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Values, stress, and coping among practicing family physicians

Post, Douglas Michael, Ph.D.

The Ohio State University, 1992

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VALUES, STRESS, AND COPING AMONG
PRACTICING FAMILY PHYSICIANS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Douglas Michael Post, B.A., M.A., M.S.W.

* * * * *

The Ohio State University

1992

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1992

DEDICATION

To My Family

and

To My Wife, Marty

Your love, support, and
gentle nudging were essential
to the realization of this project
I love you.

ACKNOWLEDGMENTS

Many individuals were instrumental to the completion of this dissertation, and I would like to offer them my affection and appreciation.

First and foremost, to my family. To my wife, Marty, and our children, Steffen and Rosemary. Steffen, your drawing over the computer served as a daily inspiration. Rosemary, your birth into our family during this study placed this work in its proper perspective, and certainly magnified the level of inspiration offered by your brother. Marty, you always inspire me.

To my other family members, Mom and Dad, I know how much this means to you, and that fact was very helpful. Robert, your work habits have unfortunately rubbed off. I look forward to watching a Browns game together again. Doody and Pinky, your support and taking care of my family in crazy times benefitted me immeasurably. To my grandfather and his values.

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offered by Dr. Sy Kleinman, Dr. Pam Highlen, and Dr. Fiona Travis strongly contributed to the personal growth which was a consequence of this work. (Sy, thanks for the editing.)

I would also like to thank Dale Alexander, Ph.D. In so many ways, our work together planted the stress and coping seed, and helped bring this project to fruition. I am very grateful, and shall miss you terribly.

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In many ways, I feel I have lived through the experience of stress that was the focus of this project. I am looking forward to living the balanced life that the participants of this research had acquired for themselves. Get ready, family and friends ... he's back ...

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CHAPTER I

INTRODUCTION

The topic of stress has, in recent years, received extensive attention in both the general public and professional literature. Extensive utilization of the term 'stress' seems to reflect its pervasiveness in our culture and the concerns many have for its pernicious effects on the individual, family, workplace, and society.

Frequency of use has been accompanied by conceptual confusion. Stress has been defined as events which are external to the individual, as intervening states and traits, as the individual's response to events, and as a transaction between characteristics of the individual and the nature of the environment (Lazarus & Folkman, 1988; Fleming, Baum & Singer, 1984). Overall, stress research has developed along these somewhat contradictory lines. The term 'stress' seemingly has arrived to a point where it means all things to all people.

One particular area of focus in the stress literature is occupational stress. Work plays a central role in today's complex society, frequently serving as the primary and defining characteristic of an individual's identity and existence (Landy, 1992). This phenomenon often relates to

the identification of significant levels of stress in the workplace.

It has been estimated that work stress accounts for more stress than any other source, with an estimated 11 million workers reporting health endangering levels of "mental stress" at work (Sauter, 1990). A recent survey of executives of Fortune 500 companies found that 70% of respondents rated mental health problems as fairly to very pervasive in the workplace. The total cost of stress-related disorders has soared to approximately \$100 billion (Sauter, 1992).

Financial factors have played a significant role in the expanded attention of research to the forces of stress. The nature of worker compensation laws, which now make employers liable for employees' mental as well as physical illness if they are attributed to work, may also force organizations to pay heed to potential stress-related difficulties, rather than ignore the problem (Beehr & Bhagat, 1985).

Increased recognition of the biopsychosocial costs of work-related stress has led a number of researchers to investigate the levels of occupational stress in specific occupations. The goal of this line of inquiry is to determine whether occupational environments differ in their contributions to varying degrees of stress. Health care professions, including those of physicians, are frequently cited as among the most stressful occupations in terms of

exposure levels to specific stressors and overall measures of the negative effects of stress, termed impairment (Simpson & Grant, 1991; Freudenberger; 1986; May & Revicki, 1985).

Several recent changes have occurred which have led to exacerbated levels of physician stress. In the mid 1970's, a 'social transformation' of American medicine occurred, accompanied by a dramatic loss of confidence in the practitioners of medicine (Starr, 1982). This was related to a variety of factors.

During this time frame, the continued growth of medicine was called into question. Economically, this was the result of a series of economic recessions combined with high levels of inflation. A major shift towards the regulation of health care was subsequently undertaken, which ultimately contributed to an increased bureaucratization of medicine, the control of medicine by large, for-profit corporations, and a relinquishing of control by physicians of the medical decision-making process (Flaherty & Richman, 1986). Earlier, physicians had practiced in an environment which was relatively free of the regulations that have recently been established concerning the use of resources (Lewis et al., 1991).

The recent emergence of the Health Maintenance Organization structure has been theorized as leading to increased stress. The combination of heavy clinical demands

with cautious management of resources has contributed to an increase in job overload (Snibbe et. al., 1989). Also, many physicians are entangled in contracts with HMO's, PPO's, hospital ventures, and insurers who 'manage' the care that physicians provide. Physician control over their work has been reduced, in that patient care is now often dictated by individuals and organizations whose primary focus is money management, and whose training and education resides in business, not medicine. In many ways, physicians have become an organizational resource, rather than the center around which the organization revolves, a role change requiring adjustment (Stoline & Weiner, 1988).

The pattern of continuing high demand of their work, coupled with a decrease in the decision latitudes of physicians in their practice, has been hypothesized as significantly amplifying physicians' levels of stress (Karasek & Theorell, 1990). Some researchers point to decreases in career satisfaction relative to greater administrative burdens and increased time requirements in this area, producing either a longer work week or decreased attention to patient care.

Lewis and colleagues (1991) have discovered a significant decrease in physician satisfaction from 1985 to 1990 related to this particular pattern. In a large national survey of internal medicine physicians, respondents indicated a growing dissatisfaction with their practice,

primarily related to increased administrative burdens, the threat of malpractice, potential loss of income, and perceptions of lost clinical autonomy. Forty percent of those surveyed would discourage students from careers in internal medicine, and only 39% would again pursue their chosen career. The authors express deep-seated concerns related to the future of primary care and medical care in general, given these set of statistics.

Other changes in the medical environment were initiated by the consumer rights movement, which began to question the power and technical expertise of physicians on legal and ideological grounds. The lack of success of medicine in treating current chronic disease, following the significant accomplishments in the development of 'miracle drugs' to treat illnesses such as polio and tuberculosis, led to a decreased confidence in the ability of the physician to cure all, at all costs.

This strongly relates to the increased prevalence and nature of acquired immunodeficiency syndrome. In terms of its effect on physicians, this disease has led to a dramatic increase in the death of young people, increasing physicians' emotional stress connect to death. Despite evidence to the contrary, some physicians fear inadvertent inoculation, leading to heightened anxieties surrounding their own death (McCall, 1988).

A major realignment between medicine and the larger society has been brought to bear, leading to a decrease in the society's vision of the power of the medical practitioner. In general, this diminished status in the society is reflected by the rising incidence of malpractice suits, an experience which is often harmful to physicians' psychological well-being (Charles et. al., 1988). Starr (1982) has suggested that every movement towards regulation is followed by an opposite movement towards litigation, contributing to heightened levels of physician stress.

Another meaningful change in the medical environment has occurred in the proportion of women physicians practicing medicine. Women presently comprise over 34 percent of medical students and 28 percent of residents, and these numbers are rising (Little, 1990). A wide variety of studies suggest that women physicians experience higher, gender-specific levels of stress, as compared to male physicians (Levinson et. al., 1992; Simpson & Grant, 1991; Bowman & Allen, 1985).

Although increased research attention has been directed towards the impact and relationship of gender to the area of physician stress, a primary investigatory deficiency with practicing physicians has been the minimal attention directed towards cultural and racial factors in the medical environment. No reliable statistics exist on the nature of impairment with Afro-American physicians, reflecting the

fact that, in this group, few studies have addressed the influence of stress (Carter, 1989).

In general, research has clearly demonstrated that physician impairment is a significant problem. Some of the consequences of stress found in the health professions include decreased job satisfaction, reduced quality of health care, absenteeism, and mental health/medical problems (Revicki, May & Whitely, 1991). Few studies, however, have assessed levels of stress and utilization of effective coping strategies in successful and satisfied physicians (Quill & Williamson, 1990). The focus on impairment has aided in the increased openness towards the identification of a problem, but little has been accomplished in the area of solutions.

The previous research on stress and coping in physicians has also concentrated primarily on medical student and resident populations, to the relative exclusion of the developmental stage of practicing physicians. Research on the practice phase has often centered on faculty physicians working in academic setting, rather than those working in the community.

Early research which did center on the practice phase was primarily descriptive, often utilizing combinations of interviews and non-empirical questionnaires developed by the researcher. This research was driven by the purpose of exploring an area which had remained relatively hidden from

view, due to the "conspiracy of silence" which had developed in the medical environment in the area of physician stress (McCue, 1982). The primary emphasis of these studies involved investigating the sources and effects of stress in the practice of medicine from a variety of perspectives (Valliant et. al., 1972; Mawardi, 1979; McCue, 1982).

Later research has proceeded by investigators choosing predefined, operationally specific variables, correlating empirically measured levels of stress with the specified variables, and creating theoretical propositions of stress and coping based on the statistical relationship of the variables of interest. Thus, recent theories on stress in the practicing physician have been created on the basis of the researchers' choice of measured variables, as well as generalizations from other populations in the medical environment, such as medical students and residents.

In the general area of stress, early theories and research evolved from the discipline of physiology, spearheaded by the work of Hans Selye, and extended outward to psychology, education, anthropology, sociology, and medicine. The process of various disciplines advancing their separate interests brought increasing specialization to the field of stress. It also minimized research attention to interrelationships among variables and holistic understanding (Karasek & Theorell, 1990).

Recently, however, attempts have been made to bridge the problem of specialization to enhance understanding of the manner in which interrelationships exist. Stress research is increasing its attention to conceptual complexity and multiple levels of analysis (Appley & Trumbull, 1986). Interestingly, a significant missing link in this development has been the lack of attention to phenomenological, qualitative approaches to the understanding of the stress and coping process (Asthana, 1985).

Qualitative, phenomenological inquiry is designed to articulate the essential meanings that underlie the description of human experience, and approaches research believing that human behavior is an expression of meaningful experience (Polkinghorne, 1989; Giorgi, 1985). The units of research analysis are the natural categories of meaning used by the research participant, rather than the predefined theoretical propositions of the researcher (Hoshmand, 1989).

Rather than reducing human phenomena into isolated and linearly-related factors, qualitative inquiry deals with interrelatedness and human complexity. Its purpose is to produce clear and accurate descriptions of particular life experiences and their underlying meanings (Polkinghorne, 1989). The worldview of the research participant is granted primary importance in this regard (Hoshmand, 1989).

Related to this conceptualization is the fact that values and their relationship to stress and coping have been minimized in the occupational and general stress research areas. Rollo May (1980; 1977), in his work on existential anxiety, suggests that anxiety is a threat to values which an individual holds essential for existence. These values are interpreted in the context of an individual's relation to other people and their expectations, viewed in terms of symbols and meanings.

Normal anxiety, from May's perspective, is inseparably related to growth and creativity, in which the self becomes integrated at a higher level as experiences of normal anxiety are dealt with successfully. Growth towards maturity is the goal. With maturity, the satisfaction of an individual's values becomes less significant compared to the actual holding of the values. I would propose that the term 'stress' could replace anxiety in May's framework. It is recognized that knowing an individual's values is an important aspect in assessing whether an experience will be deemed stressful, both in work and non-work situations (Sutherland & Cooper, 1988). However, occupational stress inventories rarely assess this dimension.

A personal fact related to the nature of this investigation is that I have been working with family physicians during the past four years. I have taught family practice residents about stress and coping in their work as

physicians, and have been involved in a number of situations in which the consequences of working in a stressful profession were readily apparent. In terms of the qualitative nature of this research, I believe my work with physicians, as well as my own personal experiences with working in a stressful occupation, will serve as a benefit to the study.

This dissertation is designed to address the historical development and methodological shortcomings of previous research efforts. These include the changes which have occurred in the medical environment, the limiting factors inherent in strictly empirical investigations, and research's minimization of certain dimensions of physician stress. The study is conceived as a qualitative, phenomenological inquiry, which will explore the concepts of stress and coping in the context of their relationship to life meanings and values with practicing family physicians.

The physicians who will serve as subjects for the research have been identified as relatively successful and satisfied in their work, a distinct difference from the wealth of research which focuses on physician impairment. The choice of family medicine is related to research which indicates this specialty is prone to high levels of stress (May & Revicki, 1985). I believe my personal knowledge of the family physician culture, as well as the nature of

qualitative inquiry as it relates to this particular specialty, are benefits to this investigation.

Kuzel (1986) suggests that qualitative inquiry is an appropriate model for the specialty of family medicine. The qualitative paradigm is viewed as more consistent with family medicine's focus on the individual within his or her environment, as well as the specialty's professed concern for understanding and working with the perspective of the patient on health and illness issues. It is the intention of this study to bridge the philosophical underpinnings of naturalistic inquiry with those who practice the specialty of family medicine.

CHAPTER II

REVIEW OF THE LITERATURE

A. GENERAL MODELS OF STRESS

1. Response Models of Stress

Research interest in the field of stress has exploded in the past three decades. A central figure in the history and development of this area is Hans Selye (1956; 1974; 1980; 1983). The genesis of Selye's theories developed in his medical student years, in his observations of the 'syndrome of being sick' which, according to Selye, involves a constellation of nonspecific factors of illness unrelated to the specific nature of the disease entity. In addition to the specific, source-related responses to various environmental events in the disease process, a nonspecific pituitary-adrenal reaction is also inevitably involved. This experience led to Selye's formulations on the nature of stress, the view that stress is a 'nonspecific response of the body to any demand' (1956, p. 53).

This generalized pattern of reaction was labeled the "general adaptation syndrome" (GAS), and consists of three stages: 1) alarm reaction, in which a stressor causes an initial activation through two phases: shock phase, which is the immediate reaction, and countershock phase, which is a rebound reaction consisting of a mobilization of defenses;

2) stage of resistance, in which a dramatic reduction in the alarm reaction occurs, as resistance to the stressor is developed; and 3) stage of exhaustion, where, if a high level of stress continues unabated, a series of detrimental physiological processes begin to occur, such as ulcers and lowered resistance to infection, potentially leading to death. The effects of stress are both cumulative and additive, as they accumulate over time and are augmented by previous reactions to the stressors.

Selye (1983) suggests that the general adaptation process involves a capacity to adapt to the demands of life, that the energy expended in adaptation is of limited supply, and that stress is an inescapable fact of life. Each stressful activity promotes 'wear and tear' on the body, and wise and sparing use of the body's resources is recommended.

Selye's work extended the theories of Claude Bernard (1859) on the maintenance of the "milieu interior" and the physiologist Walter Cannon's (1932) principle of homeostasis. Both emphasized the tendency of the body to self-regulate towards a steady state, despite external changes. Cannon developed the idea of the "fight or flight" reaction as a response to threat that is directly related to survival.

One of Selye's (1980) more significant elaborations of their work involves his description of the four basic variations of stress: eustress, viewed as a positive or

curative stress; distress, which is unpleasant and damaging; overstress (hyperstress), which exceeds the limits of adaptability; and understress (hypostress), generally viewed as boredom and/or a lack of self-fulfillment. Figure 1 graphically illustrates Selye's conceptualization (see following page).

Although Selye's work originally stemmed from principles of biology and physiology, he later extended these principles to develop a philosophically-oriented framework. Balance and purpose are viewed by Selye (1974; 1983) as keys to healthy functioning. On the one hand, this entails facilitating the development of greater eustress, while minimizing distress, and balancing the forces of hyperstress and hypostress. At a deeper level, Selye encourages the development of purpose and meaning as a means to self-pride and self-respect.

The interrelationship of biology and philosophy which Selye espoused has generally received minimal attention in the critiques of his work. Criticisms have centered on the nature of the all-or-none nature of the nonspecific physiological response, as well as the issue of the influence of psychological factors in terms of intensity, direction, and duration (Appley & Trumbull, 1986). Others

Figure 1. The four basic variations of stress (Selye, 1980, p. 142).

criticize Selye's minimizing of the active processing/ appraising by the individual in the evaluation of stress, and view his conceptualization as overly passive (Lazarus & Folkman, 1984).

Nonetheless, the biological tradition which Selye espoused helped spur the development of a new field, psychoneuroimmunology, which generally examines the interaction between stress factors and immune system functioning, and the process by which this interplay influences the onset of disease processes. It has been suggested that stressful events can create immunological disruptions and subsequent health-related consequences, ranging from the common cold to cancer (Kiecolt-Glaser & Glaser, 1988). As a whole, Selye's work generally focused on the response dimension of the stress continuum, how the individual responds to stressful factors. I would like to now turn to a consideration of the research which has focused on stimulus models of stress, which address the precipitating role of environmental factors in the production of various stress symptoms.

