A PATH ANALYSIS OF A JOB BURNOUT

MODEL AMONG FIREFIGHTERS

DISSERTATION

Presented to the Graduate Council of the

University of North Texas in Partial

Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Gail R. Goza, B.S., M.Ed.

Denton, Texas

August, 1988

Goza, Gail R., A Path Analysis of a Job Burnout Model Among Firefighters. Doctor of Philosophy (Psychology), August, 1988, 156 pp., 4 tables, 3 figures, references, 34 titles.

The purpose of this study was to propose an exploratory causal model that examines the influence of several antecedent variables on burnout. The antecedent variables included age, marital status, education, tenure, Type A personality, Jungian types, death anxiety, leadership style, job satisfaction, stress, coping efficacy, and marital satisfaction. The validity of the causal model was tested by using path analysis.

Subjects were 100 male firefighters who completed self-report measures of the predictor variables. Instruments included the Jenkins Activity Survey, Myers-Briggs Type Indicator, Collett-Lester Attitudes Toward Death Scale, Leader Behavior Description Questionnaire, Job Descriptive Index, Perceived Job Stress, The Coping Inventory, Dyadic Adjustment Scale, and the Maslach Burnout Inventory. Perceived work stress made the only direct contribution to the variance in burnout. Direct paths were found to stress from job satisfaction, Type A personality, and single marital status. Job satisfaction was directly related to leadership (consideration) and the Jungian

Introversion, Feeling, and Perceiving preferences. Direct paths were found to marital satisfaction from death anxiety, leadership (consideration), and leadership (structure). Leadership (consideration) was directly related to structure.

From the above results, it can be concluded that perception of stress is an important factor in predicting burnout. Other factors are important contributors to stress and have indirect effects on burnout. Implications for the prevention and treatment of job burnout are discussed.

ACKNOWLEDGEMENTS

I would like to thank all those who encouraged me and contributed to this research. First, I would like to thank the members of my committee: to my dissertation director, Dr. Doug Johnson, for his support and good-natured spirit; to Dr. Vicki Campbell, for her insightful suggestions and high standards which have helped me to grow in many ways over the years; to Dr. Bert Hayslip for his statistical expertise and support; to Dr. Michael Beyerlein for his helpful comments; and to Dr. John Hipple for helping me to keep in mind "the big picture."

I thank the Fort Worth Fire Department for their cooperation and enthusiasm about my project. I am grateful to Ruth Ross for her encouragement and belief that I would persevere. I thank my family for their patience with me for the ups and downs of graduate work. I am especially thankful to my mother, Michele Goza, for showing me how to reach out and attain the goals I set for myself. I thank Betsy Johnson for being such a selfless and loving friend who never lost faith in me.

Last, and most importantly, my love and gratitude goes to my husband, Peter MacMullan, for his continuous support and patience throughout my struggle with the dissertation.

TABLE OF CONTENTS

A PATH ANALYSIS OF A JOB BURNOUT MODEL AMONG

FIREFIGHTERS

CHAPTER

LIST OF TABLES

LIST OF ILLUSTRATIONS

CHAPTER I

INTRODUCTION

"Burnout" has become a popular term and the object of considerable attention in the literature in recent years. However, in spite of the substantial quantity of research, the literature has lacked a cohesive theoretical framework and a significant empirical foundation. Thus, identification of the etiological factors involved in burnout has lacked substantive study.

In an incisive critique of the burnout literature, Einsiedel and Tully (1981) contend that the literature lacks definitional and conceptual clarity and has not made use of relevant literature from other disciplines. They further note that the literature has been more applied than scientific in nature. Because the majority of burnout research has been correlational in methodology, causal explanations of the effects of various factors on burnout have not been established. Most conclusions about the nature of burnout have been drawn from cross-sectional studies that have focused only on one or two variables correlated with a burnout outcome measure.

Because of the apparent complexity of the burnout phenomenon, a methodology is needed that permits the examination of a number of salient variables in an integrated framework. Path analysis, or causal modeling, is a method that allows the testing of a theoretical model and the investigation of causal relationships among the variables.

It is the purpose of this study to suggest an exploratory causal model that examines the influence of several antecedent variables on burnout. Those variables are: age, marital status, education, work tenure, death anxiety, Jungian types, Type A personality, leadership style, job satisfaction, perception of job stress, social support, and coping efficacy. The validity of the theoretical model will be tested by path analysis. In addition, while adding to the literature on individual experiences of burnout, the present research can add to our understanding of the interactions between individual, organizational, and extra-organizational variables. Further, the present analysis can increase the body of knowledge on burnout by presenting an integrated model by which to conceptualize burnout.

In the following section, literature related to the burnout phenomenon will be reviewed. Then, literature will be discussed in separate sections for each of the variables of this research study. Finally, a rationale

will be presented for the ways in which the variables potentially interact with each other.

Job Burnout

Occupational stress has been the focus of considerable interest in the literature in the past decade. Health and economic costs due to stress have been estimated as high as $100 billion yearly for individuals and organizations (Ivancevich & Matteson, 1980). Recently, the phenomenon of "burnout" has been receiving a great deal of attention and has become a popular term for a number of physical and emotional symptoms. The serious nature of the burnout phenomenon derives from its relationship to organizational problems of turnover, absenteeism, impaired job performance, lost revenue, and personal dysfunction (Maslach & Jackson, 1981). It has been noted that workers' compensation for disability due to "psychological burnout" is no longer considered to be unusual (Ivancevich, Matteson, & Richards, 1985).

Despite the considerable literature generated on burnout in recent years, the research has lacked an extensive empirical base as well as a sound theoretical foundation. In a review of over 400 publications on burnout, only 20% of these were classified as empirical analyses (Kilpatrick, 1986). In addition, definitions of burnout have lacked specificity and precision and have been described differently among various researchers.

Since the initial use of the term "burnout" in an article by Freudenberger (1974) to describe the impaired functioning of staff in the helping professions, burnout has been as broadly defined as equivalent to stress (Freudenberger, 1980). Other definitions have been narrower in focus, connecting burnout to the nature of the counselor-client relationship found in the human service professions (Maslach & Jackson, 1981). Most definitions of burnout, however, appear to have in common the view that burnout is the process of withdrawal from work in response to stress and strain in the work environment (Cherniss, 1980a).

Maslach and Jackson (1981) described burnout as a particular type of stress response which they defined as a syndrome of emotional exhaustion and cynicism toward work due to chronic organizational stressors. In their factor analysis of the underlying dimensions of burnout, they found three symptom clusters: emotional exhaustion, devaluing of personal accomplishment, and depersonalization. According to their research, burnout is a complex construct that involves being emotionally exhausted by an undesirable job situation, valuing one's personal competence negatively, and having negative attitudes and feelings about the recipients of one's services.

Most researchers appear to agree that the concept of burnout comprises a symptom pattern involving several areas of functioning. Patrick (1979) describes burnout as falling into four categories: physical, cognitive, emotional, and behavioral areas. Other researchers have also provided support for burnout as a multidimensional construct (Berkeley Planning Associates, 1977; Maslach & Jackson, 1981; Perlman & Hartman, 1980). Physical symptoms consist of chronic fatigue, exhaustion, sleep disturbances, and lowered resistance to illness (Berkeley Planning Associates, 1977; Cherniss, 1980a; Freudenberger, 1975; Hendrickson, 1979; Kahn, 1978; Welch, Medeiros, & Tate, 1982). Cognitive symptoms include cynicism, stereotyping, and depersonalizing clients (Freudenberger, 1977; Maslach, 1978; Sparks, 1979). Emotional symptoms include feelings of emotional exhaustion and feelings of helplessness (Maslach, 1976; 1978; Maslach & Jackson, 1978). Behavioral symptoms include absenteeism, decreased productivity, complaining, increased substance abuse, and terminating the job or career (Berkeley Planning Associates, 1977; Patrick, 1979; Perlman & Hartman, 1980; Reed, 1977; Sutton, 1977; Welch et al., 1982).

Research efforts to determine the causes of burnout have primarily investigated organizational variables. Westerhouse (1979) studied the effects of tenure, roleconflict, and role conflict resolution on work

orientation and burnout of teachers. Role conflict was found to be a significant variable in the prediction of burnout. Institutional goals, job description, the physical and social environment, time demands, and management styles were identified by other researchers as structural aspects work setting that increase burnout vulnerability (Applebaum, 1981; Cherniss, 1980a; Freudenberger, 1975).

As the result of an ongoing three-year research project, Golembiewski (1985) identified features of the worksite that appeared to be strong predictors of burnout. He found that employees who reported to the same supervisor were likely to experience similar levels of burnout, suggesting that the policies and leadership style of the supervisor have a direct influence on the degree of subordinate burnout. Work units that had a high proportion of individuals in the latter stages of burnout were characterized by low cohesiveness, low supervisory support, high pressure to produce, low standards of performance, and unclear roles and goals.

Management qualities have been cited by other researchers as decreasing vulnerability to burnout. Barad (1979) and Berkeley Planning Associates (1977) found that employees who had confidence in the leadership and communication styles of their administrators and who were receiving adequate supervision were less likely to

experience burnout. Berkeley Planning Associates (1977) also found significant relationships between burnout and staff perceptions of non-supportive leadership, poor communication, and an underemphasis on task orientation. They also found significant correlations between burnout and lack of employee autonomy, unclear expectations of workers, lack of innovation, and inadequate peer support. In contrast to the findings of the Berkeley group, Brookings et al. (1985) did not find low supervisory support and high work pressure and control factors directly related to burnout.

Perceived lack of control over the work environment has also been demonstrated to be associated with increased burnout. Minahan (1980), Pines and Maslach (1978) and Sparks (1979) have found that an administration that excludes staff from involvement in policy decisions or decisions that directly affect the employee's job activities increases burnout. The perception of a lack of control over policy decisions affecting workers was also blamed by Ellenberg (1981) and Zahn (1980) as being a significant component of burnout. Other researchers have demonstrated that burnout is decreased and job satisfaction increased when workers have an active, positive influence on decisions about policies (Barad, 1979; Cooper & Marshall, 1976; Maslach & Pines, 1977). Emotional exhaustion, one of the central dimensions of

burnout, was found to be decreased by interpersonal aspects of work such as supportive leader behavior and group cohesiveness (Cherniss, 1980b; Freudenberger, 1974, 1977; Maslach, 1976; Mattingly, 1977). The importance of work group cohesiveness in reducing burnout has been supported in both the theoretical (Freudenberger, 1974, 1977; Maslach, 1976; Mattingly, 1977) and empirical literature (Maslach & Pines, 1977; Pines & Kafry, 1978). Lower rates of emotional exhaustion were found to result from frequent staff meetings in which workers shared experiences and showed support for each other (Maslach & Pines, 1977). Similarly, Maslach (1976) found lower levels of burnout in workers who actively expressed feelings and shared with their co-workers. In general, the research lends support to the availability of social supports and feedback from colleagues as negatively related to burnout (Barad, 1979; Berkeley Planning Associates, 1977; Pines & Kafry, 1978).

The available literature on the role of organizational variables such as structure and rules is contradictory. Maslach (1978) viewed rules as both promoting stress for staff but remarked that they could also be used to avoid stress. Structure, rituals, and routines were noted by Freudenberger (1977) to be important variables in preventing emotional exhaustion. Other authors, however, have discussed rules and/or rule

rigidity as playing a major role in contributing to employee stress (Cooper & Marshall, 1976; Payne, 1980; Shostak, 1980). Highly formalized rule observation, job codification, and highly centralized decision making were found to be positively related to emotional exhaustion (Armstrong, 1977; Cherniss, 1980a).

Gaines and Jermier (1983) found that the presence of rules had no significant effect on exhaustion but that inflexible rules positively correlated with the frequency of emotional exhaustion. This finding may help explain the previous conflicting results in that the existence of rules may be viewed by workers as protective, particularly if employees have input on how and when the rules are administered (Jermier, 1982). Emotional exhaustion may thus result from rigid enforcement of rules.

In addition to the studies of organizational characteristics that lead to burnout, several authors have suggested that individual characteristics such as demographics or personality variables may be responsible for burnout. Similar to findings in the stress literature, the relative importance of demographic variables to burnout is unclear and has produced inconsistent results. Maslach and Jackson (1981) reported significant correlations between burnout and demographic variables of sex, age, marital status, education, and race. Golembiewski and Scicchitano (1983), on the other

hand, did not find strong correlations between burnout and demographic variables. They suggested that Maslach and Jackson's findings were the result of a large sample size rather than a true relationship among these variables.

Support was found for sex of the respondent as being a significant predictor of burnout. Gaines and Jermier (1984) found that females scored higher than males on frequency of emotional exhaustion, a component of burnout. However, they did not find sex differences on intensity of exhaustion. Age was found in two studies to be significantly related to burnout (Berkeley Planning Associates, 1977; Gann, 1979).

Cherniss (1980a) found job burnout among new public service workers in the first three years of work. There is agreement among several authorities (Applebaum, 1981; Cherniss, 1980a; Edelwich & Brodsky, 1980) that the first one to three years are the most vulnerable for the employee. They suggest that this is often a time of disillusionment when the new worker must make a transition from idealistic expectations into the "real world." Consequently, the realization that the financial and personal rewards are not what was expected from the job may lead to burnout. Support for low work tenure as a predictor of burnout has not been consistent. For example, Nagy and Davis (1985) did not find that years of

experience were related to burnout in junior high or elementary school teachers. Years in the position were not significantly related to emotional exhaustion in a police officer sample (Gaines & Jermier, 1983) or among social workers (Gann, 1979). Thus, there appears to be a lack of agreement on the role of work tenure in leading to burnout.

