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THE RELATIONSHIP OF SELECT DEMOGRAPHIC, PSYCHOLOGICAL,
AND SOCIAL SUPPORT VARIABLES WITH WORK-TO-FAMILY AND
FAMILY-TO-WORK CONFLICT IN MEDICAL STUDENTS

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of the requirements for the

Degree of

Doctor of Philosophy

By

Cristina L. Filippo

Spring, 2003

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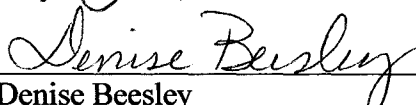
THE RELATIONSHIP OF SELECT DEMOGRAPHIC, PSYCHOLOGICAL,
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A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

BY



Jody Newman, Committee Chair



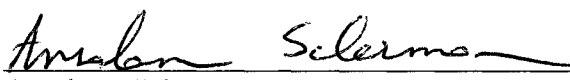
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Abstract

One hundred and twenty medical students participated in this investigation of the relationship of select demographic, psychological, and social support variables with work-to-family and family-to-work conflict. A series of multiple regression analyses were conducted. Based upon existing literature, select groups of demographic, psychological, and social support variables were identified and entered as blocks in a series of multiple regression analyses, first predicting work-to-family and then family-to-work conflict. The first series of multiple regression analyses examined both the unique and collective contributions of demographic, psychological, and social support blocks in predicting work-to-family conflict. Only the psychological and social support blocks alone significantly predicted work-to-family conflict. In the final analysis, in which all three blocks were entered into the equation, 39% of the variance in work-to-family conflict was accounted for. In the second series of multiple regression analyses, family-to-work conflict served as the criterion. Each of the three blocks alone significantly predicted family-to-work conflict, and a linear combination of the three blocks accounted for 51% of the variance in family-to-work conflict. The implications of these findings for medical colleges are discussed.

Introduction

The lives of women and men, the relationships that they establish, and their work have changed dramatically in the past 50 years. Changing demographics have been largely responsible for increasingly demanding lifestyles as men's and women's roles and values have shifted considerably over the past several decades. Women are now disproportionately represented at every level of higher education (National Center for Education Statistics, 2000), are entering and graduating from graduate and professional schools at a rate equal to or greater than men (National Center for Education Statistics, 2000), and constitute 48% of the U.S. labor force (Bond, Galinsky, & Swanberg, 1998). Men are spending more time in childcare and household tasks now than they did 30 years ago, and one third of all single parents in the workforce are fathers (Bond et al., 1998). For both men and women, age of first marriage is increasing, as is life expectancy, while family size is decreasing (Barnett & Hyde, 2001). These changes represent striking shifts from the 1950's in which families were typically larger, women were isolated from the world of work in which their husbands spent long hours, and social mores at the time provided little latitude in gender roles.

According to Barnett and Hyde (2001), "One of the most dramatic markers of the late 20th and early 21st centuries is the astonishingly fast pace of change in the work and family roles of women and men in the United States" (p.

781). Traditional work models that depended on the man focusing exclusively on breadwinning, and the woman concentrating solely on the home, no longer apply to the majority of families (Bond et al., 1998). Over the last several decades, researchers have taken these changes into account and have begun to realize that the various domains of men's and women's lives (e.g., paid work outside the home, time spent as a couple, childcare responsibilities, friendships, household chores, social obligations, educational tasks, and community/church commitments) interact with one another and must be studied in an integrated manner and within a common framework (Carlson, Kacmer, & Williams, 2000). Two broad domains that have generated considerable research attention are work and family domains. Although the exact nature of the relationship of these domains has yet to be established, the fact that they do interact with one another is clear.

Efforts to understand the work-family interaction are essential. It is this interaction that has become important to understand because of the vital consequences involved, both for the individual and the employing organization. For the individual, the costs of struggling with the demands of work and family may include increased stress and physical health risks, diminished performance of the parenting and paid-worker roles, reduced life satisfaction, and poorer mental health. Organizations feel the negative impact in higher health costs, lower productivity, and turnover and retention concerns. From a somewhat different

perspective, if an individual is able to effectively balance work and family, the benefits that work brings to family life and vice versa can be numerous (Smith, 2002).

Work-Family Conflict Construct

The construct of work-family conflict has been evolving over the last 30 years and spans across a diverse range of disciplines. The construct was initially conceptualized based upon early theories of traditional role conflict. Role conflict was the “simultaneous occurrence of two or more sets of pressures such that compliance with one would make more difficult compliance with the other” (p. 19) (Kahn et al., 1964). A more current conceptualization is that work-family conflict is a form of interrole conflict in which the role demands associated with the work or family domain are made more difficult given role enactment in the other domain (Greenhaus & Beutell, 1985). According to Greenhaus and Beutell (1985), any role characteristic affecting a person’s time involvement, strain, or behavior within a role can produce conflict between that role and another role. Thus, three major forms of work-family conflict have been identified: (a) time-based conflict (time spent in one role impedes performance in another role), (b) strain-based conflict (strain produced by one role affects performance in another role), and (c) behavior-based conflict (role behaviors required in one domain are incompatible with role behaviors in another). This work was an important contribution, but, since that time, more contemporary,

integrated, conceptual models of the work-family interface have been developed (Frone, Russell, & Cooper, 1992; Frone, Yardley, & Markel, 1997).

Work-family conflict has evolved from being viewed as a global construct to two related, but distinct, forms of interrole conflict: family-to-work conflict and work-to-family conflict (Duxbury & Higgins, 1994; Eagle, Miles, & Icenogle, 1997; Frone, Russell, & Cooper, 1997; Kossek & Ozeki, 1998). Recent research recognizes that the relationship between work and family domains is bi-directional; thus, work can interfere with family and family can interfere with work (Carlson, 1999; Chiu, 1998; Duxbury & Higgins, 1994; Frone et al., 1992; Kossek & Ozeki, 1998). Research has established that there is a positive, reciprocal relationship between the two (Frone et al., 1992) and that stressors in the work and family domains might have additive, spillover, or interactive effects, leading to overload and reduced physical and mental well-being (Greenhaus & Parasuraman, 1985).

As women began entering the workforce in greater numbers during the 1960's, traditional role conflict theory postulated that women were accumulating additional roles and, therefore, were most vulnerable to role strain. In the context of work-family conflict, the "scarcity hypothesis" assumed that women will have limited resources with which to meet the demands of the workplace due to competing demands related to their roles as primary caretakers in the home (Barnett & Baruch, 1987). Pleck (1985) and Voydanoff (1987) both asserted that

competing demands of the workplace and family could result in overload and, thereby, increase stress. Research such as Pleck's (1985) and Voydanoff's (1987) support the scarcity hypothesis, which suggests that numerous roles drain energy and time.

Nevertheless, there is a substantial amount of empirical evidence that disputes the scarcity/overload hypothesis. Several theorists have argued that the benefits of multiple roles far outweigh tensions due to overload and conflict (Barnett & Hyde, 2001; Marks, 1977, Thoits, 1983; Verbrugge, 1983). The "enhancement hypothesis" proposed that multiple roles are sources of potential gratification and can expand, rather than restrict, an individual's resources, rewards, commitment, security, and well-being (Barnett & Baruch, 1987; Barnett & Hyde, 2001).

Research has provided support for the enhancement hypothesis for both men and women (Barnett & Hyde, 2001; Thoits, 1986). Greenberger and O'Neil (1993) concluded that more support has accumulated for the enhancement hypothesis than for the scarcity hypothesis. Researchers have increasingly found that it is the quality of experiences that persons have within role contexts, rather than occupying a number of roles per se, that is most important in predicting life satisfaction outcomes (Baruch & Barnett, 1986; Berger, Cook, DelCampo, Herrera, & Weigel, 1994).

Empirical evidence also supports the assertion that both types of work-family conflict can have a negative impact on work and family-related outcomes that, in turn, can influence well-being. In a classic paper, Pleck (1977) introduced the notion of “asymmetrically permeable” boundaries between the life domains of work and family. Pleck hypothesized that family demands would intrude into the work domain more for women because they assume primary responsibility for managing home demands. He also hypothesized that work demands would likely intrude on the family role for men because they are more likely to use family time to recuperate from work stress. Pleck maintained that the intrusion of family obligations into work responsibilities was more damaging to physical and mental health over time than work interfering with family. Several more recent studies have supported the negative implications of family interfering with work (Frone, 2000; Higgins & Duxbury, 1992; Wiley, 1987) and suggested that family boundaries were more permeable than work boundaries (Frone et al., 1992; Hall & Richter, 1988). However, the notion that gender differences exist in the pattern of asymmetry has not generally been supported (Frone et al., 1992; Gutek, Searle, & Klepa, 1991; Hall & Richter, 1988).

One particularly stressful social environment that has received a great deal of attention in the stress and coping literature is the medical school environment. Demands of the university, combined with demands from a family, can be overwhelming for students (Hammer, Grigsby, & Woods, 1998). Smith (2002)

indicated that little research has been done to tease out the ways in which individuals successfully negotiate work and family roles – let alone other life roles such as going to school.

Given the widespread nature of work-family conflict, it stands to reason that, with little specific work-family research in the academic arena, efforts are needed to understand the competing nature of academic and family roles among students and the potential impact of this unique form of work-family conflict. Such research could make an important contribution to improving the quality of life for students with families.

Medical Students

Stress is inherent in human life. However, in various social environments and in different periods of the life cycle, people are exposed to numerous kinds and intensities of stressors. Medical training has often been singled out for its stressfulness. Medical students undergo considerable stress during their professional education (Rutledge, Davies, & Davies, 1994; Stern, Norman, & Komm, 1993; Wolf, Elston, & Kissling, 1989). Past studies have indicated that the stringent academic demands, prolonged personal sacrifices, and delayed financial rewards contributed to students' perceived stress (Clark & Rieker, 1986; Home 1998). A large number of stressors faced by medical students have been described in the literature (Rutledge, Davies, and Davies, 1994; Wolf et al., 1989). They have been divided into three major categories: current academic stressors

(examinations, hours of study), anticipated medical career stressors (various aspects of patient care), and balancing personal and professional goals (maintaining meaningful relationships with family and friends).

The number of non-traditional students entering the professional academic arena has increased significantly in recent years. These multi-role students typically are involved not only in their academic pursuits, but additionally have jobs, homes, families, friends, and community commitments. This challenging academic environment, coupled with any additional clinical work, typically involves long hours that may be unpredictable and/or inflexible. In addition, this environment appears to be relatively intolerant of interference from competing demands of other roles (Hammer et al., 1998; Rutledge et al., 1994; Stern et al., 1993; Wolf et al., 1989).

The inability to adapt positively to the stressors common in medical school has been linked to various negative outcomes, such as failure to perform to academic potential, poor self-concept, the degeneration of personal relationships, mental health issues, poor work satisfaction, and potential withdrawal or dismissal from a program (Kelner & Rosenthal, 1986; Wolf, 1994). The physician role in the community is central, being “gatekeeper” to a wide range of medical and psychological provisions and services. Distressed students who remain in school and eventually become treating professionals may, in the absence of some kind of

intervention, present a threat to the quality of health care they provide and, thus, may even endanger their patients (Gerber, 1983).

Although Wolf (1994) reported that graduating medical students were worse off psychosocially than when they entered school, only a few studies found within the literature have focused on role conflicts among college students (Hammer et al., 1998; Wiley, 1987). A study by Hammer et al. (1998) revealed that demands of the university, combined with demands from a family, conflict as both require constant availability, exclusive loyalty, and high flexibility. Wiley (1987) found that employed graduate students indicated that work-to-family conflict was significantly higher than family-to-work conflict. She also found that both types of work-family conflict were positively related to some form of psychological distress. The exacting demands of intense academic work (i.e., stringent academic demands, prolonged personal sacrifices, delayed financial rewards, intolerance of demands from other life roles) may make medical students especially vulnerable to work-family role conflict (Clark & Rieker, 1986; Hammer et al., 1998; Home, 1998; Wolf et al., 1989).

Individuals differ in their perceptions of stressors (Lazarus & Folkman, 1984). The same stressor may be appraised as highly salient for one student, but not at all stress-provoking for another. Demographic variables have been shown to play an important role in how students perceive role stressors. Female students have been found to perceive some specific events as more distressing than male

students (e.g., institutional obstacles such as inconvenient scheduling and procedural rigidity) and to experience more psychological distress via depressive and anxious symptomatology; however, attrition rates for men and women are not significantly different (Home, 1998; Richman and Flaherty, 1990). Several researchers have found that married students perceive some stressors as less significant than single students (Carmel & Bernstein, 1987; Coombs & Fawzy, 1982; Murphy et al., 1984). Single students have been found to report more stress than married students concerning deferred sexuality, loneliness, inability to learn all course material, helplessness and dependence in relationships, fear of receiving low grades, and limited social outlets (Coombs & Fawzy, 1982). Single students have also been found to experience more interpersonal problems and more problems with the pressure to succeed (Bjorkstein, Sutherland, Miller, & Stewart, 1983). Married students, on the other hand, have been reported to have significantly more problems related to juggling the additional life roles of spouse and parent. Difficulties typically reported by couples have included lack of time together, decreased quality of leisure activities, and diminished quality of their sex lives (McLaughlin, 1985). These difficulties were exacerbated by the presence of young children living in the home. Parenthood has been associated with significant role-specific demands (Barnett & Baruch, 1987; Lewis & Cooper, 1987; Moen, 1992).

Mediating factors such as healthy coping responses and increased spousal support may have a buffering effect on the experience of psychological distress in students experiencing work-family conflict (Folkman, Lazarus, Gruen, & DeLongis, 1986; Matthews, Conger, & Wickrama, 1996; Rospenda, Halpert, and Richman, 1994). Medical students undergo considerable stress during their professional education (Strayhorn, 1989; Wolf et al., 1989). Their ability to adapt positively to the stressors common in medical education has been shown to influence their professional and personal development, the students' well-being, the well-being of their patients and, ultimately, the state of our health care delivery system (Delvaux et al., 1988; Stern et al., 1993; Wolf, 1997).

Medical students are of particular interest for a number of reasons. Obviously, they represent a fairly homogeneous group in terms of life tasks as they share similar program requirements. These students tend to be high achieving individuals in an intense academic environment in which balancing work, school, and home responsibilities would have a direct impact on their psychological well-being. More importantly, very little is known about the process of professional school education, particularly how students in the health sciences cope with work-family role stressors. The literature indicates that students in an intense academic arena face a combination of high demand and low control situations (Lowe, 1989), much like they will encounter once they graduate and enter their highly demanding professions. Such intense academic demands

may increase the chance for work-family conflict to emerge within the students' lives.

In the present study, the definition of work-family conflict provided by Greenhaus and Beutell (1985) will be extended to include the non-work sphere of school. In many important senses such as regular activity, a time structure to the day, competing role demands, and social contacts, the student's current academic career *is* their work (Winefield, 1993). If the exacting demands of medical training make medical students especially vulnerable to work-family role conflict, understanding the roles of perceived stressors and coping responses will be essential for effective planning of counseling and related support services (Bjorksten et al, 1983; Wolf et al., 1989).

Psychological Distress

Research examining the relationship between work-family conflict and psychological distress has become more common in the past decade. Work-family conflict has been linked to psychological distress in several studies (Barling & MacEwen, 1992; Frone, Russell, & Cooper, 1992; Hughes & Galinsky, 1994; MacEwen & Barling, 1994; Parasuraman, Greenhaus, & Granrose, 1992). Recent research has focused on the relationships of both types of work-family conflict (work-to-family and family-to-work) to psychological health (Frone, Russell, & Barnes, 1996). In several of the studies reviewed, some form of psychological distress was found to be positively related to work-family

conflict (Frone et al., 1996; Hughes & Galinsky, 1994; Klitzman, House, & Israel, 1990; MacEwen & Barling, 1994; O'Driscoll, Ilgen, & Hildreth, 1992; Wiley, 1987).

A four-year longitudinal study by Frone et al. (1997) revealed that work-to-family conflict was related to elevated levels of depression and poor physical health and that family-to-work conflict was related to elevated levels of alcohol consumption. In addition, Wiley (1987) found that both types of work-family conflict were positively related to psychological distress in a sample of graduate students. Recent studies by Frone (2000) revealed that both types of work-family conflict were positively related to having mood, anxiety and substance abuse disorders.

Social Support

Theoretical models of work-family dynamics (Greenhaus & Parasuraman, 1986) and related empirical research have demonstrated the importance of social support in influencing the well-being of individuals (Bernas & Major, 2000; Frone, Russell, & Cooper, 1992; Lazarus, 1999; Parasuraman et al., 1992; Wan, Jaccard, & Ramey, 1996). Support represents an interpersonal coping resource and has been embraced by work-family researchers (Parasuraman & Purohit, 1996). A person's social support system can be viewed as a coping resource to be utilized as a way to help alleviate some of the stressors inherent in multiple roles.

A social network can be drawn upon for emotional support that contributes to the feeling that one is loved or cared about; for tangible support, which involves direct assistance in terms of services or material goods; and for informational support, which includes information and advice (Dunkel-Schetter, Folkman & Lazarus, 1987; Folkman & Lazarus, 1985). Subdividing the construct of support into discrete functions such as these does not add much to the sensitivity of measures; the core component of supportive relationships involve feeling accepted, loved, and valued (Hejri & Sorenson, 1992; Saranson, Sharing, Pierce, & Sarason, 1987; Wohlgemuth & Betz, 1991). Having such supportive relationships has been found to be related to increased well-being (Beehr & McGrath, 1992; Bernas & Major, 2000; Cohen, Mermelstein, Kamarck, & Hoberman, 1985) and to mediate the stress-health association by promoting resistance to illness and disease (Strayhorn, 1989).

There is a growing consensus within the occupational stress literature that social support can come from both work and non-work sources. Social support in the work/academic domain may come from a number of sources, such as peers, professors, or supervisors, which may create a more positive work environment. Research investigating the relationship between supervisors and role strain has revealed that having supportive supervisors is related to lower levels of stress, lower levels of work-family conflict, and greater employee job satisfaction

(Galinsky & Stein, 1990; Goff, Mount, & Jamison, 1990; Greenglass, Pantony & Burke, 1989; Parasuraman et al., 1992).