2. Stimulus Models of Stress

The primary line of research in this arena is the life change model of stress. This conceptualization suggests that life change, which reflects environmental demand, requires a certain level of adjustment on the part of the individual. If psychosocial and physiological efforts for

adjustment are severe and of substantial duration, individuals become predisposed towards the development of illness (Rahe & Arthur, 1987).

The Schedule of Recent Experiences (SRE) is an instrument which conceptualizes stress in terms of the frequency and intensity of change in life events over a one-year period of time. A variety of studies relating scores on the SRE to subsequent illness have established correlations generally ranging from .20 to .30 (Schroeder & Costa, 1984). More significant relationships have been found in the correlations between life events and psychological, rather than physical, symptoms (Edwards, Baglioni & Cooper, 1990).

Criticisms of the life events approach generally involve three issues: the use of contaminating factors that inflate the nature of the life event-illness relationship, the presumption of a linear and unidirectional relationship which flows linearly from stimulus (life change) to response (illness), and the manner in which person and environment are treated as static phenomena (Lazarus & Folkman, 1984; Schroeder & Costa, 1984).

3. Personality Models of Stress

A third line of research utilized in the study of stress involves the identification of personality variables which can influence the effects of environmental factors. In this context, a significant amount of research has been

conducted on two diverse sets of personality clusters, Type A personality and the hardy personality, to determine their relationship with stress.

The Type A personality style is generally characterized by a sense of time-urgency, competitiveness, impatience, hostility, aggressiveness, and vigorous speech and motor mannerisms. Internally, type A's carry deep feelings of insecurity and inadequacy masked by a facade of competence and control (Friedman & Rosenman, 1974).

The initial research in this area demonstrated great promise, particularly in demonstrating a significant relationship between Type A and coronary heart disease. But further research has suggested more inconclusive, if not skeptical, results (Thoresen & Powell, 1992). It has been suggested that hostility and other anger-related variables constitute the most damaging aspects of the Type A cluster (Contrada, 1989).

Gender differences have been investigated in the Type A literature. Generally, women and men demonstrate equivalent levels of Type A characteristics, particularly when education, occupation, or socioeconomic status are controlled. When assessing the impact of age, several cross-sectional studies suggest a curvilinear relationship, with less Type A qualities in very young and older women. Type A women generally have higher occupational levels, their jobs are reported as more stressful, and they

experience greater levels of stress and poorer health (Dearborn & Hastings, 1987; Kelley & Houston, 1985). In many ways, this pattern fits the work structure of women physicians.

A conceptually different personality cluster, termed hardiness (Kobassa, 1979), has been suggested as ameliorating the impact of stress. The construct of hardiness consists of three dimensions: commitment, which reflects a sense of meaningfulness and value in one's life; control, representing the belief that one is responsible for and can influence the direction of one's life; and challenge, reflecting the idea that change is normal and positive, and possesses the potential for personal growth. This cluster of beliefs protects the individual by diminishing the stressfulness of an event, and therefore, the manner in which stress affects health (Wiebe, 1991).

Research results in this area have been equivocal. Kobassa's (1982; 1979) work suggests that hardy individuals are physically healthier in their self-reports and show reduced physiological responsiveness when faced with stress. This involves their proposed capacity to appraise stress as more positive and controllable, thereby short-circuiting the stress response to threat (Allred & Smith, 1989).

A primary criticism of the hardiness construct involves the question of the unitary nature of the hardy personality. In this context, the challenge dimension has been suggested

to be a questionable contributing factor to hardiness. Other criticisms involve the effects of hardiness on actual versus self-reported health, as well as the specific question of the buffering effect of hardiness of health (Hull, Van Treuren, and Virnelli, 1987). Questions have also been raised concerning the applicability of the hardiness concept to women, particularly considering the overwhelming use of male samples in the research literature (Wiebe, 1991; Schmied & Lawler, 1986).

Studies which have investigated the potential interactive effects of hardiness and Type A present equivocal results, with some research suggesting hardiness possesses a more protective effect with Type A's (Kobassa, Maddi, and Zola, 1983), while other research suggests that physiological responsiveness to stress is lowest among Type B's high in hardiness (Contrada, 1989).

4. Cognitive Appraisal and Coping Processes

Further refinements in the research on stress have concerned the nature of intervening variables in the impact of stress on the individual. The role of perception and coping as mediators between the sources and affects of stress have been examined in this context. Perception of stress, also known as cognitive appraisal, refers to a set of judgements about the nature of stress as it relates to the individual's well-being (Lazarus & Folkman, 1984).

It is theorized that three types of cognitive appraisals exist: primary, in which the person evaluates what is at stake in a stressful situation; secondary, in which the person evaluates their coping options; and reappraisal, which serves as both a feedback loop regarding information about oneself and the environment, and as a defensive or useful coping option (Folkman et. al., 1986).

In the cognitive appraisal framework, there are four factors involved in appraising stress which influence the choice of coping: 1) degree of uncertainty; 2) degree of appraisal threat; 3) the presence of conflict; and 4) the degree of helplessness. Appraisals are viewed as stemming from personality characteristics, such as motivation, values, recognition of resources, and personal belief systems (Folkman & Lazarus, 1988a). Individual differences in these areas help explain variations in appraisal, ranging from threat to challenge.

A second factor which varies among individuals and significantly influences the impact of stress is coping. Coping generally refers to the individual's efforts to manage the demands of the situation that is appraised as overloading their resources (Folkman et. al., 1986). According to the Lazarus/Folkman model, coping possesses two major functions: dealing with the problem that contributes to the distress, referred to as problem-focused coping, and regulating the emotional aspects of the problem, labeled

emotion-based coping. It is thought that people utilize both forms in most encounters with stress.

A major criterion involved in the choice of coping strategies involves the extent to which the desired outcome is within the person's control. If it is, problem-focused methods designed to solve the problem are appropriate, and emotion-based coping is an interfering factor. If the outcome is not within control, then emotion-based methods are fitting, and problem-focused strategies will, in all likelihood, generate frustration and anger (Folkman & Lazarus, 1988a).

Folkman and Lazarus (1988b) have developed a scale, The Ways of Coping Questionnaire, which measures various coping strategies which individuals utilize in dealing with stress. The process of scale development led to an identification of eight coping strategies: confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal. The first six of these comprise emotion-based methods, the latter two are considered problem-focused strategies.

In a literature review and meta-analysis, Methany and colleagues (1986) present information on both the types and frequencies of coping behaviors and resources cited in the research literature, as well as an analysis of treatment effectiveness for stress-related difficulties.

Those coping behaviors which were the most frequently cited in research included cognitive restructuring, problem-solving, tension reduction, use of social skills, and self-disclosure/catharsis. Frequency of citation of coping resources, which the authors differentiate from coping behaviors, included social support, positive beliefs/values, self-confidence, wellness, and positive self-esteem.

The meta-analysis of treatment effectiveness revealed the following strategies, in descending order, as most helpful: cognitive restructuring, relaxation, stress monitoring, problem solving, and social skills training. In general, strategies designed to directly address a stress-related problem are viewed as preferable to actions which are designed to tolerate the stressful experience (Methany et. al., 1986).

One particular factor relevant to this investigation which has been previously studied is the influence of age differences in the coping process (Folkman et. al., 1987). Age-related changes are generally conceptualized from either a developmental perspective, which suggests that as people age, there are inherent changes in the way they cope, or a contextual perspective, which implies that age differences result from the changes in what people must cope with as they age. Research support exists for both interpretations, which suggests an interactive person-environment perspective.

Generally, coping is emerging in the research literature as a multidimensional process, and is viewed as a mediator of emotions in a dynamic, mutually-reciprocal relationship. This perspective holds that when a person-environment transaction is viewed as significant for a person's well-being, this appraisal generates emotion, which influences coping processes, leading to a reappraisal of the person-environment relationship and a change in emotion (Folkman & Lazarus, 1988). Figure 2 illustrates these reciprocal relationships (see following page).

Two coping dimensions of particular relevance to this study include exercise and spirituality. Raglin (1990) has reviewed the effects of exercise on various dimensions of mental health. A review of the literature suggests that the primary psychological benefit of exercise for healthy individuals may be prevention of stress-related difficulties. For those with mild to moderate emotional disorders, exercise may provide a treatment function. Overall, the research tends to recommend the use of 20-40 minutes of aerobic activity to maintain and enhance positive feelings of well-being.

Spirituality has received scant attention in the research of stress and coping. Pollner (1989), in his discussion of the influence of spirituality on stress and coping, cites recent surveys demonstrating the significance

Figure 2. Coping as a mediator of emotion (Lazarus & Folkman, 1988, p. 467).

of the spiritual dimension in the lives of many. Results indicate that 87% of adult Americans pray to God, 69% feel that God has guided them in making decisions, 36% believe that God has spoken to them "through some means," and 47% report they have experienced a spiritual force that "seemed to lift them out of themselves." A significant difference seems to exist between strong popular use and minimal attention in stress research to the spiritual dimension. Pollner suggests that a relationship with a deity may both reflect and encourage a positive re-framing of all personal and career realities.

5. Person-Environment Models of Stress

Consideration of appraisal processes, such as positive re-framing, has been accompanied by a significant shift in stress theory. Rather than focusing on sources of stress, such as life events, or personality variables, such as Type A or hardiness, or physiological responses, such as Selye's general adaptation syndrome, attention has turned towards the manner in which the nature of the person interacts with the nature of the environment. The person-environment theoretical perspective emphasizes the relationship between person and environment, and addresses both the characteristics of the individual and the nature of the environment (Lazarus & Folkman, 1984). The transactional relationship is seen as unique, complex, and modulating.

In the stimulus, response, and personality models of stress, research variables are reduced and separated to cause or effect. The definition of stress is dependent on which reductionist lens is utilized to perceive the world. Transactional person-environment stress theory views the person and the environment in a "dynamic, mutually reciprocal, bidirectional relationship" (Lazarus & Folkman, 1984). Individuals are viewed as active interactors with an active environment.

One of the more significant offshoots in the shift to person-environment theories of stress is an amplified assessment of the influence of the environment in the stress process. In this context, Slavin and colleagues (1991) have theorized on the role of culture in the stress process. They note that the manner in which culture affects individuals' stress and coping patterns has received minor theoretical and research attention. It is thought that culture can provide a profound and meaningful impact on how the individual experiences his/her world, so that belonging to a particular culture can significantly affect the nature of stress that an individual experiences.

These authors extend the Lazarus/Folkman conceptualization, and suggest that cultural knowledge and meanings strongly impact the appraisal and coping process. They criticize the original appraisal model for its emphasis on a "Euro-centric" perspective, in which individualistic

goals are pursued, and individual striving and achievement are idealized. This model is viewed as not applying to all cultural groups.

A particular environment which has received significant research consideration in the stress literature is the occupational environment. I will now turn to the nature of this research, and proceed from general theories and investigations in the area of occupational stress, to a more specific and refined exploration of the physical stress literature.

B. OCCUPATIONAL STRESS

1. Sources of Stress

The nature of work is receiving increased research attention as a contributing factor to stress-related difficulties. In a person-environment configuration, this attributional focus is primarily attending to the nature of the environment. Some theorists suggest that the source of the work stress problem is the work organization itself (Karasek & Theorell, 1990).

This dynamic seems to be a compensation for the historical amplification in occupational stress research of identifying individual worker characteristics as primary causative factors of stress-related problems. Nonetheless, it is clear that the job environment possesses several

psychosocial risk factors leading to the unhealthy consequences of stress and strain.

A long line of research has outlined several risk factors which are proposed to directly impact the well-being of individuals, families, and society through the exacerbation of distress (Beehr & Newman, 1978; Beehr, 1985; Harrison, 1985; Sutherland & Cooper, 1988; Lang, 1992). Primary among these is the issue of personal control which the worker exercises over the level of job demand. Lack of control in the workplace is one of the single greatest contributors to physical and psychological strain (Karasek & Theorell, 1990). When control is not commensurate with demands, adverse consequences are thought to occur (Sauter, Murphy & Hurrell, 1992).

Karasek and Theorell (1990) have proposed a job stress theory validated by research which involves the relationship of job demands and decision latitude. Their model posits that the primary work-related stress risk factor is not necessarily the level of work demand, but the amount of control one possesses in meeting the demands of the job and how one applies their skills.

In their conceptualization, the most stressful job is where the job demands are high, coupled with minimal opportunity to make decisions or decide which talents to utilize. When possibilities for control are perceived as minimal, low production and stress symptoms result. Nursing

is a profession in the medical environment which is suggested to be reflective of this dynamic. In general, Karasek and Theorell (1990) propose that the jobs at highest risk involve low decision latitude, high demand, low skill level, and are socially isolated.

A different type of work situation in the medical environment involves a combination of high job demand combined with high decision latitude. When decision latitude is high, opportunities for taking responsibility and exercising control through participative decision-making are in place, resulting in demands being seen as challenges and opportunities, and being associated with greater learning, motivation, and improved performance (Karasek & Theorell, 1990). Other proposed benefits of a high decision latitude level include heightened feelings of self-efficacy, reduction of uncertainty, and increased feelings of internal control and job meaningfulness (Landy, 1992).

Physicians have been presented as an occupational group which reflects these particular relationships. However, decision-making power for physicians has been significantly reduced through changes in the medical-insurance-government environment. In keeping with the theory, stress for physicians has been significantly increased through a reduction in decision latitude not commensurate with a reduction in job demands.

A second and related element of the job environment which contributes to stress involves role overload. This dimension is defined as the extent to which job demands exceed resources. Landy (1992) suggests that jobs with overload potential are those in which the most significant and frequent tasks have a high time urgency value. One can think of several aspects of a physician's role which fit this perspective of role overload.

A third aspect of the job environment suggestive of high levels of stress involves role conflict. Previous research has delineated four stress-producing dimensions of role conflict: intersender conflict, intrasender conflict, interrole conflict, and person-role conflict (Sutherland & Cooper, 1988; Beehr, 1985).

Intersender conflict involves a conflict in expectations or demands between two factions of a work group, a situation in which different people want the worker to do different things. A physician caught between the demands of an insurance company and a patient is an example of this. Intrasender conflict occurs when the same member of a work group desires the worker to perform mutually incompatible roles.

Interrole conflict occurs when an individual experiences conflicting demands between members of a group at work and one outside of work, such as a physician feeling caught between work and family expectations. Person-role

conflict occurs when a conflict exists between one person's values and the demands of the work group. An example of this is a physician who holds a hospice value towards dying working in an academic hospital, an environment which typically supports the performance of all measures to keep a patient alive.

Role ambiguity is a fourth job environment factor which research suggests is a contributing factor to occupational stress (Kasl, 1992; Sutherland & Cooper, 1988). Role ambiguity refers to a situation where a worker lacks information to perform, or lacks understanding in realizing expectations associated with a particular work role. A lack of training or moving from one job to another are specific examples of role ambiguity difficulties.

Research has also pinpointed responsibility as a potential contributor to occupational stress. 'Responsibility for people' is an inherently stressful aspect of certain types of work. The role of physician, in terms of dealing with emotionally-charged life and death decisions, is an example of a job with responsibility-stress dilemmas (Maslach & Jackson, 1962).

Work schedule patterns have also been demonstrated as a potential occupational risk factor. Substantial research evidence indicates that the temporal scheduling of work can have a significant impact on an individual's well-being. Rotating shifts and permanent night work are specific

entities germane to physicians which have been connected to a variety of stress-related disturbances (Sauter, Murphy & Hurrell, 1992).

The existence of poor relationships between members of a work group can also lead to distress. These are characterized by mistrust, low levels of supportiveness, and a minimal interest in problem-solving within the work organization (Sutherland & Cooper, 1988).

Quick and Quick (1984) have identified five interpersonal stressors related to social system relationships in the work place which have a bearing on physician stress. The first of these, status incongruence, is an incongruity between one's status at work and what one believes it should be. The change in status of physicians in today's society is a particularly relevant issue in this context.

The second stressor is termed social density, and refers to the effect of 'crowding' on an individual's well-being. Increased susceptibility to contagious illness in a hospital environment is an example of this notion. The third category is abrasive personalities, in which perfectionistic, hard-driving persons may ignore interpersonal aspects of relationships and induce feelings of inadequacy in others. This pattern becomes stressful for the entire work system. Later discussion of the research

literature on physician personalities will elaborate on this dynamic.