Marital status was found to be associated with burnout (Burke, Shearer, & Deszca, 1984). Higher burnout scores were obtained by single police officers than married officers. However, contradictory findings were reported by Gaines and Jermier (1983) who did not find a significant effect for marital status among police officers. Findings from the stress literature that people who are divorced, unmarried, or unhappily married are more likely to experience high stress (Shafer, 1978) suggest that marital status alone may not predict burnout. Thus, it may be that the level of satisfaction with one's marital relationship may be a more relevant factor than marital status alone in explaining burnout. Further research may clarify this issue.

In conclusion, the relationships between demographic variables and burnout are contradictory and lack strong empirical support. Further research is needed that examines the role of individual difference variables among different populations and with more sophisticated methodologies.

The literature concerning personality factors and burnout has been primarily theoretical in nature and there has been no extensive research to date. Freudenberger (1974) suggests that certain underlying personality features are important in burnout. In his studies on staff burnout, Freudenberger (1975, 1976, 1977) found that those workers who were overly dedicated to their work were most likely to experience burnout. He also found that the authoritarian individual was also likely to experience burnout. Freudenberger describes the authoritarian person as someone needing to be in control who feels like no one else can do the job as well as he or she can (Freudenberger, 1977).

Freudenberger (1974) contends that individuals experiencing burnout will attempt to compensate for their lack of productivity by increasing their time and effort at work, behaviors which he calls "workaholism". Machlowitz (1980) described workaholism as total commitment of time to one's occupation and demonstrations of impatience and aggressiveness toward others who keep them from their work. This description is very similar to the coronary-prone behavior pattern, or Type A pattern, which is characterized by an extreme sense of time urgency, impatience, achievement orientation, and competitiveness (Jenkins, 1979).

Studies investigating the relationship between the Type A personality and burnout appear to offer some support for the possibility of personality dimensions contributing to the burnout phenomenon. Further, it may be that other personality dimensions with an underlying cognitive component such as found in Jungian typology may help to clarify the linkage of personality dimensions to the burnout process. In the section to follow, the role of cognitive appraisal in the perception of stress will be discussed followed by reviews of the literature on Type A behavior and Jungian typology.

Perception of Stress

A more comprehensive interactional model of burnout requires the inclusion of a cognitive appraisal component. Although a relatively under-researched area in burnout, there is a growing interest in how cognitive processes affect individual perceptions of a stressful situation and how that perception affects their responses, emotionally and behaviorally.

Similar to the conceptualization and definitional difficulties found in the burnout literature, stress research has also lacked a consensus on what constitutes stress in organizations. Broad definitions of stress have included nonspecific responses to any type of demand (Selye, 1956) and any aspect of the work setting that threatens the individual (Caplan, Cobb, French, Van

Harrison, & Pinneau, 1975). McGrath (1976) defined stress as a set of demands or opportunities from the environment. One of the more widely used definitions derives from person-environment fit theory (French & Caplan, 1972). Stress is defined as a lack of fit between the individual's characteristics and the demands of the work environment. The usefulness of this theory in conceptualizing stress is its inclusion of both individual and environmental factors in explaining stress. Thus, due to individual difference factors, perceptions of what is stressful may vary.

The research literature supports the view that reactions to stress vary among individuals (Rabkin & Struening, 1970). Some people appear to successfully cope with stressors while others appear unable to meet demands from the environment. For example, it is typically assumed that a high level of demand from the environment will result in negative affect. Yet, in one study (Payne, 1981) managers were asked to describe the level of work demands that they encountered and then respond with the extent of their satisfaction with that situation. Although high demands did produce negative affect in some cases, some managers rated demands as producing positive feelings while other demands were rated as having no relationship to affective outcomes. These differential responses to the environment can perhaps be explained by findings in the perception literature.

Cognitive representations of environmental events rather than physical realities have been offered as one explanation for why environmental events are not perceived identically by all individuals. Brunswik (1956) has suggested that while qualities of the environment are sometimes observable and specific, sometimes they cannot be directly observed. Thus, knowledge obtained is not absolute and is open to individual interpretations. Consequently, whether or not a stimulus is determined to be a stressor may depend upon the meaning that the individual attributes to it (Levine & Scotch, 1970; House, 1974). This may explain why an individual may develop a stress response when there appear to be no external conditions to account for it.

Lazarus (1966) developed a theoretical paradigm that suggested how mediating factors operate between stressors and outcomes. According to this model, the event occurs, the individual becomes aware of it, and then makes a primary appraisal of whether the situation poses a personal threat. If the event is perceived as a threat, it then becomes a source of psychophysiological stress. Factors which influence the judgment of the threat are personal characteristics such as personality and past experience, characteristics of the event, and characteristics in the environment. Frenkel-Brunswik (1949) proposed that for some individuals mere exposure to

ambiguous situations can be a source of threat.
Consequently, they attempt to achieve cognitive closure in
all situations which results in rigid "black and white"
thinking.

Lazarus also described a secondary appraisal process
in which the individual makes judgments about potential
coping strategies. Coping behaviors are then put into
effect which, if successful, will eliminate the threat. If
the coping efforts are unsuccessful and the threat is not
extinguished, then the stress of emotional and
physiological arousal will continue. Cognitive appraisals
of stress were also found to influence responses to stress
by Meichenbaum (1977). He found thinking styles and self-
verbalizations to differentiate among highly stressed and
minimally stressed subjects.

Any comprehensive model of burnout must be sensitive
to the role that individual differences play in determining
what is appraised as stressful as well as the adaptiveness
of coping responses to the stressor. Personality
dispositions that may influence the appraisal and coping
processes have not been extensively studied, thus
suggesting the need for further research. Those
personality dimensions that differentiate ways of
perceiving and interpreting stimuli could be important
influences on the burnout phenomenon. It may be that

individuals vulnerable to burnout have different ways of thinking about and responding to environmental stimuli.

Two personality dimensions that appear to have an underlying cognitive component and may, therefore, prove promising as moderator variables of burnout are the Type A behavior pattern and Jungian typology. Rosenman and Friedman (1977) proposed that the coronary-prone behavior pattern, or Type A, is in part due to the subject's interpretation of and response to environmental forces such as stimuli, challenges, and/or demands. The role of the Type A pattern as a moderating variable warrants further investigation.

Jung (1921) suggested that variation in human behavior is due to basic differences in the way people perceive information and make decisions. He proposed six personality types which differentiate among individuals in terms of how they perceive and respond to the environment. Each of these personality dimensions will be discussed further in the next section.

Personality Dimensions

Type A Behavior

The Type A behavior pattern has been implicated in the development and progression of coronary heart disease (Glass, 1977). This factor is independent of other risks related to age, elevated systolic blood pressure, serum cholesterol or cigarette smoking (Rosenman & Strauss, 1964).

The most critical components of this behavior pattern according to Rosenman (1978) are competitiveness, time urgency, and aggression. Those who display the opposing behavior pattern, Type B, appear not to have an excessive competitive drive, nor a sense of time urgency, and are relatively free of hostile feelings. Much of the research has documented the various behaviors associated with the Type A pattern. These studies have been conducted, in part, as a means of validating Friedman and Rosenman's (1974) theory of the behaviors characterizing the Type A pattern.

Various studies have demonstrated an achievement striving component of the Type A behavior pattern. Gastorf, Suls, and Sanders (1980) reported that with a similar or superior coactor, Type A's perform better on simple tasks, but show impaired performance on complex tasks. They suggest that this illustrates that Type A's are concerned about achievement in relation to others. Other research has shown that Type A's believe that the presence of others would interfere with task completion (Dembroski & MacDougall, 1978). Van Egeren (1979) reported that Type A's were distrustful of others and less successful than Type B's in avoiding competition in laboratory games. They have also been found to influence the decision of a group to choose a competitive orientation to a laboratory game rather than a cooperative

one (Stensrud, 1985). The tendency of Type A's to be highly competitive is reflected in many studies investigating achievement-oriented behaviors. Friedman and Rosenman (1974) point out that Type B's are as success directed as Type A's, although they do not exhibit the aggressive, sometimes hostile style of the Type A individual.

Much research has addressed the social functioning of Type A's and Type B's. Jenkins, Zyzanski, Ryan, Fleasas, and Tannenbaum (1977) report that Type A's experience more life satisfaction from work-related achievement than from interpersonal relationships. They found that Type A's are often uncomfortable in interpersonal relationships and feel awkward and insecure in groups. Type A's have also been found to prefer working alone when under pressure (Dembroski & MacDougall, 1978). The Type A behavior of males was correlated with their wife's marital dissatisfaction (Burke, Weir, & DuWors, 1979). Burke et al. also reported that the Type A males had fewer good friends, less social support, and used talking with others less often as a coping strategy. A recent investigation of the psychological and social functioning of Type A individuals indicates unsatisfactory interpersonal relationships (Price, 1982). Type A's, compared to Type B's, have been found to be less successful in opposite sex relationships and social relationships in general (Waldron

et al., 1980) As a whole, the studies investigating relationships of Type A's present persuasive evidence for their lack of gratifying social interactions. The research suggests that they place more emphasis on work success than on interpersonal success.

Various studies have documented the time urgent nature of behavior exhibited by Type A's. They appear to cope less well with inactivity than Type B's and performed more poorly on a task requiring a low rate of response (Frankenhauser, Lunberg, & Forsman, 1980). Type A's exhibited irritation and impatience during a cooperative decision-making task when slowed down by another person. These findings indicate their impatience and tendency to do activities at the highest speed possible (Glass, Snyder, & Hollis, 1974). A study by Gastorf (1980) found that Type A's tend to show up earlier for an experiment than do Type B's. Burnam, Pennebaker, and Glass (1975) reported that Type A's worked on a task at near maximum capacity regardless of whether there was a time deadline. Burnam et al. (1975) and Price and Clarke (1978) both reported that when compared to Type B's, Type A's tended to underestimate the passage of time (e.g., judge the lapse of one minute sooner than Type B's). These findings support the notion that Type A's generally feel that time passes more quickly than do Type B's. Synder and Glass (1974) demonstrated that Type A's tend to suppress fatigue

and persist at a task despite feelings of exhaustion. Clearly, research suggests that Type A's have a greater sense of time pressure than Type B's.

Attempts at investigating the underlying components of Type A behavior represent another area of this body of research. Friedman, Brown, and Rosenman (1969) characterize the Type A pattern as a struggle against people and objects in the environment. Glass (1977) has offered a similar hypothesis related to Brehm's (1966) theory of psychological reactance. From this perspective the Type A pattern is an attempt to gain and maintain control over a potentially uncontrollable environment. Behaviors such as hurrying, impatience, striving for achievement, and hostility can be viewed according to Glass' model as responses to obstacles which threaten his or her sense of control over the environment. As in psychological reactance, when perceived control is threatened, individuals act to restore a measure of control, usually by heightened activity.

Glass supports his model with findings that Type A's will work persistently at a task regardless of whether the instructions require such performance (Burnham, Pennebaker, & Glass, 1975). He further offers evidence that Type A's suppress fatigue and other behaviors that might threaten their best efforts (Carver, Coleman, & Glass, 1976; Weidner & Matthews, 1978). Type A's have

been found to perform better than Type B's following exposure to uncontrollable and moderate stress (Krantz, Glass, & Snyder, 1974). These latter findings suggest that in situations where their control is threatened, Type A's will speed up their behavior in an attempt to regain control.

Other studies that have tested this desire for control hypothesis have found that Type A's responded more vigorously to initial threats to their control than do Type B's (Brunson & Matthews, 1981; Glass, 1977). However, in those situations in which it appeared unlikely that control could be achieved, Type A's relative to Type B's demonstrated diminished responsiveness to tasks. Glass (1977) reported that Type A's exhibited increased aggressiveness when frustrated by a confederate. Krantz, Glass, and Snyder (1974) report that when stress related to a task is uncontrollable, Type A's will respond more rapidly than Type B's. This suggests that in situations where their control is threatened, Type A's may decrease their response time in order to attempt to regain control.

Findings by Suls, Gastorf & Witenberg (1979) appear to be consistent with the Glass hypothesis. Based on a modified version of the Holmes-Rahe Social Readjustment Scale (1967), Type A's viewed life changes as undesirable, unexpected, and ambiguous in terms of perceived control. These life changes were significantly correlated with

increased stress for Type A's in contrast to Type B's. Events which were either within control or obviously beyond their control were not associated with distress for Type A's. However, Type B's reported less anxiety when events were beyond their control. These findings suggest that Type A's may differ from Type B's in the way they perceive events that may lead to increased stress. Type A's have also been found to give up control on a task with less frequency than Type B's, even if their partner was deemed more capable (Strube & Werner, 1985).

Glass (1977) also contends that the possibility of failure and loss of esteem is a greater threat for Type A's than Type B's. This may be an underlying cause for the results indicating an achievement striving component to Type A's behavior. Support for this idea was found is a study by Pittner and Houston (1980). Type A's had higher pulse rates than Type B's when confronted with threats to their self-esteem. They were also found to use more suppression and denial than Type B's to defend against these threats and in dealing with other stressful situations. Pittner and Houston concluded that Type A individuals' greater use of denial was partially responsible for their reporting less negative affect than Type B's. This supports Glass' hypothesis that loss of esteem is a greater threat to Type A's than Type B's and results in their efforts to regain control. Strube and

Werner (1985) found that Type A's made only minimal use of negative feedback they received about their performance when deciding whether or not to give control of a task to a more capable other. The researchers suggest that Type A's perceived the negative feedback as a threat to their self esteem, thus this information was ignored.