As a primary source of support, family members have a unique opportunity to provide both emotional and instrumental support to the worker outside of the work environment (Cohen & Wills, 1985; Home, 1998). Physical help with chores and housework has not always been found to reduce role strain, perhaps because family and friends cannot directly act on the conflict or overload brought on by strong academic or job demands (Adams & King, 1996; Baruch & Barnett, 1987; Bernas & Major, 2000; Wells & Major, 1997; Winefield, Winefield, & Tiggemann, 1992). However, research has indicated that family emotional support tends to ameliorate work-family conflict, reduce levels of stress, enhance general health, and improve life satisfaction (Adams, King, & King, 1996; Barnett & Marshall, 1991; Burley, 1995; Greenberger & O'Neil, 1993; Home, 1998).

Studies of medical residents and college students have indicated that social support is an important mediating factor between stressful events, health, and psychological and life satisfaction outcomes (Degrauw & Norcross, 1990; Strayhorn, 1989; Wolf, 1994; Wolf, Faucett, Randall, & Balson, 1988). Time with friends and family, good relationships with peers and supervisors/teachers, and relationships with parents were the most uplifting factors cited in several studies (Alexander, Monk, & Jonas, 1985; Rudner, 1985).

Current Study

The purpose of this study was to extend existing work-family conflict literature by examining the relationships of work-to-family conflict and family-to-work conflict with select demographic variables, psychological distress, and social support in a sample of medical students. Demographic variables included age, gender, and young children in the home. The literature suggests these particular demographic variables have been associated with work-family conflict. Indicators of psychological distress included depression and psychosomatic symptoms. Depression has frequently been linked to work-family conflict in empirical studies. A measure of psychosomatic symptoms was included due to common knowledge that stress may manifest itself in psychophysiological symptoms. Finally, a multidimensional measure of social support was used that assessed support from three different sources, confidants (family/friends), peers, and supervisors.

Research Questions

The specific research questions addressed in this study were as follows:

- (1) What is the relationship of a linear combination of demographic variables (age, sex, young child/children in the home) to work-to-family conflict?
- (2) What is the relationship of a linear combination of psychological variables (depression and health symptoms) to work-to-family conflict?

- (3) Does adding Block B (psychological variables) to Block A (demographic variables) produce a statistically significant increment in R^2 ?
- (4) What is the relationship of a linear combination of social support variables (confidants, peers, supervisors) to work-to-family conflict?
- (5) Does adding Block C (social support variables) to Blocks A and B produce a statistically significant increment in R^2 ?
- (6) What is the relationship of a linear combination of demographic variables (age, sex, young child/children in the home) to family-to-work conflict?
- (7) What is the relationship of a linear combination of psychological variables (depression and health symptoms) to family-to-work conflict?
- (8) Does adding Block B (psychological variables) to Block A (demographic variables) produce a statistically significant increment in R^2 ?
- (9) What is the relationship of a linear combination of social support variables (confidants, peers, supervisors) to family-to-work conflict?
- (10) Does adding Block C (social support variables) to Blocks A and B produce a statistically significant increment in R^2 ?

Method

Participants

The final sample for this study consisted of 120 (54% male, 46% female) medical students from a large health sciences center campus in the Southwest.

The mean age of participants was 25.5 years. Participants were distributed across class level as follows: first year ($n = 29$); second year ($n = 22$); third year ($n = 29$); fourth year ($n = 40$). The ethnic composition of the sample was 86% Caucasian, 6% Asian, 4% American Indian, 2% Hispanic, and 2% African American.

All 585 first through fourth year medical students enrolled in the M.D. program were invited via e-mail to participate in this study. Of these, 285 students consented to participate. A requirement for final inclusion in the study was that students had to be married, co-habiting, separated, or living with children. Thus, 119 students identifying themselves as single were excluded. Forty additional cases were excluded due to considerable missing data, in most cases complete scales being left unfinished. Finally, six cases were identified as multivariate outliers and were eliminated, resulting in the final sample of 120 participants.

Instruments

Demographics. A one-page questionnaire was designed to elicit basic demographic information such as age, gender, marital status, children and how many, ethnicity, work status, work hours, degrees obtained, class year, and college.

The Work-Family Conflict Scale (WFCS). The WFCS (Carlson et al., 2000) is an 18-item self-report scale that is both bi-directional and

multidimensional. The scale is bi-directional in that it assesses both directions of work-family conflict (i.e., work-interference with family and family-interference with work). The scale is multidimensional in that, within both scales measuring directionality, the three major forms of work-family conflict are represented (i.e., time-, strain-, and behavior-based). This study focused on work-to-family role conflict and family-to-work role conflict as general constructs; therefore, only the two global scales were used. Respondents rate the degree to which each statement describes their experience on a 5-point Likert scale.

Reported coefficient alphas for the six subscales ranged from .78 to .87 (Carlson et al., 2000). Coefficient alphas of .78 and .79 for work-to-family and family-to-work scales, respectively, based upon 6 items were also reported (Carlson et al., 2000). Although internal consistency was not examined for the two 9-item scales (work-to-family and family-to-work), Carlson et al. (2000) predicted that even higher alpha coefficients would be found for the 9 item scales. In a recent study by Laster (2002), the internal consistency reliability was .87 for work-to-family conflict and .83 for family-to-work conflict for a sample of working adults. The internal consistency reliabilities for the work-to-family and family-to-work scales were .84 and .88, respectively, for the current sample.

The WFCS was constructed over a series of three studies. Ultimately, a six-factor model (with factors allowed to correlate) was determined to be the best fitting model. The authors purported that discriminant validity of the subscales

has been demonstrated by low factor correlations, which ranged from .24 to .83; however, four of the correlations exceeded .50. Thus, there appears to be some overlap among the six dimensions represented in the six subscales. Invariance of the factor structure was established across samples based on a LISREL two-group measurement procedure, further confirming the structure of the six-factor model. The same procedure was used to test the six-dimensional model for invariance across gender and found to be minimally invariant. T-tests on the level of experienced conflict across all six dimensions revealed that females experienced more conflict than men in all three family-to-work forms of conflict, as well as strain-based work-to-family conflict. In addition, each of the scales differentially related to various antecedents (i.e., work-role ambiguity, work involvement, and workplace social support) and consequences (i.e., job satisfaction, family satisfaction, life satisfaction, and organizational commitment) of work-family conflict, further supporting the predictive validity of the scales.

This instrument was chosen because its items tap all three forms of work-family conflict and is, therefore, thought to be more theoretically and methodologically sound than other work-family conflict measures to date.

The Multi-Dimensional Support Scale (MDSS). The MDSS (Winefield, Winefield, & Tiggemann, 1992) is a 19-item self-report instrument designed to measure social support, including frequency and adequacy of emotional, practical, and informational support in young adults. The MDSS is structured to examine

support from three sources – confidants (family/friends), peers, and supervisors.

The MDSS has six factors reflecting quality of support rather than types:

confidant availability, confidant adequacy, supervisor availability, supervisor adequacy, peer adequacy, and peer availability. The MDSS is scored by simply summing item scores for the individual factors, using a 4-point Likert scale ranging from 1 (never) to 4 (usually/always) for frequency and a 3-point Likert scale ranging from 1 (more often) to 3 (just right) for satisfaction.

The MDSS appears to have good internal consistency, with reported coefficient alphas for the subscales ranging from .81 to .90. Evidence for the concurrent validity of the MDSS has been demonstrated through significant correlations with three measures of psychological well-being, including Rosenberg's Self-Esteem and Depressive Affect scales and the General Health Questionnaire. The MDSS was a better predictor of psychological well-being than measures of health, financial distress, and stressful life events (Winefield, Winefield, & Tiggemann, 1992). The internal consistency reliability for MDSS scales ranged from .71 to .86 for the current sample.

Duke-UNC Health Profile (Symptom Status Scale) (SSS). The SSS is one of four subscales included in the Duke-UNC Health Profile (DUHP). The DUHP is a 63-item instrument intended to determine an individual's health status in a primary care setting (Parkerson et al., 1981). This profile was designed to be used with persons who are 18 years of age and older. It is a self-report measure for

those with at least a ninth grade education. The SSS is included in the DUHP because physical symptoms are often the earliest and, sometimes, the only manifestation of altered health. They are considered to be a natural expression of dysfunction within the body and mind and complete the picture of mental health by examining the linkage of body states to psychological phenomena. The SSS scale is comprised of 26 physical symptom items. Participants are asked about 22 symptoms that were experienced during the past week, and 4 symptoms experienced during the past month. Examples of weekly symptoms include hearing, sleeping, indigestion, poor memory, breathing, etc., and monthly symptoms include undesired weight gain or loss, unusual bleeding, and altered sexual performance. Participants are asked, "How much trouble have you had with..." followed by a symptom with three possible responses: 0 = none; 1 = some; 2 = a lot. A higher score indicates a greater severity of symptoms.

According to Parkerson et al. (1981), measurement of reliability with regard to the SSS proved difficult since high internal consistency was not expected given the heterogeneous content of the symptoms listed. The internal consistency reliability was .85 for the current sample. Temporal stability of scores (test-retest) has been previously examined. The test-retest interval of 1 to 8 weeks was problematic due to the time allowing symptoms to fluctuate even in respondents with stable medical conditions. Overall stability for the SSS was considered acceptable as indicated by a test-retest coefficient of .68.

Evidence for the validity of the SSS was established by comparing the symptoms status scores with other scales on the DUPH scales, as well as other instruments. Symptom status scores correlated highly with scores on the other three dimensions, which included physical functioning, emotional functioning, and social functioning. According to the instrument developers, "this finding fits with the recognized clinical phenomenon that symptoms such as headache or trouble with appetite and sexual performance can be associated with various combinations of physical, social or emotional problems" (p. 81). Correlations of the SSS with other instruments provided support for its concurrent and discriminant validity. For example, the scale correlated substantially with the Sickness Impact Profile ($r = .66$), which also measures physical aspects of health and with the Zung instrument ($r = .61$), a measure of somatic and psychologic concomitants of depression partly reflected by patients' symptoms. In contrast, the scale correlated only slightly with the Tennessee Self-Concept Instrument ($r = .22$), which specifically measures the emotional dimension of health and would not, therefore, be expected to correlate highly with a physical symptom measure.

Center for Epidemiological Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item self-report scale designed to assess depressive symptomatology, with emphasis on the affective component. This instrument has been widely used and was intended to be a measure of current symptoms and mood, rather than of disorder or an illness. Participants are asked to rate on a 4-

point Likert scale, ranging from 0 to 3, how often during the past week they experienced each of the various depressive symptoms. A respondent's scale score is the sum of all items.

The CES-D had a high internal consistency, with coefficient alphas ranging from .85 to .91 in patient and community samples (Ensel, 1986; Radloff, 1977). The internal consistency reliability was .93 for the current sample. The total scale mean for the norm group was 8.70. Due to expected changes in mood over time and the scale's sensitivity to current level of symptoms, modest test-retest reliability coefficients of .40 and above were deemed acceptable. The CES-D has been especially popular in studies aimed at the general population.

Procedures

All 585 first through fourth year medical students enrolled in the M.D. program were invited to participate in the study. The students received an email from the investigator that introduced the study and the investigator, and encouraged participation in the study on a voluntary basis. The students were then directed to click onto a web page giving an overview of the study, explaining the purpose and relevance of the study. In addition, the web page informed students of an incentive for participating in the study that involved an opportunity to participate in a random drawing for one round-trip airline ticket and a \$100 clothing store certificate.

Informed consent was included on the initial web page so that students might learn about their rights as participants and the risks and benefits of participating in the study. Students choosing to participate in the study were able to link into a secure, password-protected, cookie-recognized, university-based website to take the survey electronically. Participants were advised that submitting electronic surveys implied their consent to participate in the study. Participation was strictly voluntary.

Two follow-up emails were sent to the students at 2-week intervals. Additional measures to encourage participation included an email from the college dean, electronic bulletin reminders, announcements in classes and student organization meetings, links from the main medical school web page, and a deadline extension of three days. Participants were invited to email the investigator directly under separate email to enter the drawing and were assured of confidentiality. Participants were advised that group data would be shared with all students in approximately six months time via college-wide presentation, but that absolutely no individual data would be made available.

Research materials consisted of a brief demographic questionnaire and the 4-instrument battery, all of which required approximately 30 minutes to complete. Identifying information was stripped from the electronically submitted surveys by the website administrator. Data were provided to the investigator via a data text file. All participants were treated in accordance with the ethical standards of the

American Psychological Association (American Psychological Association, 1992).

Results

Data were collected from October 22, 2002, through November 25, 2002. Missing data were found in 40 of the electronically submitted cases. The computer program would not allow the respondents to progress without completing all items and, if a packet was unfinished, the program would identify the incomplete file. If a respondent attempted to complete the packet at a later date, a computer program “cookie” would identify and return that individual back to where he or she left off. The 40 incomplete cases were omitted due to the amount of missing data, in most cases complete scales being left unfinished. Prior to analysis, the data were examined to ensure that the assumptions of multiple regression analysis were met. Data were screened for univariate and multivariate outliers and, on the basis of this examination, six cases were omitted from the study. The potential for non-normality of distribution was assessed by examining the skewness and kurtosis of the distributions for all scale variables. All distributions were within normal limits except for professor adequacy with a kurtosis of -1.47 . Transformations were attempted and unsuccessful. Consequently, it was decided to use the original variable scores. The distributional characteristics of the variables used are presented in Table 1. An additional data screening was done in the process of conducting the multiple

regression analyses. Residual plots were examined to check for failure of normality, non-linearity, and heteroscedasticity. These assumptions were met in all cases. Zero order correlations among all variables are presented in Table 2.

The general data analytic strategy utilized to answer the two main sets of research questions (questions 1 through 5; questions 6 through 10) consisted of a series of multiple regression analyses, successively entering the demographic, psychological distress, and social support variables as blocks.

To address question 1, a multiple regression analysis was conducted in which the three demographic variables, age, gender, and young children in the home, were entered into the equation as a single block, with work-to-family conflict serving as the criterion. The results of this analysis, presented in Table 3, revealed that work-to-family conflict was not significantly predicted by the block of demographic variables ($R^2 = .05$; $F(3,116) = 2.08$; $p = .107$).

To address question 2, a second multiple regression analysis was conducted in which the psychological distress variables (depression, symptom status) were entered as a block to predict work-to-family conflict. The results of this analysis, presented in Table 3, revealed that work-to-family conflict was significantly predicted by the block of psychological distress variables ($R^2 = .19$; $F(2,117) = 13.49$; $p = .000$).

To address question 3, a regression model was evaluated to determine whether adding the block of psychological distress variables to the demographic

block produced a statistically significant increment in variance accounted for. The resulting change in R^2 was statistically significant (R^2 Change = .20; Sig F Change = .000). Thus, it was confirmed that the addition of the psychological distress block significantly enhanced the prediction of work-to-family conflict over that achieved by the demographic block alone.

To address question 4, a multiple regression analysis was conducted in which all six of the social support variables treated as a single block were used to predict work-to-family conflict. The results of this analysis, presented in Table 3, revealed that work-to-family conflict was significantly predicted by the block of social support variables ($R^2 = .32$; $F(6,113) = 8.92$; $p = .000$).

To address question 5, a regression model was evaluated to determine whether adding the social support block to the demographic and psychological distress blocks produced a statistically significant increment in variance accounted for. The resulting change in R^2 was statistically significant (R^2 Change = .14; Sig F Change = .001). As reflected in Table 3, the combined demographic, psychological distress, and social support blocks accounted for 39% of the variance in work-to-family conflict.

In addressing question 6 – 10, the same sequence of multiple regression analyses were conducted, with family-to-work conflict replacing work-to-family conflict as the criterion. To address question 6, a multiple regression analysis was conducted in which the demographic block of variables was used to predict

family-to-work conflict. The results of this analysis, presented in Table 4, revealed that family-to-work conflict was significantly predicted by the block of demographic variables ($R^2 = .07$; $F(3,116) = 2.70$; $p = .049$).

To address question 7, a multiple regression analysis was conducted in which the psychological distress block of variables was used to predict family-to-work conflict. The results of this analysis, presented in Table 4, revealed that family-to-work conflict was significantly predicted by the block of psychological variables ($R^2 = .26$; $F(2,117) = 20.42$; $p = .000$).

To address question 8, a regression model was evaluated to determine whether adding the psychological block to the demographic block would produce a statistically significant increment in variance accounted for. The change in R^2 was statistically significant ($R^2 \text{ Change} = .27$; $\text{Sig } F \text{ Change} = .000$). Thus, it was confirmed that the addition of the psychological distress block significantly enhanced the prediction of work-to-family conflict over that achieved by the demographic block alone.

To address question 9, a multiple regression analysis was conducted in which the social support block of variables was used to predict family-to-work conflict. The results of this analysis, presented in Table 4, revealed that family-to-work conflict was significantly predicted by the block of social support variables ($R^2 = .43$; $F(6,113) = 14.42$; $p = .000$).

To address question 10, a regression model was evaluated to determine whether adding the social support block of variables to the demographic and psychological distress blocks of variables produced a statistically significant increment in variance accounted for. The change in R^2 when the social support block was added was significant (R^2 Change = .17; F Change = .000). As reflected in Table 4, the final model with all three blocks included accounted for 51% of the variance in family-to-work conflict.

Discussion

At the most general level, these results suggest that a linear combination of the demographic, psychological distress, and social support blocks accounted for a substantial portion of the variance in both work-to-family conflict ($R^2 = .39$) and family-to-work conflict ($R^2 = .51$) in this sample of medical students. In both cases, psychological distress and social support accounted for most of the observed relationships. The demographic block of variables failed to relate significantly to work-to-family conflict and its relationship with family-to-work conflict, while statistically significant, was small ($R^2 = .07$). An examination of the zero order correlations in Table 2 reveal that having young children was the only demographic variable that related to work family conflict and that this variable correlated significantly with both forms of conflict. Although age and gender have been found to be significant predictors of work family conflict in previous studies (Barnett & Baruch, 1987; Burley, 1995; Carmel & Bernstein,

1987; Hertz, 1986; Home, 1998; Lewis & Cooper, 1987; Moen, 1992; Murphy, Nadelson, & Notman, 1984; Richman & Flaherty, 1990; Sekaran, 1986), such was not the case here. This was a fairly young sample and the variability on the age variable was rather limited ($SD = 2.7$), factors which may have suppressed the relationships observed in this study. The lack of significant relationships for gender with work-family conflict may be reflective of either female students adopting more traditionally male coping strategies as a way of “better” adjusting to medical school or may be reflective of a true gender convergence as suggested by Bond et al. (1998).