The fourth factor is leadership style, which emphasizes the importance of a good working relationship between leaders and subordinates. The final element is group pressure, in which conformity to group norms becomes stressful if a lack of person-environment fit exists between the values, beliefs, and/or behavior of the individual and the norms of the work environment.

As in the general framework of stress, the occupational stress literature suggests several specific facets of the individual which can either exacerbate or attenuate the experience of stress. Included in this domain is any characteristic of the individual which may influence the perception of stress and the perception of the work environment. This could include the physiological and psychological states of the individual, life stage developments, internal qualities, such as needs and values, as well as personality characteristics (Sutherland & Cooper, 1988).

Previous discussions of the role of personality variables and cognitive appraisal are also relevant to the occupational stress literature (Landy, 1992; Sutherland & Cooper, 1988; Harrison, 1985; Beehr & Bhagat, 1985). The issue of the occupational environment reinforcing Type A behavior is a relevant issue for physicians, particularly

with recent research evidence suggesting Type A as a predictor of accident involvement (Sutherland & Cooper, 1988). The significance of cognitive appraisal in determining the impact of the sources of work stress on the individual continues to receive research corroboration (Segovis, Bhagat & Coelho, 1985). Other research lines continue to verify the personality triad of commitment, control, and challenge as factors promoting stress resistance in the work setting (Kobassa, 1988).

In the area of values, the general line of thinking is that stress and impairment will arise when important values of the individual are not satisfied by the nature of their work life. The needs and values which have been identified as mediators in response to organizational stressors include achievement, self-control, interpersonal recognition and acceptance, responsibility, meaningfulness of purpose, stimulation, and intrinsic satisfaction (Sutherland & Cooper, 1988).

Healthy work environments have received significantly less research attention than studies investigating stress difficulties associated with work. Locke (1976) identified several components of healthy work which have received subsequent research support (Kasl, 1992).

These include the following: 1) work represents mental challenge (with successful coping) and leads to involvement and personal interest; 2) work is not physically too tiring;

3) rewards for performance are just and meet aspirations; 4) working conditions are compatible with physical needs and they facilitate work goals; 5) work leads to high self-esteem; and 6) the work environment facilitates the attainment of job values. It is interesting to note that half of these conditions (personal involvement, self-esteem, values) represent areas which previous research efforts in occupational stress have minimized. It does seem that the investigatory focus on pathology has delayed the implementation of successful solutions to the problem.

A variety of models have been proposed to elucidate the complexity of mechanisms involved in occupational stress (Ieita & Sauter, 1992); Karasek & Theorell, 1990; Cooper & Payne, 1988; Beehr & Bhagat, 1985, Beehr & Newman, 1978). Two models particularly relevant to physician stress will be outlined to serve as a framework for the presentation of the more specific research. The models include the facet analysis model of Beehr & Newman (1978) and the person-environment model of occupational stress (Harrison, 1986).

2. Facet Analysis Model of Occupational Areas

Beehr and Newman (1978) have presented a seven-facet conceptualization of the job stress - worker health domain. Job stress is conceived in terms of the person-environment misfit between worker and job environment. This can be considered in terms of either a mismatch of the person's skills and abilities with the requirements of the job, or a

lack of fit between the resources of the job environment and the person's needs. It is hypothesized that a misfit of either kind produces physiological/psychological strain when a threat to the individual's well-being occurs. In their model, job stress is defined as "a situation wherein job-related factors interact to change (i.e., disrupt or enhance) his or her psychological and/or physiological condition such that the person (i.e., mind-body) is forced to deviate from normal functioning" (p. 670).

The seven major dimensions of the model include the environmental facet, the personal facet, the process facet, the human consequences facet, the organizational consequences facet, the adaptive responses facet, and the time facet.

The environmental facet includes components of the work environment that are likely to be involved in job-related stress. These include job demands and task characteristics, role demands or expectations, organizational characteristics and conditions, and the organization's external demands and conditions.

The personal facet involves a variety of characteristics which may lead to increased susceptibility to stress. Included in the category are personality traits, behavioral characteristics, physical conditions, life stage characteristics, and demographics.

The process facet represents the psychological and physiological processes that provide linkages between facets. These can occur between the environmental and personal facets, and/or between the consequences and adaptive response facets. This may involve psychological processes, such as perceptions and evaluations of situations and/or physical processes, such as neurotransmitter pathways.

The human consequences facet possesses all positive and negative aspects of physical and mental health. This category may involve psychological health consequences (i.e., depression), physical health consequences, (i.e., cardiovascular disease), or behavioral consequences, (i.e., substance abuse). Although positive dimensions are addressed in their article, the examples presented by the authors focus on pathology.

The organizational consequences facet reflects the effects of job stress on the quality of the work organization. The adaptive response facet includes various approaches to dealing with stress. These may involve adaptive responses by the individual, the organization, or third parties.

The final facet, time, is theorized to run through all other facets as linkages between facets depend on the passage of time. Depending on the sampling time period, elements of the facet could serve as cause, effect,

mediating or moderating variables. Beehr and Newman suggest longitudinal field research as facilitating a greater understanding of the relationships between job stress and worker health.

Figure 3 represents the relationships of the seven facets as contributors to a general model of stress.

The facets of the model are proposed to interact in a complex fashion. It is theorized that elements of the personal and environmental facets interact through the process facet potentially to produce human and organizational consequences. Adaptive processes are undertaken which may, in turn, impact on the personal and environmental facets. If, over time, the adaptive responses are unsuccessful, more severe secondary consequences may occur. If the stress continues unabated, permanent and long-term affects may accrue.

3. Person-Environment Model of Occupational Stress

In the person-environment model of occupational stress, the environment consists of the work environment which, coupled with characteristics of the individual, potentially can serve as significant contributors to stress (Harrison, 1985). As discussed in the facet model of stress, two types of fit are conceived to exist between the individual and the job environment. The first of these is the extent to which the job provides resources and rewards to meet the needs of the individual. Misfit in this context produces individual

Figure 3. Facet model of occupational stress (Beehr & Newman, 1978).

strain. The second type of fit is the extent to which the abilities of the individual meet the job's demands. This type of misfit produces organizational strain.

Harrison (1978) describes physicians as individuals who select a job environment for its potential future gratification in the person-environment fit domain. Having decided that medicine "will be a good fit with his needs and values, the individual begins to cope with the present lack of fit between himself and the job by acquiring the skills and abilities which are necessary" (p. 199).

Developmentally, physicians foresee need value realization in the future, a path which can be fraught with difficulties if the future environment is transformed. The medical environment has changed, which the theory suggests can be stressful if the person-environment fit is compromised.

In the context of this investigation, person-environment theory emphasizes goals which the individual worker strives to attain (Harrison, 1985). Goals generally involve meeting both the basic needs and personal values/meanings which the person has created over time. When important values are not realized, a person-environment misfit is generated, and the well-being of the individual suffers.

I would now like to turn to a discussion of the specifics of physician stress, and review the research

literature from the frameworks which have been presented in previous sections.

C. PHYSICIAN STRESS

1. Early Research

Research in the area of physician stress has proceeded along conceptually diverse lines. One approach compares the work of physicians with other occupations parallel in socioeconomic status to determine both its individual and comparative status in the stress domain.

Caplan and his associates (1975) studied 2010 individuals from 23 diverse occupations, and found that assemblers and relief workers on assembly lines were exposed to the highest overall levels of stress and strain as compared to other occupations. Family physicians, the only health care occupation studied in the sample, possessed the highest stress levels in the variables of work overload, people responsibility, and job complexity. Overall, they were not judged to be more stressed than other comparable occupations.

Valliant and his co-workers (1972), in a longitudinal prospective design, studied 268 college sophomores, including 46 who later became physicians, in an effort to assess comparative dimensions of occupational and personal stress during a time frame of 30 years. Results from nonempirical questionnaires developed by Valliant and

occasional interviews served as data for the study. Comparatively, physicians were suggested as more likely than socioeconomically-matched controls to be in marriages of poor quality, to engage in drug and alcohol abuse, and to obtain psychotherapy for their emotional difficulties.

The individuals experiencing significant stress were judged to possess vulnerability to emotional disorders which preceded medical school, such as childhood instability or adolescent maladjustment. Physicians, according to Valliant, were "more likely to exhibit traits of dependency, pessimism, passivity, and self-doubt" (p. 374), which made them more susceptible to the occupational hazards of medicine. Rather than attributing difficulties to the nature of the medical environment, Valliant's work exemplifies attention to individual, intrapsychic phenomena as primary contributors to stress and strain.

In this vein, Gabbard (1985) has suggested that "compulsiveness is the hallmark of the physician's personality" (p. 2926). Doubt, guilt feelings, and an exaggerated sense of responsibility are viewed as forming a 'triad of compulsiveness' that characterizes the personality makeup of a physician. Individuals with these traits, according to Gabbard, are drawn to the profession of medicine, and fit in an unhealthy person-environment sense. Medicine, unfortunately, enhances and reinforces the

unhealthy patterns. Society and the work system value these qualities, but they exist at a personal cost.

Overall, physicians are viewed by Gabbard as needing to be valued and needed by patients in order to maintain a psychological equilibrium. Stress and coping dimensions are not directly discussed. The personality characteristics he presents however, directly relate to the framework proposed by Valliant, in terms of personality patterns producing increased susceptibility to stress-related disorders.

A third psychodynamically-oriented researcher is Krakowski (1982), who interviewed 100 physicians from various specialties on questions related to the identification of career stressors, patterns of coping, lifestyle choices, family relationships, and health beliefs. The sample primarily consisted of white married males, with an average age of 44 years and 18 years in their current specialty. Internal medicine was the most represented specialty, followed by surgery and family practice.

Krakowski suggests the following characteristics: 1) inadequate physical stamina, leading to confusion concerning the biological nature of human beings; 2) a combination of a strong but distant father, with a strong, warm, and close mother who encourages educational pursuits; 3) a fear of death, resulting from severe illness in the individual or a family member; 4) this fear is repressed and transformed through reaction formation into a need to fight illness in

others; and 5) a desire to become a physician at a relatively young age.

Other results of this study concerned the personality makeup of the research sample. Results validated Gabbard's thinking on physician compulsivity, which in their sample was reflected by a lack of restful leisure time, as well as their styles of reacting to stress in general. Once again, this line of research points to the personality of the physician as the primary culprit in producing a significant number of stress-related difficulties.

Mawardi (1979) utilized interviews and non-empirical questionnaires to assess the satisfactions, dissatisfactions, and sources of stress in practicing physicians. The sample consisted of approximately 180 alumni in 9 different medical specialties who were randomly selected graduates of Case Western Reserve School of Medicine from 1956 through 1965.

Her results are significantly different from previously-discussed studies. As a whole, research participants of this investigation were satisfied with their careers and their personal lives. Greater numbers of satisfactions than dissatisfactions were reported, with very few physicians stating they would choose a different career if given a second chance.

The greatest satisfaction related to being needed, a dynamic which correlates with other psychodynamic

investigations. Successes were reported in the enjoyment of successfully managing difficult cases, the development of personal relationships with patients and their families, and the financial rewards of practice.

The largest source of stress concerned the aspect of time, a combination of a lack of leisure time and the time pressures of work. 'Too many patients to see in too short a time' was a frequently-cited stressor. Those in private practice were most affected by time pressures.

Correlations of satisfaction level with particular types of stressors revealed that those scoring highest on job satisfaction were most stressed by the changing image of the physician in society and by blocks in the medical environment to providing the best possible care for their patients. Those with the lowest satisfaction scores were bothered by middle of the night phone calls and the lack of leisure/family time. General practitioners scored next-to-last in job satisfaction among the various specialties.

Mawardi suggests that group practice is essentially a healthier work environment than private practice for the physician, due to the nature of support and time overload reduction available in the group organization. She concludes that many of the new sources of stress at the time of the study were related to a significant breakdown in the traditional physician-patient relationship.

Mawardi's research methods and findings possess a significantly different conceptual attitude than other previously-discussed research. Physicians in her sample were presented as much healthier and personally/ occupationally satisfied, and career successes were highlighted in her findings.

In a general sense, the early research on physician stress focused on questions concerning the magnitude of physician impairment. Related issues concerned the degree to which this impairment could be attributed to personality dimensions or to the occupational environment of medicine, and to what extent physicians as a group are successful in coping with their work-related stressors.

A large national survey specifically related to the specialty of family medicine attempted to answer some of these questions (McCranie, Hornsby & Clavart, 1982). Utilizing a non-empirical 76-item questionnaire developed by the authors as the source of data generation, graduates of family practice residencies from 1970-1979 were randomly surveyed, and assessed on measures of career satisfaction, work-related stressors, and specific aspects of their practice.

The survey received a 52% response rate, with approximately 1000 family physicians serving as research subjects. The sample was primarily male, white, and under 35 years of age. The majority were either in a partnership

or family practice group, worked between 50 and 70 hours per week, and were seeing between 16 and 30 patients per work day.

Results indicated that the majority of physicians were experiencing moderate to high levels of satisfaction. Lowest satisfaction scores were correlated with the time dimension, as in Mawardi's investigation. Again, practice time requirements and lack of leisure and family time were stressors associated with low levels of satisfaction. A difference in this study, however, related to the high levels of stress associated with the interference of external regulations and agencies to the physician-patient relationship. It seems that the difference in sampling periods (sixties versus seventies) would be a significant explanatory factor for this difference.

In terms of demographic variables, gender was not significantly associated with levels of stress or certain types of stressors. The variable of practice experience was suggested to be significant, with physicians in practice for four to seven years as less likely to be satisfied with their practice than those in practice for less than two years. Similar to Mawardi's results, those practicing in groups were less likely to report dissatisfaction and stress as compared to those in solo and partnership practice.

In essence, results such as Mawardi's and McCranie's highlight the nature of the occupational environment, versus

the individual's personality, as a significant contributing factor to stress and career dissatisfaction. In a descriptive article, often cited in the physician stress literature, McCue (1982) addresses both the nature of the person and the environment as causal agents. He identifies several sources of physician stress, the effects of such stress on the well-being of the physician and the health care provided, and the manner in which physicians typically cope with their stress.

McCue's paper primarily focuses on the unhealthy adaptations to what he terms are the "stresses that are an inherent part of medical practice" (p. 456). Stressors identified by McCue include working with strong emotional aspects of humanity, such as suffering, fear, sexuality and death, inadequate training for handling fundamentally necessary medical tasks, and dealing with unreasonable demands from patients and/or society.

McCue points to various consequences of stress as reflecting the severity of the problem. Among medical students, the need for psychotherapy, the fact that suicides are second to accidents as a cause of death, and the common problem of drug abuse are presented as evidence. In residents and practicing physicians, impairment is found in suicide rates, levels of substance abuse, and low rates of career and/or marital satisfaction.

Problems with coping styles are also discussed. McCue suggests that physician retreat from family life is the most common adaptation to work related stress. Other problems stem from a tendency towards social isolation and the denial of professional problems. Physician denial, according to McCue, has resulted in a 'conspiracy of silence,' which not only serves as an obstacle to investigating the effects of stress, but also compounds the consequences by blocking the healthy function of discussing stress in an honest and supportive fashion.. Openly and directly discussing the nature of physician stress could counteract the typical physician styles of suppression and distancing, and lead to healthier lives and improved health care.

McCue highlights the importance of the early training years as forming the foundation for learning stress and coping patterns. In this context, a significant amount of research has been conducted on the medical school years and residency, partially to determine the sources and effects of stress during these years, and partially to determine the developmental influences of these training years on the practicing physician.

2. Medical School and Residency

In a thought-provoking article, McKegney (1989) refers to medical education as "a neglectful and abusive family system" (p. 452). Consequences of being raised in the abusive environment of medicine, according to this

viewpoint, include unrealistic expectations of self and others, denial, dysfunctional patterns of communication, rigidity, and isolation. Interestingly, these are qualities similar to the previous individual psychodynamic interpretations of the physician stress phenomenon.

These consequences are attributed to the fact that the early training and education physicians receive in coping with stress is rare. Anxieties, frustrations, and resentments are common emotional reactions to the nature of medical education (Quill & Williamson, 1990; Coombs & Fawzy, 1986). These authors recommend that medical education strongly encourage addressing this denial through the ventilation and exploration of personal feelings associated with medical practice, and through changing the manner in which teachers educate pupils. Coombs and Fawzy (1986) present a model of balance between heart, hands, and head as an ideal for the medical education system to strive towards (Quill & Williamson, 1990; Coombs & Fawzy, 1986).