Recent studies indicate that Type A's are more vulnerable to direct threats to self-esteem and experience more intense and long-lasting distress following poor performance, particularly if they are socially insecure (Humphries, Carver, & Neumann, 1983; Pittner & Houston, 1980, 1983; Suls, Becker, & Mullen, 1981). In addition, Type A's may process information differently than Type B's when challenged, are more threatened by the possibility of loss of control over important environmental events and demonstrate different communication and interaction patterns, including more punishment, distrust, anger, and less cooperation and reward (Humphries et al., 1983; Pittner & Houston, 1980, 1983; Suls et al., 1981). Initial work investigating Type A and Type B differences in cognitive functioning (which may underlie differences in behavioral and physiological responses) was conducted by Matthews and Brunson (1979). They found evidence that Type A's and Type B's have different ways of allocating their attention to tasks. Type A's focused their attention to tasks and events portrayed as important or

central and inhibited their attention on tasks and events portrayed as peripheral. These tendencies were found much less often among Type B subjects.

It was also found that Type A medical students did not obtain as high of a grade point average on elective courses as Type B's. Type A's appeared to place more effort into core courses which indicated that they focused more on the central as opposed to the peripheral (Jones, 1985). It is possible that in an effort to maintain control, Type A's will concentrate on those central tasks which appear to be the most crucial for success.

Efforts at identifying the antecedents to the behavioral components of Type A personality have pointed to developmental factors. The Type A style has been observed in children and adolescents and appears similar to the competitiveness, achievement-striving, time-pressured, and aggressive components observed in adults (Matthews, 1977). Studies of Type A antecedents have primarily focused on family influences such as child rearing practices and parental modeling, as well as genetic factors (Compas, 1987). Of these three possible influences, child rearing practices appear to have the strongest support. Recently, early temperament has been shown to be predictive of Type A behavior 20 years later (Steinberg, 1985). Although more research needs to be conducted on developmental antecedents, there is some

evidence that early developmental factors play a role in Type A behavior.

Most of the Type A research has consisted of validity studies which offer support for Type A characteristics of aggressiveness, impatience, a sense of time urgency, and competitive achievement striving. Researchers have begun to identify the specific components of Type A behavior which may be causally related to coronary heart disease. Recent studies have reported contradictory findings concerning the relationship of the Type A behavior pattern to heart disease (Dimsdale, Hackett, & Hutter, 1978; Krantz et al., 1981). Some research has not found an association between Type A behavior and mortality in large samples of patients surviving myocardial infarction (Case, Heller, Case & Moss, 1985; Ruberman, Weinblatt, Goldberg & Chaudhary, 1984). Such results do not invalidate previous findings regarding the effects of behavioral factors on coronary disease. However, further investigation of how the Type A pattern may be related to stress, particularly the burnout phenomenon, may clarify the conflicting research.

Those few studies that have investigated the relationship between the Type A pattern and burnout have produced conflicting results. In one study (Nagy, 1982), the Type A personality was found to have little relationship with burnout and work-orientation. However,

more recently, Nagy and Davis (1985) studied burnout, Type A personality, and work orientation among junior high and elementary school teachers. They found evidence that the Type A personality and a high work-orientation (workaholism) are related to the burnout process. Nagy (1985) studied the relationship of job involvement, a construct within the Type A pattern, with work-orientation, assertiveness, and various classifications of burnout. He found no significant relationship between job involvement and burnout and an inverse relationship between burnout and work-orientation. In a longitudinal study of burnout among men and women in police work (Burke et al., 1984), Type A behavior was found to have only a weak relationship with burnout. Results from another longitudinal study (Golembiewski, 1985), indicated no consistent associations between the Type A pattern and burnout.

Although contradictory, the studies on Type A and burnout point to an avenue that warrants further investigation. Studying the linkage between burnout and Type A seems logical since the literature on the Type A pattern points to Type A's exhibiting a vigorous, even volatile response style to the environment that could lead to job burnout.

Jungian Personality Typology

Jung's psychological typology (1921/1971) was derived from his view that much of the apparent random variation

in human behavior is actually orderly and consistent. He suggested that this variation is due to innate differences in the way people perceive information and make decisions. Thus, Jungian theory assumes that these predispositions are inborn and are stable across time.

Jung (1921/1971) postulated the existence of six different ways of perceiving and relating to the environment. According to this theory, extroversion and introversion are two basic attitudinal types which reflect a way of orienting consciousness to the world. Extraverts direct consciousness outward toward external objects (people, events, and experiences). Behaviorally, they are viewed as being outgoing and action-oriented. Introversion is the direction of consciousness inward to one's own subjective perceptions of the world. Introverts are described as being hesitant, reserved, and socially withdrawn.

Further, Jung described four functions: sensation, intuition, thinking, and feeling. These functions comprise an individual's system for relating facts and data from the environment. Although all are present in an individual, typically one function becomes dominant or superior through habitual use. The other functions remain less developed. Sensation and intuition are two opposing modes of perception. Sensing involves the use of sensory input to perceive the presence or absence of stimuli. The

individual who has sensation as a dominant function attends to the concrete details and practical aspects of a situation. Whereas sensation involves use of present perceptions, intuition often obtains information from the unconscious by relating to the world through spontaneous hunches from the unconscious and inferring meanings.

According to Jung's conceptual framework, thinking and feeling are two opposite means of forming judgments and coming to conclusions. The thinking function bases judgment on logical structures which connect two or more images or percepts. These judgments are made by objectively organizing material and impersonally weighing the facts. On the other hand, the feeling function was considered by Jung to be a means of assigning personal value to an experience. This type of judgment involves evaluation of experiences in terms of good or bad, pleasant or unpleasant.

Although some personality instruments have included Extraversion-Introversion scales, few inventories have assessed Jung's whole typology. Of these, the Gray-Wheelwright Questionnaire (Wheelwright & Buehler, 1964) and the Myers-Briggs Type Indicator (Myers, 1962, 1975) represent the most significant attempts. The Myers-Briggs Type Indicator (MBTI), a self-report inventory, is the most widely used measure of Jung's typology. This instrument contains scales to measure Extraversion-

Introversion, Sensing-Intuition, and Thinking-Feeling. In addition, there is a fourth scale, Judging-Perceiving, which Myers derived from Jung's basic typology. The Judging-Perceiving scale is designed to measure whether an individual relies primarily upon a judging process (coming to conclusions) or upon a perceptive process (taking in information) in his or her dealings with the world (Myers, 1962).

Extraversion-Introversion

Studies using the MBTI tend to offer considerable evidence for the differentiation of the types. Extraverted types are reported to be talkative, gregarious, and impulsive, with underlying needs for dominance, exhibition, and affiliation (Myers, 1962; Ross, 1966, Stricker & Ross, 1962; Webb, 1964). In high school, extraverts have been found to like working on group projects, making reports to the class, and engaging in team competition (McCaulley & Natter, 1974). These findings appear to be consistent with theoretical expectations that the extraverted person's consciousness is primarily directed toward external objects.

Introverted types score high on scales of self-sufficiency and are rated as more solitary and less carefree than extraverts (Myers, 1962; Ross, 1961; Stricker & Ross, 1962). In general, studies indicate that introverts prefer to reflect before acting and enjoy

working alone. Introverts tend to score higher than average on tests of aptitude, abstract reasoning, reading ability, and aesthetic values (Myers, 1962; Stricker & Ross, 1964; Webb, 1964). These results appear to coincide with Jung's theory that describes the introvert's consciousness as mainly directed toward the inner world of the psyche.

Sensing-Intuition

Sensing types appear to have a practical orientation. They have also been found to value authority and work and have been rated as cooperative, pragmatic, and willing to take direction (Ross, 1961). Sensing types enjoy proceeding in an orderly fashion toward well-defined goals (McCaulley & Natter, 1974). These findings appear to be consistent with theoretical expectations that persons who are oriented to life primarily through sensing perception typically are attuned to facts and detail.

Intuitive types appear to like using their minds and have a high tolerance for complexity (Myers, 1962; Madison, Wilder, & Suddiford, 1963). They have been found to express strong needs for autonomy and have a positive attitude toward change (Myers, 1962; Madison et al., 1963). They are more likely to be rated as imaginative than are sensing types (Ross, 1961). In studies of highly creative persons, Mackinnon (1966) found that most of the participants scored as Intuitive types. A substantial

body of data documents that Intuitive types choose college
majors and career fields allowing them to express their
interest in symbolic and abstract ideas (McCaulley, 1973;
Simon, 1979; Stephens, 1975). Compared to Sensing types,
Intuitive types show higher grades and academic aptitude
on numerous measures but no differences in practical
skills, such as arithmetic, spelling, clerical-
administrative aptitude, and motor skills (McCaulley,
1981; McCaulley & Natter, 1974). Compared to persons with
the Sensing preference, Intuitive types report more
inferential constructs on the Kelly Role Construct
Repertory and make more imaginative efforts in
communication (Carlson, 1980). Overall, studies support
the theory that intuitive types have an interest in new
possibilities rather than practical facts and relate to
the world through hunches, guesses, or creative solutions.

Thinking-Feeling

Thinking types have been found to have strong needs
for order, autonomy, dominance, achievement, and endurance
(Myers, 1962). They are more likely to have a positive
attitude toward work and good study habits than feeling
types (Myers, 1962; Ross, 1966; Stricker & Ross, 1964).
The evidence on the thinking function appears to support
Jung's theory that thinking types have strong analytical
abilities and prefer to use objectivity and logic in
making decisions.

The research on feeling types indicates that they tend to value interpersonal relationships and harmony. Myers (1962) reported that feeling types have strong needs for nurturance and affiliation. They appear to enjoy working on group projects and in harmonious settings (McCaulley & Natter, 1974). These findings support Jung's notion that feeling types base their judgments on personal values and emotional responses.

Judging-Perceiving

Judging types tend to be responsible, industrious and steady workers and have a strong need for order (Ross, 1966). They appear to have better study habits than perceptive types (Myers, 1962) and report that they usually follow a study schedule and meet deadlines on time (McCaulley & Natter, 1974). Myers (1962) found that judging types usually get higher grades than perceptive types, and tend to be over-achievers. These results appear to be consistent with Myers' extension of Jung's theory in which the Judging person prefers to come to conclusions about what has been perceived.

Studies on Perceptive types indicate that they are impulsive and enjoy change (Myers, 1962). They tend to procrastinate, value play over work, and are less competitive than Judging types (McCaulley & Natter, 1974; Myers, 1962; Ross, 1966; Webb, 1964). Although perceptive types generally do better than judging types on tests of

abstract reasoning and scholastic aptitude, they appear to perform below capacity as indicated by lower grades in school (Myers, 1962; McCaulley & Natter, 1974; Stricker, Schiffman, & Ross, 1965). These findings appear to be consistent with Myers' extension of Jung's theory that Perceptive individuals prefer to rely on the process of taking in information.

Given the characteristics of the Jungian variables, Myers (1975) has suggested that each psychological type has preferences for certain work situations. For example, Extraverts have strong needs for affiliation and are also competitive. They are attracted to occupations where they can interact with others, such as sales and personnel work. Introverts are less competitive than Extraverts and prefer working alone in occupations such as engineering, mathematics, and carpentry. Sensing types prefer authority and established routines and tend to be attracted to practical occupations such as office management, banking, and police work. Intuitive types, on the other hand, prefer creative work situations where they can use their imaginative and abstract abilities, such as creative writing and architecture (Stricker & Ross, 1964). Thinking types prefer order, planning, and achievement and are attracted to vocations which require logical thinking, such as technical and business professions. Feeling types value interpersonal relationships and enjoy helping

people. They are attracted to professions such as teaching and counseling (Stricker & Ross, 1964). Judging types have a strong need for order, are competitive, and steady workers. They are attracted to administrative positions such as business management. Perceiving types, on the other hand, are less competitive than Judging types and enjoy change and complex tasks. They are attracted to professions such as art, music and psychology (Stricker & Ross, 1964).

While the bulk of research on Jungian types has examined each variable individually (Carskadon, 1982), Jungian theory suggests that the various typological variables have interactive effects with each other that go beyond the additive effects of the four bipolar variables. There is little evidence to support this point, however, primarily because studies thus far have not used methodologies that would identify these interactions (Hicks, 1982). In one of the few studies to investigate interactions among Jungian variables, Hicks (1982) found only a weak interaction between the Sensing-Intuition and Thinking-Feeling dimensions. Further, this effect was found only with continuous scores and not with dichotomous categories.

A few studies have been conducted investigating combination of Jungian types. Matthews, Miller and Carskadon (1981) examined the relationship of MBTI types to

conformity in judgment in a group context. It was hypothesized that extraverts and feeling types would be more conforming than introverts or thinking types. Similar to the classic Asch conformity experiments, confederates made line-length statements in an attempts to influence subjects' judgments concerning comparison lines relative to standard lines. In support of their hypotheses, the authors found that Extraverted Feeling and Extraverted Sensing types together conformed more than Introverted Thinking and Introverted Intuitive types.

Few empirical studies have been conducted on the MBTI types and stress, although some literature is available investigating the predominance of Jungian types in certain stressful occupations. For example, Hancewicz (1978) notes that Sensing, Thinking, and Judging types tend to dominate the police field. A few studies have examined responses to stress by the MBTI types and indicate that they may respond to stress in different ways. Myers (1962) suggested that Thinking Judging types can exhibit impulsive behaviors under pressure, such as temper outbursts, which their Thinking style would consciously not permit. Hancewicz (1978) agreed that Sensing, Thinking, and Judging types can exhibit unexpected displays of emotional behavior, and reported that this is characteristic of Sensing, Thinking, and Judging types in any occupational group, and not confined only to policemen.