This study provides further evidence of a relationship between work-family conflict and psychological distress. Depression and health symptoms were predictive of both work-to-family ($R^2 = .19$) and family-to-work ($R^2 = .26$) conflict. Examination of the zero order correlations among these indicators of psychological distress and the two forms of work-family conflict were in the moderate range. Given the correlational nature of findings in this study, no inferences can be made regarding causality. However, findings do suggest that exploration of these relationships in clinical contexts may be important in both assessment and treatment. It seems likely that individuals may tend to associate work-family conflict and depressive symptoms with one another, but may not as readily connect the manifestation of health-related symptoms to conflict between

work and family demands. Awareness of this possible relationship may greatly enhance individuals' sense of understanding and control over physical symptoms.

When psychological distress is observed, universities may want to ensure that clinical and course work are adjusted to allow individuals a realistic amount of time and support to deal with their family problems. Making timely mental health interventions available to students through culturally accepted student assistance programs would represent a pro-active step on the part of universities to help head off potentially escalating problems that impact both the student and medical school. Health promotion programs would be helpful in developing and maintaining a balanced lifestyle and the personal well-being of medical students (Wolf, 1994).

It is important for medical school administrations to address the ongoing stress and competing role demands experienced by students in medical training. Currently, medical education emphasizes performance under stress, complete loyalty to the student role, competition, and self-denial. Implementing stress-management programs providing students with coping techniques (such as meditation, hypnosis, imagery, and muscle relaxation), time management skills, education regarding the psychological and physiological effects of stress, affiliation with peers and opportunities for emotional expression (support groups), and intensified relationships with faculty is imperative. Future research will need to determine what type of stress-management programs are most effective,

durations and frequencies of interventions, specific outcome measures, and follow-up assessment, including effectiveness of future patient care (Shapiro, Shapiro, & Schwartz, 2000).

Another contribution of this study was that it examined the notion that social support may have an impact on individuals' experience of work-family conflict. A review of the literature revealed convincing evidence that social support influences the well-being of individuals (Bernas & Major, 2000; Frone et al., 1992; Lazarus, 1999; Parasuraman et al., 1992; Wan et al., 1996). The results of this study clearly support previous empirical findings that the main-effects relations of both work-to-family and family-to-work conflict have an inverse relationship with social support. It appears that mobilizing social support is helpful in reducing work family conflict. Upon entering medical school, students may have difficulty anticipating the impact that student demands will have on them. They and their families are often unprepared for their reduced availability to the family, intense academic demands, and reverberating effects on family functioning (Home, 1998).

Fostering a less competitive medical school environment that encourages students to network with peers (to explore housing, shopping, recreational facilities, child care, potential school districts, and share concerns about relocation and coursework) who have successfully managed combined roles may help students prepare for this challenge while strengthening negotiation and time

management skills. Tapping social support resources may be encouraged by involving family members in school-sponsored social gatherings so that they will feel more involved in job and student roles. Orientations during which the stressors associated with medical school education and implications for marital adjustments are discussed may be beneficial for students and their significant others. Finding time to stay connected with friends is a problem for these multiple role students, but they should be encouraged to make it a priority by faculty and mentors.

When examining the correlations found in Table 2, it appears that peer support does not relate strongly to either work-to-family or family-to-work conflict. This might be explained by the competitive environment inherent in medical school. Students are grouped together early in the first semester in modules in the hope that students will form effective study groups. However, this does not necessarily promote emotional, practical, and informational support as measured by the instrument utilized in this study. Once students enter medical school, they are no longer the extraordinary students they were in undergraduate school because all of the students admitted to medical school tend to be exceptional. It is much more difficult to "stand out," remain in the top percentage of their class, and get accepted into the residency of their choice. Students may be much more likely to develop mentoring-type relationships with faculty and attending physicians as sources of support, as opposed to meeting such needs in

peer relationships. They also tend to rely heavily on nuclear and extended family members to provide emotional, practical, and informational support.

The idea that availability and satisfaction with social support is important to the well-being of individuals has implications for counseling. When a therapist assesses a student's social support system, it is important to focus not only on the nature and size of the support network, but also to explore the level of satisfaction with the support being received. Counselors should not simply encourage students who are in distress and who have inadequate social support resources to expand their networks in terms of number of people. Working with students to help them discover and clarify what would be a satisfying, realistic (due to medical school time constraints) social support system in terms of numbers, functional behaviors, and types of people and then helping the students to build a satisfying social support network may be one way that counselors can help improve the well-being of students (Wohlgemuth & Betz, 1991).

Understanding the potential impact of these results and explanations will be important in tailoring interventions to help alleviate stressors inherent in the medical school environment. Overall, special efforts should be made at medical schools to help students deal with stressors through increased faculty and student interactions, decreased competition, development of strong academic and personal support resources for students, and a responsive administration that allow for student input into the policy-making process of the institution and the assessment

of the overall quality of the culture, teaching, and curriculum (Strayhorn, 1989). One example of this is when students have young children in the home, universities may be more flexible with course scheduling, adopt a less grueling clinical rotation schedule, assist with employment opportunities for a spouse, as well as offer affordable on-site day care. Increased availability of faculty and staff for discussing difficulties encountered in medical school might occur through “rap sessions” and be incorporated into required school activities (Carlson & Perrewé, 1999; Gaensbauer & Mizner, 1980; McLaughlin, 1985).

Cultivating and encouraging social support from peers, faculty, and family may positively impact students experiencing work-family conflict. Interventions that would help create a different culture include giving students more control over, and flexibility in, their school environments and ensuring that rewards and incentives do not encourage the “workaholic” mentality that alienates students from their social support network, but that is rampant in the health care industry. Universities may create a culture that promotes a belief system that makes it acceptable for students to make family issues a priority. Universities will do well to create a more accepting culture that acknowledges the reality that student’s family lives will affect work performance from time to time. Reframing the idea that students with families have more “baggage” into the reality that students with families have numerous experiences and a rich context from which to serve their patient population would greatly improve these student’s lives.

There are several issues that were not addressed in the current study that warrant attention in future research. For example, this study did not address the special issues faced by single students and the work-family conflict they might experience with their extended family members. Also, this study was not designed to compare the relative magnitude of relations of predictors with work-to-family and family-to-work conflict. Studies designed to permit the reliable partitioning of variance in each type of work-family conflict associated with specific predictors may add much to our understanding of the nature of these relationships.

However, prior to further study of potential correlates of work-family conflict, results reported here seem to point to the need to re-examine the constructs of work-to-family conflict and family-to-work conflict as measured by the Work-Family Conflict Scale. In the current study, as in previous studies, the correlation between the two work-family conflict scales was moderately high ($r = .70$). If one corrects the correlation between the two scales for attenuation, the resulting correlation is even higher ($r = .82$). This degree of relationship raises fundamental questions regarding the structural independence of these two scales. The likelihood that these scales, in their current form, represent sufficiently independent dimensions of work-family conflict appears improbable, to say the least. Therefore, it seems that there may be great value in revisiting these constructs. If, in fact, both types of conflict do exist, further development and

refinement at the conceptual level may be required before they can be more effectively operationalized. Eventually, factor analytic studies designed to examine the underlying structure of the emerging scales may further explicate the nature and relationship of these constructs.

Limitations of the Study

It should be noted that this study had several limitations. It is likely that the findings obtained in this study were affected by the homogeneity of this medical school sample. This particular sample was primarily Caucasian, highly educated, and relatively young. It was conducted within one medical college culture that is urban in nature and, therefore, may not be generalizable to other medical school samples with significantly different cultural climates or demographic profiles. Finally, since this study was correlational in nature, no inference can be drawn regarding the causal nature of relationships among the variables studied. Experimental studies (e.g., longitudinal studies) are seriously lacking in the study of work-family conflict and would prove useful in furthering our understanding of the correlates of both types of work-family conflict.

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APPENDIX A

Tables

Table 1

Normal Distribution Indices for each Variable

Variables	Mean	SD	Skewness	Kurtosis
Age	25.50	2.70	1.23	1.57
Work-to-Family Conflict	41.62	10.10	-.10	-.35
Family-to-Work Conflict	33.00	11.41	.56	-.24
Health	9.31	6.72	.76	-.15
Depression	15.33	11.71	.82	-.10
Social Support				
Family Availability	19.62	3.63	-.43	-.16
Family Adequacy	16.98	3.72	-.73	-.38
Peer Availability	14.13	3.41	.23	.06
Peer Adequacy	14.81	3.36	-.79	-.43
Professor Availability	12.34	3.77	.66	.42
Professor Adequacy	12.70	4.48	-.18	-1.47

Potential Scale Scores:

WF Conflict = 9 – 45*

FW Conflict = 9 – 45*

Health = 0 – 52*

Depression = 0 – 60*

Family Availability = 6 – 24**

Family Adequacy = 6 – 18**

Peer and Professor Availability = 5 – 20**

Peer and Professor Adequacy = 5 – 15**

* Higher Score = More Distress

** Higher Score = More Availability
and Adequacy

Table 2

Zero Order Correlations for All Variables

	WF	FW	Hlth	Dep	Fav	Fad	Pav	Pad	Prav	Prad	YC	Ag	Gnd
WF	1.00	.70**	.38**	.42*	-.39**	-.43**	-.06	-.11	-.36**	-.43**	.22*	.02	.05
FW		1.00	.39**	.51**	-.45**	-.56**	-.13	-.25**	-.39**	-.43**	.24**	.11	-.01
Hlth			1.00	.74**	-.08	-.40**	-.01	-.13	-.03	-.28**	-.11	-.18*	.28**
Dep				1.00	-.25**	-.50**	-.13	-.22*	-.28**	-.40**	-.01	-.13	-.10
Fav					1.00	.64**	.32**	.10	.41**	.22*	-.27**	-.15	-.23
Fad						1.00	.22*	.23*	.29**	.30**	-.23*	-.01	.01
Pav							1.00	.45**	.25**	.12	-.08	-.06	-.09
Pad								1.00	.04	.29**	-.02	.07	-.01
Prav									1.00	.43**	-.16	.09	-.21*
Prad										1.00	-.04	.01	-.02
YC											1.00	.28	.19*
Ag												1.00	.18
Gnd													1.00

* Correlation significant at the .05 level (2-tailed)

** Correlation significant at the .01 level (2-tailed)

Table 2 Legend

WF = Work-to-Family Conflict
FW = Family-to-Work Conflict
Hlth = Health
Dep = Depression
Fav = Family Availability
Fad = Family Adequacy

Pav = Peer Availability
Pad = Peer Adequacy
Prav = Professor Availability
Prad = Professor Adequacy
YC = Young Children
Ag = Age
Gnd = Gender

Table 3

Summary of Multiple Regression Predicting Work-to-Family Conflict From Demographic, Psychological Distress and Social Support

Blocks

Blocks	R^2	F for Equation	p	R^2 Change	F for Change	Sig F Change
Block A	.05	2.08	.11	.05	2.08	.11
Block B	.19	13.49	.000**	.19	13.49	.000**
Block A + B	.25	7.78	.000**	.20	15.55	.000**
Block C	.32	8.92	.000**	.32	8.92	.000**
Block A + B + C	.39	6.36	.000**	.14	4.12	.001**

Block A = Demographic Variables

Block B = Psychological Variables

Block C = Social Support Variables

Table 4

Summary of Multiple Regression Predicting Family-to-Work Conflict From Demographic, Psychological Distress and Social Support Blocks

Blocks	R^2	F for Equation	p	R^2 Change	F for Change	Sig F Change
Block A	.07	2.70	.049*	.07	2.70	.049*
Block B	.26	20.42	.000**	.26	20.42	.000**
Block A + B	.34	11.67	.000**	.27	23.55	.000**
Block C	.43	14.42	.000**	.43	14.42	.000**
Block A + B + C	.51	10.11	.000**	.17	6.17	.000**

Block A = Demographic Variable
 Block B = Psychological Variables
 Block C = Social Support Variables

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APPENDIX B

Prospectus

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE RELATIONSHIP OF SELECT DEMOGRAPHIC, PSYCHOLOGICAL,
AND SOCIAL SUPPORT VARIABLES WITH WORK-TO-FAMILY AND
FAMILY-TO-WORK CONFLICT IN MEDICAL STUDENTS

Dissertation Prospectus

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of the requirements for the

Degree of

Doctor of Philosophy

by

Cristina L. Filippo, M.Ed.

Fall, 2002

CHAPTER ONE

Introduction

The lives of women and men, the relationships that they establish, and their work have changed dramatically in the past 50 years. Women are now disproportionately represented at every level of higher education (National Center for Education Statistics, 2000), are entering and graduating from graduate and professional schools at a rate equal to or greater than men (National Center for Education Statistics, 2000), and constitute 48% of the U.S. labor force (Bond, Galinsky, & Swanberg, 1998). Men are spending more time in childcare and household tasks now than they did 30 years ago, and one third of all single parents in the workforce are fathers (Bond et al., 1998). For both men and women, age of first marriage is increasing, as is life expectancy, and family size is decreasing (Barnett & Hyde, 2001). These changes represent striking shifts from the 1950's in which families were typically larger, women were isolated from the world of work in which their husbands spent long hours, and social mores at the time provided little latitude in gender roles.

Over the last several decades, researchers have taken these changes into account and have begun to realize that the various domains of men's and women's lives (e.g., paid work outside the home, time spent as a couple, childcare responsibilities, friendships, household chores, social obligations, educational tasks, and community/church commitments) interact with one another and must

be studied in an integrated manner and within a common framework (Carlson, Kacmer, & Williams, 2000). Two broad domains that have generated considerable research attention are work and family domains. Although the exact nature of the relationship of these domains has yet to be established, the fact that they do interact is clear.

Efforts to understand the work-family interaction are essential. It is this interaction that has become important to understand because of the vital consequences involved, both for the individual and the employing organization. For the individual, the costs of struggling with the demands of work and family may include increased stress and physical health risks, diminished performance of the parenting and paid-worker roles, reduced life satisfaction, and poorer mental health. Organizations feel the negative impact in higher health costs, lower productivity, and turnover and retention concerns. From a somewhat different perspective, if an individual is able to effectively balance work and family, the benefits work brings to family life and vice versa can be numerous (Smith, 2002).

Smith (2002), indicated that little research has been done to tease out the ways in which individuals successfully negotiate work and family roles – let alone other life roles such as going to school. Given the widespread nature of work-family conflict, it stands to reason that, with little specific work-family research in the academic arena, efforts are needed to understand the competing nature of academic and family roles among students and the potential impact of this unique

form of work-family conflict. Such research could make an important contribution to improving the quality of life for students with families.

Background of the Problem

Work-Family Conflict Construct

The construct of work-family conflict has been evolving over the last 30 years and spans across a diverse range of disciplines. The most current conceptualization is that work-family conflict is a form of interrole conflict in which the role demands associated with the work or family domain are made more difficult given role enactment in the other domain (Greenhaus & Beutell, 1985). Three major forms of work-family conflict have been identified: (a) time-based conflict (time spent in one role impedes performance in another role), (b) strain-based conflict (strain produced by one role affects performance in another role), and (c) behavior-based conflict (role behaviors required in one domain are incompatible with role behaviors in another).

Work-family conflict has evolved from being viewed as a global construct to two related, but distinct, forms of interrole conflict: family-to-work conflict and work-to-family conflict (Duxbury & Higgins, 1994; Eagle, Miles, & Icenogle, 1997; Frone, Russell, & Cooper, 1997; Kossek & Ozeki, 1998). Recent research recognizes that work and family are bi-directional so work can interfere with family and family can interfere with work (Carlson, 1999; Chiu, 1998; Duxbury & Higgins, 1994; Frone et al., 1992; Kossek & Ozeki, 1998). Greenhaus and

Parasuraman (1986) proposed that stressors in the work and family domains might have additive, spillover, or interactive effects, leading to overload and reduced physical and mental well-being.

As women began entering the workforce in greater numbers during the 1960's, traditional role conflict theory postulated that women were accumulating additional roles and, therefore, were most vulnerable to role strain. In the context of work-family conflict, the "scarcity hypothesis" assumed that women will have limited resources with which to meet the demands of the workplace due to competing demands related to their roles as primary caretakers in the home (Barnett & Baruch, 1987). Pleck (1985) and Voydanoff (1987) both asserted that competing demands of the workplace and family could result in overload and, thereby, increase stress. Such research supports the scarcity hypothesis, which suggests that numerous roles drain energy and time.

There is a substantial amount of empirical evidence that disputes the scarcity/overload hypothesis. Several theorists have argued that the benefits of multiple roles far outweigh tensions due to overload and conflict (Barnett & Hyde, 2001; Marks, 1977, Thoits, 1983; Verbrugge, 1983). The "enhancement hypothesis" proposed that multiple roles are sources of potential gratification and can expand, rather than restrict, an individual's resources, rewards, commitment, security, and well-being (Barnett & Baruch, 1987; Barnett & Hyde, 2001).

In a classic paper, Pleck (1977) introduced the notion of “asymmetrically permeable” boundaries between the life domains of work and family. Pleck hypothesized that family demands would intrude into the work domain more for women because they assume primary responsibility for managing home demands. He also hypothesized that work demands would likely intrude on the family role for men because they are more likely to use family time to recuperate from work stress. Pleck maintained that the intrusion of family obligations into work responsibilities was more damaging to physical and mental health over time than work interfering with family. Several more recent studies have supported the negative implications of family interfering with work (Frone, 1992, 2000; Higgins & Duxbury, 1992; Wiley, 1987) and suggested that family boundaries were more permeable than work boundaries (Frone et al., 1992; Hall & Richter, 1988). However, the notion that gender differences exist in the pattern of asymmetry has not generally been supported (Frone et al., 1992; Gutek et al., 1991; Hall & Richter, 1988).

Psychological Distress

Research examining the relationship between work-family conflict and psychological distress has become more common in the past decade. Work-family conflict has been linked to psychological distress in several studies (Barling & MacEwen, 1992; Frone, Russell, & Cooper, 1992; Hughes & Galinsky, 1994; MacEwen & Barling, 1994; Parasuraman, Greenhaus, &

Granrose, 1992). Recent research has focused on the relationships of both types of work-family conflict (work-to-family and family-to-work) to psychological health (Frone, Russell, & Barnes, 1996). In several of the studies reviewed, some form of psychological distress was found to be positively related to work-family conflict (Frone et al., 1996; Hughes & Galinsky, 1994; Klitzman, House, & Israel, 1990; MacEwen & Barling, 1994; O'Driscoll, Ilgen, & Hildreth, 1992; Wiley, 1987).

A four-year longitudinal study by Frone et al. (1997) revealed that work-to-family conflict was related to elevated levels of depression and poor physical health and that family-to-work conflict was related to elevated levels of alcohol consumption. In addition, Wiley (1987) found that both types of work-family conflict were positively related to psychological distress in a sample of graduate students. A recent study by Frone (2000) revealed that both types of work-family conflict were positively related to having mood, anxiety and substance dependent disorders.