The developmental context of becoming a physician also includes medical residency. For family medicine, this three-year time period is a time of transition and involves a significant increase in levels of responsibility and continual shifts in roles which require significant adaptation. Medical students suddenly shift to becoming a new physician, sometimes in an entirely new community, with a significant drop in the institutional and personal support

built up over the previous four years (Hoekelman, 1989). In recognition of these factors, the AMA (1978) has designated residents as a special risk group for impairment.

Residency training has been deemed stressful by a wide variety of studies (Resident Services Committee, 1988). The sources of stress include sleep deprivation, the workload generally required in residency programs, time pressures, the financial burdens which residents face, and other sources previously discussed in sections on practicing physicians, such as changes in the medical environment (Alexander, 1983; Butterfield, 1988; McCall, 1991).

Distressing consequences for residents include depression, which is particularly problematic for the first year, fatigue, substance abuse, burnout, suicide, relationship difficulties, and career dissatisfaction (Colford & McPhee, 1989; Butterfield, 1988).

In light of the significant level of stress associated with residency, several researchers have suggested a variety of coping strategies to help alleviate the impact of stress. These include the development of strong social contacts, which can serve a buffering function to the stress, providing residents the time to develop and maintain close personal relationships, enhancing the use of recreation skills by residents, and facilitating the development of self-care skills (Butterfield, 1988; Alexander, 1983).

Colford and McPhee (1988) suggest instituting changes in the medical environment to help alleviate the stress experienced by residents. These include ensuring adequate ancillary help, guaranteeing adequate benefits, increasing faculty availability, implementing a 'night float' call system, reducing call, developing support groups, and providing stress management training.

The necessity for attending to developmental issues in the physician stress area is the significance of the developmental learning process. From their point of initiation into medicine, physicians are experiencing the inherent sources of stress, and are developing coping strategies to manage the stress. Medical and residency education are important forums for teaching healthy coping strategies for continued utilization throughout a medical career. However, the commitment of medicine to this end has been called into question (McKegney, 1989).

In addition to a lack of education on career stress management, the impact of physician stress is compounded by a lack of training in the assessment and treatment of the nature of patients and their problems which are an inherent part of medical practice. Demographic research indicates that more than half of the patients with primary mental health disorders, most commonly depression, anxiety, and substance abuse, receive all their care in the general medical sector, usually from a primary care physician

(Kamerow et. al., 1986). Of these, only one-fifth state they make a visit for mental health purposes. Three-fourths of these patients arrive at the office bearing a physical symptom as their chief complaint. Physicians are thus referred to as the "hidden mental health network" (Schurman et. al., 1985).

In terms of treatment, various studies place the percentage of accurate assessments of psychosocial disorders by physicians between 19% and 50% (Kamerow et. al., 1986). Treatment generally consists of medication for depression and anxiety, with work in the area of substance abuse restricted to the complications of the disease, rather than to the disease itself.

These types of treatments reflect the fact that primary attention in these disorders is given to their biological correlates, a focus which neglects the primary role that psychosocial dimensions play in their etiology. However, the nature of this treatment mirrors the training and education which physicians receive.

Generally, medical schools and residencies devote minimal training and education time to the management of mental health disorders from a psychosocial perspective. Although some recent indications point to changes in this context, various data suggest that medical schools devote less than 1% of their required teaching hours to curricula

such as an integrated approach to alcoholism and drug abuse (Kamerow et. al., 1986).

Physicians-in-training also express a lack of interest in formal training in these areas, as well as certain fears, such as the pain of facing the emotional problems of others and potential difficulties dealing with patients' issues which may be similar to their own (Williamson et. al., 1981). Due to these factors, many physicians feel ill-equipped to care for these patients, and either mis-diagnose, mis-treat, or actively resist them, which further compounds the problem and the stressful consequences for all parties. I would like to now elaborate on the nature of these stressful consequences, labeled impairment, for the population of practicing physicians.

3. Physician Impairment

This section shall review the physician stress literature in four areas: burnout, suicide and affective disorders, substance abuse, and marriage/family relationships.

Burnout generally refers to a cluster of reactions which are the potential consequences of employment in "people work occupations." The medical environment, particularly work in direct patient care, is viewed as a potential contributor to the development of burnout symptoms. This is due to the structure of the role of

physician, an occupation which inherently focuses on the problems of disease and death (Maslach & Jackson, 1982).

Burnout is defined as consisting of three separate but related aspects: emotional exhaustion, or feelings of being emotionally overextended by one's work; depersonalization, which is an unfeeling and impersonal response towards the recipients of one's work; and lack of personal accomplishment, defined by feelings of incompetence and a lack of achievement in one's work.

Maslach (1981) developed a scale to assess the burnout phenomenon, termed the Maslach Burnout Inventory (MBI). It is a psychometrically-sound, 22-item scale designed to measure the frequency and intensity of the three aspects of burnout.

Studies which have utilized this scale with practicing physicians have generally suggested significant differences on scores in the burnout dimension, related to various intrapsychic and practice qualities. Snibbe and colleagues (1989) compared primary care physicians and psychiatric staff working in a large H.M.O. on dimensions of the MBI. Moderate emotional exhaustion and depersonalization scores were representative of the physician sample (family practice and internists), with high scores on the personal achievement subscale. Psychiatric staff scored high on all dimensions. The authors contend these results reflect the heavy toll of an overburdened clinical practice in an

H.M.O., particularly for psychiatric staff trained in long-term verbal interactions.

McCranie and Brandsma (1988) investigated the relationships of burnout with intrapsychic characteristics of practicing physicians. Their results suggest that higher levels of burnout are correlated with a number of personality dimensions, including low self-esteem, feelings of inadequacy, dysphoria, obsessive worry, passivity, social anxiety, and withdrawal from others. A potentially significant confounding factor in this study involves correlating measurements of personality and burnout which were taken 25 years apart. The authors feel that the majority of physicians do not develop symptoms of burnout.

Deckard, Hicks, and Hamory (1992) sampled the entire identified population of US infectious disease physicians on various dimensions, including burnout. The sample was primarily male (87%) and married (80%). Results indicated that 44% of the physicians reported high scores on emotional exhaustion and 40% were high on the depersonalization dimension, somewhat alarming scores for a national sample. These results were tempered by high scores in the personal accomplishment subscale (92%), which reflect a low level of burnout.

For physicians who practice in an organized setting, such as an H.M.O. or P.P.O., scores on the emotional exhaustion subscale were significantly lower. This may seem

contradictory to the Snibbe' study, but practice settings were not compared by Snibbe. Deckard suggests that a group setting may help reduce time and work overload factors, and serve as a professional support system, an explanation which fits hypotheses of other investigations.

Criticisms of empirical efforts contained in previous discussions is also applicable to the burnout literature. Burnout is often used as a single measure of the negative effects of stress. However, burnout could also be considered a source of stress, and help create a reciprocal cause and effect spiraling of stress. Utilization of one dimension in a model of stress also negates the complexity of influences which are involved in this phenomenon, and reduces models to partiality and linearity.

A second area of focus in the area of physician impairment includes suicide and mental illness. Suicide is both a dramatic and tragic response to the stresses of life. Various investigations have focused on the rate of suicides in various occupational groups, such as physicians. Readings of the popular press would lead one to assume that physicians have exceedingly high rates of suicide (Bedeian, 1982). However, the research conducted in this area paints a different picture.

Craig and Pitts (1968) utilized data collected by The American Medical Association on physician deaths during the years 1965 to 1967. Through a stringent analysis, they

determined that a total of 228 physicians committed suicide, which calculated to an annual suicide rate of 38.4 per 100,000. It was concluded that this rate was equivalent to the general population of white males over the age of 25.

Rich and Pitts (1979) examined physician suicide rates from 1967 to 1972, employing identical collection and analytic procedures to the earlier study. There were 544 reported suicides during this time frame, resulting in an annual suicide rate of 35.7 per 100,000. Once again, these rates were found to be comparable.

Physician suicide rates have basically stabilized, presently ranging between 28 and 40 per 100,000 (American Medical Association, 1987). A disturbing, yet consistent finding across all studies involves the disproportionate number of women physicians who take their lives. Various studies suggest the rate of suicide among women physicians is approximately four times that of the general population of US white women over the age of 25. The rate is about twice the figure for divorced women older than 70, which is the demographic group in the general population with the highest known suicide rate.

It is also double the percentage of male physician deaths, with 6.5% of female physician deaths attributed to suicide, as compared to 3% of males (American Medical Association, 1987). Causative factors involved in these

figures shall be discussed in the review section on women physicians.

The pattern of susceptibility to suicide in physicians is very similar to that of the general population. Risk factors include major depression, substance abuse, signaling of intentions, the desire to escape mental pain, and being raised in a troubled family of origin (American Medical Association, 1987). This points to one of the questionable factors involved in determining the consequences of occupational stress, etiology. It would be extremely difficult, if not impossible, to sort through the etiology of suicide and determine the proportion that occupational stress may have contributed to the tragic event (Kasl, 1992).

Much of the data on mental illness in physicians suggests the incidence rates among practicing physicians are higher, as compared to similarly-matched controls (Pfifferling, 1986). The work of Valliant (1972) is frequently cited as evidence which validates this hypothesis. However, this data is subject to considerable inaccuracy, due to factors such as familiarity with psychiatric treatment, which may inflate rates, or cover-ups, which may serve to depress incidence figures (Pfifferling, 1986).

Freudenberger (1986) has presented a composite of the health professional in mental health treatment. Dynamics

generally involved with this type of patient include difficulty viewing themselves as receiving treatment, narcissism, denial that anything is wrong, inflexible thinking patterns, and a strong association between self-worth and occupational achievement. Treatment, according to Freudenberg, often consists of teaching the health professional to be more self-caring and less self-critical, and educating him/her to access support resources as a means to enhanced self-esteem.

Substance abuse is a third area of attention in the sphere of physician impairment. This area is also predisposed to popular stereotypes contaminating the picture presented by research. The problem is further compounded by methodological shortcomings in the research which has been conducted. The predominant method of investigation is the confidential self-reporting of substance use patterns, a procedure which possesses inherent problems with validity. It seems, however, that minimal response bias has been demonstrated in a variety of studies (Hughes et. al., 1992).

The most recent and refined research in this area involved a random national sample of 9600 physicians. This group was requested to complete an anonymous survey on substance use patterns and potential treatment (Hughes et. al., 1992). The response rate was 59%. This study is significant because it represents the first national investigation on substance use among US physicians.

Results indicated that physicians were more likely than demographically matched controls to use alcohol and two types of prescription medication, benzodiazepines and prescription opiates. They were less likely to use tobacco and illicit substances. The investigators hypothesize that the pattern of alcohol use was more a function of their socioeconomic status than occupation. Persons of higher socioeconomic status have been found more likely to drink alcohol, to drink frequently, although in moderate amounts, and to exhibit fewer gender differences in drinking patterns as compared to other groups (Hughes et. al., 1992).

Medication use is described as partially a characteristic associated with self-treatment by the physician. Physicians, as compared to the general population, obviously possess greater access to controlled prescription substances, as well as the ability to diagnose and treat their own maladies.

The authors clearly state that physicians are not immune to the problem of substance abuse. However, the vast majority of physicians are viewed as not intoxicated or drug-impaired when seeing patients. This is reflected by results of this study, which suggest that the daily, heavy use of alcohol is 0.6%, benzodiazepine use is 0.5% and opiate use is 0.2%. Once again, the etiology of occupational stress in this pattern is difficult to determine. The authors clearly state that the increased

responsiveness of organized medicine and state medical societies to the problem is benefitting those who are afflicted with the disease of chemical addiction.

A research study pertinent to the nature of this investigation compared the specialties of a physician population being assessed for the presence of impairment. The sample consisted of physicians who were referred for evaluation and/or treatment of chemical dependence to the Impaired Physicians Program of the Medical Association of Georgia. The primary research question involved determining whether the specialty distribution of the sample group was proportional to the US specialty distribution.

Results indicated that the specialties of anaesthesia and family practice were overrepresented in the distribution, and were thus more likely to be involved in substance abuse. In this sample, family practitioners were more likely than other specialties to have a solo practice, to be from a rural area, and to be alcohol-abusing, versus drug-abusing. The authors suggest that family practice is a specialty at risk for chemical dependence due to the nature of family practice work and its unique stresses. In solo rural practice, the factors of isolation and lack of controls serve to further increase levels of risk.

The authors proceed to present several factors involved in the development of physician impairment: 1) genetic predisposition and environmental exposure; 2) stress and

poor coping skills; 3) lack of education regarding impairment, 4) the absence of effective prevention and control strategies; 5) drug availability; and 6) denial.

The fourth area of focus in the physician impairment area is physician marriages. The popular stereotype holds that physician marriages are of poor quality, leading to divorce (Doherty & Burge, 1989). Valliant's work initiated the picture of physician marriages possessing these characteristics. However, the use of a nonstandardized assessment, the use of only one cohort, and the fact that this research was conducted during the 1960's, limits the generalizability of Valliant's findings (Doherty & Burge, 1989).

Doherty and Burge conducted research which compares the proportional divorce rates of physicians to other occupational groups. Contrary to the popular stereotype, they found that physicians of both genders possess lower rates of divorce. This finding leads the authors to exclaim that "there is solid evidence that their marriages are among the most stable in the land" (p. 2377).

Other researchers would dispute this claim. Some research indicates that physicians tend to stay in unhappy marriages of poor quality, rather than divorce (Gabbard, Menninger & Coyne, 1985). These authors requested a group of physicians and their spouses to complete a questionnaire

assessing marital satisfaction and particular sources of conflict in the marriage.

Results indicated that although a majority of respondents rated their marriage as moderately to extremely satisfying, they tended to possess lower expectations regarding marital bliss. The authors contend that partners in medical marriages have a high tolerance level for dissatisfaction, and that the lack of time due to practice demands of the physician serves the function of externalizing difficulties in the marriage to factors outside of it.

Generally, physician impairment has been the predominant focus of research efforts in the area of physician stress. I would like to now address the methods which more recent research has utilized to investigate the problem of physician stress.

4. Recent Research

The early research in the physician stress domain generally proceeded by open-ended questionnaires concerning the types of stressors experienced by physicians, the impact of these stressors, and the coping strategies they would utilize to deal with the identified stress. Researchers would also interview subjects to obtain similar information. Developmentally, a methodological shift occurred over time, due to the criticisms of earlier research efforts.

Criticisms of these research methodologies have centered on the lack of reliability and validity inherent in the early research designs, which is generally viewed as limiting the accuracy and generalizability of results. Criticism of non-empirical methods led several researchers to either utilize empirically-based methods developed in the field of occupational stress, or to develop empirical tools specifically applicable to the medical professional.

Alexander (1983) utilized the Occupational Stress Inventory (Osipow & Spokane, 1987) to assess measures of stress, strain, and coping among family practice residents and faculty in military and civilian settings. Utilization of this instrument is based on "an integrated theoretical model linking sources of stress in the work environment, the psychological strain experienced by individuals as a result of work stressors, and the coping resources available to combat the effects of stressors and alleviate strain" (p. 1).

Alexander's results suggested that the highest-rated sources of occupational stress are role overload, in which job demands exceed resources, and responsibility, in which an individual feels a high degree of accountability for the performance and welfare of others on the job. Significant differences were found between differing developmental levels of physicians, such that first year residents reported more stress than second and third year residents,

and residents as a group reported comparatively more stress than faculty physicians.

Differences in stress levels were accounted for by comparatively less use of the specific coping strategies of recreation and care for self among groups reporting higher levels of stress. The dimension of social support, which has received abundant research support as a mediator of stress, was the most frequently utilized coping resource of all research subjects, and did not account for significant group differences.

May and Revicki (1985; 1983) investigated physician stress through assessing diverse components which previous research had demonstrated to possess a significant relationship to perceived stress. A randomly stratified sample of 330 family practice physicians, primarily white males, were requested to complete a 126-item questionnaire consisting of four separate inventories.

The first of these, the Physician Stress inventory, was developed by the authors to assess professional stress, and consists of four subscales: 1) internal professional stress; 2) perceived work productivity; 3) interference with family life; and 4) external professional stress.

The second, the Zung Self-Rating Depression Scale, is a commonly-used, valid diagnostic tool which assesses symptoms of depression. The third instrument, the Internal-External Locus of Control Scale, developed by Rotter, assesses the

degree to which individuals believe they control or influence the circumstances and events of their lives. The fourth section consisted of social support items derived from the Family Inventory of Resources for Management, and is designed to measure perceived stress from family and physician peers.