Various scales of the Myers-Briggs Type Indicator have been found to moderate the effects of life changes (Cooley & Keesey, 1981). Their findings indicate that life changes are more closely associated with physical illness for the Introvert, Thinking, and Sensing types. Similarly, Roberts and Roberts (1987) found that patients with coronary heart disease (CHD) were primarily Sensing and Judging types. Another study found that patients with CHD were more likely than a control group to have Sensing and Feeling preferences (Thorne, Fyfe, & Carskadon, 1987).

A few studies have investigated the relationship of Jungian types to maladaptive coping responses, such as drug dependency. Utilizing the constructs of extraversion and introversion, DeWinne and Johnson (1976) found more extraverts in a small group of heroin addicts than with a group of nonaddicts. However, in a larger sample of heroin addicts, Roszell, Chaney, and Blaes (1983) found their subjects to consist of more Introverts than Extraverts. In examining the predominance of the remaining types, they found a significant difference only among Sensing and Intuitive types with Sensing types more prevalent. In addition, they found significant differences among the groups on marital status with sensing types primarily being single and divorced and Intuitives being married. Roszell et al. (1983) conclude that drugs may be used for self-medication, particularly among

Introverted patients whose primary perceptual function is Sensation. Although interesting, the results of these studies are inconclusive in terms of generalizability to nonaddicted populations.

Although some investigators (Earls, 1981; Stewart & Mescaros, 1981; Zahn, 1980) have suggested that personality characteristics may play a role in leading to burnout, little has been done examining MBTI types and burnout thus far. Personality research suggests that personality dimensions may provide a moderating effect on stress. There appear to be several traits of MBTI types that suggest influential processes in the development of stress and burnout. Further research is needed to clarify possible relationships between Jungian types and stress and burnout.

Other mechanisms besides personality dimensions have also been proposed as buffers to effects of stress (Cohen & Lazarus, 1983). In addition to personality dimensions, coping factors also need to be investigated. How well an individual is able to cope with stress once it's appraised as a threat can have important consequences for stress outcomes.

Coping Efficacy

The individual's ability to cope with perceived stress is a necessary component of a burnout model. Most of the stress literature appears to offer support for the

view that coping plays a mediating role between stress and health outcomes (Cohen & Lazarus, 1979; McGrath, 1970). Although it is widely recognized that coping affects psychological and physical health, little research has been conducted on the mechanisms that underlie the effectiveness of one's coping responses. Coping responses can be either adaptive or maladaptive in terms of their eventual consequences on the individual and his/her environment. If coping responses are maladaptive, they may be perceived as threatening stimuli and evaluated as stressors.

Part of the difficulty in identifying what is helpful versus nonhelpful coping derives from definitional weaknesses in the coping literature. Coping has been as broadly defined as any response to a potentially threatening event (Silver & Wortman, 1980) to effortful reactions to manage stressful situations (Lazarus & Folkman, 1984). While the coping literature contains numerous investigations of cognitive, affective, and behavioral coping strategies in response to stress, there is little agreement concerning the effectiveness of one strategy over another in relieving stress. For example, while coping directed at managing problems (problem-focused coping) has been shown to reduce emotional distress (Felton & Revenson, 1984; Mitchell, Cronkite & Moss, 1983), others have found that it had little effect

(Menaghan, 1982). Lazarus (1966) proposed that only when an individual perceives an inability to cope with an event will it be perceived as stressful. Thus, it may be that a cognitive appraisal element is an important mediator between coping and stress.

Based on a series of studies investigating how patients cope with illness, Leventhal and Nerenz (1983) have developed a model in which cognitive processes play an important role in determining coping responses to health threats. Their work has focused on how individuals interpret information about health threats from outside sources. Their model incorporates a form of perceptual representation called "cognitive encoding" which is similar to Lazarus' concept of threat appraisal. Although Lazarus contends that his concept operates at a conscious level, Leventhal and Nerenz suggest that the appraisal process can be nonconscious.

Personality dimensions with an underlying cognitive component, such as Type A behavior, may influence the selection of coping strategies. Recent findings indicate that Type A and Type B individuals have different coping strategies. Pittner and Houston (1980) in a laboratory study found that Type A subjects used more denial in threat conditions and reported less negative affect than Type B's, yet exhibited greater physiological arousal than B's. Pittner and Houston concluded that denial was only

partially effective as a coping strategy since reduced negative affect was reported but with more physiological arousal than Type B's. Carver et al.'s (1976) study also demonstrated the Type A's inclination to deny negative symptoms in that Type A's exerted greater effort in a treadmill task, yet admitted to less fatigue than Type B's. Both studies indicate that cognitive defensive processes such as denial are functioning to minimize the stress response, namely denial.

Pittner and Houston (1980) suggest that by distorting the perception of threat, Type A's may be exposing themselves to longer and/or higher levels of stress than Type B's. However, the coping literature is inconclusive about the adaptiveness of defensive functioning such as exhibited by Type A's. For example, the environmental context of the threat may influence the usefulness of a coping response. Gentry, Foster, and Harvey (1972) suggest that the victim of myocardial infarction who ignores or denies the diagnosis of impending death may do better physically and psychologically than someone who doesn't use denial. However, in a context where the denial process results in a delaying of treatment, the defense mechanism may prove to be fatal for the individual (Coyne & Lazarus, 1980).

The Type A behaviors of denial and suppression of threatening material may be related to Byrne's (1964)

repression-sensitization scale and Goldstein's (1959)
coper- versus-avoider test. Copers tend to display
vigilance or sensitizing behaviors while avoiders display
avoidant or denial defenses. Studies using these scales
suggest that those individuals classified as chronic
repressors or avoiders are likely to minimize, deny, or
ignore preparatory information about impending stressful
experiences (Andrew, 1970; DeLong, 1971).

One limitation with studies examining the
relationship between specific coping strategies and
outcomes is the lack of attention to the subject's
perception of how successful he or she was in managing the
situation. It may not be the particular strategy used
that is critical but the perceived effectiveness of one's
response in reducing distress. In one of the few studies
to include a measure of perceived coping efficacy, Aldwin
and Revenson (1987) examined the mediating effects of
perceptions of coping efficacy between coping strategies
and mental health. They found that problem-focused coping
was beneficial in reducing stress provided that the
individual perceived the strategy as successful. They
conclude that research that examines coping strategies
without assessing how the respondent felt about his/her
efforts to handle the situation is incomplete. Thus,
further research is needed which examines perceived coping
effectiveness in relation to stress and burnout.

Another variable in the coping literature that can mediate the effect of stress is social support. Social supports have been thought to assist an individual's ability to cope effectively (Thoits, 1986). In reviews of the coping literature by Cassel (1976) and Cobb (1976), they found that those individuals who maintained a support network cope better than those without close relationships.

Marital Satisfaction

In the last decade there has been growing interest in the moderating influence of social support systems on the effects of stress. Reviews of the literature indicate that social support reduced or eliminated negative health outcomes (Cassel, 1976; Cobb, 1976; Payne, 1980). Further, House's (1980) work clearly points out that social support helps to account for much of the variance in the stress literature.

Despite a substantial amount of evidence that social support reduced the effect of negative stress outcomes, some studies have reported contradictory findings (Brown & Harris, 1978; Tennant & Bebbington, 1978). One explanation for these inconsistent results derives from different conceptualizations about who and what constitutes social support. For example, most of the the studies have examined social support in a work context (e.g., supervisors or co-workers) (La Rocco & Jones, 1976),

while others have studied social support from outside the work environment (e.g., family or friends) (Cooper & Marshall, 1976). Definitions have usually included some element of emotional closeness, such as expression of feelings and concerns (Barrera, 1981).

The mechanisms by which social support operates remain unclear. It has been suggested that social support's mitigating effects on negative health outcomes derive from having a relationship with another that is characterized by positive feelings, frequent interactions, and ability to lend assistance when needed (McLean, 1978).

Another hypothesis to explain the moderating effects of social support comes from the social psychology literature. Findings that the presence of others can cause changes in one's initial perceptions of objective stimuli (Lazarus, 1966) suggests that social support may cause individuals to perceive a situation as less of a threat. Or, it may be that if a situation is perceived as stressful, the possibility of the stress leading to a negative outcome is minimized.

Caplan (1976) suggested that the family can function as a "buffer" between perceptions of stress and a stress response. Conceptualizing family support as a "buffer" to stress proposes that for those with a high level of support, the likelihood of stress leading to a negative outcome will be less than for those with low support.

In his model of burnout, Cherniss (1980a) proposed that satisfying relationships with significant others can provide important resources for coping with job stress. In a study designed to test the Cherniss model (Burke, Shearer, & Deszca, 1984), social support (as defined by significant relationships outside of work) was shown to be associated with lower burnout in a group of police officers. Unmarried police officers were found to have higher burnout than married officers. In another study providing support for the buffering effect of the family, Shafer (1978) investigated categories of people more likely to experience stress and found that divorced, unhappily married, or unmarried individuals encountered increased stress.

Burnout has been found by others to be related to family and marital problems (Jackson & Maslach, 1982; Maslach & Jackson, 1979). Maslach and Jackson (1981) found that poor relations with family and friends were significantly related to overdepersonalization, a component of burnout.

Although there is some evidence that support groups may add to burnout as well as reduce it (Maslach, 1982), previous studies have primarily been correlational in nature. Thus, there is still a need for more empirical support based on causal models before a reciprocal relationship between social support and burnout can be established.

The research lends some support to the hypothesis that a marital relationship in which there is a significant level of satisfaction can function as a moderator of stress on negative outcomes, such as burnout. It may be that the examination of marital satisfaction as a type of social support can account for some of the contradictory findings in the social support literature.

Death Anxiety

The importance of beliefs and feelings about death in appraising environmental threats warrants further investigation. Although it is generally assumed that the possibility of death is a major stress-producing condition for everyone, individual differences may play an important role here as well. For example, Schneidman (1963) suggested that there are differences in motivations to avoid death. Some may view death as the end of existence while others perceive it as the beginning of a new existence. Zilboorg (1943), a noted psychoanalyst, argued that although fear of death is always present, it is repressed in order to allow normal functioning. Becker (1973) proposed that the fear of death is a basic component of human activity and that all human activity is an attempt to deny the fear of death.

From a developmental perspective, anxiety about death is thought to originate in early childhood as an expression of separation anxiety (Anthony, 1973; Nagy,

1948). The physical separation from the parent, particularly from the mother, may be associated with the infant's first experience of distress and fear. Thus, anxiety about separation and loss may be a fundamental part of anxiety about change and, ultimately, death.

The prospect of death is generally regarded as an occurrence that is not imminent for most healthy, nonelderly individuals. However, certain occupational groups face danger at a more immediate level, such as in police work or firefighting. For example, in the United States for the years 1980-1982, 374 firefighters were killed in the line of duty (Hildebrand, 1984). Both Maslach (1976) and Mattingly (1977) suggest that physical danger associated with the work task could increase levels of burnout. However, physical danger was not found to be significantly related to tedium (considered to be similar to burnout in definition and symptomology) in a sample of college students and professionals (Kafry & Pines, 1980). They speculate that the lack of relationship was due to the low levels of physical danger experienced by their subjects, unlike those experienced by police officers or firefighters.

In the only other study related to this issue, Gaines and Jermier (1983) investigated sources of emotional exhaustion (a component of burnout) in a police organization. They found physical danger to significantly

affect emotional exhaustion. However, this effect was significant only as it interacted with departmental context. They found that as danger increased, significantly higher emotional exhaustion was experienced by investigators rather than by service employees.

The findings on differences in levels of death fear across occupations have been inconsistent. In one of the earliest studies to examine fear of death, Feifel, Hanson, Jones, and Edwards (1967) found that fear of death was reported more in the medical profession than in nonmedical groups. Other investigators have not found differences between occupational groups on this dimension. Ford, Alexander, and Lester (1971) reported no differences on death and dying of self and others between police officers and mail workers, or between male undergraduates and police officers. Similarly, Alexander and Lester (1972) found no differences for a group of parachute jumpers compared to control groups.

These contradictory results can be explained, in part, by more recent findings that death anxiety is a multidimensional concept which can be differentiated by both conscious and covert levels of death anxiety, as well as fear of one's own death versus that of others. In a recent study examining occupation-related differences in levels of death anxiety, Lattanner and Hayslip (1984-1985) found differences between death-related occupations

(firefighters, funeral personnel) and non-death related
occupations (secretaries, accountants, teachers, etc.)
Higher levels of fear of death and dying of others were
found among the death-related group compared to the non-
death related group. No significant differences were
found for fear of one's own death and dying. Lattanner
and Hayslip suggest that those in occupational groups who
are frequently exposed to death may be attempting to
master their fears of death by familiarization.

Presumably, firefighters would be expected to have
some concerns about death, since they are frequently
exposed to death in their work. Death anxiety could
potentially contribute to stress and job burnout as well
as affect their ability to effectively respond to life-
threatening situations. Thus, the inclusion of death
anxiety as a variable to examine further in studies of
stress and burnout appears warranted with this
occupational group.

Leadership Style

One aspect of the organization which may be related
to burnout is the relationship of the employee with
his/her supervisor. Although the "style" a leader uses in
dealing with subordinates has been the object of empirical
investigation since the 1930's, the relationship between
leadership style and burnout is still contradictory.
Despite there being many different labels to describe

leadership styles, approaches to leadership have primarily focused on two: task-oriented and person (consideration) oriented styles.

The relationship between leader behavior and subordinate satisfaction has been studied to a great extent using the Ohio State Leadership scales (Fleishman, 1973; Stogdill, 1974). These studies have emphasized the need for further investigation of moderator variables on the leader-subordinate interaction. Moderator variables such as stress may be an important factor in how subordinates respond to different leader behaviors.