Social Support

A major emerging area of interest within counseling psychology has been the relationship of social support to psychological health and, in particular, the extent to which social support adds to, or interacts with, the effects of work-family conflict in the prediction of mental health outcomes (Wohlgemuth & Betz, 1991). Within the literature, social support has a variety of definitions, both

conceptual and operational. Some researchers have assessed social support in terms of its structural dimensions, such as size, density and number of family members (Stokes, 1984). Other researchers have focused on the support system's functions, that is, the types of support being offered, such as cognitive guidance, self-esteem support, tangible assistance, and emotional support. Researchers have explored social support and its interaction with stress in relation to diverse outcomes. Increasingly, it has been recognized that lower levels of social support tend to be associated with poorer physical and mental health outcomes (Cohen & Syme, 1985; Cohen & Willis, 1985; Shumaker & Hill, 1991).

Theoretical models of work-family dynamics (Greenhaus & Parasuraman, 1986) and related empirical research have demonstrated the importance of social support in influencing the well-being of individuals (Bernas & Major, 2000; Frone, Russell, & Cooper, 1992; Lazarus, 1999; Parasuraman et al., 1992; Wan et al., 1996). Support represents an interpersonal coping resource and has been embraced by work-family researchers (Parasuraman & Purohit, 1996). A person's social support system can be viewed as a coping resource to be utilized as a way to help alleviate some of the stressors inherent in multiple roles.

Statement of the Problem

Medical training has often been singled out for its stressfulness. Medical students undergo considerable stress and hassles during their academic careers (Strayhorn, 1989; Wolf, Elston, & Kissling, 1989). Stress associated with a

professional education has been linked to various negative outcomes, such as failure to perform to academic potential, retention concerns, and the degeneration of personal relationships (Wolf, 1994). The majority of these students do not seek mental health services when they are experiencing difficulties. Typically, these students will resort to behaviors/attitudes that have been ineffective in the past (e.g., drinking, procrastinating, withdrawal, depression) and/or they simply suffer in silence.

The number of non-traditional students entering the professional academic arena has increased significantly in recent years. These multi-role students typically are involved not only in their academic pursuits, but additionally have jobs, homes, families, friends, and community commitments. Although Wolf (1994) reported that graduating medical students were worse off psychosocially than when they entered school, only a few studies found within the literature have focused on role conflicts among college students (Gilbert & Holahan, 1982; Hammer, Grigsby, & Woods, 1998). Much of the research indicates that the extent to which medical science students can maintain supportive relationships may have a buffering effect on the experience of psychological distress in students experiencing work-family conflict (Rospenda, Halpert, and Richman, 1994).

Medical students are of particular interest for a number of reasons. Obviously, they represent a fairly homogeneous group in terms of life tasks as

they share similar program requirements. These students are all high achieving students in an intense academic environment in which balancing work, school, and home responsibilities would have a direct impact on their psychological well-being. More importantly, very little is known about the process of professional school education, particularly how students in the health sciences cope with work-family role stressors. The literature indicates that students in an intense academic arena face a combination of high demand and low control situations (Lowe, 1989), much like they will encounter once they graduate and enter their highly demanding professions. Such intense academic demands may increase the chance for work-family conflict to emerge within the student's life. In the present study, the definition of work-family conflict provided by Greenhaus and Beutell (1985) will be extended to include the non-work sphere of school. In many important senses such as regular activity, a time structure to the day, competing role demands, and social contacts, the student's current academic career *is* their work (Winefield, 1993).

The purpose of this study is to extend previous work-family conflict literature by examining the relationships of work-to-family conflict and family-to-work conflict, with select demographic variables, psychological distress, and social support in a sample of medical students. Demographic variables will include age, gender, and young children in the home. The literature suggests these particular demographic variables are associated with work-family conflict.

Indicators of psychological distress will include depression, perceived stress, and psychosomatic symptoms. Depression has frequently been linked to work-family conflict. Given the high prevalence of depression sufferers, better understanding of its relationship to work-family conflict in the professional student population would be useful. Perceived stress will be measured in this study because it would seem that a student's experience of stress would be relevant to how one might experience work-family conflict. Finally, a measure of psychosomatic symptoms is included due to common knowledge that stress may manifest itself in psychophysiological symptoms. A multidimensional measure of social support will be used that assess support from three different sources, confidants (family/friends), peers, and supervisors.

CHAPTER TWO

The Relationship of Select Demographic, Psychological, and Social Support Variables with Work-to-Family and Family-to-Work Conflict in Health Science Students

Introduction

One of the most interesting developments of the late 20th century has been the changes that have taken place in the work and family roles of women and men in the United States. These massive changes in social roles have created new dilemmas for families for which there are no socially prescribed and routine methods of coping. Although these new roles have provided exciting opportunities for families, they also have introduced the potential for creating role overload which may reduce role performance and impact satisfaction with life (Barnett & Hyde, 2001; Greenberger & O'Neil, 1993).

The typical American family has now become the dual-earner family (White & Rogers, 2000). Employed women make up 48% of the U. S. labor force (Bond, Galinsky, & Swanberg, 1998) and are now disproportionately represented at every level of higher education (National Center for Education Statistics, 2000). Women are entering professional and graduate schools at a rate equal to or greater than men (National Center for Education Statistics, 2000). Women comprise 44% of the students currently entering U.S. medical schools and up to 64% of the physicians in some residency programs (Foster et al., 2000).

Employed women are spending less time in childcare and household tasks now than they did thirty years ago, whereas employed men are spending more time in those roles. Though the gap between the amount of time employed men and women spend in childcare and household tasks still exists, it has decreased dramatically, and experts have predicted eventual convergence (Bond et al., 1998).

The home has typically been viewed as a source of support for the worker, a sanctuary where one recovers from work-related stress. Such a perspective assumes that, for men and women, the roles associated with home, e.g., husband/wife, parent, and homemaker, are free from undue stress. The role of paid worker has been added onto the roles historically viewed as “natural” for women. All of these changes have represented striking shifts in the relationships between gender, work, and family (Barnett & Hyde, 2001; Greenglass, 1995).

Individuals working in environments requiring a high degree of involvement and commitment may experience compounded or increased stress in the interface between work, school, and home. In the early years of the work-family literature, involvement in multiple roles was thought to lead to excessive role strains, conflicts in demands, and, ultimately, to negative impacts on mental and physical health (Greenberger & O’Neil, 1993). This belief that occupancy of multiple roles drains individuals’ time and energy resources and reduces their well-being has often been referred to as the “scarcity hypothesis” (Baruch &

Barnett, 1987). Since individuals have a limited amount of time and energy to devote to the duties of each of their roles, some researchers have argued that the increased obligations that develop as a result of an increased number of roles may result in various forms of psychological distress (Clark, Nye, & Gecas, 1978). More recent authors have offered an alternative view regarding the effects of multiple roles, often referred to as the “enhancement theory”. This theory asserts that role accumulation is positive, with the benefits outweighing the stress associated with role conflict (Barnett & Hyde, 2001; Bekker, deJong, Zijestra, & van Landeghem, 2000).

In a recent article by Barnett and Hyde (2001), the authors asserted that the radical changes in our culture have rendered traditional gender, work, and family theories such as the functionalist, psychoanalytic, and evolutionary perspectives obsolete. Barnett and Hyde (2001) attempted to fill the theoretical gap that exists in the literature by articulating the enhancement theory. Based on empirical evidence, these authors suggested that multiple roles are beneficial for both men and women. A number of processes have been hypothesized to contribute to the beneficial effects of multiple roles, some of which include buffering, social support, opportunities to experience success, expanded frame of reference, and increased self-complexity. However, beyond certain upper limits, overload and distress may occur across multiple roles. This may occur when the

demands of one role are excessive or when the number of roles becomes too great.

Numerous empirical studies have provided support for the assertion that multiple roles can be beneficial for both men and women. These studies have suggested that employment is associated with improved health (Repetti, Matthews, & Waldron, 1989), women who juggle multiple roles are less depressed than other women (Crosby, 1991; Wethington & Kessler, 1989), employed women show less distress than non-employed women (Crosby, 1991), men who hold all three roles of spouse, parent and employee rated family as most critical to their well-being (Barnett, Marshall, & Pleck, 1992), and men in multiple roles report fewer physiological symptoms of distress than men who occupy fewer roles (Gore & Mangione, 1983). Both men and women who hold multiple roles have been found to experience positive marital effects such as high gains in marital satisfaction, lower marital dissolution, increased income potential, higher involvement by men in child rearing, and a sense of success in balancing work and family (Milkie & Peltola, 1999; Oppenheimer, 1997; Ozer, Barnett, Brennan & Sperling, 1998; Wilkie, Ferree, & Ratcliff, 1998).

However, the empirical evidence has also yielded some support for the assertion by Barnett and Hyde (2001) that, when roles are excessive and numerous, overload and distress may occur. Bekker et al. (2000) found that multiple roles, despite their possible health-protecting effects, resulted in

psychological stress responses, namely in negative mood states and disruption in cognitive functioning, particularly in women. Voydanoff and Donnelly (1999) found a curvilinear relationship between hours of paid work and psychological distress, as well as time spent with a spouse. When the time spent in a particular role (worker, spouse, parent, friend, student) reached a certain number of hours, the benefits began to decline and, in fact, became detrimental. With regard to the number of roles, Thoits (1986) attempted to discern the upper limits of these benefits. Her results indicated that five roles seemed optimal for psychological well-being.

Work-family role conflict has been linked to increased psychological distress in numerous studies (Barling & MacEwen, 1992; Frone, Russell, & Barnes, 1996; Frone, Russell & Cooper, 1992; Hughes & Galinsky, 1994; Parasuraman et al., 1992). Psychological distress has been defined in a variety of ways, most commonly in terms of depression, anxiety, alcohol use, life satisfaction, and physical symptomatology (Barling & MacEwen, 1992; Frone et al., 1996; Parasuraman et al., 1992). Psychological distress has consistently been found to be positively related to both work-to-family (work role interferes with family role) and family-to-work conflict (family role interferes with work role) (Frone et al., 1996; Hughes & Galinsky, 1994, MacEwen & Barling, 1994).

Research examining the relationship between work-family conflict and stress has increased substantially during the past decade. Empirical evidence on

the development of stress associated with work-family conflict has increasingly focused on the role of moderator variables. Conceptually, moderator variables are hypothesized to have a mediating or buffering effect on the development of psychological symptoms and life stress (Sherman & Walls, 1995). Moderator variables can be divided into at least two types: personality variables and environmental variables (Roos & Cohen, 1987).

It has been hypothesized that personality variables play an important role in the interpretation of situational demands, constraints, and opportunities as stressful, as well as in influencing the coping mechanisms evoked and social support sought to deal with environmental stressors. The most consistent findings have pointed to the mediating roles of age, trait anxiety, locus of control and a Type A behavior pattern (Roos & Cohen, 1987). Thus, younger individuals who are highly anxious, who have an external locus of control, and who exhibit a Type A behavior pattern are more likely to interpret a given situation or event as stressful.

Environmental variables examined have included physical aspects of the environment such as air quality and noise, as well as psychosocial variables such as social support (Greenhaus & Parasuraman, 1987; Parasuraman & Cleek, 1984; Roos & Cohen, 1987; Sherman & Walls, 1995). The environmental variables of marriage and family have been highlighted as important sources of social support that can serve to buffer the effects of stress on well-being (Barnett & Marshall,

1991; Burley, 1994; Cooke & Rousseau, 1984). Spousal relationships have been shown to play a major role in reducing the negative effects of work stress, in particular. It has also been recognized, however, that the obligations of marriage and a family often compete with those of work and school, leading to exacerbation of the stress experienced in the work place and academic arena (Coombs & Fawzy, 1982; Kelner & Rosenthal, 1986). Cooke and Rousseau (1984) reported that social support from a spouse can reduce the effects of stress on certain health outcomes as evidenced by several studies (House & Wells, 1978; LaRocco, House, & French, 1980; Thoits, 1983).

The growing body of stress research regarding the relationship between work and family has suggested that there are interconnecting and possibly reciprocal influences between these two domains (Burley, 1995; Suchet & Barling, 1986). Much of this research has proceeded along two lines of inquiry. The first line of inquiry has focused on work-to-family conflict, where researchers have argued that conflict between the work and family domains can be a source of stress that influences important outcomes. The second line of inquiry has focused on social support. Researchers have contended that social support provided by members of the work and family domains can have a positive influence on individuals' well-being. However, there has been little integration of these two areas of research.

Empirical evidence indicates that when people experience a great amount of stress in coping with the often competing demands of work and family, there are frequently negative consequences both on and off the job (Frone et al, 1992; Hammer, et al., 1998). Logically, these negative consequences would similarly be expected when the demands of the student role are added to existing roles, e.g., work and/or family roles. Empirical studies of medical students in particular indicated that these students had mean anxiety scores one standard deviation above those of non-patients, and their depression levels increased significantly through the first year of medical school (Shapiro, Shapiro, & Schwartz, 2000). Stress has also been found to harm trainees' professional effectiveness by decreasing attention, reducing concentration, impinging on decision-making skills, and reducing trainees' ability to establish strong physician-patient relationships (Shapiro et al., 2000). Historically, options for many multiple role students (e.g., worker, parent, spouse) have been limited by attitudes and policies that still treated the family, the university, and the workplace as separate worlds. To address these problems, academic programs have slowly been changing in a variety of ways, including reducing the work week, instituting curricular reforms (e.g., smaller classes, less rote memorization), implementing stress-management programs, and providing psychological services such as couples counseling, child care services, social activities, and support groups (Shapiro et al., 2000).

Medical Students

Role stressors are inherent in human life. However, in different social environments and in different periods of the life cycle, people are exposed to different kinds, numbers, and intensities of stressors. One particularly stressful social environment that has received a great deal of attention is the medical school environment. Medical colleges are often housed on a health science center campus along with hospitals and other health science colleges such as pharmacy, nursing, dental, and allied health.

The number of roles these students are typically involved in far exceeds the optimal five roles mentioned previously by Thoits (1986). Besides being students, many of these individuals are clinicians, employees, organizational members, spouses, parents, sons or daughters, siblings, friends, and neighbors. Demands of the university, combined with demands from a family, conflict as both require constant availability, exclusive loyalty, and high flexibility. This academic environment, coupled with any additional clinical work, typically involves long, unpredictable or inflexible hours. In addition, this environment appears to be relatively intolerant of interference from demands of other roles. With the growing number of multi-role students in college and university settings comes an increased need to determine ways of helping students manage the increased demands of their hectic lives (Hammer et al., 1998).

A major function of health science programs is to socialize their students into professional roles. A common theme in studies of this socialization process is the stress of conflicting demands that students face and must adapt to during their training (Clark & Rieker, 1986). Past studies have indicated that the stringent academic demands, prolonged personal sacrifices, and delayed financial rewards contributed to the students' perceived stress (Clark & Rieker, 1986; Home, 1998). A large number of stressors faced by medical students have been described in the literature (Rutledge, Davies, & Davies, 1994; Wolf et al., 1989). They have been divided into three major categories: current academic stressors (examinations, hours of study), anticipated medical career stressors (various aspects of patient care), and balancing personal and professional goals (maintaining meaningful relationships with family and friends). A study by Bjorksten, Sutherland, Miller, and Stewart (1983) compared medical students with dental, pharmaceutical, and nursing students at the same health science institution. Bjorksten et al. assessed problems reported by students while enrolled in a demanding health science program. The medical students were found to have the same spectrum of perceived problems as the other students; however, their problems were rated as more intense than those of the other students.

Students in medical specialties undergo considerable stress during their professional education (Rutledge et al., 1994; Stern, Norman, & Komm, 1993; Wolf et al., 1989). However, only 3% to 6% of the general college population

receives mental health services in any given year. Hence, over 90% of students rely on coping or self-change strategies (DeGraw & Norcross, 1989; Shapiro et al., 1984). It can be inferred that statistics may be similar for those students in upper-level medical science curricula. Their ability to adapt positively to the stressors common in medical school has been shown to influence their professional and personal development, as well as their ability to communicate with patients (Stern et al., 1993). Extreme fatigue, difficult and demanding work, a sense of professional inadequacy, and loneliness have been frequently mentioned as major sources of stress. These high levels of stress have been shown to negatively influence the work satisfaction, self-concept, and overall mental health of medical students and residents (Kelner & Rosenthal, 1986).

Demographic Variables

Individuals differ in their perceptions of stressors (Lazarus & Folkman, 1984). The same stressor may be appraised as highly salient for one student but not at all stress-provoking for another. The variables employed to explain the differences in students' appraisals of stressors have been predominantly sociodemographic (e.g., gender, marital status, age). Female students have been found to perceive some specific events as more distressing than male students, but there is little evidence that, overall, women find medical school more stressful than men (Carmel & Bernstein, 1987; Murphy, Nadelson, & Notman, 1984; Richman & Flaherty, 1990). Examples of these specific stressors include

institutional obstacles such as inconvenient scheduling or location, as well as procedural rigidity regarding degree completion and residency (Home, 1998).

While in the past, women have dropped out for nonacademic reasons, more recent data show that the current attrition rates for men and women are not significantly different. A study by Richman and Flaherty (1990) revealed that, although women in the medical sciences expressed psychological distress via depressive and anxious symptomatology, men were more likely to engage in heavy and problem-related drinking. The authors reported that this finding may represent sex-differentiated manifestations of an equally distressful condition.

Several researchers have found that married students perceive some stressors as less significant than single students (Carmel & Bernstein, 1987; Coombs & Fawzy, 1982; Murphy et al., 1984). In a study by Coombs and Fawzy (1982), single students consistently reported more stress than married students concerning deferred sexuality, loneliness, inability to learn all course material, being in helpless and dependent roles, fear of receiving low grades, and limited social outlets. A study by Bjorkstein et al. (1983) revealed that single students reported more interpersonal problems (e.g., relationship and psychological difficulties) than married students. This finding was consistent with a growing body of literature that indicates marriage is related to lowered levels of stress and increased psychological well-being and happiness (Coombs & Fawzy, 1982). However, Bjorkstein et al. (1983) also reported that the younger, single students

reported significantly more problems with the pressure to succeed, while the older, married students had significantly more problems with marriage and children. McLaughlin (1985) reported that couples in which either the husband or wife was in graduate school reported that they had a lack of time together, decreased quality of leisure activities, and diminished quality of their sex lives. These findings highlight the advantages and disadvantages that students involved in committed relationships might experience.