Results suggested that perceived occupational stress is correlated with the development of depressive symptomatology. This relationship is directly moderated by family social and emotional support and indirectly by the influence of locus of control on the family social support dimension. The authors suggest that individuals who possess a strong sense of internal personal control activate their support systems when they are faced with a stressful situation.

The relationship between physician age and the research variables of interest was also assessed. Age was suggested to be significantly related to peer support, locus of control, and depression. Results implied that older physicians possess more supportive peer relationships, are more likely to report symptoms of depression, and feel more personal control over their environment. The authors neglect to explain the finding on depression, which is contradictory to other results, but do express the notion that, in all likelihood, older physicians possess

established practices and have developed effective strategies for dealing with their work-related stress.

Recently, Wolfgang (1988a) developed the Health Professions Stress Inventory (HPSI), a standardized instrument designed to "compare the levels and sources of stress experienced by a variety of health professionals" (p. 220). It contains items specific to medical practice, and others reflecting the larger social and cultural context in which medicine is practiced. Stress is assessed through descriptions of 30 job situations that a health professional might encounter, with respondents being asked how often they found each situation to be stressful.

In a non-random comparative study assessing occupational stress in practicing physicians, nurses, and pharmacists, HPSI results suggested that physicians experienced the most stress related to issues of overwork, interrupted work, responsibility for patient outcomes, and conflicts between job duties and family responsibilities (Wolfgang, 1988b).

Criticism of the HPSI pertains to its use of single-item versus multiple-indicator measures and its inclusion of several items non-specific to physician stress, which ultimately decreases its research value in the physician stress area (Simpson & Grant, 1991). A related research question concerns the nature and utilization of empirically-based assessment instruments.

Overall, one of the potential dilemmas in interpreting empirically-based research results is the manner in which the investigators' choice of research instruments dictates the conclusions generated by the research. In the previously-discussed empirical investigations, theoretical models of research are presented based on respondents' answers to questions which cover a specific range of topics.

The development of May and Revicki's model of stress exemplifies this pattern. In their studies, subjects are requested to complete measures on stress, depression, locus of control, and social support. Statistical analyses reveal relationships among these pre-selected variables, and a model is created based on their statistical relationships. The predetermined choices dictated by the researchers potentially negate the influence of other variables of importance in an investigation of the stress phenomenon, and load the results in the direction of the instruments of choice, to the exclusion of other dimensions.

In empirical investigations, the choice of research instruments tends to reduce a description of the phenomenon of interest contained in the empirical instrument, rather than allowing the subject of the research to present their choices. For example, in inventories assessing coping styles, such as The Occupational Stress Inventory and the Ways of Coping Scale, spiritual dimensions and the use of exercise generally receive minimal attention, despite

reports of significant utilization by individuals when faced with stressful situations (Raglin, 1990; Pollner, 1989).

A different investigatory approach to the physician stress problem was utilized by Simpson and Grant (1991). Data in their investigations was initially derived from interviews of physicians in their early career years, having started their first practice or medical position one to four years prior to the interview. Gender proportions and specialty were equal in proportion to national statistics, with the exception of the underrepresentation of surgery. Hour-long interviews, conducted by telephone, covered topics pertaining to the professional and personal lives of the research subjects.

This initial qualitative interview generated certain themes which were utilized as the basis for a more closed-ended scale of job stress, one which was modified and refined through a process of pretesting. The authors suggest that the scale construction procedure enables the scale to more accurately reflect the "real-life concerns of contemporary physicians" (p. 33).

Results of this process served to reduce the sources of job stress for physicians into four dimensions: time pressures, competence concerns, business/financial worries, and patient relationship issues. The matter of constraint of medical practice by nonphysicians was also a common complaint. Ratings of the sources of stress revealed

competence concerns as most problematic, followed by time pressures, business concerns, and patient concerns.

The influence of job stressors on mental impairment was also examined. No significant relationships between job stress and impairment was suggested. Mental impairment was, however, predicted by the occurrence of nonmedical life events. In terms of coping, 80% of physicians of both genders reported using someone other than their spouse or partner to turn to in times of distress. Also, 47% of the sample had received professional help to assist in coping with personal problems.

The value of this study is in the utilization of the research participants' data. Physicians do work in a changed medical environment, and employing open-ended interviews to dictate the direction of the research process can be a valuable exploratory endeavor. The need to reduce this information to discrete categories seems questionable, due to the reduction of complexity and holistic understanding which can potentially occur. Also, although the authors critically allude to the emphasis on impairment in the physician stress area, their research seems to succumb to historical influences in their minimization of the dimensions of coping, success, and satisfaction.

One particular study has explored how some physicians develop and sustain career meaning and satisfaction (Quill & Williamson, 1990). Ten areas of difficulty for physicians

were identified by the authors through a literature review on physician stress. Research subjects were requested to complete an open-ended, two page questionnaire on coping strategies they utilized when faced with these dilemmas. The sample consisted of 550 physicians whose specialty was primarily internal medicine.

Unfortunately, the response rate was 10%, which usually serves to minimize generalizability of results. The sample was also non-random which, in a traditional research sense, also serves to reduce investigatory quality. The authors attribute the low response rate to the demands of the questionnaire for openness and introspection, and recognize the questionable nature of research generalizability. They view the presentation of their results, however, in the context of the minimal attention to successful coping, an issue extremely relevant to the nature of this investigation.

Results indicated that research respondents who reported feeling in control of their lives have made adaptations in five general areas. The first of these is self-awareness, which involves paying attention to and learning from one's internal signals as a means of personal growth. Unhealthy behavior patterns and feelings became signals for change in this context. The second dimension entails a sharing of feelings and responsibilities, in which

learning to supportively share feelings and relinquish control to others is valued.

Self-care is the third aspect, a placing of considerable emphasis on making life choices in terms of personal, physical, and emotional needs. The fourth involves developing a personal philosophy through a process of exploring and clarifying core values. Primary values of the research participants included self-care, balance of family and profession, sharing, competence, success, and self-awareness. Use of nontraditional coping skills is the fifth adaptation. Many respondents mentioned the use of reframing, which enabled them to see a problem from a fresh perspective, and limit-setting, which facilitated the development of a realistic view of medicine's and their own limits.

One area which is receiving increasing research attention in the physician stress literature is the relationship between gender and stress. Interestingly, research on female physicians has often utilized qualitative methodology in investigating various aspects of the problem.

5. Women Physicians

In terms of gender differences in the area of occupational stress, several studies suggest that women physicians experience more job-related stress than males (Levinson et.al., 1992; Richardsen & Burke, 1991; Simpson &

Grant, 1991; Coombs & Hovanessian, 1988; Bowman & Allen, 1985).

As previously discussed, research indicates that female physicians are four times more likely to kill themselves than the general population of women the same age, and are twice as likely to kill themselves as male physicians. One study, although somewhat dated, estimates that approximately 65% of American female physicians suffer from a primary affective disorder (Pitts et. al., 1979). Firth-Couzens (1990) reported symptom levels suggestive of clinical depression in almost 50% of female residents in her study. Several investigations have focused on the sources of stress for this group to help explain these disturbing figures.

In their descriptive discussion of the stress of female physicians, Bowman and Allen (1985) point out that since women are a minority, they lack sufficient role models, making it more difficult for them to deal appropriately with role strain. They state that in comparison to male physicians, women physicians experience more strain in attempting to perform the "juggling act" of combining physician role, marriage commitments, household responsibilities, the experience of pregnancy, child care, and time of self. Managing these multiple roles often leads to role conflict, and potential consequences of job dissatisfaction and self-esteem difficulties (Brown, 1992).

Coombs and Hovanessian (1988) utilized content analysis of tape-recorded interviews with female residents to assess the nature of their stress. Sources of stress included social isolation due to an "old boy's network," preoccupation with sex status, differential role demands, and inappropriate role models.

In a recent Canadian survey comparing male and female physicians in practice, Richardsen and Burke (1991) indicate that women physicians were reporting slightly higher overall stress than men, with small but significantly higher stress levels in both a need to maintain their level of medical knowledge and in counseling non-medical problems.

A Canadian survey with a differing focus assessed female family physicians on several dimensions of their work. Subjects completed a variety of psychological and work-related tests to measure various attitudes towards self and work. Inventories included assessments of self-esteem, social support, affective health, and workload/work satisfaction.

Results indicated that subjects possessed positive self-esteem, functioned productively, and were non-symptomatic. Work satisfaction was generally at a high level, and supportive relationships were deemed adequate. The author suggests that the absence of pathology in this sample sharply contrasts with previous research reporting the psychological vulnerabilities of women physicians. It

seems the utilization of more positive psychological measures may have partially contributed to these findings.

The author suggests that the opportunity to acquire new skills, the availability of friends, and satisfaction with significant others may have contributed to the high self-esteem scores. Support and emotional fulfillment were often derived from the physician's marriages. Work satisfaction was attributed to opportunities for accomplishment, mastery, and challenge, as well as a sense of independence. Examining the factors which enhance the quality of work and lead to success and satisfaction were processes which guided Brown's research.

In an investigation with similar goals to the present study, the development of coping strategies for balancing career and personal lives of women physicians in academic medicine was investigated (Levinson et. al., 1992). Survey responses to open-ended questioning revealed strategies related to hiring/purchasing support, limiting personal and social activities, and increasing efficiency to meet demands. The women of the study utilized these primary coping mechanisms as a means to achieve balance in their lives.

In terms of minority physicians, little data has been collected in the area of occupational stress. In addition to the diversity of stressors presented in this review, Carter (1989) contends that black physicians must also cope

with institutional racism in their practices and personal lives. Also, the epidemic of cocaine abuse, teenage pregnancy, and the cycle of poverty and despair are added stressors for black physicians working in the inner city.

The present study is intended to return to the descriptive approach which characterized the earlier research on physician stress. These research efforts are often criticized due to nonstandardized approaches to measurement, subsequently affecting dimensions of reliability and validity (Doherty & Burge, 1989). This dissertation utilizes several qualitative methodological strategies designed to enhance reliability and validity, thereby increasing descriptive power beyond previous research.

The use of black physicians in the sample is reflective of the exploratory nature of the study. Relatively little research attention in physician stress has been directed to the areas of values and success. Comparisons between urban and rural, as well as black and white physicians have been minimal. It is hoped that the nature of this exploration yields productive results in areas which have remained relatively untapped.

CHAPTER III

METHOD AND PROCEDURES

Effective qualitative studies reflect three distinct, interrelated elements of inquiry: 1) credibility of the researcher, associated with high-quality training, experience, status, and presentation of self; 2) rigorous methods and techniques for gathering data, and 3) philosophical belief in the phenomenological paradigm (Patton, 1990).

The significance attached to the person of the researcher reflects the fact that he/she is the instrument of data collection and is fundamental to the process of analysis (Lincoln & Guba, 1985; Patton, 1990). This characteristic of qualitative research includes advantages such as flexibility of research design and adaptability of the research instrument. It can lead to a holistic emphasis within the inquiry, and various research opportunities, such as clarification of response and the ability to explore idiosyncratic responses (Lincoln & Guba, 1985).

In this context, I believe that the nature of my occupation and training contributed a high degree of trustworthiness to the nature of this investigation. I have been employed by the Ohio State University Department of Family Medicine in the behavioral sciences area, and have

worked within the culture of physicians for the past four and one-half years. The position entails educating physicians in the mental health arena, including the areas of stress and coping.

This fact negated a need for prolonged engagement (Lincoln & Guba, 1985) within the occupational environment of physicians in order to learn the "culture," and possessed the advantages of investigator-subject rapport and trust. I believe the quality of the interview itself benefitted from my training as a mental health professional through facilitating the acquisition of rich and meaningful research data.

These details strengthened the reliability and validity of the study from the qualitative perspective. In particular, knowledge of the "culture" of the research participants served to increase the credibility of the investigation (Lincoln & Guba, 1985).

Sampling in naturalistic inquiries is purposive, in which strategies are designed to elicit data of central importance to research purposes (Patton, 1990). In this study, sampling strategies of maximum variation sampling and the use of a knowledgeable informant were utilized in order to gather a full and meaningful description of the physician stress phenomenon (Lincoln & Guba; Patton, 1990).

The individual who served as knowledgeable informant is involved with work which entails considerable networking

with practicing family physicians in the state of Ohio. Initial and primary sampling emerged through his identification of family physicians he deemed most qualified to provide meaningful information in the area of physician stress and coping.

Selection of the sample was guided by the identification of diverse characteristics within the occupational group of family physicians. The selection of a small sample of great diversity was designed to yield two types of findings: 1) rich, detailed descriptions of the uniqueness of each case; and 2) significant shared patterns which cut across heterogeneous cases, capturing the core experiences of the research participants in the areas of research interest (Patton, 1990).

The criterion of diversity in this investigation was derived from several sources of research interest: 1) gender; 2) race; 3) age, 4) location of practice: rural, inner city, and suburban; and 5) philosophy of practice: holistic to biomedical, traditional to non-traditional. I met with the knowledgeable informant on several occasions to identify practicing family physicians who would match in diverse ways with these criteria of interest.

The emergent design of this study is reflected by the nature of my meetings with the knowledgeable informant. An initial criteria in selecting the research sample involved choosing physicians who ranged from satisfied to

dissatisfied with their work. After meeting on two occasions to discuss potential research participants, the knowledgeable informant stated that, from his perspective, the research group we had decided upon was healthy and well-functioning. It was only then that I decided to focus on individuals who were successful in the management of stress and satisfied with their medical practice.

Success was defined by the knowledgeable informant in terms of their being liked. Patients, staff, medical students, and himself were presented in terms of having positive relational experiences with the research participants he identified. He also expressed a lack of knowledge concerning the quality of care delivered by these physicians, and clearly stated that success is "not money."

To a lesser degree, sampling proceeded by requesting research participants to name individuals they believed could offer meaningful descriptions of the stress phenomenon (Lincoln & Guba, 1985; Patton, 1990). The question was stated in the following manner: Can you identify an individual or two who you believe can provide a full and rich description of physician stress and coping?" The sample was designed to "snowball" in this fashion as the research proceeded, leading to a continuous refinement of the sample (Lincoln & Guba, 1985).

These methods of sampling were designed to enhance the credibility of the data collection through triangulation of

sources, the selection of multiple sources of information concerning the stress phenomenon (Lincoln & Guba, 1985; Patton, 1990).

Prior to the interview of research participants, I engaged in bracketing, a process designed to assist in the suspension of my preconceptions and biases of the phenomenon under study. This proceeded on two levels: through writing of my personal biases and predictions relative to the research question, and through writing my personal experiences of the stress phenomenon. Both sets of information were included as part of the database (Hoshmand, 1989).

These were analyzed both in terms of comparing my preconceptions to the actual results of the interview process and matching my personal experience of stress with the experience of the research participants. Examples of this bracketing process are contained in Appendix B.

Prospective interviewees were contacted by the researcher through a telephone call. The researcher identified himself as a member of the Ohio State University Department of Family Medicine faculty and as a doctoral student conducting dissertation research titled "Values, Stress and Coping Among Practicing Family Physicians" (Full phone contact, Appendix C). The researcher informed the research participant that his/her name was provided by a colleague in the O.S.U. Family Medicine Department, who

identified the prospective interviewee as an individual who could provide useful and rich information on the phenomenon under research investigation.

Prior to the first interview, two semi-structured pilot interviews were conducted with a black and a white family physician as a means of adjusting the major theme questions and improving the interview protocol from the perspective of a family physician. The subjects of the pilot interview were requested to provide feedback to the researcher as a means of improving the interview format. The primary purpose of the interview itself was to facilitate a description of the meanings and values underlying and related to the stress phenomenon.

All interviews utilized a semi-structured interview process, which was worded in a predetermined fashion, while also allowing flexibility on the part of the researcher to determine when it might be appropriate to explore certain topics in greater depth or open new lines of inquiry (Patton, 1990). Questions were intentionally open-ended to allow the research participants to define the nature of the research data, rather than having it defined for them (Interview guide, Appendix A).

Prior to the interview itself, research participants were presented with explanations concerning the purpose of the study, the procedures that were to be followed, the duration of participation, and the benefit of a consultation

service in the area of stress. The voluntary nature of the study and the procedures to be followed concerning confidentiality were also explained and documented (Appendix D).

Interviews were transcribed, producing a wealth of descriptive data as part of a "thick description." This process permits others to draw their own interpretations of the data of the research investigation. Field notes are also included in the description, containing what the researcher believed was worth noting (Patton, 1990).

Notes encompassed basic information of the interview, the researcher's emotional reactions to the interview, field-generated insights and interpretations, and reflects concerning the personal meaning of the interview to the researcher. These observations were recorded during the interview and immediately after the experience. Interviews generally took place in the physician's office, and notes were often written in the parking lot outside the office setting.