Fleishman, Harris, and Burtt (1955) were among the first of the Ohio State leadership investigators to report that high levels of stress and pressure in departments resulted in leaders who were rated as being more proficient when they demonstrated high structure and low consideration behavior. They defined consideration as behavior which indicates mutual trust, warmth, respect, and rapport between a leader and his or her subordinates. Structure was defined as how a leader organizes, plans, defines, and delegates tasks. Leaders in departments with less stress and pressure were rated as having more considerate and less structuring behavior. Fleishman et al. (1955) concluded that pressure and stress acted as moderator variables on the relationships between leadership and subordinate satisfaction and performance.

Fleishman and Harris (1962) found that consideration may function as an important moderator between initiating structure and other criteria. They suggest that when the leader is perceived as highly considerate, structure may be viewed as supportive by subordinates. However, when the leader is seen as low in consideration, structuring behavior may be seen as restrictive and threatening. A review of the literature on considerate and structuring leadership behavior found similar findings in the majority of studies (Kerr, Schriesheim, Murphy, & Stogdill, 1974).

Schriesheim and Murphy (1976) found support for consideration, job stress, and unit size as important determinants of the responses of subordinates to leadership. They report that supervisors who demonstrated high structure and low consideration had subordinates who performed significantly lower, supporting results from earlier studies. However, they also found that leaders who were high on both consideration and structure had only a slight positive effect on subordinate performance. Job stress appeared to have a significant effect on subordinate reactions to leader behavior. When under conditions of low stress, leader structure significantly reduced subordinate performance whereas high stress conditions resulted in slight increases in subordinate performance. Under conditions of low stress, leader consideration resulted in increased satisfaction and

performance. When under high stress conditions, leader consideration resulted in decreased satisfaction and performance. These findings support earlier studies by Fleishman et al. (1955) and Halpin (1955) suggesting that leader consideration will increase subordinate satisfaction and performance in relatively low stress work environments. However, in high stress work settings, leader structure will enhance subordinate satisfaction and performance.

Kahn and Katz (1960) found that highly productive groups were not closely supervised and had leaders who took a personal interest in employees. Low productive groups were given detailed instructions from their supervisors, had work checked frequently, and were limited in freedom to make decisions. In short, leaders who had a strong employee orientation had more productive workers than those who were task oriented.

Similar findings were found by LaRocco and Jones (1978) who studied the moderating effects of leader support with a large sample of Navy enlisted men. They explored the relationship of job stress (measured by perceived role conflict, ambiguity, poor communication, and low interdepartmental cooperation) and leader and co-worker support on a number of organizational outcomes. Their results indicated a negative relationship to stress and a positive relationship to job satisfaction, self-esteem, and tendency to remain in the organization.

Buck (1972) examined the attitude and relationship of employees and their leaders using Fleishman's instrument on consideration and initiating structure. Buck found the consideration factor to be related to behaviors that indicated friendship, mutual trust, respect, and warmth between the employee and supervisor. More job pressure was reported by workers who perceived their boss as low on consideration. Buck concluded that those supervisors rated low in consideration contributed significantly to the employees feeling work pressure.

In a study investigating leadership style and job satisfaction (Duxbury, Armstrong, Drew, & Henly, 1984), nurses who perceived their supervisor to be highly considerate rated themselves higher on job satisfaction. Acute stress or burnout was experienced more by those nurses who had supervisors low on consideration. Other studies have demonstrated low to moderate correlations between supervisory structuring and consideration behaviors and job satisfaction (Aiken, Smits, & Lollar, 1972; Barad, 1979; Berkeley Planning Associates, 1977; Cherniss, 1980a).

Supervisor behaviors were also studied by Stout (1984) who examined structure and consideration in relation to job satisfaction, stress, and health problems of rehabilitation workers. Those employees who perceived their supervisors as demonstrating high-consideration

behaviors reported more job satisfaction, regardless of the level of structure, than employees with low considerate supervisors. In addition, subordinates who had high structure and high considerate leaders reported lower stress than those with leaders who were low on both dimensions. Fewer health problems were reported by workers with high structure leaders and high consideration than workers with low considerate leaders. These findings suggest that those leadership behaviors most effective in producing the lowest stress and the highest job satisfaction among employees are high structure and high considerate behaviors.

The research indicates that levels of employee dissatisfaction, stress, health problems, grievances, and turnover may be influenced by leadership style. Specifically, those leaders who show genuine concern and support for their employees have subordinates who are less likely to experience negative effects which are detrimental to themselves and the organization. These effects have been shown to be major components of employee burnout. Learning more about how leadership style affects perceived stress and relates to burnout may facilitate the development of effective intervention techniques and add to the understanding of underlying causes of burnout.

Job Satisfaction

One of the most obvious organizational variables related to stress and burnout would seem to be dissatisfaction with the job. Low job satisfaction has been suggested as an example of psychological strain in that it requires a deviation from the individual's normal responses (Caplan, Cobb, French, Van Harrison, & Pinneau, 1975). For the most part, however, job satisfaction has been conceptualized as a positive affective reaction to the job situation (Locke, 1976).

Although job dissatisfaction and stress were found in one study as having only a moderate correlation (Kasl, 1978), other researchers have found a positive relationship between stress and burnout and job satisfaction (Pines, Aronson, & Kafry, 1981; Riggar, Godley, & Hafer, 1984).

In a study on burnout among staff members of mental health institutions, Pines and Maslach (1978) found job satisfaction to be related to fewer working hours and less time in administrative duties. Other researchers have found job satisfaction to be increased and burnout reduced when workers are directly involved in policy decisions (Barad, 1979; Cooper & Marshall, 1976; Maslach & Pines, 1977).

Tedium, considered to be similar to burnout in definition and symptoms, was shown to be negatively

correlated with indices of job satisfaction and positively correlated with an intention to leave the job (Pines & Kafry, 1980). Stout and Williams (1983) correlated burnout and tedium measures with job satisfaction and health problems. Using a measure of job satisfaction that assessed satisfaction of needs in five areas (basic, safety, belonging, ego-status and self-actualization needs), they reported a significant negative relationship between the tedium measure and job satisfaction. Further, the emotional exhaustion and depersonalization scales of the burnout inventory showed significant negative correlations with job satisfaction.

Golembiewski, Munzenrider, and Carter (1983) provided evidence for the decrease of satisfaction as burnout increases. Using two major measures of job satisfaction, the Job Diagnostic Survey and the Job Descriptive Index, they were able to cross-check results against the burnout measure.

Maslach and Jackson (1981) analyzed the Maslach Burnout Inventory's three scales in relation to the Job Diagnostic Survey which includes measures of job characteristics such as "feedback," "meaningfulness," "task significance," "skill variety," and "growth satisfaction." Of their results that relate to job satisfaction, they reported significant moderate relationships between: feedback and all three scales,

task significance and productivity, growth satisfaction and all three scales, meaningfulness and personal accomplishment and depersonalization, intention to leave and overall burnout, and absenteeism and depersonalization.

One difficulty in interpreting the literature in this area is its treatment of job dissatisfaction in some studies as an outcome of stress and burnout versus treatment as an antecedent variable in other studies. House (1974), for example, treats job dissatisfaction as an antecedent of stress rather than an outcome of stress. In general, the relationship between stressors and psychological symptoms such as job satisfaction appears to warrant further investigation of the interrelationship among the stressor-burnout response.

One conclusion that can be drawn from the body of literature reviewed is that there are a number of individual difference variables, as well as organizational and extra- organizational factors that appear relevant to the study of burnout. Although there has been a vast amount of literature on burnout, there have been few empirically-based studies. Existing studies have primarily focused on work- related variables or have demonstrated contradictory findings for individual difference variables. Thus, a multi-dimensional model is needed that integrates individual difference variables,

organizational and non-work variables, into a framework incorporating a cognitive/perceptual focus.

Rationale and Hypotheses

Burnout is a type of stress response which involves emotional exhaustion, devalued personal competence, and negative changes in attitudes and feelings. It has been related to many social, behavioral, and psychological characteristics in the literature. However, the main trend has been to relate only one or two variables to the construct of burnout in any given study. Consequently, the knowledge concerning the causal factors of burnout remains incomplete. It may be that personality dimensions, and cognitive, affective, organizational, and coping factors play a role in differentiating among those at most risk for burnout. An approach that studies interrelationships and causal variables may add to a more complete understanding of the underlying components of burnout.

Fear of death has been viewed by some to play a major role in all human activity. Although for most people, death is not immediately foreseen, certain occupational groups must face physical danger on a regular basis. Physical danger has been shown to affect burnout levels. Thus, it seems likely that for those individuals in a high-stress occupational group such as firefighting, high levels of death anxiety will result in low job satisfaction, and high stress and burnout.

The Type A behavior pattern is a competitive, aggressive, time-pressured, and achievement-oriented lifestyle that has been linked to coronary heart disease. The Type A individual's lifestyle of continually struggling to achieve an increasing number of goals in the shortest time period and against opposing environmental forces logically seems to be related to a stress outcome for the Type A individual. Glass (1977) contends that the Type A behavior pattern is a characteristic response style to environmental stressors which threaten the Type A's sense of control. The Type A's heightened activity level such as hurrying and being impatient can be viewed as attempts to regain a measure of control. Further, in situations where they have no control, Type A's have been found to experience more stress than Type B's. The literature on burnout has demonstrated that perceived lack of control over the work environment is associated with increased burnout (Minahan, 1980; Pines & Maslach, 1978; Sparks, 1979). In addition, the Type A work orientation and minimal social interaction would preclude the use of social support systems. Social support systems have been shown to moderate the effects of stress (Cobb, 1976). Thus, it seems reasonable to expect that the Type A individual's style of behavior will be directly associated with stress and burnout.

Extraverts are reported to be talkative and gregarious, with needs for affiliation (Myers, 1962; Ross, 1966). Introverts, on the other hand, tend to be more solitary and enjoy working alone. Social support systems have been shown to be a significant modifier of responses to stress (Cobb, 1976). Thus, it would seem likely that Introverts would show higher levels of stress since their personality style would inhibit the use of social supports in comparison to Extraverts. In addition, it is expected that Extraverts would be more job satisfied and less stressed in a work environment, such as firefighting, that requires team cooperation and close contact over long periods of time. Therefore, it is expected that that Extraverts will report higher job satisfaction, lower stress, and, indirectly, lower burnout than Introverts.

Sensing types value well-defined goals and proceeding in an orderly fashion toward these goals. Intuitive types prefer new possibilities as opposed to the routine and practical. It would be expected that Sensing types would be more satisfied and less stressed than Intuitives in a work environment such as firefighting that has established routines. Therefore, it is expected that Sensing types will be more likely to report higher job satisfaction, lower stress, and, indirectly, lower burnout than Intuitive types.

Thinking types tend to organize facts and ideas in a logical fashion while Feeling types base their judgments mostly upon subjective values. Feeling types have a higher need for affiliation than Thinking types. It would be expected that Thinking types rather than Feeling types would have higher job satisfaction and lower stress in an environment requiring logical thinking and order such as firefighting. Therefore, it is expected that Thinking types will report higher job satisfaction, lower stress, and, indirectly, lower burnout than Feeling types.

Judging types have been found to be over-achievers. Perceiving types tend to value play over work and are less competitive than Judging types. The incidence of burnout has been found to be related to a high work orientation. In addition, Judging types have a strong need for order while Perceiving types prefer change. It would be expected that Judging types rather than Perceiving types would have higher job satisfaction and lower stress and burnout in a paramilitary organization such as firefighting. Therefore, it seems reasonable to expect that Judging types will be more likely to have higher job satisfaction, lower stress, and, indirectly, lower burnout than Perceiving types.

Individual perceptions of environmental stimuli have been shown to affect emotional and behavioral responses to stimuli. Mediating factors between stressors and outcomes

such as cognitive appraisal appear to explain why some individuals develop a stress response while others do not. Differential perceptions of stress should occur among individuals and result in differences in burnout.

The degree of subordinate burnout has been shown in some studies to be related to the leadership style of the supervisor. House and Mitchell (1974) describe directive, supportive, and achievement-oriented behaviors as being qualities of leadership most relevant to stress research. Supportive leader behavior and group cohesiveness were found in several studies to decrease emotional exhaustion, a component of burnout (Cherniss, 1980a; Freudenberger, 1974, 1977; Maslach, 1976, Mattingly, 1977). Perceptions of nonsupportive leadership, poor communication, and an underemphasis on task orientation were significantly related to burnout (Berkeley Planning Associates, 1977).

Recently, a longitudinal study by Golembiewski (1985) identified low supervisory support as one of the features of the worksite that contributes to employee burnout. However, some studies have reported contradictory findings in this area. For example, Brookings et al. (1985) did not find a direct relationship between low supervisory support and burnout. Based on the majority of studies reviewed, it seems reasonable to expect that low consideration and high structure leader behavior would lead to increased levels of burnout among subordinates.

Studies investigating job satisfaction in relationship to burnout have generally found a negative relationship of job satisfaction to stress and burnout. Therefore, it seems reasonable that low job satisfaction will result in high stress and high burnout.

Coping responses of the individual can interact with environmental characteristics to result in further stress for the individual. For example, a maladaptive coping response such as drug abuse can impact the individual job setting and social network in such a way that further stress results. Thus, it seems reasonable to expect that low coping efficacy will moderate perceptions of stress and will result in higher levels of burnout.

Social support, such as found in the marital relationship, can do much to influence coping responses. Encouragement and support from a spouse can function to increase the individual's ability to think through a problem and deal effectively with a stressor. Therefore, high marital satisfaction should result in high coping efficacy and, indirectly, lower burnout. Marital satisfaction should also mediate the effect of perceived stress on burnout.