These difficulties have been found to be exacerbated with the presence of young children living in the home. The parenting role is likely to create significant and competing demands (Barnett & Baruch, 1987; Lewis & Cooper, 1987). Several studies have indicated that children under six years of age can intensify feelings of work-family conflict (Burley, 1995; Hertz, 1986; Sekaran, 1986; Moen, 1992) and can produce symptoms of psychological strain (Cooke & Rousseau, 1984). However, the resulting strain may be offset by the satisfaction derived from parenthood and the complementary effects of multiple roles (Cooke & Rousseau, 1984)

Regarding differences found in multicultural populations, DeFour and Hirsch (1990) noted that social support was positively associated with psychological well-being and academic performance in a sample of African American graduate students. This finding was consistent with findings by Tofi, Flett, and Timutimu-Thorpe (1996) in a sample of Pacific Island students

attending a university in New Zealand. A range of studies has documented a consistent positive association between social support, psychological adjustment, and academic performance of overseas students (Mallinckrodt & Leong, 1992; Ward & Kennedy, 1993; Westwood & Barker, 1990). A study by Post and Weddington (1997) reported that African American physicians utilized family and collegial support as a way of coping with stress. Social support may be something of a "two edged sword" in that while multicultural students typically reported greater availability of social network resources (Hejri & Sorenson, 1992), this may also be accompanied by increases in family related pressures and commitments (Oropeza, Fitzgibbon & Baron, 1991; Tofi et al., 1996).

Educational Process

Most studies of medical school stressors have focused on the perceptions of first-year students. Among first-year students, there has been a tendency for older students to rank stressor items as less threatening than younger students (Coburn & Jovaisas, 1975; Murphy, et al., 1984). Researchers have found that various stressors have been ranked differently by students in different years of study, but results have not suggested, as have some earlier clinical studies, that medical school was particularly more stressful for first-year students (Carmel & Bernstein, 1987; Edwards & Zimet, 1976; Wolf et al., 1989). The research has suggested that both males and females employed significantly greater social support in the first year of medical school compared to their undergraduate years

and that both male and female medical students experience increases in psychopathology during medical school (Richman & Flaherty, 1990).

In order to gain insight into the various stressors found within each year of medical school, the educational process must be viewed as a succession of adaptive tasks that students must master. In a study by Bjorksten et al. (1983), medical students in all four years reported problems with the learning situation. Second-year students reported dissatisfaction with the quality of education, while third and fourth-year students reported problems with uncertainty about career choice, future goals, and professional ambivalence. Time management problems were most severe among first and second-year students, while feelings of powerlessness were most prevalent among second-year students. Fourth-year students complained more about emotional difficulties and their interpersonal relationships.

First year students in the medical sciences are typically overwhelmed with the quantity and complexity of the material to be learned and the time required to learn it (Coombs & Fawzy, 1982). Students also begin to realize that the competition is keener, and students can no longer stand out as easily as in undergraduate school due to homogeneity of academic excellence among students. In addition to the academic demands, medical education often disrupts personal and social relationships due to time constraints and stresses (Gaensbauer & Mizner, 1980). Most students enter the health sciences academic arena with

high motivation and use this extra energy to cope with stress. As time goes by, they may lose some of this energy while they have not fully developed adequate coping strategies (Bjorksten et al., 1983).

The major stresses of the second-year student typically involve an increased fatigue factor in the face of a heavy class schedule and continued pressure for strong performance on examinations, with little opportunity for actual clinical experience (Gaensbauer & Mizner, 1980). This year tends to highlight the issue of commitment and pushes students to determine how much they want to pursue medicine, as well as how much they can commit themselves to hard work with few immediate rewards (Gaensbauer & Mizner, 1980). The second year of school is typically referred to as the “sophomore slump.” The students have many stressors, poorly developed coping strategies, and little energy during both the second and third years (Bjorksten et al., 1983).

The third year is typically a time of intense clinical work. The student confronts several aspects of clinical work that require psychological adaptation. In the clinical setting, a student is exposed to the full range of intimate expressions of feelings and illness/death issues by patients, as well as intense interpersonal interactions with faculty, staff, and peers (Gaensbauer & Mizner, 1980). This contrasts with the first two years in which the major demand has been passing exams in an academic setting. Interactions with other medical personnel in pressured situations can be very taxing. The student must be able to

tolerate being called upon to give opinions about situations, being told what to do, and having mistakes pointed out (Gaensbauer & Mizner, 1980).

The fourth year presents students with the same demands of clinical work as in the previous year. However, the students are now faced with the prospect of ending one phase of their medical education and beginning to apply and interview for internships and residencies (Gaensbauer & Mizner, 1980). Another developmental issue typically faced by these students is that of striking a proper balance between their personal and professional lives (Gaensbauer & Mizner, 1980). By the last year, many students have developed good methods for handling stress, but they are also beginning to disengage from the academic environment (Bjorksten et al., 1983).

Mediating factors such as healthy coping responses (Folkman, Lazarus, Gruen, & DeLongis, 1986) and increased spousal support (Matthews, Conger, & Wickrama, 1996) may help alleviate some of these stressors. Beutell and Greenhaus (1982) found that effective coping with interrole conflict was a factor contributing to life satisfaction. Evidence of "spillover" effects of poor coping responses in dealing with work, school, and family stress appears to be accumulating, although it has proven difficult from the literature to separate the effects of occupational and/or academic variables from individual dispositional differences (Morrison & Clements, 1997).

Despite evidence that emphasizes the importance of the appraisal process, few studies of the coping strategies used by health science students have examined the mediating influence of the students' appraisal of the situation on the coping response. Medical students undergo considerable stress and hassles during their professional education (Strayhorn, 1989; Wolf et al., 1989). Their ability to adapt positively to the stressors common in medical education has been shown to influence their professional and personal development, as well as their ability to communicate with patients (Delvaux et al., 1988; Stern, et al., 1991). Students with poor coping skills typically have pre-existing emotional difficulties, such as unresolved family problems, that may become intensified in the stressful and unsupportive medical school environment (Rutledge et al., 1994). Although a certain amount of stress in professional schools is unavoidable, evidence suggests that the stresses of the health science education may have negative consequences for the student in both professional and interpersonal domains (Clark & Reiker, 1986). Arguably, high levels of stress and few coping strategies in medical students have potentially serious consequences for the students' well-being, the well-being of their patients, and, ultimately, the state of our health care delivery system (Wolf, 1997).

Because of the severe stresses encountered throughout medical school, students should ideally possess high levels of psychological well-being, as well as necessary coping skills (Rutledge et al., 1994). The physician role in the

community is central, being “gatekeeper” to a wide range of medical and psychological provisions and services. Distressed students who remain in school and eventually become treating professionals may, in the absence of some kind of intervention, present a threat to the quality of health care they provide and, thus, may even endanger their patients (Gerber, 1983).

The exacting demands of clinical work may make medical students especially vulnerable to work-family role conflict. Knowledge about the spectrum of perceived stressors and coping responses in medical students is important for effective planning of counseling and related support services (Bjorksten et al., 1983; Wolf et al., 1988) and for administrative planning and decision-making. Hopefully, such knowledge will also assist academic programs in cultivating students’ ability to successfully take responsibility for their own psychological well-being and to navigate through the stressors encountered during their medical education and future professional practice.

Work-Family Conflict

In the mid-20th century, most sociologists assumed that men and women’s sense of self was based on quite different societal roles. Work was assumed to be the identity-defining role for men, and family was assumed to be the identity-defining role for women. Over the past three decades, there have been significant changes in society’s ideas of gender, work roles, and parenting (Eagle et al., 1997).

These changes have been hastened by numerous demographic trends. The typical American family is now the dual-earner family (White & Rogers, 2000). Employed women make up 48% of the U.S. work force (Bond et al., 1998) and are now disproportionately represented at every level of higher education (National Center for Education Statistics, 2000). The number of women in the workforce is projected to grow 15 percent in the next six years, while the number of men entering the workforce will only increase by 10 percent (U. S. Department of Labor Women's Bureau, 2000). The majority of women with children in the United States today occupy both work and family roles. Six out of ten married, working women have children under the age of six (U.S. Department of Labor Women's Bureau, 1997). All of these trends contribute to the stress men and women encounter when attempting to balance work and family roles.

Identity Theory

Identity theory, as developed by Burke (1980), McCall and Simmons (1966), and Stryker (1968, 1980, 1987), provides a systematic way of examining the connection between gender, work/family roles, stress, and the self. Identity is the meaning one attributes to oneself by virtue of occupying a particular position (called role identities). The self is made up of a collection of identities that are linked to the person's role relationships (Burke 1980; McCall & Simmons 1966). For this reason, the concept of identity links the self to the larger social structure while allowing for individual variability.

The role identities that make up the self are organized hierarchically on the basis of salience (Stryker, 1980). This salience hierarchy represents the probability that a particular identity will be evoked in a particular situation and is determined by the commitment of the person to the various identities that make up the self. The greater the commitment, the more salient the identity, and the more likely the individual will be to choose behaviors confirming that identity in a particular setting (Stryker, 1987).

The idea that stress naturally accompanies certain roles and role combinations has been examined extensively in the literature on role conflict. Stressors are environmental conditions such as insufficient time, scheduling difficulties, and conflicting demands that are associated with negative psychological reactions (Greenhaus & Beutell, 1985; Wiley, 1991). From an identity perspective, one possible source of stress for an individual is conflict between actions confirming disparate identities, e.g., a female executive having to choose between an important meeting and a parent-teacher conference. A choice between behaviors that confirm identities of markedly different salience will likely create little stress. However, stress is more likely to occur when an individual is faced with a choice between role behaviors that confirm identities of similar salience and commitment. Another source of stress might be the inadequate performance of a chosen role.

Within the university setting, there has been an increase in students who must manage concurrent roles in the classroom, the family, the workplace, and the community. Many specific psychological hazards and frustrations have been associated with a medical science education. Students must change their lifestyles and make personal and family sacrifices. Balancing personal and professional goals and aspirations is, therefore, a challenge for students (Wolf et al., 1989; Wolf et al., 1988). One way of examining work-family conflict is from the perspective of the rational view. In the rational view, the amount of conflict one perceives rises in proportion to the number of hours one expends in both the work and family domains (Gutek, Searle, & Klepa, 1991). These multiple-role students are themselves a diverse group in terms of their family responsibilities, socioeconomic backgrounds, age, and education experiences. Demands of the university and the family conflict the most as both demand constant availability, exclusive loyalty, and high flexibility. Jobs and/or clinical work that involve long, unpredictable, or inflexible hours, demand exclusive devotion, and are intolerant of interference from other roles are problematic (Edwards, 1993; Home, 1998; Lambert, 1993).

Today, most men and women report that they value their family more than their work; however, traditional gender role socialization has prescribed different emphases for men than for women: The breadwinner role has traditionally been a priority for men; family and home responsibility have traditionally been a priority

for women (Frone, 2000; Gutek et al., 1991). This tradition, which has biosocial and cultural origins, was made explicit in a classic work by Parsons in his delineation of instrumental (male) and expressive (female) roles (Parsons & Bales, 1955). Despite the many changes in gender roles in the past 45 years, this tradition persists as evidenced by women participating in household responsibilities 55 percent more than their partners and men putting in 55 percent more hours at work than their female counterparts. It is very possible that these gender roles will affect men and women's perceptions of work-family conflict (Gutek et al., 1991). Taken together, identity theory and research on sex role socialization suggest that there may be a significant gender difference in work-family conflict and related outcomes (Frone et al., 1996).

Work-Family Conflict Defined

A review of the literature reveals that the work-family conflict literature is expansive. A variety of definitions have been used to describe work-family conflict (Duxbury & Higgins, 1991) and has been called job-family role strain (Keith & Schafer, 1980; Kelly & Voydanoff, 1985), family-work role incompatibility (Jones & Butler, 1980), and interrole conflict (Kopelman, Greenhaus, & Connolly, 1983). This review will primarily focus on the work-family role conflict literature. Work-family conflict has been defined as a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respects (Greenhaus & Beutell, 1985).

Inherent in this definition is the idea that work-family conflict is a complex construct having multiple forms (time-based, strain-based, behavior-based) and operating in multiple domains (work and family). Recent research in this area explicitly recognizes that relationships between work and family are bi-directional. That is, work can interfere with family and family can interfere with work (Carlson, 1999; Chiu, 1998; Duxbury & Higgins, 1994; Frone et al., 1992; Kossek & Ozeki, 1998). In general, considerably more research has been conducted on work-to-family than family-to-work conflict (Netemeyer et al., 1996).

Three Forms of Work-Family Conflict

Multiple roles may compete for a person's time. Time-based conflict occurs when time devoted to one role makes it difficult to participate in another role or when time pressures associated with one role make it impossible to comply with expectations arising from another role (Greenhaus & Beutell, 1985). Work-family conflict is positively related to the number of hours worked per week, the amount and frequency of overtime, and irregular hours associated with shift work. Being the parents of young children, having a large family, and spouse employment patterns may all produce pressures associated with family-related conflict (Greenhaus & Beutell, 1985).

Strain-based conflict is experienced when strain symptoms such as tension, anxiety, fatigue, depression, apathy, and irritability from one role intrude

into, and interfere with, participation in another role (Greenhaus & Beutell, 1985). The two roles are incompatible to the degree that strain created by one domain makes it difficult to comply with demands in the other domain. Ambiguity and/or conflict within the work role, as well as the absence of support in the family unit, have been found to be positively related to work-family conflict. (Greenhaus & Beutell, 1985).

Behavior-based conflict occurs when specific behaviors required in one role are incompatible with behavioral expectations within another role (Greenhaus & Beutell, 1985). In other words, in-role behavior patterns in one environment (e.g., assertiveness at work) are incompatible with the expectations of behavior in another environment (e.g., nurturance at home) (Greenhaus & Beutell, 1985).

Role Overload and the Scarcity/Enhancement Hypothesis

Role overload is said to occur when the number of demands from all roles decreases the performance in each role. Competing demands of the workplace and family can result in overload and increase stress (Pleck, 1985; Voydanoff, 1987). Such research supports the scarcity hypothesis, which suggests that roles drain energy and time. Thus, the more roles a person has, the greater the likelihood of role strain and overload from fulfilling them. This hypothesis would suggest that women may have greater stress levels than men if they continue to have greater responsibility for household tasks than their partner while gainfully employed (Greenhaus & Parasuraman, 1986; Sekaran, 1983). The scarcity

hypothesis is one of the most common approaches found in the literature to explain the competitive relationship between work and home demands.

Several theorists have argued that the benefits of multiple roles far outweigh tensions due to overload and conflict (Marks, 1977; Thoits, 1983; Verbrugge, 1983). A competing hypothesis discussed earlier, the enhancement hypothesis (Barnett & Baruch, 1987), proposed that multiple roles are sources of potential gratification and may actually increase self-esteem. Barnett and Baruch proposed that multiple role involvements can expand rather than constrict an individual's resources, rewards, commitment, sense of gratification, and security, resulting in enhanced well-being.

Research has provided support for the enhancement hypothesis for both men and women (Barnett & Hyde, 2001; Thoits, 1986). Greenberger and O'Neil (1993) concluded that more support has accumulated for the enhancement hypothesis than for the scarcity hypothesis. Researchers have increasingly found that it is the quality of the experiences that persons have within role contexts, rather than occupying a number of roles per se, that is most important in predicting life satisfaction outcomes (Baruch & Barnett, 1986; Berger, Cook, DelCampo, Herrera, & Weigel, 1994).

Bi-directional Nature of Work-Family Conflict

Over the past decade, work-family conflict has evolved from being viewed as a global construct to two related, but different forms of interrole

conflict: family-to-work and work-to-family conflict (Duxbury & Higgins, 1994; Frone, Russell, & Cooper, 1997; Kossek & Ozeki, 1998). Greenhaus and Parasuraman (1986) proposed that stressors in the work and family domains may have additive, spillover, or interactive effects (i.e., work-family conflict), leading to overload and reduced physical and mental well-being.

Netemeyer et al. (1996) defined work-to-family conflict as a form of interrole conflict in which the general demands of the job interfere with family-related responsibilities. These same authors defined family-to-work conflict as a form of interrole conflict in which the general demands of the family interfere with performing work-related responsibilities. In the past, research has focused more heavily on work-to-family conflict. However, more contemporary models of the work-family interface have taken a more comprehensive, bi-directional approach that gives equal emphasis to the impacts of work on family and family on work (Frone, Yardley, & Markel, 1997; Kelloway, Gottlieb, & Barham, 1999; Parasuraman, Greenhaus, & Granrose, 1992).

Empirical evidence supports the assertion that both types of work-family conflict can have a negative impact on work and family-related outcomes that, in turn, can influence well-being. Bacharach, Bamberger and Conley (1991) found that work interfering with family was significantly related to burnout, which likewise was related to lower job satisfaction for both a sample of nurses and a sample of engineers.

In a recent study, Thomas and Ganster (1995) reported that work interfering with family was negatively related to job satisfaction and positively related to depression and health complaints among health care workers. Though there have been a few studies showing a weak link (e.g., Kopelman, Greenhaus, & Connolly, 1983) between interrole conflict and job satisfaction, a substantial body of research has demonstrated that higher role conflict is associated with lower job satisfaction (Higgins, Duxbury, & Irvin, 1992). In studies based on a sample of accounting professionals (Bedeian, Burke, & Moffett, 1988; Greenhaus, Bedian, & Mossholder, 1987; Parasuraman, Greenhaus, Rabinowitz, Bedian, & Mossholder, 1989), findings indicated that work-family conflict was strongly related to quality of life issues such as quality time with spouse and children, time spent in individual recreational activities, and time spent in household chores.

Asymmetrically Permeable Boundaries

In a classic paper on work-family dynamics, Pleck (1977) introduced the notion of asymmetrically permeable boundaries between the life domains of work and family. Boundaries between work and family are hypothesized to be “asymmetrically permeable” to the extent that the intrusion of demands from one domain into the other occurs with unequal frequency. For example, if work demands intrude into family life more often than family demands intrude into work life, then work and family boundaries are asymmetrically permeable, with family boundaries being more permeable than work boundaries. The theory of

asymmetric permeability of occupational and domestic roles suggests that family-to-work conflict has a greater impact on individuals' physical and mental health over time than work-to-family conflict (Frone, Russell, & Cooper, 1992). Pleck (1977) hypothesized that family demands would intrude into the work domain more for women because they assume primary responsibility for managing home demands. He also hypothesized that work demands would be more likely to intrude on the family role for men because they are more likely to use family time to recuperate from work stress. Pleck's notion of asymmetrically permeable boundaries has received consistent empirical support, although his specific hypothesis regarding gender differences has not been generally supported.