Recordings, transcriptions, and field notes are available for scrutiny, and are located in the office of the researcher. This process is another qualitative strategy designed to increase the validity and reliability of the findings.

The decisions involved in the analysis of the research data reflect the property of the emergent qualitative

design. Initially, the data were to be analyzed using Giorgi's (1985) phenomenological approach, which focuses on a description of life experiences related to the phenomenon of research interest. In the course of this study, I found that questions centering on descriptive experiences did not generate the quality or enthusiasm which I had expected prior to conducting the research. Research participants tended to think primarily in abstract terms, and responded to interview questions from this perspective. Rather than forcing the data to fit the analysis, I decided to choose a more appropriate and productive type of analysis.

Analysis of the data primarily proceeded through the qualitative analysis procedures developed by Miles and Huberman (1984). The nature of the data as presented by the research participants were regarded by the researcher as compatible to a variety of matrix development strategies, leading and connected to an inductive/phenomenological analysis.

Miles and Huberman propose that qualitative data analysis involves three separate and interrelated stages: data reduction, data display, and conclusion drawing/verification. Data reduction refers to a process of selecting and focusing the "raw" data of the interviews and field notes. In data display, the data is organized into various presentations, leading to conclusion-drawing.

Themes, patterns, and potential causal flows are discussed in the final inductive phase of the analysis.

In the first phase of the analysis, a series of codes was created to help facilitate a recognition of thematic clusters in the data. This helped pull a diversity of material together, leading to different levels of analysis. Coding primarily focused on the dimensions of values, stress, strain, and coping, which were the emphasis of the study. This was partly determined by the manner in which the data functioned in its context, as well as the nature of the interview questions which helped produce the data.

The second stage of the analysis involved the development of matrices as part of the data display function. Three matrices were utilized in this study: the conceptually clustered matrix, the checklist matrix, and the time-ordered meta-matrix. The choice of these particular matrices was ultimately dictated by the nature of the research data.

The basic principle behind the development of the conceptually-clustered matrix involves conceptually bringing together response items that belong together in a manner which facilitates cross-case analysis. Key information which is useful for further analysis purposes is presented (Miles & Huberman, 1984). In this investigation, key concepts include values, sources of stress, strain, and coping.

The checklist matrix is designed to determine how much there is of a given quality, rather than its meaning. In this context, percentages were ascribed to the various dimensions of values, stress, strain, and coping variables to ascertain their significance in the overall inductive analysis, and to facilitate the process of scanning the data for significant group differences. Group differences were assessed through both qualitative and quantitative measures.

A statistical procedure, Fischer's exact test, was utilized as one particular measure of group differences. This particular test is a nonparametric method for analyzing discrete data when the two independent samples are small in size. Particular aspects of the data which are naturally a member of two mutually exclusive classes, such as gender and race, were included in this phase of the analysis. Probabilities of particular relationships, such as gender and reported success, were obtained and compared to the chosen significance level of $<.05$ to determine if a significant relationship existed between the variables (Everitt, 1977; Siegel, 1956).

Group differences were also assessed through qualitative means. This entailed reviewing themes and patterns, and determining whether particular groups differed in their presentations of values, stress, and coping. Groups which were not included in the statistical analysis were of particular focus in this phase of the inquiry.

The time-ordered meta-matrix was utilized in this investigation to display events and experiences which occurred over a period of time. The organization of this display presents past and present experiences with stress and coping. Particular emphasis was placed on the learned processes which helped elicit changes which occurred over time. The choice of this matrix was directly related to the significance of developmental processes as presented by the research participants.

The most important phase of the analysis involved a holistic, interrelated interpretation of the "thick description." This phase utilizes an inductive analysis procedure (Patton, 1990), generating patterns and themes from the data. Primary attention was given to the manner in which these were interrelated in a non-linear fashion.

In order to further enhance validity and reliability of the data, the knowledgeable informant also served as peer reviewer of the research investigation. His position as practicing family physician, his research experience in the area of stress and coping, his technical expertise in qualitative methods, and closeness in peer status to the researcher made him ideally-suited to serve in this capacity. The researcher met periodically with this individual to review various aspects deemed relevant to the nature of the study (Lincoln & Guba, 1985).

Two other qualitative methodological strategies were utilized to enhance validity and reliability. The member check, which involves testing the data analysis and conclusions with the research participants who provided the data, is considered a critical technique for establishing credibility (Lincoln & Guba, 1985). This was accomplished in two ways. At the conclusion of each interview, respondents were provided a summary of the process from the perspective of the researcher, and given an opportunity to provide additional feedback.

At the conclusion of the data analysis phase, individuals were given an opportunity to provide written feedback or participate in a second interview. This provided additional information to the researcher from the participants' perspective. The data from the member check was integrated into the final analysis. The mailing of results provided physicians in the study insight into their own and their colleagues' ways of coping with stress.

To further enhance validity and reliability, the researcher recorded notes in a personal journal, which revealed personal values and meanings. Entries were also recorded in a log, as a means of recording methodological decisions as the study emerged.

Finally, Patton (1990) states that "Sufficient description and direct quotation should be included to allow the reader to enter into the situation and thoughts of the

people reading the report" (p. 430). These were indeed recorded in the reporting of results in the following chapter.

CHAPTER IV

RESULTS

I. SAMPLE CHARACTERISTICS

This chapter focuses on the results of the study from the perspective of the interviews and field notes. Chapter V shall elaborate on the process of qualitative research. In this chapter, sample characteristics and matrices development leading to the inductive analysis shall be discussed in detail.

The total sample of the study consisted of 11 physicians, including the 2 pilot interviews. The second pilot interview was included as part of the final research sample for analysis purposes, which created a final sample of 10 research participants.

Inclusion of the second pilot interview was related to this participant's extension of the diversity of the sample. Race and age were deemed significant in this context and fitting of the maximum variability criteria which this investigation sought to achieve. This individual recently ended the clinical aspect of work, and was asked to reflect upon previous practice experience when answering questions on the various dimensions of work-related stress. Table 1 outlines various personal and work characteristics of the research participants (see following page).

Table 1

Characteristics of the Research Sample

R.P.	Age	Gender	Race	Practice
#1	O	M	Af Am	Urban/G
#2	O	F	Cau	Rural/S
#3	O	M	Cau	Rural/S
#4	Y	M	Af Am	Urban/S
#5	Y	F	Cau	Urban/P
#6	Y	F	Cau	Urban/S
#7	O	M	Cau	Urban/P
#8	O	F	Cau	Rural/P
#9	Y	M	Cau	Urban/P
#10	Y	F	Cau	Urban/S

R.P. = Research Participant; Philos = philosophy of Practice; O = >45; Y = <45; M = Male; F = Female; Af Am = Afro-American; Cau = Caucasian; G = Group Practice; S = Solo Practice; P = Partnership Practice.

Ages of the sample ranged from 34 to 67, with a mean of 50 years. Within all tables, those physicians who are 45 years or older are classified into the age category of older. Eight of the ten physicians in the sample were married, one lived with a significant other, while the other lived alone. Seven of the physicians had children, ranging in ages from 42 to less than one year.

In the practice component, 7 of the research participants practiced in an urban setting. Of these, three were centered in an inner city region. Two of the suburban-based physicians worked extensively in the Obstetrics area. Physicians in the sample generally practiced in the central portion of the State of Ohio.

A wide diversity of patient contact was reflected by the majority of medical problems. Those practicing OB were skewed towards the younger end of the practice age continuum. The numbers of patients per week ranged from 60 to 140, which reflected a wide range of work week hours, from 20 to 90.

This sample is weighted in certain directions. The average number of hours worked is 51.2, which is less than the national average of 58.3 (AMA, 1989). The sample group is primarily engaged in either solo or partnership practice, which is reported by the participants as a structure that is less involved than is typical with Medicaid/Medicare patients. There was one exception to this, with one

research participant reporting that "we want to take care of anybody that wants to get in."

Previous research suggests that a solo/partnership practice is more stressful than a group structure, due to factors such as isolation and time overload. Research participants spoke of the increased stress associated with Medicaid/Medicare patients, due to factors such as regulations and paperwork. The stresses related to practice structure in this investigation are balanced with regard to a high number of solo practitioners seeing a low number of Medicaid/Medicare patients.

II. MATRICES DEVELOPMENT

Three matrices shall be displayed which significantly contributed to the final analysis. The choice of matrices is directly related to the manner in which the research data presented itself to the researcher. These include the conceptually clustered matrix, the checklist matrix, and the time-ordered meta-matrix.

A) Conceptually Clustered Matrix

Table 2 (following page) includes data presented by the physician sample along four dimensions: a) values; b) sources of stress; c) strain; and d) coping strategies. The source of the data listed in the table primarily

Table 2

Conceptually Clustered Matrix

R.P. VALUES		STRESS	STRAIN	COPING
#1	family giving/helping spirituality honesty	loss of pt. overload responsibility economics	depression emotional upset + irritability	awareness perspective prayer time to self action fm, cg support
#2	diversity involved caring control prevention have influence	overload pt problems time load responsibility	- memory - relationship muscle spasm frustration	time to self perspective meditation support problem-solve exercise fm, fr, cg support
#3	diversity caring have influence spirituality honesty	overload problem pts staff rltps time load responsibility	temper tightness	time to self awareness counseling breaks perspective action fm, cg support exercise
#4	diversity involved caring honesty family	overload managed care pt demands paperwork	+ irritability tiredness intensity - family	monitoring perspective outside int. breaks fm, fr support exercise
#5	diversity control spirituality caring honesty perfectionism family	overload pt demands time paperwork	+ irritability tight muscles impatience	scheduling time to self breaks exercise fm, fr support awareness perspective action
#6	challenge diversity caring control family independence	time load administration responsibility pt demands expectations	- memory - family + irritability	perspective positive action exercise fm support massage

Table 2 (continued)

Conceptual Clustered Matrix

R.P.	VALUES	STRESS	STRAIN	COPING
#7	diversity spirituality involved caring	economics pt concerns overload paperwork family	grid teeth - memory flushing	fm, fr support exercise outside int. perspective awareness prayer problem-solve
#8	perfectionism diversity control caring	regulations overload paperwork competence threat	depressed emotional upset + irritability sleep disturb	perspective exercise outside int. monitor action fr support
#9	family control perfectionism caring diversity have influence	pt demands overload paperwork staff conflict	+ irritability - relationship yelling	fm support exercise perspective counseling outside int. problem-solve monitor work
#10	family control perfectionism caring diversity have influence	pt demands overload paperwork staff conflict	+ irritability - relationship yelling	fm support exercise perspective counseling outside int. problem-solve monitor work

pt = patient; + = increased; - = decreased; int. =

interests; fm = family; cg = colleague; fr = friend

involves the research participant's answer to the specific question on the item of interest.

Across all participants, predominant values related to career decision-making and the present practice of medicine included altruism, diversity, control, spirituality, having an influence, honesty, perfectionism, and family.

A value discussed by all physicians (N=10) within this study comprised a quality I've termed "altruism." This group of physicians spoke at length of their strong desire to care, to establish intimate and helpful relationships with their patients. Phrases such as the "privilege ... of being involved with people's lives in such an intimate way" captured the essence of this group's feelings towards the caring side of their work. Thirty percent (N=3) of the research sample view their patients as part of their extended family system: "My relationship with my patients I try to treat the same as a relationship with my own parents or wife."

The value of diversity was presented by the majority of the research group (N=8) as being stimulated by variety in their work. When asked about their specialty choice of family medicine, a typical response was the following: "One of the things I like about family practice is the variety. I get bored very easily at times. And I do not like doing the same things over and over again." Family medicine was chosen over sub-specialties such as cardiology due to the

value and challenge of involvement with different types of work and people, versus the potential "boredom" of performing the same procedures with the same type of patient.

A value also frequently cited by the participants (N=6) is control. The statement "I see in myself a great need to be in control" reflected the quality shared by these physicians. This dimension most often manifested itself in a relationship context, such as struggles in the doctor-patient relationship, or conflict issues related to control which would arise in working with staff.

A related value advanced by close to half of the sample (N=4) is perfectionism. This was presented as a recognized dimension of their personality makeup. One stated, "I'm the typical compulsive perfectionist-type person. I like making everything just so." Everything being "just so" often involved the physicians' perfectionist preference, a dynamic potentially leading to conflicts with patients and staff. This dimension was significant in terms of the sources of stress and the learning-related coping presented by a number of physicians in the study, issues discussed in subsequent sections.

Spirituality was a value cited by close to half of the research group (N=4), one intimately tied to their worldview: "I am only an instrument ... working within the confines of being guided by a deity." This dimension was

also discussed through the perspective of patient care:

"Patients see that I recognize there is a greater power than us that is a very important resource, and it's there for us to use."

The same number of research participants (N=4) also clearly stated a value related to having an influence both in the lives of others and in the quality of society: "I just wanted to one day say, hey, when I'm dead and gone, my being here made a difference ... I guess I think that makes a life worthwhile to say that I made a contribution in whatever way that is. And medicine is the way that I think I can make my contribution."

The value of honesty was viewed by several (N=6) as an important dimension of their work: "My objective is to continue to practice honest relationships with my patients, number one." Those who addressed honesty as a value tended to strongly emphasize the importance of this quality to them in the context of the doctor-patient relationship.

The value of family was also presented by half the research group (N=5). It was particularly discussed as an important aspect of their specialty decision-making process. This particular dimension also illustrates the complexity of interrelationships involved in this study. Family was discussed by five as a value, by one as a source of stress, by two individuals as related to the strain their work, in which family life suffered as a result of work-related

stressors, and by eight as an important aspect of their supportive coping processes. To discuss family as a factor singularly involved in one aspect of the value-stress-strain-coping framework would minimize the complexity inherent across all dimensions.

In terms of the sources of stress, the factor cited by all research participants (N=10) involved overload. This was primarily presented in the context of the relationship between demands and time. The phrase "too much to do, too little time to do it" clearly reflects the nature of the problem. One physician stated that "I sometimes want to clone myself because I need at least two or three of me to do all the things I want to do."

This source of stress was often related to another source of stress reported by the group, that of working in today's medical environment. This section of discussions was often quite emotional. "One of the things that is most constantly stressful is the need to ask what the insurance company will allow me to do for the patient, instead of what the patient needs done ... they (the insurance companies) have a strong, vested interest in seeing the patient as few times as possible. Very, very frustrating. It is counter to everything that our profession and our community believe is good."

The dimension of overload was most often presented as a consequence of the nature of today's medical environment.

Stress was presented in terms of charting, regulations, paperwork, and the process of negotiating with managed care of government systems over the care to be provided to the patient. The report of stress was related to the fact that this type of work essentially reduced the amount of time and energy the physician was able to devote to patient care which, for this sample, was the primary source of career satisfaction. One physician simply stated, "I'm trying to take care of patients, not paperwork."

Another aspect related to this source of stress concerned the fact that non-physicians were dictating the care which the physicians provided. Not only were physicians performing non-patient care tasks which they strongly preferred were not integral to their work, but non-physicians were performing tasks which were formerly and enjoyably within the physician domain.

Half the physicians (N=5) cited responsibility as a significant stressor in their work. This was exemplified by the following remark: "There's really a high volume of high pressure because of the importance of taking care of people, the importance of the fact that what we do affects people's well-being, affects their health." Responsibility was generally related to the type of decision-making associated with the job.

Certain aspects of the doctor-patient relationship were discussed as sources of stress. Some physicians (N=3) cited

the nature of the problems which patients would bring to the office. Others (N=5) discussed the demanding style of some patients, who would become problem patients, and the stress associated with engaging in conflicts with patients who would demand a type of care deemed inappropriate by the physician. Demandingness was a patient style cited by the group as most difficult to handle, and quite stressful.

In terms of the strains which were manifested as an impact of stress, the characteristic most often cited (N=7) was irritability. This was primarily presented in the context of work, in the physicians' relationship encounters with office staff or patients. One physician noted, "I become less patient with the patients." This was reflected in behaviors such as rushing through office visits or a diminishment in listening skills, such as cutting patients short in their dialogue.

It was more likely, however, that this group of physicians would show the strains of stress to office staff: "Sometimes I am so intent on taking care of my patients that I abuse my staff." A few physicians (N=2) discussed incidents related to increased irritability towards family members as a manifestation of their work-related stress.

For close to half (N=4) of the physicians, their stress would be manifested in physical sensations, such as tight muscles, clenched jaws, or headaches. To a lesser degree, emotional difficulties, such as depression, were discussed.