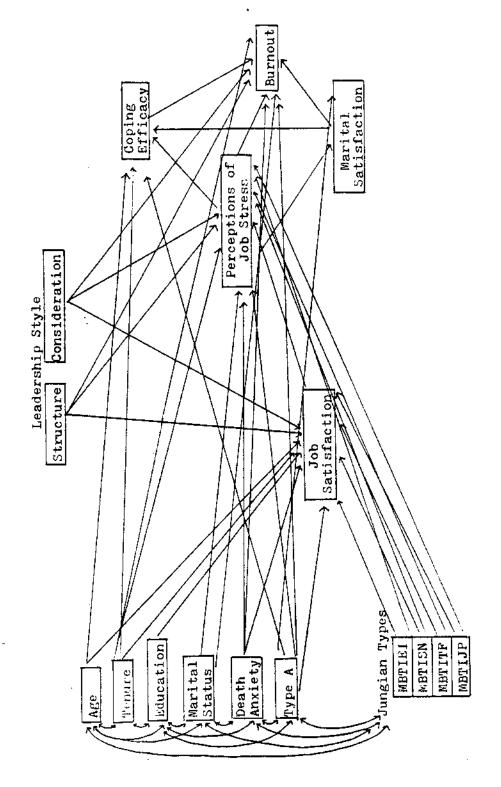The model that emerges from this analysis is presented in Figure 1.

Figure 1. Hypothesized Path Diagram of the Variables Affecting Burnout

Hypotheses were stated where there was adequate theoretical and empirical justification to do so. The following hypotheses were tested in the present research:

Hypothesis One

The demographic variables of age, tenure, education, and marital status will have direct effects on job satisfaction. Thus, older firefighters, those who are married, and those with longer work tenure will report lower job satisfaction. Marital status will directly affect stress and burnout such that single firefighters will report higher stress and burnout than married firefighters. Age and tenure will directly affect coping efficacy so that older firefighters and those with longer work tenure will report higher coping efficacy. Tenure will directly affect stress and burnout such that firefighters with lower work tenure will report higher stress and higher burnout than those with longer work tenure.

Hypothesis Two

Death anxiety will have a direct effect on job satisfaction, perceptions of stress, and burnout. Therefore, firefighters with more death anxiety will have lower job satisfaction, higher perceptions of stress, and higher burnout than firefighters with less death anxiety. Death anxiety will have an indirect effect on stress and burnout via job satisfaction.

Hypothesis Three

Type A personality will have a direct effect on job satisfaction, marital satisfaction, perceptions of stress, coping efficacy, and burnout. Thus, those who score higher on Type A personality will report lower job satisfaction, marital satisfaction, marital satisfaction, coping efficacy, and higher stress and higher burnout. Type A will also indirectly burnout through its effects on stress.

Hypothesis Four

Jungian types are differentiated as follows: The Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving dimensions will have direct effects on job satisfaction and stress and indirect effects on burnout. Thus, those scoring higher in the Extraversion, Sensing, Judging, and Perceiving ranges will report higher job satisfaction, lower perceptions of stress, and, indirectly, lower burnout than those scoring in the Introversion, Intuitive, Feeling, and Perceiving ranges.

Hypothesis Five

Leadership style will directly affect job satisfaction, stress, and burnout. Therefore, firefighters who perceive their supervisors as high on consideration and low on structure will report higher job satisfaction, lower stress, and lower burnout.

Hypothesis Six

Job satisfaction will directly affect stress perceptions and burnout. Therefore, lower job satisfaction will lead to higher stress and higher burnout.

Hypothesis Seven

Perceptions of stress will directly affect burnout and directly affect coping efficacy and marital satisfaction. Thus, stress will also have an indirect effect on burnout through these two variables.

Hypothesis Eight

Coping efficacy will directly affect burnout. Thus, the more effective one's coping efforts are perceived to be, the lower the burnout.

Hypothesis Nine

Marital satisfaction will directly affect burnout. Thus, lower marital satisfaction will result in higher burnout. Marital satisfaction will also directly affect coping efficacy as well as indirectly affecting burnout. Thus, high marital satisfaction will lead to high coping efficacy.

CHAPTER II

METHOD

Subjects

Subjects were 100 male firefighters employed by the City of Fort Worth Fire Department. This group was selected because firefighters are assumed to experience considerable stress in their work. This stress is due to factors such as responsibility for others' lives and suddenly occurring rush periods as well as monotonous intermittent periods. In addition, shift work, physical demands, and emotional stress incurred during emergencies all interact to create a stressful work environment. Initially, data were obtained from 243 subjects. However, complete information was available only on 100 of the sample. Participants ranged in age from 21-56 with a mean of 34.4 years and a standard deviation of 8.2. Married participants comprised 84 per cent (n = 84) of the sample. Years of service ranged from 1 to 28 with a mean of 9.1 and a standard deviation of 7.3 years. Educational level of participants was as follows: 3 per cent had not completed high school, 41 per cent had completed high school, 15 per cent had one year of college, 18 per cent had two years of college, 8 per cent had three years of college, 14 per cent had four years of college, and 1 per cent had completed master's degrees.

Procedure

The data for this study were collected as part of a project for the Fort Worth Fire Department in conjunction with the City of Fort Worth Personnel Training Division. The subordinates consisted of all Operations Division firefighters who worked the 24 hours on, 48 hours off shift. Subjects were tested 20 at a time at district fire stations. The data collection process took approximately two months from initial contact with the Fire Chief through screening of the instruments and collection of the data. The instruments were handscored by the author and the Counseling and Testing Center staff at North Texas State University. For each subject, demographic variables of age, educational level, marital status, and years of service with the Fort Worth Fire Department were collected.

Instruments

Demographic variables

Demographic variables included age, marital status, education, and tenure.

Jenkins Activity Survey

The Jenkins Activity Survey (JAS-Version C) (Jenkins, Rosenman, & Zyzanski, 1974) is one of the more widely used instruments to identify Type A, coronary-prone behavior patterns. The JAS contains 52 multiple-choice questions. Each alternative is assigned points based on the product

of the item regression weight and the optimal scaling
weight for that response. The JAS provides scores for
four separate scales: The Type A scale and three
factorially independent components of the broader Type A
construct: speed and impatience, hard-driving and
competitive behavior, and job involvement.

Scale scores are derived by summing the points for
the items in the particular scale. Raw scores range from
30 to 423. Raw scores can be converted to standard scores
with a mean of zero and standard deviation of 10.
Standard scores range from -25.0 to 25.0. Positive scores
indicate Type A behavior while negative scores indicate
Type B behavior. Therefore, the JAS scores reflect
relative placement on a continuum of behavior patterns.
The adult version of the JAS has a test-retest reliability
of .66 (Jenkins et al., 1971) and agrees about 73 per cent
of the time with A-B classification based on a structured
interview. The agreement rate increases to 90 per cent if
only the extremes (plus or minus one standard deviation)
of the A-B distribution are used.

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator (MBTI) (Myers, 1962)
is a personality instrument designed to assess personality
types as described by Jung. The MBTI classifies
respondents on four dichotomous type categories:
extraversion versus introversion (E-I), sensing versus

intuition (S-N), thinking versus feeling (T-F), and judging versus perceiving (J-P). It also yields eight numerical scores which can be converted into four continuous scores. The MBTI is organized so that for each of the preference dichotomies, there is a forced-choice format consisting of behavior reports, value judgments, and word pairs. Each of the 166 items has at least two alternatives reflecting opposing attitudes or functions which are assigned different weights to offset social desirability bias. The score on a scale is the result of the difference between the sums of the weights (or score) for the two alternatives. The direction of the difference indicates which of the two categories is dominant.

Webb (1964) and Myers (1962) report internal consistency coefficients ranging from .76 to .82 (E-I), .75 to .87 (S-N), .69 to .89 (T-F), and .80 to .84 (J-P). Stricker and Ross (1963) found that test-retest reliabilities for continuous scores of .76 to .78 (E-I), .74 to .80 (S-N), .64 to .74 (T-F), and .78 to .84 (J-P). As reported earlier, research using the MBTI supports the construct validity of the instrument.

Myers' description of the construction of the MBTI (1962/1975) provides support for the content validity of the instrument. Bradway (1964) in a comparison study of the MBTI, self-typing by Jungian analysts, and the Gray-

Wheelwright Questionnaire (1946) also found considerable support for content validity.

Collett-Lester Attitudes Toward Death Scale

The Collett-Lester Attitudes toward Death Scale (Collett & Lester, 1969) is a 36-item measure designed to assess fear of death at a conscious level of awareness. The Collett-Lester scales consist of of four separate scales measuring fear of death and dying for both self and others. Responses are scored on a 6-point continuum. On each item, subjects indicate how strongly they agree or disagree, ranging from strong agreement (+3) to strong disagreement (-3). To facilitate scoring, a 1 to 6 point scale was used in the present study, with 6 representing strong agreement and 1 representing strong disagreement. Possible scores range from 6 to 66, depending on the number of items in the subscale. The higher the score, the higher the death anxiety. Intercorrelations between the four subscales range from .03 to .58 (Collett & Lester, 1969).

Leader Behavior Description Questionnaire

The Leader Behavior Description Questionnaire (LBDQ) (Stogdill, 1963) is a measure of leader behavior commonly used in the literature. The instrument is used by subjects to describe their supervisors' behavior. The LBDQ contains items which describe specific ways in which a leader may behave. The subject indicates the frequency

with which he or she perceives the leader engaging by
marking one of five adverbs: always, often, occasionally,
seldom, never. These responses are then scored on two
dimensions of leader behavior: Initiating Structure and
Consideration. For each dimension, the scores from group
members are averaged to yield an index of the leader's
behavior. The possible range of scores on each dimension
is 0 to 60. The estimated reliability by the split-half
method is .83 for Initiating Structure scores and .92 for
Consideration scores.

Job Descriptive Index

The Job Descriptive Index (JDI) (Smith, Kendall, &
Hulin, 1969) is one of the major instruments used to
assess job satisfaction. The JDI measures satisfaction
with five aspects of work. A total satisfaction score can
be derived by summing scores from the five subscales. The
five facets of work measured are: work, supervision, co-
workers, promotion, and pay. The subject indicates his or
her agreement, disagreement, or uncertainty about
descriptors of various aspects of the job. Possible
scores range from 0 to 270. Cronbach's alpha tests for
reliability range from .73 to .92 for the six scales, with
an average of .84.

Perceived Job Stress

Perceived stress was measured by a questionnaire on
perceived job pressures adapted by Wells and House (1978).

The five indices covered by the measure include: job versus nonjob conflict, role conflict, quality concern, responsibility, and (quantitative) workload. Those items measuring workload were taken from a questionnaire developed by Caplan et al. (1975). The remaining 12 items were adapted from items developed at the University of Michigan Institute for Social Research. These indices and their constituent items tend to be moderately intercorrelated (Wells & House, 1978). Subjects are asked to respond to each of the items according to how often they are bothered by them in their work. The response scale included choices of "Not at all," "Rarely," "Sometimes," "Rather often" and "Nearly all the time." Responses are scored on a 0 to 5 point scale, for a possible range of 0 to 60 points. The higher scores indicate more perceptions of work stress.

The Coping Inventory

The Coping Inventory (Horowitz & Wilner, 1980) is a self-report measure designed to measure the usefulness of various strategies for adapting to a serious life event. The inventory consists of 33-items. For each item, subjects are asked to indicate whether the response had been used in coping with a serious life event and whether the response was helpful in reducing stress. The instrument is then scored for the frequency of endorsement of each item, and for the frequency with which the item

was found helpful. The present study used the frequency of perceived helpfulness to arrive at a total "coping efficacy" score. Higher scores indicate higher coping efficacy. The possible range of scores is from 0 to 66. There are no adequate norms for this measure. However, the authors do report coping scores for a number of different samples.

Dyadic Adjustment Scale

Social support as conceptualized included satisfaction and adjustment in one's marital relationship. Marital satisfaction was assessed with nine items from the Dyadic Adjustment Scale (Spanier, 1976). This 32-item self-report instrument measures the quality of interaction with one's spouse and can be grouped into four subscales (dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression). The nine items assessing marital satisfaction were drawn from the dyadic satisfaction subscale. Items in the scale were derived empirically. Higher levels of marital satisfaction are indicated by higher scores. The possible range of scores for the nine item subscale is 0 to 46. Each of the items correlated significantly with the external criterion of marital status in married and divorced samples. Cronbach's reliability estimates are .96 for the total scale and .94 for the satisfaction subscale (Spanier, 1976).

Maslach Burnout Inventory

The Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981) is one of the more widely used instruments to assess burnout. The MBI is a 22-item scale which measures both the intensity and frequency of subjects' responses on three scales: emotional exhaustion, depersonalization, and lack of personal accomplishment. Using a Likert-type response scale, subjects respond to each statement identifying how often they experience the feeling and how strongly the feeling is experienced. Maslach and Jackson (1981) report Cronbach's alpha estimates of internal consistency as .76 (frequency) and .81 (intensity).

The subscale, "emotional exhaustion--frequency" was selected as the sole measure of burnout in this analysis. The emotional exhaustion subscale contains nine items and has a possible range of 0 to 54. Justification exists in the literature for use of emotional exhaustion as a sole indicator of burnout. Maslach (1982) points out that emotional exhaustion is the core dimension of burnout. Golembiewski and Munzenrider (1981) found that the emotional exhaustion subscale accounted for at least half of the variance among the three subscales in relation to 22 target variables. They also point out a high correlation between intensity and frequency factorial structures for the MBI. Although Maslach has both

"frequency" and "intensity" dimensions for emotional exhaustion, Gaines and Jermier (1983) also found that frequency and intensity of emotional exhaustion were strongly correlated (.80). Further, in a factor analysis conducted on the emotional exhaustion frequency and intensity subscales, Gaines and Jermier found a unidimensional solution. They found that analysis of intensity added little to understanding the sources of emotional exhaustion and suggest that emotional exhaustion is represented adequately by the frequency format.