A series of studies investigating dual-career families was conducted by Higgins and his colleagues and revealed that work interfering with family had a significant relationship with family-related outcomes, such as lower quality of family life. This lower quality of family life was, in turn, related to lower levels of life satisfaction among workers (Duxbury & Higgins, 1991, Higgins & Duxbury, 1992; Higgins et al., 1992). Marital satisfaction was also affected by interrole conflict (Judge, Boudrea, & Bretz, 1994), and the findings suggested that an increase in interrole conflict would lead to a decrease in marital satisfaction. Hall and Richter (1988) described the findings of a case study on managing home and work boundaries. Based on their interviews with participants, they reported that home boundaries were consistently more permeable than work boundaries

among both men and women. However, the authors hypothesized this may be due to work demands being easier to quantify (Gutek et al., 1991).

Several empirical studies have also supported a relationship between family interfering with work; however, they have not indicated that work boundaries were as permeable as home boundaries. Wiley (1987) conducted a study of work-family conflict with employed graduate students and found that the mean level of work-to-family conflict was significantly higher than the mean level of family-to-work conflict. However, she also found that family interfering with work was negatively related to job satisfaction, organizational commitment, and life satisfaction. In a set of studies, Frone et al. (1992) documented that family boundaries were more permeable than work boundaries. Frone (1992; 2000) also found that family interfering with work was positively related to clinical depression and distress for a community-based sample of working adults. There was no evidence of gender differences in the pattern of asymmetry, indicating that the dynamics of work and family boundaries may operate similarly among men and women (Frone et al., 1992).

Measurement of Work-Family Conflict

In recent years, work-family conflict researchers have struggled with the lack of psychometrically sound work-family conflict instruments available for research. The evolving nature of work-family conflict literature may account for the variety of ways in which it has been measured (Carlson et al., 2000). Early

measures focused on work interfering with family (Greenhaus & Beutell, 1985). As more research was done, it became clear that work-family conflict was bi-directional (Duxbury & Higgins, 1994; Frone et al., 1992) and that there were three forms of conflict (time-based, strain-based, and behavior-based) (Greenhaus & Beutell, 1985).

Allen, Herst, Bruck, and Sutton (2000) provided the most recent review of work-family conflict measures. These authors criticized studies over the past few decades in which author-generated instruments often consisting of a single item were utilized with little evidence of reliability and validity. Netemeyer et al. (1996) summarized inadequacies found in work-family conflict measures as being overly lengthy and cumbersome, inadequate one-item measures, measures that were not subjected to rigorous scale development, and measures which ignored the bi-directional nature of the work-to-family and family-to-work constructs.

One of the most utilized measures found in a review of the literature was developed by Kopelman, Greenhaus, and Connelly (1983). However, it has a limited number of items and does not take the bi-directional nature of work-family conflict into account. Another instrument was developed by Stephens and Sommers (1996) and was the first instrument to include the three major forms of work-family conflict (time-, strain-, and behavior-based) (Greenhaus & Beutell, 1985). However, this instrument utilized a predominantly female, white-collar sample and only measured work-to-family conflict. Netemeyer et al. (1996)

developed an instrument which was an improvement over past measures by possessing adequate content validity and internal consistency. However, the authors failed to include items that tapped all three major forms of work-family conflict, failing to include any items assessing behavior-based conflict. In addition, the instrument contained only two broad scales, one assessing work-to-family conflict and the second assessing family-to-work conflict.

The most promising and recent measure, entitled the Work-Family Conflict Scale, was developed by Carlson, Kacmar, and Williams (2000). This measure is an 18-item self-report measure incorporating all three forms of interrole conflict (time, strain, and behavior) from both directions (work-to-family and family-to-work), resulting in a six-dimension measure. The validity and reliability of the instrument was supported over three studies using five different samples. Each of the scales differentially related to various antecedents and consequences of work-family conflict, supporting the construct validity of the scales. The content validity of items was established through an extensive scale development process. This measure provides researchers with the flexibility to measure any of the six dimensions of interrole conflict independently. Allen et al. (2000), in their comprehensive review of studies of work-to-family conflict, recommended that researchers consider incorporating this recently developed measure in future research.

Psychological Distress and Health Outcomes

A link between work-family conflict, psychological distress, and general health outcomes has been supported in the literature. Models of job stress suggest that conflict at the interface of work and family roles can be a powerful stressor that influences an employee's health and health-related behaviors (Frone et al., 1997; Greenhaus & Parasuraman, 1986). Numerous researchers have produced substantial evidence that work-family role conflict is associated with psychological distress (Barling & MacEwen, 1992; Frone, Russell, & Cooper, 1991; Hughes & Galinsky, 1994; MacEwen & Barling, 1994; Parasuraman et al., 1992; Vinokur, Pierce & Buck, 1999), increased physical symptomatology and poor physical health (Frone et al., 1991; Guelzow, Bird, & Koball, 1991; Thomas & Ganster, 1995), and lowered life satisfaction (Bedeian et al., 1988; Chiu, 1998; Napholz, 1994; Rice, Frone, & McFarlin, 1992).

Vinokur, Pierce, and Buck (1999) examined the effects of work and family stressors and conflicts on Air Force women's mental health and functioning. Their study demonstrated that job and parental stresses had direct effects on work-family conflict and that job and marital distress and work-family conflict had an independent adverse effect on mental health. Frone et al. (1992) examined the indirect relationships of work-family conflict with depression via family-and work-related distress, respectively. They found that both types of work-family conflict were positively and indirectly related to depression.

Frone's (2000) study assessed whether work-family conflict was related to severe psychiatric disorders that would impair individuals' ability to function adequately at work or home. This study revealed that both types of work-family conflict were positively related to having mood, anxiety, and substance dependent disorders. An earlier four-year longitudinal study by Frone et al. (1997) revealed that work-to-family conflict was related to elevated levels of depression and poor physical health and that work-to-family conflict was related to elevated levels of alcohol consumption. Finally, Wiley (1987), using a sample of 191 graduate students, found that both types of work-family conflict were positively related to some form of psychological distress.

Overview of Coping

An extensive body of literature exists regarding how individuals cope with stressful events. This research underscores the importance of the coping process as a factor influencing the impact of stressful events on the individual's physical and psychological well-being (Bernas & Major, 2000; Lazarus, 1999; Wan, Jaccard, & Ramey, 1996).

There are two dominant approaches in the literature on stress and coping. Prior to 1970, the reductionist perspective dominated the field of stress and coping. This perspective grew out of the psychodynamic literature (Freud, 1964), which viewed coping behavior as a manifestation of ego defense mechanisms embedded in the personality. Theorists working from this perspective (Byrne,

1964; Shapiro, 1965) viewed coping behavior and personality as synonymous. Stress was believed to be a unidimensional concept and coping an unconscious, trait-like personality factor used for the purposes of adaptation. Coping was thus defined as a function of personality, while variations in the stressful situations were of little or no importance (Bolger, 1990; McCrae & Costa, 1986).

In the 1960s and 1970s, as scientific and societal assumptions about the nature of behavior changed, researchers began rejecting the idea of equating personality and coping and, instead, began to view coping as a multidimensional process. In this new perspective, referred to as a transactional approach, coping was defined in terms of the person-environment relationship, and the dynamic, interactive nature of the stressful transaction was emphasized (Aldwin, 1994; Lazarus & Folkman, 1984; Watson & Hubbard, 1996). This primarily cognitive approach has steadily come to be accepted as the predominant paradigm for explaining coping behavior (Aldwin, 1994; Watson & Hubbard, 1996). Within this approach, individual differences and environmental factors are mainly considered under the global construct of cognitive appraisal and are not treated as separate components (Hudik-Knezevic & Kardum, 1995). In this model, the most relevant groups of variables that are active in the process of stress, coping, and adaptation to stress are conceptualized as causal antecedents, mediating processes, and outcomes. Cognitive appraisal and coping, as central concepts in the

transactional approach, are the main mediators between personality and environment (Lazarus, 1999; Lazarus & Folkman, 1984).

Though still regarded as a transactional perspective, Lazarus' latest work is referred to as the relational model (Lazarus, 1999). The relational model consists of four major components: stress, appraisal, coping, and emotion. Lazarus chose to rename the model to highlight the importance of conceptualizing these four components as a synthesized whole. The following review of Lazarus' (1999) relational model will be organized around each component separately.

Stress. Lazarus and Folkman (1984), as leaders in the field of coping, have described how interactions with the environment generate emotions and how certain interactions can produce a stress response. According to their theory, individuals constantly evaluate the stream of events they encounter. In this appraisal process, individuals classify events as familiar or unfamiliar and threatening or non-threatening. At the same time, they generate behavioral strategies to deal with these unfolding events. Along with these appraisals and behavioral adjustments, individuals experience emotions that signal them about the success of their behavioral strategies and motivate additional behaviors.

Appraisal. Lazarus and Folkman's (1984) model of psychological stress takes a cognitive view of how individuals behave in their environments. They assert that individuals first evaluate events for their threat value. This primary appraisal is intended to ensure that humans do not encounter danger without first recognizing

it and then formulating a plan of action. Events are considered threatening if they violate an individual's belief about how the world should work and their commitment to a given course of action. The criteria for deciding what events are threatening provide a means of accounting for differences between individuals in how threatening an event may be. Benign events are safely ignored, requiring no special adaptive response. When an event is considered to be a genuine threat, the emotional reaction that signals alarm and motivates further behavioral and psychological responses will occur. Events are then evaluated with options for coping with these presumed threats using secondary appraisals.

The process of secondary appraisal focuses on the kinds of responses that might be employed to manage the event in question; again, people are likely to differ. This includes the appraisal of existing resources that could be social (e.g., social support), material (e.g., financial resources), or personal (e.g., ability) in their nature (Lazarus & Folkman, 1984). Potential or known threats require some adaptive behavioral intervention to ensure that harm is avoided or that its negative effects are limited. The interventions people employ are referred to as coping strategies (Lazarus, 1999).

Emotions. Emotions are the feelings one experiences as a result of a life event or environmental condition. Lazarus (1999) contends that emotions are logical and rational and result from the antecedent conditions mentioned previously (i.e., environmental and personal variables). Thus, experiencing emotion is closely

connected with the appraisal process. Lazarus (1999) offers a taxonomy of 15 emotions, each with its own core theme: anger, anxiety, fright, guilt, shame, sadness, envy, jealousy, disgust, happiness, pride, relief, hope, love, gratitude, compassion, and aesthetic emotions.

Coping. Once an event or environmental condition has been appraised as stressful, coping is used to alter the stressful event-condition or to regulate emotions associated with the event-condition. However, coping can take on several forms and can change depending on the situation. As such, Lazarus (1999) defines coping as constantly changing cognitive and behavioral efforts used to manage stress.

The coping behaviors identified by Lazarus (1999) are as follows: confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal. Originally, these eight coping behaviors were categorized as either problem-focused (gaining information or mobilizing resources in an effort to change the stressful life event or environmental condition) or emotion-focused (regulating emotions tied to the stressful life event or environmental condition). However, results from several studies (Fleishman, 1984; Folkman & Lazarus, 1980) indicated that clear distinctions between the two were not evident; certain strategies served both problem-focused and emotion-focused functions, depending on how each was used. As such, research making these distinctions is not as

prevalent as in the past, and Lazarus (1999) has placed less emphasis on the distinctions in his current version of the model.

Lazarus and Folkman (1984) also emphasized the cumulative impact of day-to-day events (microstressors) that have personal meaning and significance for the individual (proximal variables) in contrast to major life events (distal variables). Common occurrences have been labeled hassles (irritating, frustrating and distressing incidents that occur in one's daily transactions with the environment) and uplifts (pleasurable, happy, and satisfying experiences) by DeLongis et al. (1982) and Kanner, Coyne, Schaeffer, and Lazarus (1981). These researchers, as well as others (Wolf et al., 1989), have shown that hassle scores were more strongly associated with psychological symptoms than were life event scores. It has been suggested that uplifts, on the other hand, may serve as emotional buffers against stress by functioning as breathers, sustainers, and restorers when resources are depleted (Wolf et al., 1989).

Social Support

Perhaps the most widely studied coping response in the stress literature has been social support. This emerging area of interest within counseling psychology has focused on the examination of the relationship of social support with psychological health and the extent to which social support adds to, or interacts with, the effects of life stress in the prediction of emotional, physical, and behavioral strain (Wohlgemuth & Betz, 1991). Researchers have explored

the relationship of social support and its interaction with stress in relation to diverse outcomes such as the ability to perform in demanding situations (Saranson, Levine, Basham, & Sarason, 1983), physical symptomatology (Sandler & Barrera, 1984; Thoits, 1983), and parenting demands in a spousal relationship (O'Neil & Greenberger, 1995; Phillips-Miller et al., 2000), to name a few. Increasingly, it has been recognized that low levels of social support tend to be associated with poor physical outcomes and mental health. (Cohen & Syme, 1985; Cohen & Wills, 1985; Shumaker & Hill, 1991).

Theoretical models of work-family dynamics (Greenhaus & Parasuraman, 1986) and related empirical research have also demonstrated the importance of social support in influencing the well-being of individuals (Bernas & Major, 2000; Frone, Russell, & Cooper, 1992; Lazarus, 1999; Parasuraman et al., 1992; Wan et al., 1996). Support represents an interpersonal coping resource and has been embraced by work-family researchers (Parasuraman & Purohit, 1996). A person's social network or social support system can be viewed as a coping resource to be cultivated, maintained, and utilized as a way to help alleviate some of the stressors inherent in the roles of parent, worker, and spouse.

A social network can be drawn upon for emotional support, which contributes to the feeling that one is loved or cared about; for tangible support, which involves direct assistance in terms of services or material goods; and for informational support, which includes information and advice (Folkman &

Lazarus, 1985). Research indicates that social support is related to increased well-being (Beehr & McGrath, 1992; Bernas & Major, 2000; Cohen, Mermelstein, Kamarck, & Hoberman, 1985) and mediates the stress-health association by promoting resistance to the disease agents that exist in the environment (Strayhorn, 1989).

A variety of definitions, both conceptual and operational, of social support have been advanced. Social support has often been defined as a construct in which one has family, friends, and/or coworkers with whom one shares activities, interests, and views. Important aspects of these relationships involve being accepted, visiting, giving and receiving help, love, trust, support, and guidance (Hejri & Sorenson, 1992; Wohlgemuth & Betz, 1991). Many researchers have tended to use only one facet of social support. In a review of the literature by Wohlgemuth and Betz (1991), social support was typically assessed by three strategies, including structural dimensions (e.g., size, density, number of family members), support system functions (e.g., tangible assistance, cognitive guidance, self-esteem support, emotional support), and individual satisfaction with the support received.

The person-environment fit model emphasizes that different varieties of help must be distinguished in order to understand what is helpful about some forms of social contact (Shinn, Lehmann, & Wong, 1984; Shumaker & Brownell, 1984). Dunkel-Schetter, Folkman, and Lazarus (1987) asserted that there were

three forms of support, namely emotional, practical/aid, and informational. All of these represent different constructs and have different antecedents and consequences. However, Saranson, Shearing, Pierce, and Sarason (1987) found that subdividing the construct of support into discrete functions did not add much to the sensitivity of measures; they regarded the feeling of being loved and valued as the core component of support and one that may arise from a variety of supportive behaviors by others.

There is a growing consensus within the occupational stress literature that social support can come from both work and non-work sources. Social resources in both the school/work and non-work domains for stress prevention exist when an individual has cultivated relationships with others such as friends, family, and peers in order to develop a support system (Cohen & Edwards, 1989). The meaning of potentially supportive behaviors by others varies according to the source of the would-be support. Good intentions are not always sufficient, and recipients may be distressed rather than encouraged by inappropriate efforts at help (Winefield, Winefield, & Tiggemann, 1992).

Social support from family has typically received less research attention than work- and school-related sources of social support, and few studies have examined emotional and instrumental types of support separately (Adams & King, 1996). Mobilizing peer- or work-related support may be helpful (Home, 1993), but the findings in a recent study of graduate students by Home (1997)

emphasized the role of support from family and friends in reducing stress. Family support did not reduce role strain, perhaps because family and friends cannot directly act on the conflict or overload brought on by strong academic or job demands; however, research indicates that family support does have a link with life satisfaction. Family support may be most useful when an attitude of encouragement is matched by tangible help such as increased involvement of spouse or children in household chores.

In the work-family conflict literature, Cohen and Wills (1985) conceptualized family support in two ways, either as instrumental tangible support (e.g., doing household chores) or as emotional support (e.g., nurturance and positive affective experiences). Indeed, as a primary source of support, family members have a unique opportunity to provide both emotional support and instrumental support to the worker outside of the work environment. Whereas physical help with chores and housework has not always been found within the literature to be as helpful to recipients, emotional support has been found to be a potentially important resource (Adams & King, 1996; Baruch & Barnett, 1987; Bernas & Major, 2000; Wells & Major, 1997). Family emotional support has been shown to ameliorate work-family conflict (Adams, King, & King, 1996; Burley, 1995).

The role of social support in work-family conflict has been addressed by several researchers. Across studies, different conceptual models of the

relationship between work-family conflict and social support has been proposed. For example, some researchers have described social support as an antecedent to sources of stress (Cohen & Wills, 1985; Schaubroeck, Cotton, & Jennings, 1989). In this model, individuals who perceive themselves to have strong social support networks may be less likely to perceive demands in their social environment as stressors. Yet other researchers have described social support as an intervening variable between stressors and satisfaction outcomes (Burley, 1995; Repetti, et al., 1989). This model asserts that, after one perceives stressors in the environment, there is a mobilization of resources in which social support is sought. Thus, social support reduces the direct impact that work-family conflict has on life satisfaction and health outcomes (Staines & Pleck, 1983; Thomas & Ganster, 1995; Thomas & Thomas, 1990).

Social support is an interpersonal transaction that involves emotional concern, instrumental aid, and information (Thomas & Ganster, 1995). It has been argued that the degree of social support an individual has in a situation may affect the entire stress process (Lazarus, 1999). In order to better understand the impact of role conflict on the overall life satisfaction of an individual, it is necessary to consider the social support an individual may have in both the work/academic and family domains.