On an emotional level, this would generally be associated with a sense of overload combined with certain values characteristics, which would produce a sense of being "overburdened." This dynamic shall be elaborated upon in the inductive analysis section.

Interestingly, the majority of physicians (N=8) noted their lack of awareness at different times in their career concerning the effects of stress, and how others, usually office staff or family, were the first to recognize the physician experiencing stress. They would proceed to inform that individual, and that would lead to an increased awareness on the part of the physician concerning the toll of stress that was being experienced.

Coping with stress was presented as a diversity of strategies. All physicians in the sample (N=10) addressed the importance of stress monitoring as a coping skill. Being aware that one was overstressed, or being open to the suggestion from significant others in the work and family system, was described as a critical first step leading to some type of coping action.

A second coping strategy utilized by all research participants (N=10) involved a quality I've termed "perspective." The ability to look at the positive aspects of life experiences was mentioned by several physicians as enabling them to manage the stresses of their work: "I have learned to ride stress, it's a major surge of energy ...

take positive energy and do something with it, as opposed to being disabled by it." One physician addressed a "What's the worst that can happen?" strategy. The answer to this question would end as "I would be okay," a discovery that kept the stressful work circumstances in a balanced, "let's not lose scope" perspective.

A third set of strategies discussed involved the use of problem-solving. All physicians in the sample (N=10) spoke of employing some type of action-oriented approach to dealing with their stress. After the identification of a stress-related difficulty, some type of question, such as "Okay, what am I going to do to stop this?" Would initiate the problem-solving process. Options would be generated as a means of resolving the problem, and, after a period of evaluation, a particular action would be taken.

Support was utilized extensively by this sample. Generally, support was through three paths: family support (N=8), friends' support (N=6), and collegial support (N=4). In terms of family support, the majority of the sample were married (N=8) with children (N=9), and this group spoke of the value of close, intimate relationships with spouse and children as an important balance to the stress of the work setting. Spouses often served in therapeutic roles in the identification and discussion of stress-related difficulties.

In the work setting, office staff were presented as serving an important support function. As discussed earlier, staff often alerted the physician that he/she was operating at a high level of stress: "They will ask, 'What's wrong with you?' and then I know I'm stressed." A few physicians (N=3) spoke of stressful experiences in their early years of practice, in which physician-staff relationships were difficult. One aspect of stress reduction involved replacing staff who were judged to be non-supportive and/or less than competent. This led to the creation of a healthier work system through hiring individuals who provided a better fit with the values of the physician.

Developing close and supportive friendships outside of the work setting was also described as an important coping process. This often served the function of removing oneself from the job environment: "I am able to go hang out with regular people and forget about work."

Time outside of work also entailed their use of breaks and/or vacations. Four physicians spoke of times when they felt significant levels of pressure and stress, that they would immediately make plans to go away for a trip and/or work-related conference. This type of coping again generally involved removing oneself from the patient care environment as a means of stress reduction. The "getting away" phenomenon was highly desired by this group.

These strategies were often related to a "time for self" perspective. The majority of the group (N=9) would structure portions of their week to themselves, and would engage in activities such as exercise (N=9), reading (N=4), or meditation/prayer (N=5) as a means of coping. The purpose behind these strategies would primarily center on either a "letting go of steam," or a time of "quieting, centering." The physicians generally perceived this time "alone" to be one of great significance in their ability to cope with their sources of stress. It was often presented in the context of a balance between time for self versus time for others, in which time for self was viewed as beneficial to the work of devoting time to others.

Those in the research sample who coped through prayer/meditation described it as a process which enabled them to gain personal control in stressful experiences: "I stop and pray in crazy times It helps me get back." Spirituality as a value was also expressed as a means of placing the control value in a greater perspective, the feeling that "I have relatively little control over my life and that's okay." The interrelationships involved in this values-stress-strain-coping framework shall be further discussed in the inductive analysis section.

B) Checklist Matrix

The matrix in Table 3 presents the values, stressors and coping strategies of the research participants in a ratio format. The table illustrates the proportions of these variables in a number of sub-groups within the sample.

This table serves as the basis for group comparisons on the dimensions of stress, coping and values. Comparisons were analyzed utilizing both qualitative and quantitative methods. Fisher's exact test assessed statistically significant differences among various sub-groups on the areas of research interest. Analysis of differences in themes and patterns among the sub-groups was also undertaken, with particular focus on the sub-groups which were not included in the statistical analysis. The latter results shall be presented in the section labeled "Qualitative Comparisons."

1. Statistical Analysis

Table 4 represents results from Fisher's exact test on probabilities of significant relationships between two sets of variables. The first set of variables included gender and age. These choices were dependent on the ability to categorize these variables into two separate classes: male vs. female, and young vs. old.

The second set of variables included all categories of stressors, values, and coping strategies, which were

Table 3

Checklist Matrices on Stressors, Values, and Coping

STRESSOR	M F	Y O	U R	CAU Af Am
time overload	100 100	100 100	100 100	100 100
regulations	80 40	40 80	71 31	50 100
managed care	80 20	20 80	57 33	37 100
responsibility	60 40	40 100	71 66	75 50
pt problems	60 40	20 80	57 33	50 50
paperwork	40 60	60 40	57 33	50 50
staff conflict	40 60	20 80	28 100	62 0
competence thr.	40 20	0 60	28 33	25 50
problem pt	40 0	0 40	14 33	12 50
malpractice	40 0	0 40	14 33	12 50
pt demands	20 60	60 20	43 33	37 50
VALUES	M F	Y O	U R	CAU Af-Am
altruism	100 100	100 100	100 100	100 100
diversity	60 100	100 40	57 100	87 50
spirituality	60 20	20 60	42 33	37 50
family	40 60	60 40	57 33	37 100
having influence	40 40	20 60	28 66	50 0
control	20 100	60 60	57 60	75 0
perfectionism	20 60	40 40	42 33	50 0
honesty	20 40	20 40	14 66	37 0
challenge	0 60	60 0	42 0	37 0

Table 3 (continued)

Checklist Matrices on Stressors, Values, and Coping

COPING	M F	Y O	U R	CAU Af-Am
perspective	100 100	100 100	100 100	100 100
monitor	100 100	100 100	100 100	100 100
problem-solve	100 100	100 100	100 100	100 100
exercise	80 100	80 100	86 100	100 50
get away	100 60	80 80	86 66	75 100
family support	80 80	80 80	85 66	75 100
time for self	60 80	60 80	71 66	75 50
friend supp.	60 60	40 80	57 66	62 50
outside inter.	60 40	40 60	57 33	50 50
prayer	60 40	40 60	28 66	37 50
vacation	40 40	60 20	57 0	37 50
collegial supp.	40 40	40 40	43 33	37 50
counseling	40 20	20 40	28 20	37 0
structuring	20 60	60 20	43 33	50 0

M = male; F = female; Y = young; O = old; U = urban; R = rural; CAU = Caucasian; Af-Am = Afro-American

Table 4

Results of Fisher's Exact Test

STRESSORS	MALE/FEMALE	YOUNG/OLD
overload	1.0	1.0
paperwork	.50	.50
patient problems	.50	.10
staff conflict	.50	.10
competence threat	.50	.08
staff conflict	.50	.08
regulations	.26	.26
patient demands	.26	.26
problem patients	.22	.22
malpractice threat	.22	.22
managed care	.10	.10

VALUES	MALE/FEMALE	YOUNG/OLD
altruism	1.0	1.0
influence	.74	.26
honesty	.50	.50
family	.50	.50
perfectionism	.26	.74
spirituality	.26	.26
diversity	.22	.08
challenge	.08	.08
control	.02	.74

Table 4 (continued)

Results of Fisher's Exact Test

COPING	MALE/FEMALE	YOUNG/OLD
perspective	1.0	1.0
monitor	1.0	1.0
problem-solve	1.0	1.0
family support	.78	.78
collegial support	.74	.74
friend support	.74	.26
vacation	.74	.26
exercise	.50	.50
outside interests	.50	.50
time for self	.50	.50
prayer	.50	.50
counseling	.50	.50
structuring	.26	.26
get away-changed	.22	.78

categorized according to their presence or absence as related to the first set of variables. The probability of a significant relationship between these variables was measured, with the decision rule of statistical significance being $<.05$, as specified by the criteria of Fisher's exact test.

Only one relationship was found to be of statistical significance on the dimensions of research interest. This was the relationship between gender and the value of control, as defined in this investigation. Results suggested that female physicians in the research sample held this value at a significantly higher rate, as compared to the male physicians.

Although statistically significant, this finding might not possess the strength of significance that research with larger sample sizes are able to generate. However, the nature of this pattern, which is more thoroughly discussed in the inductive analysis section, does possess interesting theoretical relevance.

As compared to men, women are socialized in the culture to value caretaking to a much greater extent. In order to maximize this value in a helping profession, it seems the women of this sample initially viewed control as a means to an altruistic end. Part of their learning, which led to increased self and career satisfaction, involved the

perception of the unhealthy and self-defeating nature of this particular strategy.

The other value which does not possess statistical significance, but which diverged in this direction, was the relationship between the value of challenge and the demographics of gender and age. If sample size were increased and these trends remained consistent, these relationships could possess significance.

Results suggested that women and younger physicians held the value of challenge at a much higher rate than male and older physicians. Previous research has demonstrated that the medical environment is more of a challenge to female physicians, due to historical, cultural, and occupational perspectives. Perhaps a self-selection process was involved in these findings, in which women who valued challenge in their lives selected the career of medicine.

In terms of age factors, the values of challenge and diversity were held at a much lower rate by older physicians in the sample. For this group, it seems the challenge and stimulating diversity of medicine could have dissipated over time with experience and maturity.

Other age-related differences which were also not statistically significant, but more closely approached the .05 level, were related to the nature of the medical environment. Older physicians more frequently presented

medical environment stressors, such as managed care and regulations, than younger physicians.

This seems related to the fact that these changes have occurred while older physicians were in practice. Today, younger physicians are more adequately prepared for these realities through training in medical school and residency. They enter the field of medicine with a realistic knowledge of the environment in which they will work. The learning situation for older physicians operated under a different set of values attached to a medical career. Results suggest that today's medical environment was perceived more as a threat to older physicians, rather than a challenge.

Differences in age-related perceptions of the environment seem related to differences between young and old physicians on the stressors of competence threat and responsibility, which also closely approached the .05 significance level. Three of the five older physicians presented threat to competence as a stressor which they tended to guard against, versus none of the younger physicians.

Interestingly, two of the three physician, both of whom were on the older end of the age continuum, had been subjected to a malpractice suit as part of legal action against a physician group. The incidents were described as emotionally difficult ones. It seems the perception of

stressors, such as the medical environment and threats to competence, developed out of their personal experiences.

2. Qualitative Comparisons

In scanning the data and reviewing patterns in the subgroups which were not the focus of the statistical analysis, two themes were found to be noteworthy. The first concerned differences between physicians working in rural versus urban settings. Rural physicians in this sample presented the stressors of the medical environment at a much less frequent rate, as compared to urban physicians.

One rural physician stated, "I think in the rural areas it (the influence of environmental change) is probably less because the HMOs and the PPOs really have had very little impact on the rural areas. I think I have about 2% of my practice on HMOs." In an interactive sense, two of the three rural physicians were in the older age grouping. However, the rural influence seems much more pervasive in this context. Older urban physicians spoke very forcefully on the stress of this issue.

A second theme suggested in the data suggested strong differences between Caucasian and Afro-American physicians on the influence and value of family. For the two Afro-Americans, family was presented as very influential in their career choices of medicine and family medicine. Only two of

the eight Caucasian physicians spoke of family in this regard.

Both Afro-Americans addressed their patient care in family terms, with one physician viewing patients as part of his extended family system. Both discussed returning to their family roots and environment as influential in their practice and specialty choices. Less than half of the Caucasians (N=3) presented practice as related to family in this manner.

It is interesting to note how this perspective relates to racial differences on the values of control and perfectionism. Neither of the Afro American physicians presented these values as part of their makeup. This seems to reflect cultural differences. A "Euro-centric" perspective stresses individual mastery and achievement, which quite conceivably could lead to problems with over-control and perfectionism, if valued to an extreme. An "Afro-centric" perspective, which stresses the importance of group needs and family values, would inherently seem to be less problematic in this area. Results of this study suggest this to be the case. Culture seems to affect the way stress is evaluated and coping choices are realized.

In terms of coping, the data suggested a lack of quantitative and qualitative differences among groups. This dimension possessed more similarities across groups than the spheres of stress and values.

Generally, these results are viewed by the researcher as somewhat tenuous. One should caution against placing a high value on generalizability until future investigations are able to corroborate these findings utilizing varied methodologies with larger sample sizes.

C) Time-Ordered Meta-Matrix

The matrix in Table 5 presents developments which occurred over time for the research participants, and the nature of learning which facilitated healthy changes. This structure provided significant impetus to the nature of the inductive analysis through its attentiveness to developmental processes in the areas of research interest. The presentation of this data shall lead to a discussion of the themes and patterns which evolved during the analysis phase. Many of the phrases contained in the matrix are often direct quotations presented by the research participants.

Table 5

Time-Ordered Meta-Matrix

R.P.	PAST	PROCESS	PRESENT
#1	overload	struggle with monitoring	different outlook satisfaction
#2	need for control all I think of is work	struggle with limit-setting letting go quiet centering + awareness	different outlook enjoy the moment not being so effortful
#3	crisis quick reaction overload	ongoing review experience helpful problem-solving learn crossing point	+ confidence certain things don't matter humility
#4	perfectionism	What's the worst that can happen?	acceptance
#5	make everyone happy fix the world control	staff protects me more accepting that I can't do it all problem-solve	taking time off positive choices + realistic
#6	stressed by people disabled by stress	limit-setting problem-solving ride the stress	acceptance experience payoffs
#7	controlling abrasive communication	thought devaluation adaptation - control	humility accept difference part of the flow
#8	do it all whole life work	lower expectations allow others responsibility	+ comfort externalizing emotions
#9	high expectations I want this done now changing the entire society	accept and go on feedback process problem-solve	create a little unit of sanity
#10	making everything just so control defined by others perfection	setting limits letting go plan of action not going to be it for everybody	+ self-esteem balance feeling good about accomplishments + self-acceptance

III. INDUCTIVE ANALYSIS

"Life is a circle" (research participant).

Inductive analysis revealed several significant interrelationships among the variables of interest. The processes of developmental learning and reciprocity between values, stress, strain, and coping were presented by the research participants as primary perspectives related to their career satisfactions, successes, and difficulties.

Values often served as the foundation of the stress-coping framework. As previously discussed, predominant values related to career decision-making and the practice of medicine included diversity, altruism, perfectionism, control, spirituality, honesty, family, and having an influence on the lives of other. The sources of stress which the research participants presented were often related to these sets of values in reciprocal and complex ways. Generally, one set of results suggested that stress is produced when a conflict in values exists between the person and the work environment.

The problems this sample described with the nature of the medical environment reflected this dynamic. The physician value of control, for example, was compromised to a significant degree when medical decision-making was dictated by non-physicians. When the decisions were based on economics, rather than high-quality care, the physician value of altruism was being undermined. The environmental

changes which have occurred are thus viewed as stressful due to the clash between today's medical environment and the nature of values held by those working in that environment. If patients were viewed as family, the significance of this type of stress was heightened.

The dimension of overload, which was presented by the group as strongly related to the nature of the medical environment, also illustrated the process of a conflict with values producing stress. As previously presented, this group of physicians discussed overload in the context of performing non-medical tasks, such as excessive paperwork and negotiating with insurance companies. The nature of this work as it related to overload also strongly conflicted with the value of altruism, creating stress.

Overload was also related to values in a differing fashion. Several of the research participants cited a past and/or present need to be accepted by others and pleasing to them. One participant stated that "I want people to be so happy with me that I let them be a little unreasonable in their expectations." Others noted attempts to "carry the whole burden.... I've got to do it all myself." As previously discussed, this dynamic would pertain more to the women physicians (N=5) of this study than the males (N=1). It is interesting to note that the knowledgeable informant's definition of success, being liked by others, became a source of stress when carried to the extreme.

This style related to an interrelationship between the values of altruism, control, and perfectionism. Being helpful (altruistic) to their patients was often defined by the physicians in terms of patients being happy, satisfied, and totally accepting of their care. Physicians expressed a need to be perfect in the satisfaction of this goal, and would assume maximum control as a means towards fulfilling this objective. This often led physicians to assume total responsibility for the well-being of their patients.