CHAPTER III

RESULTS

The adequacy of the hypothesized causal model depicted in Figure 1 was assessed using path analysis, because it permits analysis of a number of predictor variables. The variables were ordered so that causality was uni-directional and was specified according to the theoretical and empirical literature. Therefore, a variable preceding another variable may be a cause of that variable but cannot be affected by that same variable. The causal ordering meets a key assumption of path analysis and produces a recursive model. The assumption of uni-directional causal ordering does not apply to those variables whose causes are outside of the model. Those variables are called exogenous variables and may be correlated without postulating a causal direction. In this model the exogenous variables are the demographic variables, death anxiety variables, and the personality dimensions of Type A and Jungian types since their causes are assumed to lie outside this model. Those variables whose causes are assumed to be within the model are labeled endogenous and must be ordered to show one-way causality. The endogenous variables in this study are leadership variables, job satisfaction, stress, coping efficacy, marital satisfaction, and burnout.
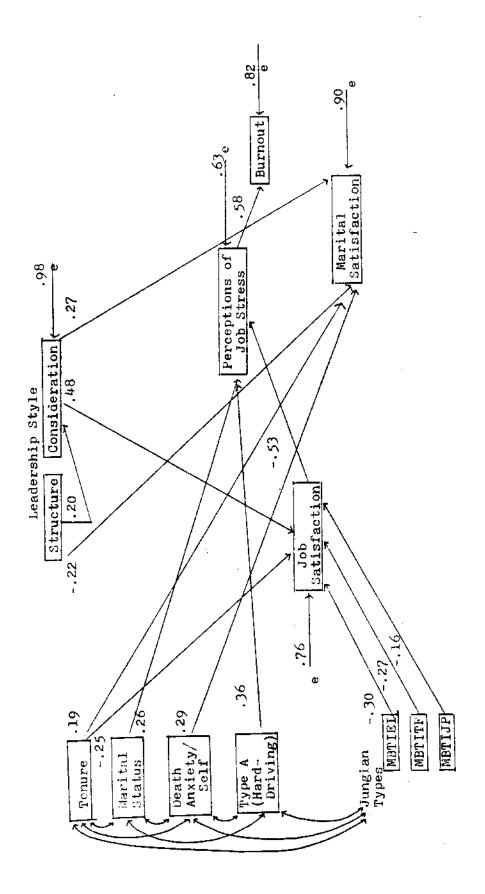
$\underline{F}$ statistics were computed on the variables in the model which established that path analysis assumptions of linearity and additivity were met ($\underline{F}$ = 3.15, $\underline{p}$ = .001). Residual variables were added to the model to allow for the influence of other variables not specified in this model or of no interest to this study. These residual variables are represented by the residual term "e" on the diagram (see Figure 2). Therefore, each endogenous variable is a weighted function of those variables preceding it and the residual term.

The first step consisted of the computation of correlation coefficients between the variables. Correlations for the variables in the path model are shown in Table 1, Appendix A. The Pearson correlation coefficients obtained were then analyzed to assess multicollinearity among the variables. Cohen and Cohen (1975) suggest that correlations of .80 or above indicate excessive multicollinearity. Preliminary correlations indicated a very high correlation between age and tenure (.89). Because extreme multicollinearity would make it difficult to separate the effects of age and tenure, age was deleted from further analyses. Tenure was selected to remain in the model since it is relevant to organizational variables that are expected to predict burnout. Of the remaining correlation coefficients, none were large enough to warrant concern about excessive multicollinearity (Cohen & Cohen, 1975.)

To determine estimates of the path coefficients, stepwise multiple regression was employed. Each endogenous variable was regressed on those variables directly affecting it. Standardized beta weights were used to represent the path coefficients because they adjust for variables measured in different units (Wright, 1960). Therefore, standardized coefficients allowed for the comparison of coefficients across different variables.

The path analysis procedure begins the first equation by entering first into the analysis that predictor variable that is most highly correlated with the dependent variable. If the F test value is significant for that equation, then the next variable to enter the equation is the independent variable with the highest significant partial correlation. (The probability of F for the predictor variable to enter the equation was that the probability value be less than or equal to 0.05.) These steps continue until all variables have been accounted for with significant partial correlations or fail to meet the criterion for statistical significance.

The initial path diagram was modified by deleting nonsignificant parameters and is depicted in Figure 2. The revised model includes only significant paths and accounts for 33.4 per cent of the variance in the burnout criterion.

Figure 2. Path Coefficients of the Variables Affecting Burnout

Note: The residual term is represented by "e" on the diagram

In the first step of the path analysis, burnout (as measured by emotional exhaustion--frequency) was regressed on stress (r = .58) since this variable was expected to be the strongest predictor of burnout (see Figure 2 for calculated path coefficients). The calculated path coefficient for stress was B = .58, p < .001. The contribution to the variance of burnout by this variable was 33.4 per cent.

In the next step of testing the model, marital satisfaction was regressed on death anxiety (r = .29, p < .01), leadership (consideration) (r = .20, p < .05), leadership (structure) (r = -.17, p < .05), and tenure (r = .21, p < .05). Death anxiety/self (B = .29, p < .01) had the largest effect on marital satisfaction followed by leadership (consideration) (B = .27, p < .01), leadership (structure) (B = -.22, p < .05), and tenure (B = .19, p < .05). The proportion of variance accounted for by the four variables was 18.3 per cent. Death anxiety explained 7.3 per cent of the variance, followed by leadership (consideration) (4.4%), leadership (structure) (3.7%), and tenure (2.9%).

In the third path analysis step, stress was regressed on job satisfaction (r = -.46, p < .001), Type A (Hard-Driving) (r = .29, p < .01), and marital status (r = .15, p < ..05). The calculated path coefficient for job satisfaction was B = -.53, p < .001, for Type A

(Hard- Driving) $\underline{B}$ = .36, $\underline{p}$ < .001, and for marital status $\underline{B}$ = .26, $\underline{p}$ < .01. The proportion of the variance in stress accounted for by the three variables was 37.18 per cent. Of the total variance in stress, job satisfaction accounted for 20.17 per cent, Type A for 10.96 per cent, and marital status for 6.05 per cent.

In the fourth step, job satisfaction was regressed on leadership (consideration) ($\underline{r}$ = .48, $\underline{p}$ < .001), work tenure ($\underline{r}$ = -.24, $\underline{p}$ < .01), Extraversion-Introversion (MBTIEI) ($\underline{r}$ = -.28, $\underline{p}$ = .01) Thinking-Feeling (MBTITF) ($\underline{r}$ = -.22, $\underline{p}$ < .05), and Judging-Perceiving (MBTIJP) ($\underline{r}$ = -.08, n.s.). Beta weights for leadership (consideration) were $\underline{B}$ = .48, $\underline{p}$ < .001, for tenure $\underline{B}$ = -.25, $\underline{p}$ < .01, for MBTIEI $\underline{B}$ = -.30, $\underline{p}$ < .001, for MBTITF $\underline{B}$ = -.27, $\underline{p}$ < .001, and for MBTIJP $\underline{B}$ = -.16, $\underline{p}$ < .05. The total variance in job satisfaction explained by the five variables was 41.9 per cent. The major proportion of the variance was accounted for by leadership (consideration) (22.69%), followed by work tenure (6.94%), MBTIEI (4.28%), MBTITF (5.94%), and MBTIJP (2.1%).

In the fifth step, leadership (consideration) was regressed on leadership (structure) ($\underline{r}$ = .23, $\underline{p}$ < .05). The beta weight for leadership (structure) was $\underline{B}$ = .28, $\underline{p}$ < .01. The proportion of the variance in leadership (consideration) explained by structure was only 3.1 per cent. No significant predictor variables were found for leadership (structure).

Predictor variables were not regressed on demographic variables, Death Anxiety, Type A, or Jungian types since they are treated as exogenous variables in this study. Those variables not found to be significant so far (Coping Efficacy, Type A subscales of global Type A, Speed and Impatience, Job Involvement, Jungian type of Sensing-Intuition, and Death Anxiety subscales of Death Anxiety/Others, Dying Anxiety/Self, Dying Anxiety/Others) were dropped from the path model since they were not significant predictors in the regression equations.

<center>Direct, Indirect, and Total Effects</center>

Causal modeling allows the correlations among the variables (excluding correlated exogenous variables which are left unanalyzed) to be decomposed into direct and indirect effects (see Table 2, Appendix A). The direct effect is defined as the effect from the independent variable to the dependent variable that is not mediated by intervening variables. The indirect effect is that part of the independent variable's effect that is mediated by one or more variables. An indirect path for a variable is calculated by multiplying the direct path coefficients that contribute to it. The total effect is the sum of the direct and indirect effects (Duncan, 1975).

Effects on Burnout

The most important variable accounting for burnout was stress ($\underline{B}$ = .58) which had a large direct effect on

burnout. Thus, firefighters who reported high stress also reported high burnout. It should be noted that the mean scores obtained in the present sample on the emotional exhaustion subscale ($\underline{M}$ = 13.73, $\underline{SD}$ = 11.48) were much lower than scores reported by Maslach and Jackson (1981) in a sample of human services workers ($\underline{M}$ = 24.08, $\underline{SD}$ = 11.88). Indirect paths were also found from job satisfaction, Type A (Hard-Driving), marital status, leadership (consideration), leadership (structure), Extraversion-Introversion, Thinking-Feeling, Judging-Perceiving, and Tenure.

Effects on Stress

Job satisfaction had a direct negative effect on stress ($\underline{B}$ = -.53). The total effect of job satisfaction on stress (Total effect = -.53) was greater than the effect of Type A (Hard-Driving) (Total effect = .36) or marital status (Total effect = .26). Thus, firefighters who reported low job satisfaction reported higher perceptions of stress. Type A (Hard-Driving) firefighters reported higher stress than those who were not Type A. Unmarried firefighters reported higher stress than those who were married. In addition, indirect effects were found via job satisfaction from leadership (consideration) (Total effect = -.26), Extraversion-Introversion (Total effect = .16), Thinking-Feeling (Total effect = .15), and Judging-Perceiving (Total effect = .09). A small indirect

effect was also found from tenure via job satisfaction (Total effect = .13).

Effects on Marital Satisfaction

Death anxiety/Self had a direct positive effect on marital satisfaction (Total effect = .29). Thus, those with higher anxiety about their own death reported higher marital satisfaction. Further, a direct positive effect of leadership (consideration) was also found (Total effect = .27) while a negative direct effect was found from leadership (structure) (Total effect = -.22). An indirect effect path was also found from structure to marital satisfaction via consideration ($\underline{B}$ = .05). Thus, firefighters with high consideration and low structure leaders reported more satisfaction with their marriages.

Effects on Job Satisfaction

The results indicated a positive direct effect of leadership (consideration) on job satisfaction ($\underline{B}$ = .48). Thus, firefighters who had supervisors high in consideration reported higher job satisfaction than those with supervisors low in consideration. Further, leadership was the most important variable in predicting job satisfaction, followed by Extraversion-Introversion, Thinking-Feeling, tenure and Judging-Perceiving.

The Extraversion-Introversion dimension of the MBTI was the second most important factor in predicting job satisfaction. Extraversion-Introversion had a negative

direct effect on job satisfaction (Total effect = -.29).
Thus, firefighters who were in the Extraversion range
reported higher job satisfaction than those in the
Introversion range. Thinking-Feeling had a direct
negative effect on job satisfaction (Total effect = -.26).
Those in the Thinking range reported higher job
satisfaction than those in the Feeling range.

Tenure was the next most important variable in
predicting job satisfaction and had a direct negative
effect (Total effect = -.25). Thus, firefighters with
less tenure reported higher job satisfaction.

The Judging-Perceiving dimension had a direct
negative effect on job satisfaction (Total effect = -.16).
Thus, those in the Judging range reported higher job
satisfaction than those in the Perceiving range. In
addition, leadership (structure) had a small indirect
effect on job satisfaction via leadership (consideration)
(Total effect = .09).

Effects on Leadership

Leadership (structure) had a direct positive effect
on Consideration (Total effect = .23). Thus, high
structure behaviors were associated with high considerate
behaviors.

Summary of Path Analysis

Stress was a significant contributor to burnout.
High stress was also directly associated with lower job

satisfaction, Type A personality (Hard-Driving), and being single. High stress was indirectly associated with Introversion, Feeling, and Perceiving preferences of the Jungian dimensions. Death Anxiety/Self, leadership (consideration and structure), and work tenure were directly associated with high marital satisfaction. Leadership (consideration) was the most important variable in predicting job satisfaction followed by Extraversion, Thinking, tenure, and Perceiving. Leadership (structure) was indirectly associated with high job satisfaction. Leadership (structure) was the most important variable in predicting leadership (consideration). Multiple regression summaries for the endogenous variables are presented in Tables 6, 7, 8, 9, and 10 of the Appendix.

$\underline{T}$ test comparisons and chi square statistics were performed on the demographic variables to test the hypothesis that there were no differences between the means of the original sample and those used in in the path analysis. The means and standard deviations for age and tenure are shown in Appendix B. Results did not indicate significant differences between the two samples on the two variables. Two demographic variables, marital status and education, were compared for the two groups by computing chi square statistics. There was no significant difference between the two groups on the education variable, however, there was a significant difference

between the groups on the marital status variable (see Appendix A).