Work/Academic-Related Social Support

Social support in the work/academic domain may come from a number of sources, such as peers, professors, or supervisors, which might create a more positive work environment. Research investigating the relationship between supervisors and role strain has revealed that having supportive supervisors is related to lower levels of stress and conflict for individuals (Galinsky & Stein, 1990; Greenglass, Pantony, & Burke, 1989). For example, a supportive instructor may make academic situations less stressful by discussing family-related difficulties and being more flexible when emergencies arise. Having supportive supervisors has been found to be associated with lower levels of work-family conflict and greater employee job satisfaction (Goff, Mount, & Jamison, 1990; Parasuraman et al., 1992). Thomas and Ganster (1995) found that flexible scheduling and supportive supervisors were positively related to employee perceptions of control over work and family, job satisfaction, and psychological functioning, and negatively related to somatic complaints.

Family-Related Social Support

Support from the family has been found to moderate the impact of work-family conflict experienced by the individual and has been strongly associated with general health (Adams, King, & King, 1996). Family support has been demonstrated to be an important factor in reducing levels of stress and increasing overall well-being (Barnett & Marshall, 1991; Greenberger & O'Neil, 1993).

More specifically, spousal support has received a great deal of attention in the literature (Barnett & Marshall, 1991; Greenberger & O'Neil, 1993; Phillips-Miller, 2000; Thomas & Ganster, 1995). A positive relationship with one's spouse has been found to be strongly correlated with feelings of being loved and supported which, in turn, result in increased satisfaction with life (Roskies & Lazarus, 1980). It has been established that supportive relationships throughout career development are especially important if an individual is to realize their professional potential (Phillips-Miller, 2000). The inequitable division of household labor reported by women in dual-career relationships can be considered a form of lack of spousal support for career and may contribute to higher levels of stress, both at home and at work (Phillips-Miller, 2000). Even the perceived equity of domestic and occupational roles may be a more important factor in work-family conflict than the actual workload contribution of each partner (Lewis & Cooper, 1987). In a recent study by Aryee, Luk, Leung, and Lo (1999), findings revealed that family-to-work conflict was negatively related to life satisfaction and that implementing both emotional and instrumental coping positively influenced job and family satisfaction.

Medical Students and Social Support

Studies of medical residents and college students (Degrauw & Norcross, 1990; Strayhorn, 1989; Wolf, 1994; Wolf, Faucett, Randall, & Balson, 1988) have indicated that social support is an important mediating factor between stressful

events and health, psychological, and life satisfaction outcomes. Time with friends and family, good relationships with peers and supervisors/teachers, and relationships with parents were the most uplifting factors for the adult student sample studied. Another study by Rudner (1985) revealed that the most significant stressors, as ranked by medical residents, were time pressures that included lack of time for their families, lack of time for themselves, and the feeling of having too many things to do at once. Most of the respondents in this study, as well as those in a study by Alexander, Monk, and Jonas (1985), reported that they coped best by being able to talk over their problems with, and be emotionally supported by, other residents, family members, friends, and others (Rudner, 1985).

Although the number of women in medical school has increased in recent years, few studies have focused on identifying whether men and women respond differently to medical education and training. Researchers have detailed the difficulties women face in adapting to the “male socialization process” associated with medical education and training. When female medical students have been compared with their male counterparts, the results have been inconsistent. Some studies have suggested that female students visit psychologists more often, experience more stress, report a higher incidence and greater severity of personal problems, and report more strain in their marriages (Davidson, 1978; Young, 1987). Others have reported no gender differences in the situations medical

students identified as most stressful or in the coping responses used to deal with those stressors (Stern et al., 1993). The latter findings are in direct contrast to the findings of Eagle et al. (1997) that being male is associated with lower levels of family-to-work conflict. An intuitive reason for this contradiction may be that women in medical school do not typically conform to normative role expectations of women in the general population.

Gender Differences in Coping

Regarding the general coping literature, most of the findings regarding gender have been inconsistent. A fairly consistent hypothesis within the coping research has been the belief that men tend to utilize problem-focused coping whereas women rely more on emotion-focused coping strategies (Folkman & Lazarus, 1985). Several researchers have failed to find significant gender differences in coping (Carver, Scheier, Weinbraub, 1989; Firth-Cozen & Morrison, 1989; Hamilton & Fagot, 1988; Keller, 1988; Tanck & Robbins, 1979). Both Folkman and Lazarus (1980) and Billings and Moos (1981) have suggested that gender differences in coping may be attributable to differences in the kinds of stressful situations that men and women typically encounter.

Gender differences have been consistently found in research on social support. Generally, these differences have favored females in that females have nearly always demonstrated a greater sensitivity to their social surroundings (Greenglass, Burke, & Ondrack, 1990; Sherman & Walls, 1995), although this

sensitivity has not necessarily translated into less stress. Lowenthal and Haven (1968) found that females were significantly more likely to have close, confiding relationships than males. In addition, several studies have indicated that women have larger social networks than men (Antonucci & Akiyama, 1987; Lowenthal & Haven, 1968). Women have generally reported receiving more social support than men (Burda, Vaux, & Schill, 1984; Hirsch, 1979; Sherman & Walls, 1995) and greater stress in the absence of social support (Sherman & Walls, 1995).

The consistent findings of gender differences in research on social support have led several authors to speculate on the cause of this difference. Kessler and McLeod (1984) suggested that women are more communicative than men. This national survey revealed that women were more emotionally involved in others' lives, and they tended to serve nurturing roles for a wider network of people. Kessler and McLeod (1984, 1985) also suggested that men cared about fewer people beyond their loved ones. Finally, Eisenberg and Lennon (1983) asserted that, across a variety of experimental and natural situations, women were generally more empathic than men.

Measurement of Social Support

Published research on social support has increased greatly over the last two decades. Despite this proliferation, there has been a lack of uniformity with regard to the conceptualization and definition of social support. One of the main

contributing factors to this problem is the complex and multidimensional nature of social support (Winemiller, Mitchell, Sutliff, & Cline, 1993).

One of the criticisms within the literature has been the use of unstandardized, ad hoc instruments to assess support. Researchers have often developed unstandardized measures tailored to the idiosyncratic nature of a particular research question (Browner et al., 1987; Lansdown, Atherton, Dale, Sproston, & Lloyd, 1986). Often the items have been global and have prevented the opportunity to determine specific aspects of the individual's social network, such as density, reciprocity, function, or the proportion of supportive vs. nonsupportive family and friends (Winemiller et al., 1993). Studies that have utilized unstandardized instruments have generally failed to provide psychometric data (Holahan & Moos, 1982; Stokes, 1984), which has led to serious questions regarding their validity. Further, the idiographic nature of these instruments has rendered comparisons of findings across studies virtually impossible. The populations or situations to which these instruments may be appropriately applied have not been adequately established (Winemiller et al., 1993; Vaux et al., 1986).

Many social support researchers have utilized standardized instruments (Barrera, 1981; Procidano & Heller, 1983). However, many of these measures do not accommodate the complex and multidimensional nature of social support. An instrument utilized in a given study may examine only a certain type of social support (Winemiller et al., 1993). For example, perceived social support,

structural aspects of the support network, or perhaps specific functions of the support network may be explored. Other measures are essentially global without specification of type or source of support (Holahan & Moos, 1982; Wilcox, 1981).

In their comprehensive review of 23 social support measures, Heitzmann and Kaplan (1988) recommended that measures should assess both quantity and adequacy of support, which have commonly been operationalized as network size and/or recipient satisfaction. They also recommended that only measures with internal consistency or test-retest reliabilities greater than .80 should be used and noted that the lack of validity data is a serious deficit in the literature on social support.

Conclusion

In examining the work-family conflict literature it is obvious that this area of research is both popular and relevant. Understanding the work-family interface is an essential concern for researchers in both occupational and family domains. Consequently, given contemporary demographic trends in the work force (e.g., increased numbers of working mothers and two-earner families), it is not surprising that research activity in this area has increased dramatically in the last several years due to its broad applicability.

The construct of work-family conflict, initially rooted in traditional interrole conflict, has been plagued by ambiguities in regard to its nature,

measurement, and relationships to other variables (Allen et al., 2000).

Contemporary models of work-family conflict are far superior to earlier models in that they more accurately reflect the complex nature of the construct (Adams et al., 1996; Bedian et al., 1988; Carlson et al., 2000; Frone et al., 1992; Greenhaus & Beutell, 1985; Greenhaus & Parasuraman, 1986; Gutek et al., 1991; MacEwen & Barling, 1994; Netemeyer et al., 1996). Current models acknowledge the bi-directional nature of work-family conflict (work-to-family and family-to-work), as well as the fact that its origins may be time-, strain-, or behavior-based (Greenhaus & Beutall, 1985). Because previous research has tended to define work-family conflict in terms of the impact of work on family, our current understanding of work-to-family conflict is somewhat superior to our understanding of family-to-work conflict. Further, work and family domains have been found to have asymmetrically permeable boundaries, with family boundaries being more permeable than work boundaries.

Work-family conflict has been found to influence a number of outcomes including psychological distress, job satisfaction, life satisfaction, physical health, stress, and organizational commitment/turnover. Empirical evidence suggests that similar outcomes have been observed in the medical student population (Carmel & Bernstein, 1987; Clark & Rieker, 1986; Coombs & Fawzy, 1983; Home, 1998; Rutledge et al., 1994; Strayhorn, 1989; Wolf & Kissling, 1989). Medical trainees (students, interns, and residents) often suffer high levels of stress, which may lead

to alcohol and drug abuse, interpersonal relationship difficulties, depression, and anxiety (Shapiro et al., 2000). This stress and the resulting consequences have a definite impact on the roles these students engage in such as clinician, spouse, parent, and friend, to name a few.

An extensive body of research that investigates the processes individuals use to cope with stressful situations has accumulated. This proliferation of research underscores the importance of the coping process as a factor influencing the impact of stressful events on the individual's physical and psychological well-being. Medical students use certain coping processes or mediators of stress, such as social supports, to minimize the effects that stressors have on their physical and psychological health.

The number of non-traditional students has grown, as has awareness of how stress can harm the effectiveness of the trainees, university programs have begun to introduce new policies to help reduce the negative consequences of work-family conflict. Effectiveness of these policies, however, remains to be seen.

Research Questions

The specific research questions to be addressed in this study are as follows:

- 1) What is the relationship of a linear combination of demographic variables (age, sex, young child/children in the home) to work-to-family conflict?

- 2) What is the relationship of a linear combination of psychological variables (depression, health symptoms, perceived stress) to work-to-family conflict?
- 3) Does adding Block B (psychological variables) to Block A (demographic variables) produce a statistically significant increment in R^2 ?
- 4) What is the relationship of a linear combination of social support variables (confidants, peers, supervisors) to work-to-family conflict?
- 5) Does adding Block C (social support variables) to Block A and B produce a statistically significant increment in R^2 ?
- 6) What is the relationship of a linear combination of demographic variables (age, sex, young child/children in the home) to family-to-work conflict?
- 7) What is the relationship of a linear combination of psychological variables (depression, health symptoms, perceived stress) to family-to-work conflict?
- 8) Does adding Block B (psychological variables) to Block A (demographic variables) produce a statistically significant increment in R^2 ?
- 9) What is the relationship of a linear combination of social support variables (confidants, peers, supervisors) to family-to-work conflict?
- 10) Does adding Block C (social support variables) to Block A and B produce a statistically significant increment in R^2 ?

CHAPTER THREE

Methods

Participants

Participants for this study will consist of medical students currently attending a college on a large health science center campus in the Southwest. A requirement for participants will be that they are either married, living with a significant other, and/or living with at least one child under the age of 18 in the home. By having either a child or significant other living with them, participants will be able to answer questions relevant to work-family conflict and social support. Generally, each college's curriculum is viewed as traditional and comparable with the curricula of other schools. There are no readily apparent reasons why these data could not be generalized to other medical school populations.

The college selected for the study enrolled 843 students for the academic year 2001-2002. Approximately 150 participants will be sought for this study. Students from this college, broken down by gender, are 55% male and 45% female. The age distribution for this population is as follows: 1% are under 20 years old, 70% are 21-25 years old, 17% are 26-30 years old, 9% are 31-40 years old, and 3% are 41-50 years old. Participants from the medical college, broken down by racial and ethnic backgrounds, are: Caucasian (84%), Asian (5%), other

(4%), African American (2%), Native American (2%), and Hispanic (0%). All participants in the sample will have at least an undergraduate degree.

Instruments

Demographics. A one-page questionnaire has been designed to elicit basic demographic information such as age, gender, marital status, children and how many, ethnicity, work status, work hours, degrees obtained, class year, and college.

The Work-Family Conflict Scale (WFCS). The WFCS (Carlson et al., 2000) is an 18-item self-report scale that is both bi-directional and multidimensional. The scale is bi-directional in that it assesses both directions of work-family conflict (i.e., work-interference with family and family-interference with work). The scale is multidimensional in that, within both scales measuring directionality, the three major forms of work-family conflict are represented (i.e., time-, strain-, and behavior-based). This study will focus on work-family role conflict and family-work role conflict as general constructs; therefore, only the two global scales will be used in this study. Respondents rate the degree to which each statement describes their experience on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Reported coefficient alphas for the six subscales ranged from .78 to .87 (Carlson et al., 2000). Coefficient alphas of .78 and .79 for work-to-family and family-to-work scales, respectively, based upon 6 items were also reported

(Carlson et al., 2000). Although internal consistency was not examined for the 9-item scales, Carlson et al. (2000) predicted that even higher alphas coefficients would be found for the 9 item scales. In a recent study by Laster (2002) the internal consistency reliability was .87 for work-to-family conflict and .83 for family-to-work conflict.

The WFCS was constructed over a series of three studies. Ultimately, a six-factor model (with factors allowed to correlate) was determined to be the best fitting model. The authors purported that discriminant validity of the subscales has been demonstrated by low factor correlations, which ranged from .24 to .83; however, four of the correlations exceeded .50. Thus, there appears to be some overlap among the six dimensions represented in the six subscales. Invariance of the factor structure was established across samples based on a LISREL two-group measurement procedure, further confirming the structure of the six-factor model. The same procedure was used to test the six-dimensional model for invariance across gender and found to be minimally invariant. T-tests on the level of experienced conflict across all six dimensions revealed that females experienced more conflict than men in all three family-to-work forms of conflict, as well as strain-based work-to-family conflict. In addition, each of the scales differentially related to various antecedents (i.e., work-role ambiguity, work involvement, and workplace social support) and consequences (i.e., job satisfaction, family

satisfaction, life satisfaction, and organizational commitment) of work-family conflict, further suggesting the potential predictive validity of the scales.

This instrument was chosen because its items tap all three forms of work-family conflict and is, therefore, thought to be more theoretically and methodologically sound than other work-family conflict measures to date.

The Multi-Dimensional Support Scale (MDSS). The MDSS (Winefield, Winefield, & Tiggemann, 1992) is a 19-item self-report instrument designed to measure social support, including frequency and adequacy of emotional, practical, and informational support, in young adults. The MDSS is structured to examine support from three sources – confidants (family/friends), peers, and supervisors. The MDSS has six factors reflecting quality of support rather than types: confidant availability, confidant adequacy, supervisor availability, supervisor adequacy, peer adequacy, and peer availability. The MDSS is scored by simply summing item scores for the individual factors, using a 4-point Likert-type scale ranging from 1 (never) to 4 (usually/always) for frequency and a 3-point Likert-type scale ranging from 1 (more often) to 3 (just right) for satisfaction.

The MDSS has good internal consistency, with alphas for the subscales ranging from .81 to .90. The MDSS has good concurrent validity, with significant correlations with three measures of psychological well-being, including Rosenberg's Self-Esteem and Depressive Affect scales and the General Health

Questionnaire. The MDSS was a better predictor of psychological well-being than measures of health, financial distress, and stressful life events.

Duke-UNC Health Profile (Symptom Status Scale) (SSS). The SSS is one of four subscales included in the Duke-UNC Health Profile (DUHP). The DUHP is a 63-item instrument intended to determine an individual's health status in a primary care setting (Parkerson et al., 1981). This profile was designed to be used with persons who are 18 years of age and older. It is a self-report measure for those with at least a ninth grade education. The SSS will be included in the DUHP because physical symptoms are often the earliest and, sometimes, the only manifestation of altered health. They are considered to be a natural expression of dysfunction within the body and mind and complete the picture of mental health by examining the linkage of body states to psychological phenomena. The scale is comprised on 26 physical symptom items. Participants are asked about 22 symptoms that were experienced during the past week, and 4 symptoms experienced during the past month. Examples of weekly symptoms include hearing, sleeping, indigestion, poor memory, breathing, etc., and monthly symptoms include undesired weight gain or loss, unusual bleeding, and sexual performance.

Participants are asked, "How much trouble have you had with..." followed by a symptom with three possible categories from which to choose.

They include: 0 = none; 1 = some; 2 = a lot. A higher score indicates a greater severity of symptoms.

According to Parkerson et al. (1981), measurement of reliability with regard to the SSS proved difficult since high internal consistency was not expected given the heterogeneous content of the symptoms listed. Temporal stability of scores (test-retest) was utilized, therefore, as the assessment for reliability for the SSS. The test-retest interval of 1 to 8 weeks was problematic due to the time allowing symptoms to fluctuate even in respondents with stable medical conditions. Overall stability for the SSS was considered acceptable as indicated by a test-retest coefficient of .68.

Evidence of the validity of the SSS was established by comparing the Symptoms status scores with other scales on the DUPH scales, as well as other instruments. Symptom status scores correlated highly with scores on the other three dimensions, which included physical functioning, emotional functioning, and social functioning. According to the instrument developers, "this finding fits with the recognized clinical phenomenon that symptoms such as headache or trouble with appetite and sexual performance can be associated with various combinations of physical, social or emotional problems" (p. 8181). Correlations of the SSS with other instruments provided evidence of concurrent and discriminant validity. For example, the scale correlated substantially with the Sickness Impact Profile ($r = .66$), which also measures physical aspects of health;

and with the Zung instrument ($r = .61$), a measure of somatic and psychologic concomitants of depression partly reflected by patients' symptoms. In contrast, the scale correlated negligibly with the Tennessee Self-Concept Instrument ($r = .22$), which specifically measures the emotional dimension of health and would not, therefore, be expected to correlate highly with a physical symptom measure.

Perceived Stress Scale (PSS). The PSS (Cohen, Kamarck, & Mermelstein, 1983) items were designed to provide a measure of the degree to which participants find their lives uncontrollable, unpredictable, and overloading. The authors proposed that these components were central to the individual experiencing stress. The PSS is a 14-item instrument asking respondents to endorse how often they have felt or thought a certain way over the last month as measured by a 5-point Likert scale ranging from 0 (never) to 4 (very often). The questions are quite general in nature and hence are relevant to a broad range of sub-groups. Respondents' scores on the PSS are obtained by reversing the scores on seven positive items, and then summing across all 14 items. Higher scores indicate higher levels of stress (Cohen et al., 1983).