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These physicians spoke candidly of this style serving as a source of stress, often leading to a sense of time and role overload. Dealing with non-compliant patients and demanding, difficult-to-please personalities was particularly stressful in this context, as physician attempts to be perfect and to control the health of the patient were unsuccessful and ultimately self-defeating.

Thus, for many of the participants in the study, their values became sources of stress if manifested in unhealthy and unbalanced ways. Phrases such as "do it all myself" and "make everyone happy" reflected a perfectionist style which often led to over-control. Several participants clearly described stressful experiences dealing with attempts to make everyone perfectly happy. This led to experiences with strain, when the impact of the stressor revealed itself in detrimental ways.

The strains of physician stress were described as most likely to manifest themselves under overload conditions. Thus, frequently performing tasks which conflicted with values or behaving in ways which reflected unbalanced values would contribute to overload, which would produce a type of strain sensed by the physician themselves or by significant others in the family or work environment.

A key finding of this investigation concerned the process of learning involved in the coping dimension. All research participants, at some level, addressed the changes they had made for themselves as a result of significant experiences with stress. This also frequently involved the values of diversity, altruism, perfectionism, and control.

Several physicians expressed learning that "you can't be everything for everybody." This was particularly applicable to the nature of work: "It was not really my job to make everybody happy all the time" was a lesson learned

by one physician. Reducing the personal meaning of gaining everyone's approval through pleasing behaviors was a significant aspect of the learning process: "I don't have to have every patient love me to feel I'm a success." The resulting coping pattern involved "learning to be much easier on myself and expect much less of myself." For this group of physicians, these changes resulted in significant increases in self-acceptance and self-esteem.

A related process of learning by this group concerned a reduced need to be in control, and allowing others to take responsibility for their lives. The impossibility of being perfect, and the realization that letting go of control facilitates the attainment of healthy personal values was presented as part of the growth process which these physicians reported: "I had felt quite stressed about that (need to be in control) until I am ready to let go of the control." Overcontrol often led to out of control and stressed feelings, which subsequently led to learning a letting-go process, and a reduced need to control. The learning involved in this pattern led to enhanced feelings of personal and career satisfaction.

The value of spirituality cited by half the research sample was strongly related to this pattern. Thus, coping strategies connected to the value of spirituality helped temper thoughts, feelings, and behaviors associated with the value of control. A process of "devaluing," as described by

one physician, facilitated a re-prioritization of values, in which self-importance was de-emphasized and control over others sought to a lesser degree. This shift in values significantly changed the nature of this physician's stress and coping, and greatly enhanced feelings of self-satisfaction and self-esteem, according to self-report. Physicians who described spiritual value systems shared similar dynamics.

In a generic sense, the choice of coping strategies was intricately tied to the values held by the group. In some cases, coping behaviors were a manifestation of values, as in the relationship between the act of prayer and the value of spirituality. With the value of diversity, several physicians (N=5) spoke of holding a diversity of interests outside of medicine, which was helpful in a coping sense. A general theme in the developmental learning process was the adoption of an altruistic attitude towards oneself. Self-care was viewed with increasing importance, a process which enabled the physicians to better care for others.

A significant aspect of this learning involved a balancing of the control value and a letting go of the perfectionism which had been previously reinforced. The process of limit-setting was presented as being instrumental in this regard. The developmental path was viewed as a struggle and a challenge, yet one which had produced the rewards of career satisfaction and enhanced self-esteem.

On a note related to how these changes occurred, thirty percent of the sample discussed previous or present involvement in individual or marital counseling as a means to enhance their coping processes. These research participants reported that many of the changes outlined in previous sections were enacted as a result of positive experiences with therapy.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The process of research, findings of research significance and their implications, limitations of the study, and directions for future research are discussed in this section. Rather than proving or disproving hypotheses, this investigation was designed as an exploratory, qualitative study designed to assess stress and coping of physicians and the relationship of these factors to physician values.

The choice of qualitative methodology was dictated by several considerations. On a philosophical level, qualitative approaches are designed as processes of discovering the meaning and essence of human experience (Giorgi, 1985). Rather than the researcher dictating the type of research data generated by research participants, the focus of qualitative research is their natural meaning categories. This is accomplished by asking research participants to describe their world in terms of what they find important.

In terms of research, qualitative methods tends to be discovery-oriented (Patton, 1990). In this investigation, exploration centered on two facets: health and values.

Previous research in the area of physician stress has tended to focus on impairment and pathology. In this line of inquiry, subjects are requested to complete inventories measuring problem areas such as depression and substance abuse. Theories on impairment are generated, and the numbers of impaired physicians are quantified. The lack of research on healthy physicians can lead one to assume that this occupation suffers significant impairment. However, one could argue that this assumption is dictated by the nature of research being conducted. In essence, impairment research focuses solely on problems, and is therefore unbalanced.

The dimension of values has also received minimal research attention in the physician stress literature. The inclusion of values and philosophy of practice in the design of this study was intended to open avenues to the acquisition of rich and meaningful research data. Through a relative neglect of the interrelationships between values and the factors of stress, strain, and coping, previous research efforts have limited the complexity and depth involved in these processes.

In terms of research methodology, traditional research in the area of physician stress has involved research subjects completing occupational stress inventories. The inventories themselves, as well as the choice of which inventory the researcher decides to utilize, tend to limit

investigation potential by predefining and reducing the nature of the data being gathered.

This process also restricts the data to the specific point of time in which the subject completes the inventories, limiting the data to one specific time period in the subject's life. The methods of this study allowed the physicians to present developmental and maturational perspectives in their stress and coping. These processes were suggested to be meaningful to this population, ones which traditional, single time-frame quantitative research tends to negate.

Rather than focusing on impairment, this study was designed to address healthy dimensions through the research identification and investigation of satisfied and emotionally successful physicians. This was accomplished through both the use of a knowledgeable informant, who identified a diverse group of healthy physicians, as well as through the design of interview questions which focused on coping efforts.

The creation of wide diversity in the research group was emphasized. Creation of a diverse research sample was intentional, in order to identify values, stress and coping commonalities (Patton, 1990). Minority physicians, who have received minimal research consideration in this area, were purposefully included in the sample. A limitation of this investigation is the absence of a female Afro-American

physician in the sample group. Unfortunately, it was very difficult to identify or locate such an individual.

With regards to other aspects of the sampling process, I found it surprising that only one physician chose to not participate after being contacted by phone. Even though a variety of concerns were expressed about issues of confidentiality, the physicians were willing research participants once they were offered reassurances in this matter.

One of the initial steps in this research investigation involved a process termed "bracketing." Prior to the first interview, I outlined a series of my expectations concerning the research findings (Appendix B). A comparison between my expectations and the actual results revealed several patterns of research interest.

Prior to the study, I did not think of physician stress in developmental terms. I had expected a rather static, present-oriented series of responses to the interview questions. My assumptions were that success was conceived early in life through positive family modeling and learning, and that a healthy family-of-origin served as the foundation for a satisfying and successful career experience.

The transcribed interviews and field notes which served as the source of research data revealed a distinctly different picture. The physicians of this investigation described a process designed to improve their personal fit

with the environment in which they worked. The initial step included their choice of specialty, in which values such as diversity and altruism played a significant role in filtering their decision-making to the present practice.

The process of development and choice continued throughout their career and seems to have been an important factor in their success. For this group of physicians, success and satisfaction often involved a learning dimension, in which experiences with detrimental levels of stress and strain would lead to periods of evaluation and change. I believe the nature of this developmental process is the most important finding of this dissertation study.

Research participants clearly described their continuing efforts to create a harmonious relationship among all aspects of their lives - self, others, work. Rather than experiencing success and satisfaction early in their careers, all of these physicians struggled through difficulties. However, these hardships subsequently contributed to personal/career growth and health.

A second important pattern reveals the connection between values, on the one hand, and stress, strain, and coping on the other. Stress was produced when a conflict in values existed between the person and the work environment. Certain values also became sources of stress if manifested in unhealthy and unbalanced ways.

Choices of coping strategies were also tied to values, such as creating a diversity of interests outside of medicine, learning an altruistic attitude towards oneself, and constructing a balance in the dimension of control. This often involved an understanding that responsibility for health resides with the patient and was under the patient's control. Processes of limit-setting and acceptance often contributed to this healthier balance.

There were a variety of unexpected processes and findings which developed out of the research. One of the more surprising findings concerned the frequent presentations of spirituality as a value and prayer as a coping strategy. These factors were generally presented early in the interview process, a reflection of their importance to the participants. The development of a spiritual philosophy was often tied to a surrendering of personal control within a larger perspective.

A second surprise concerned the level of emotionality which often permeated the interview. Three of the ten physicians cried at some moment during our time together. At least seven of the ten exhibited strongly felt emotions at some time in the interview process. These behaviors were dramatically different from the caution and guardedness which I had expected prior to the initiation of the research process. Four of the physicians also reported the interview

as a productive experience involving "self-learning." This, too, was an unexpected response.

Results suggest confirmation of the demand-control hypothesis of Karasek and Theorell (1990), in which occupational stress is defined as a function of the level of work demand coupled with the amount of decision latitude involved in the role of the worker. Research participants presented forceful feelings associated with decreased decision-making power in their work. This loss of control was deemed very stressful. Gabbard's (1987) hypotheses concerning the role of perfectionism and compulsiveness in physicians was also validated by the interview responses contained in this study.

Where this study deviates from previous research efforts is its focus on coping with these dimensions. Although changes in the medical environment were perceived as stressful, my research participants spoke of the need for adaptation to these conditions. And though many recognized the nature of their perfectionist and controlling styles, efforts to make healthy changes were often initiated.

These results also confirm the person-environment model of stress, which views person and environment in a dynamic, mutually reciprocal relationship (Lazarus & Folkman, 1984). The validation of this model was enhanced by the use of qualitative methods, which more appropriately captures

themes and patterns which fluctuate throughout the life span.

Limitations of this investigation concern its reliance on interviews as the main source of research data. The potential for subjective bias, which led to the extensive development of quantitative methods, a confounding factor in interview-based qualitative studies. Bias can be manifested through a variety of conditions: the emotional state of the interviewee or interviewer at the time of the interview, through recall error, self-serving biases, and varied reactions of the interviewer to the interviewee, such as giving researchers what they are perceived to want (Patton, 1990).

A dramatic example of the first condition involved the author, who was called into an emergency situation with a suicidal client just prior to the initiation of the first non-pilot interview. When reviewing field notes, it was evident that this situation affected the interview. It is recognized that this study may be limited by its subjective nature.

In this context, quantitative methods have been developed to help reduce measurement error. Methodological attention has been directed towards improving measures of validity and reliability to increase the generalizability of research results. This investigation has also utilized

various qualitative strategies to enhance its validity and reliability.

One particular strategy is termed the member check, in which the results of the study are directed back to the research participants as a means of assessing the accuracy of the results suggested by the researcher. The member check essentially verified the results of the inquiry. One research participant seized upon the importance of values in this study, and commented that "That's why we do what we do." Another participant, in commenting on the gender differences discussed in chapter 4, stated that women physicians who enter the field of medicine feel an initial "need to prove themselves," and, as a result, get involved in patterns of control and perfectionism.

The results of this study suggest that research of this kind can be extended in the following ways: First, the population of satisfied and successful physicians should receive significantly greater research attention. Focusing on this group can facilitate the presentation of healthy solutions to the nature of those stress-related difficulties which are inherent to the practice of medicine. Second, it is recommended that combining qualitative and quantitative research efforts will generate more information on what particular person-environment factors help produce physician career satisfaction. This may be accomplished in several ways.

First, the results of this study could be tested through quantitative means. Occupational stress, values, and career satisfaction inventories could be utilized to assess the validity of these findings, and extend the conclusions.

Second, it would also be productive to administer quantitative measures to a group of research participants, differentiate individuals successful and non-successful in coping with their stress, then interview members of different groups to gather richer, more extensive information on what may define their differences.

The ideal research strategy would utilize a variety of measures: interviews with research participants, their staff, and significant others; self-report psychological inventories; observations in the workplace; and physiological monitoring to assess bodily processes and their relationship to stress and coping. The type of strategy would enable researchers to develop complex, holistic interrelationships that capture the essence of stress and coping.

Future directions in research should attend more closely to developmental processes. This study discovered the importance of tapping into this dimension to gather a fuller, richer description of the stress phenomenon than is

generally captured by single time-frame quantitative research. Longitudinal research, would be an appropriate research method in meeting this goal. Follow-up interviews with the physicians of this study would elicit interesting findings.

Finally, the significance of values was also demonstrated. Further research should elaborate and clarify the suggested relationships among values stress and coping. This study suggests that successfully dealing with stress does indeed contribute to a higher level of integration and health.

APPENDIX A
INTERVIEW GUIDE

1. Gender of research participant?
2. How old are you?
3. What is your present relationship status?
4. Do you have children? Ages?
5. Describe your ethnic/cultural background.
6. Describe the nature of your medical practice.
7. Describe your practice responsibilities.
8. How many total hours do you work during a typical work week?
9. What is the total number of patients you would see during a typical work week?
10. What factors led you to decide on medicine as a career?
11. What led you to go into family medicine as a specialty?
12. What part did personal values play in these decisions, and in your practice of medicine?
13. Describe your philosophy for medical practice.
14. What are the sources of your work-related stress?
15. How do you know when you're under stress? Please describe an experience which reflects this.
16. What happens to you? Physically? Mentally? Emotionally?

17. What stands out for you from your experience of work stress?
18. How does your experience of stress affect your work?
19. How does this experience affect you personally?
20. In what ways do you attempt to cope with your work-related stress? What do you do? Think? Feel?
21. How successful do you feel in coping with your work-related stress?
22. Are there times when you experience work stress positively? What happens? Please describe an experience which reflects this.
23. In what ways are your experience of work stress and coping related to your personal values?
24. How are they related to your philosophy of medical practice?
25. Is there anything else that you haven't said that you would like to say that would help me to understand your experience of work-related stress?
26. Summarize interview to research participant.

APPENDIX B

BRACKETING

RESEARCHER PREDICTIONS

Values:

holistic philosophy
caring
challenge
perfectionism

Stressors:

overload
nature of medical
environment
responsibility
problem patients

Coping:

support
exercise
positive appraisal
vacations
problem-solve
self-care

FINDINGS OF STUDY

Values:

diversity
altruism
perspective
perfectionism
control
spirituality

Stressors:

overload
nature of medical
environment
responsibility
problem patients
competence threat

Coping as Developmental Process:

support
exercise
perspective
time for self
problem-solve
stress monitoring
prayer
counseling
outside interests

APPENDIX C
ORAL SOLICITATION, TELEPHONE

Hello. My name is Douglas Post. I am a faculty member of the Ohio State University Department of Family Medicine, and a doctoral student conducting dissertation research titled "A Qualitative Analysis of Stress and Coping in Practicing Family Physicians." Your name has been provided to me by a colleague who identified you as an individual who could provide useful information on stress and coping in practicing family physicians.

The study involves a strictly confidential interview format, in which I will interview you for approximately one hour on the topic of stress and coping in your work. With your permission, the interview will be audiotaped. Participation in this study is strictly voluntary. If you volunteer to participate, you have the right to withdraw from the study at any time and have the research data returned to you at your request.

Would you like to participate in this research study?

APPENDIX D
WRITTEN SUMMARY OF ORAL PRESENTATION TO THE
RESEARCH SUBJECT CONCERNING THE NATURE
OF THE RESEARCH STUDY

The purpose of the dissertation titled "Values, Stress and Coping Among Practicing Family Physicians" is to gather information on the sources and effects of occupational stress in practicing family physicians, and to determine how they cope with their identified stress.

Research data shall consist of one hour interviews with various practicing family physicians, such as yourself. With your permission, the interview shall be tape-recorded. During the course of the interview, you can terminate the recording of the interview through pressing the stop button on the tape machine.

The data on the tape shall be transcribed for qualitative data analysis. The data will be coded to ensure that raw or processed data cannot be linked with you. Your name shall not be used during the interview to further ensure confidentiality.

You will be given an opportunity for a second interview to provide feedback on the preliminary data analysis, if you so choose. You will also be given an opportunity to provide

so choose. You will also be given an opportunity to provide written feedback through a letter, rather than a second interview. At the conclusion of the study, you shall be sent both an individual and group analysis of the topic under investigation, which can serve as a useful consultation service on the topic of physician stress.

Participation in the study is strictly voluntary. If you volunteer to participate, you have the right to withdraw from the study at any time and have all research data returned to you upon your request.

Date: _____ Signed: _____
(Participant)

Signed: _____ Signed: _____
(Principal Investigator (Person Authorized to
or his/her authorized Consent for Partici-
representative) pant - if required)

Witness: _____

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