Coefficient alphas of .84, .85, and .86 in three samples (two college student samples and one smoking-cessation program sample) have been reported in the manual. The PSS correlated, as it was predicted to do so, with a range of self-report and behavioral criteria including depressive and physical

symptomatology, life-event scores, utilization of health services, and social anxiety, providing evidence of concurrent and predictive validity.

Center for Epidemiological Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item self-report scale designed to assess depressive symptomatology, with emphasis on the affective component. This instrument has been widely used and was intended to be a measure of current symptoms and mood, rather than of disorder or an illness. Participants are asked to rate on a 4-point Likert-type scale, ranging from 0 to 3, how often during the past week they experienced each of the various depressive symptoms. A respondent's scale score is the sum of all items.

The CES-D has a high internal consistency, with coefficient alphas ranging from .85 to .91 in patient and community samples (Ensel, 1986; Radloff, 1977). Due to expected changes in mood over time and the scale's sensitivity to current level of symptoms, modest test-retest reliability coefficients of .40 and above were deemed acceptable. The CES-D has been especially popular in studies aimed at the general population.

Procedure

The sample will be drawn from a health sciences center located on a Southwestern university campus from the college of medicine. The proposed study will be examined and approved by the Internal Review Board of the participants' university campus and a letter verifying this approval will be sent to

the researcher's university campus, as there is reciprocity between these two campuses. A cover sheet explaining the goals of the questionnaire packet including instructions and the informed consent, demographics sheet, and the five questionnaires, in random order, will be distributed. Participants will be strictly advised not to put their name or any identifying information on the research instruments. The packets will take approximately 30 minutes to complete. The questionnaire packets will be electronically mailed to randomly selected students in the medical college. Participants' returned research response packets will imply their consent to participate in the study. A reminder email will be sent two-weeks to participants after the initial invitation to participate. Those students who do not wish to respond to the electronic questionnaire will be asked to obtain a questionnaire packet from the University Counseling Center.

Participants can choose to email the researcher to have their names entered into a drawing for a chance to win one Southwest Airline round-trip airfare ticket. This will be done on an "honor basis" since there will be no way to associate returned packets with names submitted for the drawing. The airfare will be provided directly from the researcher to the winner so that no one on campus will know who participated in the study.

Methodological procedures will be followed, and ethical guidelines will be met in accordance with recommendations by the American Psychological Association (1992). Confidentiality and anonymity of participants will be

preserved as evidenced by names and/or identifying information not being collected. All data collected via electronic mail will be stripped of all identifying information to preserve the confidentiality and anonymity of participants in this study.

Data Analytic Strategy

Means and standard deviations will be calculated for the whole group and for male and female students separately. The analytic strategy that will be used is blockwise multiple regression. First, three blocks of variables (demographic, psychological, social support) will be entered successively to explore the unique relationship of each block with work-to-family conflict. With the addition of the second and third blocks, the incremental change in R^2 will be examined to determine whether either or both added blocks add significantly to the relationship between predictors and the criterion. Second, this same series of analyses will be repeated with family-to-work conflict serving as the criterion.

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APPENDIX B

Informed Consent Statement

Date: September 1, 2002
To: University of Oklahoma Health Science Center Students
From: Cristina L. Filippo, M.Ed., University of Oklahoma
Re: Informed Consent – Work-Family Role Conflict Study

My name is Cristina Filippo, a doctoral candidate at the University of Oklahoma. The OU Health Science Center has agreed for me to invite you to participate in my dissertation research study. It's a study about the struggles we sometimes experience as we try to balance our school/work life and our home life. The purpose of this study is to determine what impact, if any, this type of role conflict has on a student's well-being.

As a reward for you participating in this survey you may enter your name in a drawing for one **SOUTHWEST AIRLINES ROUND TRIP AIRFARE TICKET**. To participate you will simply fill out a battery of short surveys (including a short demographic questionnaire, and brief self-report surveys measuring work-family conflict, social support, perceived stress, depression, and health symptoms). It will take you **approximately 30 minutes** to complete these surveys. It is very important that you answer questions **honestly** and that you **do not omit** answering any items. Therefore, you will not be asked to provide any identifying information on the surveys. All precautions have been taken to protect the anonymity of your responses. Results of the study will be reported as group data only and no individual survey results will be accessible.

To submit your survey responses, you simply click on the website link provided at the end of this email. You will be connected to a secure, password protected website with firewall protection through the University of Oklahoma Health Sciences Center. You will be guided through the survey response and submittal process. If, at any point during the survey you wish to log off and return later, you may do so. When you link back up to the website, you will be returned to where you left off. The website administrator will strip all email addresses prior to sending survey data to me to assure the anonymity of your individual responses.

This study was approved by the University of Oklahoma Health Science Center's Institutional Review Board and meets all research ethical standards. Your participation in the study is strictly voluntary. You do not have to participate and you may quit at any time without penalty. Participating involves some minimum risks. These include: 1) the inconvenience of devoting some time out of your busy schedule to respond to the survey, and; 2) the possibility that responding to the survey could heighten your awareness about issues that may produce some psychological discomfort. Should such feelings persist, you may contact the University Counseling Center at (405) 271-7336. You may also call the American Psychological Association's toll-free help center to find an appropriate referral for counseling (1-800-964-2000) in your area. On the positive side, participating in the study may have a validating effect on your experiences and feelings.

Survey responses need to be mailed or electronically submitted no later than September 30th. Submitting your electronic responses will imply your consent.

To enter the drawing, you will need to send me a separate email at cristina-filippo@ouhsc.edu with your name. This is because I will NOT know whom actually submitted surveys since, by design, they are anonymous. Your entries will be treated **confidentially**. Send your entries by October 15th. I will personally hold the drawing on September 16th and will notify the winner by email to make arrangements to receive the round-trip airline ticket.

If you have any questions about this study or the drawing, please feel free to contact me or my faculty sponsor, Dr. Jody Newman at (405) 325-5974. Any questions about your rights as a research participant may also be directed to the Office of Research Administration at (405) 271-2090.

Click here to access survey electronically:

Enter this user name and password:

APPENDIX C

General Demographic Questionnaire

GDQ

Please respond to the following questions.

1. Which best describes you?
☐ (1) African-American
☐ (2) Asian-American
☐ (3) Hispanic
☐ (4) Native-American/American Indian
☐ (5) White, Euro-American (non-Hispanic)
☐ (6) Other (please explain): _____
2. What is your sex?
☐ (1) Female
☐ (2) Male
3. What is your age? _____
4. What is your marital status?
☐ (1) Single
☐ (2) Married
☐ (3) Separated
☐ (4) Divorced
☐ (5) Widowed
☐ (6) Co-Habiting
5. How many children do you have? _____
6. If you have children, what are their ages? _____
7. What college are you currently attending?
☐ (1) College of Allied Arts
☐ (2) College of Dentistry
☐ (3) College of Medicine
☐ (4) College of Nursing
☐ (5) College of Pharmacy
☐ (6) Graduate College
8. What is your student status? (e.g. 1st year, 2nd year) _____
9. What is your employment status?
☐ (1) Full-time employed/clinicals (with or without pay)
☐ (2) Part-time employed/clinicals (with or without pay)
☐ (3) Not employed and not doing clinicals at this time
☐ (4) Other (please specify): _____
10. To date, what is the highest educational degree you have earned?
☐ (1) Graduate degree (e.g. Masters, Ph.D., M.D.)
☐ (2) Undergraduate degree (e.g. B.A., B.S.)
☐ (3) Associates degree/Community college degree
☐ (4) High school diploma

APPENDIX D

Work-Family Conflict Scale

WFCS

Below are some statements with which you may agree or disagree. Use the scale below to show how you feel about each item. Place the number on the line for that item. Please be open and honest in your answers.

1=Strongly disagree
2=Disagree
3=Slightly disagree
4=Neither agree nor disagree

5=Slightly agree
6=Agree
7=Strongly agree

- ___ 1. My work keeps me from my family activities more than I would like.
- ___ 2. The time I must devote to my job keeps me from participating equally in household responsibilities and activities.
- ___ 3. I have to miss family activities due to the amount of time I must spend on work responsibilities.
- ___ 4. The time I spend on family responsibilities often interfere with my work responsibilities.
- ___ 5. The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career.
- ___ 6. I have to miss work activities due to the amount of time I must spend on family responsibilities.
- ___ 7. When I get home from work I am often too frazzled to participate in family activities/responsibilities.
- ___ 8. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family.
- ___ 9. Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy.
- ___ 10. Due to stress at home, I am often preoccupied with family matters at work.
- ___ 11. Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.
- ___ 12. Tension and anxiety from my family life often weakens my ability to do my job.
- ___ 13. The problem-solving behaviors I use in my job are not effective in resolving problems at home.
- ___ 14. Behavior that is effective and necessary for me at work would be counterproductive at home.
- ___ 15. The behaviors I perform that make me effective at work do not help me to be a better parent and spouse.
- ___ 16. The behaviors that work for me at home do not seem to be effective at work.
- ___ 17. Behavior that is effective and necessary for me at home would be counterproductive at work.
- ___ 18. The problem-solving behavior that works for me at home does not seem to be as useful at work.

APPENDIX E
Multidimensional Support Scale

MDSS

Below are some questions about the kind of help and support you have available to you in coping with your life at present. The questions refer to 3 different groups of people who might have been providing support to you IN THE LAST MONTH. For each question, please place an X under the alternative, which shows your answer. Then indicate whether you would have liked more support, less support, or if you received the right amount of support for each question.

A. First, think of your family and close friends, especially the 2-3 who are most important to you.

	Never	Sometimes	Often	Usually
How often did they really listen to you when you talked about your concerns or problems?				
Would have liked:				
More Less Right				
How often did you feel that they were really trying to understand your problems?				
Would have liked:				
More Less Right				
How often did they try to take your mind off your problems by telling jokes or chattering about other things?				
Would have liked:				
More Less Right				
How often did they really make you feel loved?				
Would have liked:				
More Less Right				
How often did they help you in practical ways, like doing things for you or lending you money?				
Would have liked:				
More Less Right				
How often did they answer your questions or give you advice about how to solve your problems?				
Would have liked:				
More Less Right				
How often could you use them as examples of how to deal with your problems?				
Would have liked:				
More Less Right				

B. Think of other people that you know, who are like you in being employed, unemployed or studying.

	Never	Sometimes	Often	Usually
How often did they really listen to you when you talked about your concerns or problems?				
Would have liked:				
More Less Right				
How often did you feel that they were really trying to understand your problems?				
Would have liked:				
More Less Right				
How often did they try to take your mind off your problems by telling jokes or chattering about other things?				
Would have liked:				
More Less Right				
How often did they help you in practical ways, like doing things for you or lending you money?				
Would have liked:				
More Less Right				
How often did they answer your questions or give you advice about how to solve your problem?				
Would have liked:				
More Less Right				
How often could you use them as examples of how to deal with your problems?				
Would have liked:				
More Less Right				

- C. Think about the people in some sort of authority over you. If you are employed, this means your supervisors at work. If you are a part-time/full-time student, it means your professors and faculty. Answer for the 2-3 that you see most.

	Never	Sometimes	Often	Usually
How often did they really listen to you when you talked about your concerns or problems?				
Would have liked:				
More Less Right				
How often did you feel that they were really trying to understand your problems?				
Would have liked:				
More Less Right				
How often did they try to take your mind off your problems by telling jokes or chattering about other things?				
Would have liked:				
More Less Right				
How often did they fulfill their responsibilities towards you in helpful practical ways?				
Would have liked:				
More Less Right				
How often did they answer your questions or give you advice about how to solve your problems?				
Would have liked:				
More Less Right				
How often could you use them as examples of how to deal with your problems?				
Would have liked:				
More Less Right				

APPENDIX F

Duke-UNC Health Profile

Health Profile

Instructions:

Here are a number of questions about your health. Please read each question carefully and check (✓) your best answer. There are no right or wrong answers.

DURING THE PAST WEEK: How much trouble have you had with:

	None	Some	A Lot		None	Some	A Lot
1) Eyesight.....	_____	_____	_____	13) Hurting or aching in a			
2) Hearing.....	_____	_____	_____	part of your body.....	_____	_____	_____
3) Talking.....	_____	_____	_____	14) Itching in any part of your			
4) Tasting food.....	_____	_____	_____	body.....	_____	_____	_____
5) Appetite.....	_____	_____	_____	15) Indigestion.....	_____	_____	_____
6) Chewing food.....	_____	_____	_____	16) Fever.....	_____	_____	_____
7) Swallowing.....	_____	_____	_____	17) Getting tired easily.....	_____	_____	_____
8) Breathing.....	_____	_____	_____	18) Fainting.....	_____	_____	_____
9) Sleeping.....	_____	_____	_____	19) Poor memory.....	_____	_____	_____
10) Moving your bowels.	_____	_____	_____	20) Weakness in any part of			
11) Passing water/				your body.....	_____	_____	_____
urinating.....	_____	_____	_____	21) Feeling depressed or sad..	_____	_____	_____
12) Headache.....	_____	_____	_____	22) Nervousness.....	_____	_____	_____

DURING THE PAST MONTH how much trouble have you had with:

	None	Some	A Lot		None	Some	A Lot
23) Undesired weight loss...	_____	_____	_____	25) Unusual bleeding...	_____	_____	_____
24) Undesired weight gain..	_____	_____	_____	26) Sexual performance			
				(Having sex).....	_____	_____	_____

APPENDIX G

The Perceived Stress Scale

PSS

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate. For each question, choose from the following alternatives:

Circle: 0 for *Very Often* 1 for *Fairly Often* 2 for *Sometimes* 3 for *Almost Never* 4 for *Never*

- | | | | | | |
|---|---|---|---|---|---|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly?..... | 0 | 1 | 2 | 3 | 4 |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? | 0 | 1 | 2 | 3 | 4 |
| 3. In the last month, how often have you felt nervous and "stressed"? | 0 | 1 | 2 | 3 | 4 |
| 4. In the last month, how often have you dealt successfully with irritating life hassles?..... | 0 | 1 | 2 | 3 | 4 |
| 5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?.... | 0 | 1 | 2 | 3 | 4 |
| 6. In the last month, how often have you felt confident about your ability to handle your personal problems?..... | 0 | 1 | 2 | 3 | 4 |
| 7. In the last month, how often have you felt that things were going your way?..... | 0 | 1 | 2 | 3 | 4 |
| 8. In the last month, how often have you found that you could not cope with all the things you had to do?..... | 0 | 1 | 2 | 3 | 4 |
| 9. In the last month, how often have you been able to control irritations in your life?..... | 0 | 1 | 2 | 3 | 4 |
| 10. In the last month, how often have you felt that you were on top of things?..... | 0 | 1 | 2 | 3 | 4 |
| 11. In the last month, how often have you been angered because of things that happened outside your control?..... | 0 | 1 | 2 | 3 | 4 |
| 12. In the last month, how often have you found yourself thinking about things that you have to accomplish?..... | 0 | 1 | 2 | 3 | 4 |
| 13. In the last month, how often have you been able to control the way you spend your time?..... | 0 | 1 | 2 | 3 | 4 |
| 14. In the last month, how often have you felt difficulties were piling up so high you could not overcome them?..... | 0 | 1 | 2 | 3 | 4 |

APPENDIX H

Center for Epidemiologic Studies Depression Scale

CES-D SCALE

Instructions:

Please indicate how often you have felt this way during the last week.

0 = Most or all of the time (5-7 days a week)

1 = Occasionally or a moderate amount of time (3-4 days a week)

2 = Some or a little of the time (1-2 days a week)

3 = Rarely or non of the time (less than once a week)

1. I was bothered by things that usually don't bother me.....	0	1	2	3
2. I felt that everything I did was an effort.....	0	1	2	3
3. I felt I was just as good as other people.....	0	1	2	3
4. I had trouble keeping my mind on what I was doing.....	0	1	2	3
5. I felt sad.....	0	1	2	3
6. I felt fearful.....	0	1	2	3
7. I felt lonely.....	0	1	2	3
8. I had crying spells.....	0	1	2	3
9. I talked less than usual.....	0	1	2	3
10. My sleep was restless.....	0	1	2	3
11. I enjoyed life.....	0	1	2	3
12. I felt that I could not shake off the blues even with the help of my family/friends.....	0	1	2	3
13. I thought my life had been a failure.....	0	1	2	3
14. I was happy.....	0	1	2	3
15. I could not get "going".....	0	1	2	3
16. I felt hopeful about the future.....	0	1	2	3
17. People were unfriendly.....	0	1	2	3
18. I did not feel like eating; my appetite was poor.....	0	1	2	3
19. I felt depressed.....	0	1	2	3
20. I felt that people disliked me.....	0	1	2	3

APPENDIX I

Institutional Review Board Approval



The University of Oklahoma

Health Sciences Center

OFFICE OF RESEARCH ADMINISTRATION

IRB Number: 10353

Amendment Approval Date: October 18, 2002

October 18, 2002

John Tassey, Ph.D.
Dept of Psychiatry and Behavioral Sciences-COM
921 N.E. 13th, VAMC 183E
Oklahoma City, OK 73104-5076

RE: IRB No. 10353: The Relationship of Select Demographic, Psychological, and Social Support Variables with Work-to-Family and Family-to-Work Conflict in Medical Students.

Dear Dr. Tassey:

On behalf of the Institutional Review Board (IRB), the Chair has reviewed your protocol modification form. It is the Chair's judgement that this modification allows for the rights and welfare of the research subjects to be respected. Further, it has been determined that the study will continue to be conducted in a manner consistent with the requirements of 45 CFR 46 or 21CFR 50.56 as amended; and that the potential benefits to subjects and others warrant the risks subjects may choose to incur.

This letter documents approval to conduct the research as described in:

Protocol Dated: October 14, 2002

Amend Form Dated: October 14, 2002

Amendment Summary:

Increase number of subjects from 300 to 1000.

This letter covers only the approval of the above referenced modification. All other conditions, including the original expiration date, from the approval granted September 30, 2002 are still effective.

If consent form revisions are a part of this modification, then you will be provided with a new stamped copy of your consent form. Please use this stamped copy for all future consent documentation. Please destroy all outdated versions of this consent form.

If you have any questions about these procedures or need additional assistance, please do not hesitate to call the Institutional Review Board office at (405) 271-2045 or send an email to irb@ouhsc.edu.

Sincerely yours,

Alberta Yadack, R.N., M.P.H.

Assistant Director, Human Research Participant Protection

Ltr_Amend_Final_Appv_Exp

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