Supplementary Path Analysis

A supplementary path analysis was performed in order to determine if the path model depicted in Figure 2 changed with less stringent entry criterion. The criterion for entry for the predictor variables was changed from .05 to a probability value of .10. Stepwise multiple regression procedures were conducted in the same manner as performed for the initial path analysis. Findings from the second path analysis (see Figure 3) indicated that both path analyses shared common predictor variables but varied in direct and indirect effects found.

Coinciding with results found in the initial path analysis, stress had a positive direct effect on burnout ($\underline{B}$ = .58, $\underline{p}$ < .001). Both analyses also were consistent in demonstrating direct effects from job satisfaction ($\underline{B}$ = -.53, $\underline{p}$ < .001), Type A (Hard-Driving) ($\underline{B}$ = .36, $\underline{p}$ < .001), and marital status ($\underline{B}$ = .26, $\underline{p}$ < .01). Similarly to the initial path model, job satisfaction was explained by the negative direct effect of tenure ($\underline{B}$ = -.25, $\underline{p}$ < .01), and Jungian types of Extraversion-Introversion ($\underline{B}$ = -.30, $\underline{p}$ < .01), Thinking-Feeling ($\underline{B}$ = -.27, $\underline{p}$ < .001) and Judging-Perceiving ($\underline{B}$ = -.16, $\underline{p}$ < .05). Leadership (structure) contributed equally in both analyses to leadership (consideration) ($\underline{B}$ = .23, $\underline{p}$ < .05). Death

anxiety of self death had a direct effect on marital satisfaction in both analyses ($\underline{B}$ = .27, $\underline{p}$ < .01).

Significant differences from the initial model were found in the supplementary analysis. The Sensing-Intuition dimension and marital satisfaction emerged as additional predictors of burnout. Both Sensing-Intuition ($\underline{B}$ = -.17, $\underline{p}$ < .05) and marital satisfaction ($\underline{B}$ = -.14, $\underline{p}$ < .10) had direct negative effects on burnout. Tenure and leadership (structure) were found to be additional predictors of marital satisfaction in the supplementary analysis. Tenure ($\underline{B}$ = .21, $\underline{p}$ < .05) had a direct positive effect, while leadership (structure) had a negative direct effect ($\underline{B}$ = -.16, $\underline{p}$ < .10).

Another significant difference resulted from the direct effects of Extraversion-Introversion, tenure, and death anxiety of others' deaths on coping efficacy. In the initial path analysis, no independent variables were found to be predictors of coping efficacy. Extraversion-Introversion had a direct negative effect ($\underline{B}$ = -.22, $\underline{p}$ < .05), tenure had a direct positive effect ($\underline{B}$ = .23, $\underline{p}$ < .05), and death anxiety had a direct positive effect ($\underline{B}$ = .18, $\underline{p}$ < .10).

Other important differences in comparison to the original analysis were the emergence of marital satisfaction and death anxiety of self death as predictors of leadership (consideration). Marital satisfaction had a

direct positive effect ($\underline{B}$ = .30, $\underline{p}$ < .01) and death anxiety had a direct negative effect ($\underline{B}$ = -.17, $\underline{p}$ < .10).
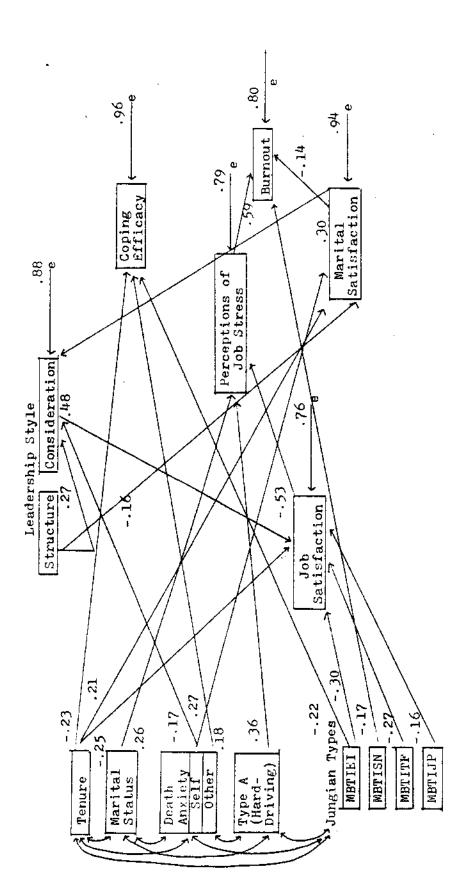
Summary of Differences in the Path Analyses

Several additional predictors were found in the supplementary analyses. Sensing-Intuition and marital satisfaction were found to be additional predictors of burnout which, along with stress, explained 36 per cent of the variance in burnout (in comparison to 33% explained in the first analysis). The personality dimensions of Extraversion-Introversion, tenure, and death anxiety of others' deaths were all found to be significant predictors of coping efficacy. In addition to the contribution of death anxiety, high tenure and low leadership (structure) were associated with high marital satisfaction. Significant predictors for leadership (consideration) were leadership (structure), marital satisfaction, and death anxiety/self.

Assessment of the Validity of the Causal Model

The results demonstrated that of the 34 hypothesized paths, 8 emerged as significant ($\underline{p}$ < .05), disconfirming the initial hypothesized model (see Figure 1). The initial model was revised and the final restricted model was found to provide an adequate fit to the data (see Figure 2) according to the reproduced correlation test. If the correlations can be reproduced, the causal model is considered to be an accurate fit of the data. Correlation

coefficients should be approximately equal to the total effect between two variables or no different than .05 (Kerlinger & Pedhazur, 1973). Relatively small discrepancies between the reproduced correlations and the original correlations can be accounted for by sampling errors. Examination of the Decomposition Table for the revised model (see Table 2, Appendix A) indicates that approximately 80 per cent of the estimated correlations are consistent with the data. There are several possible explanations why the initial model did not fit the data more accurately. It may be that the ordering of the variables was incorrect, residuals may have been correlated, or a path may have been deleted unnecessarily (Kenny, 1979).

Figure 3. Supplementary Path Diagram of Variables Affecting Burnout

Note: The residual term is represented by "e" on the diagram

CHAPTER IV

DISCUSSION

This study attempted to determine the best combination
of predictors of job burnout among firefighters. The
findings indicated that one variable, stress, was the most
important predictor variable. The amount of variance
contributed by stress was at a reasonable level of
predictive power, accounting for 33.4 per cent of the
variance in burnout.

It was also found that three factors were significant
predictors of stress. The firefighter most likely to
perceive high stress has a Type A personality, is single,
and is highly dissatisfied with his or her job.
Firefighters most at risk for low job satisfaction are those
who have low considerate leaders, have longer work tenure,
and have Introversion, Feeling, and Perceiving preferences.
Firefighters most likely to experience high marital
satisfaction are those who have high death anxiety about
their own death, longer work tenure, low structure and high
considerate leaders.

In a comparison of the hypothesized and empirical
path models (see Figures 1 and 2), the findings indicated
partial support for Hypothesis One. Hypothesis One
predicted that the demographic variables of age, tenure,

94

and marital status would have direct effects on job satisfaction, stress, and burnout. Age was found to be highly correlated with tenure and was, therefore, dropped from subsequent analyses. As predicted, tenure had a direct negative effect on job satisfaction. Thus, firefighters with longer work tenure had lower job satisfaction than those with less tenure. It may be that as firefighters gain more work experience, they do not perceive their jobs as challenging or rewarding as they did when they had less experience.

In contrast to the prediction in Hypothesis One, tenure did not directly affect burnout although there was an indirect effect via intervening variables of job satisfaction and stress. Thus, it may be that firefighters with high burnout leave the firefighting profession before accruing long work tenure. There is some evidence that an employee suffering from job burnout is more likely to terminate his or her job (Berkeley Planning Associates, 1977). Further, many researchers agree that the employee is at highest risk for burnout during the first 1-3 years of his or her career (Applebaum, 1981; Cherniss, 1980a).

Surprisingly, tenure was not found to be predictive of coping efficacy. It was expected that veteran firefighters would have more resources to draw upon due to more life experiences. It may be that if coping

effectiveness had been related to a specific work stressor, an effect would have been found. Thus, over time and with successful coping experiences, a firefighter would be expected to gain more confidence in his or her ability to deal effectively with stressors, such as life threatening situations.

As predicted, marital status directly affected perceptions of stress. Consequently, single firefighters reported more stress which led to higher burnout. Apparently, regardless of the level of marital satisfaction, a married firefighter perceives less stress than a single firefighter. Similarly, Eaton (1978) found that for unmarried individuals and those living alone, life stress and psychiatric symptoms were greater than for those who were married or living with someone. It would seem that social bonds are significant moderators of stress.

A direct effect was not found from marital status to burnout. This contradicts findings that single and divorced employees had significantly higher scores on burnout than married employees (Maslach & Jackson, 1981). However, since an indirect path to burnout was found from marital status via stress, it appears that perception of job stress is an important intervening variable.

In contrast to what was predicted in Hypothesis One, education had no significant effects and was deleted from the final, restricted model. It was expected that

education, representing socioeconomic status, would result in increased coping efficacy since there is some support for this in the coping literature (Pearlin & Schooler, 1978).

In contrast to what was predicted in Hypothesis Two, death anxiety did not have a direct effect on job satisfaction, perceptions of stress, or burnout. One possibility is that the risk of death in firefighting is not inherently perceived as stressful by firefighters. Related to this issue is a finding that the four most frequently cited concerns and/or emotional stressors among RAF fighter pilots were housing, marital partner, finances, and children (Aitken, 1969). Anxiety about the risk of death was much less a concern. Another explanation of this finding is that firefighters, in general, may use the cognitive defense mechanisms of denial and repression in order to avoid anxiety about the risk of death or dying in their work. Exploratory research is needed that examines cognitive coping styles among this occupational group. Unexpectedly, death anxiety had a direct positive effect on marital satisfaction. Thus, high death anxiety of one's own death was associated with high marital satisfaction. While at first, this finding may appear difficult to reconcile, it may be that fear of death makes an individual more appreciative of his or her marital relationship.

As predicted in Hypothesis Three, Type A personality was directly associated with stress and indirectly associated with burnout. Thus, for those Type A's who reported high stress, burnout was also high. Type A individuals who reported low stress reported no higher burnout than Type B's. Although Type A was found to directly affect stress perceptions, it was only the Hard-Driving component of the Type A measure that was predictive of stress. The remaining JAS subscales (Type A, Job Involvement, and Speed and Impatience) had little explanatory power with regard to stress. The Hard-Driving subscale measures perceptions of oneself as competitive, intensely driven, and exerting more effort than others (Jenkins, Zyzanski, & Rosenman, 1979). The finding that only the Hard-Driving component was predictive of stress is particularly interesting in view of the fact that much of the Type A research is conducted using only the global Type A score. In the present study, use of the global Type A score alone would have obscured the contribution of the Hard-Driving factor to stress perceptions.

The finding that Type A personality affected perceptions of stress is consistent with Lazarus' (1971) view that individual perception, or "cognitive appraisal," determines whether a situation is evaluated as stressful. Further, the effect of Type A on stress provides empirical evidence for the notion of "person-environment fit"

described by Lofquist and Dawis (1969). According to their theory, stress results from a lack of fit between the individual and his or her environment. Thus, the relationship found between the Type A personality and high perceived stress suggests a lack of fit between Type A's and their environment. Future studies that investigate reciprocal relationships among Type A and organizational variables, such as leadership, may find a moderating effect on Type A personality. For example, a supervisor who discourages competitiveness and achievement-striving may add to Type A perception of stress.

Unexpectedly, Type A personality did not affect marital satisfaction. These results are surprising given the evidence that Type A's do not have satisfying personal relationships, presumably because of their need for control and competitive style (Price, 1982). Little research is available on Type A's and their marital relationships. The few studies that are available indicate that Type A behavior is associated with lower marital satisfaction (Burke & Weir, 1980; Burke, Weir, & DuWors, 1979). It should be noted that Burke et al. found lower marital satisfaction among executives and their wives. Since the present study assessed only the firefighters' perceptions of marital satisfaction, it may be that they are less likely to report dissatisfaction than their spouses.

It was also predicted that Type A firefighters would report lower coping efficacy. However, support for this hypothesis was not found. It is thought by some researchers that Type A coping behaviors are responsible for increased stress among Type A's (Glass, 1977). The results found in the present research might be explained by the coping instrument used. This measure requires the participant to rate the perceived effectiveness of his/her coping skills in relation to a self-reported specific stressor. The instrument measuring perception of job stressors may not have elicited the same level or type of coping responses as was identified by the individual on the coping instrument. These results could also be explained by findings that Type A's use repression as an evasive defense against excessive stress more so than Type B's (Heilburn & Renert, 1986). Thus, the use of repression may prevent Type A's from acknowledging low coping effectiveness.

The lack of a direct relationship of Type A personality to burnout may be explained by the instruments used to measure Type A and burnout. It may be that because the Jenkins Activity Survey appears to assess competitive behaviors rather than affect (Matthews, 1982), using emotional exhaustion as an indicator of burnout may not have demonstrated a direct relationship between the two variables. These findings are also congruent with

previous results that Type A individuals avoid unpleasant feelings through cognitive mechanisms of denial (Carver et al., 1976; Matthews, 1978). Thus, the self-report of burnout as measured by emotional exhaustion may have been underreported by Type A's. More research is needed to identify how Type A behavior may relate to burnout.

The results did not support Hypothesis Three which stated that Type A's would report low job satisfaction. Although previous research has shown that Type A's tend to be more dissatisfied with their jobs than Type B's (Howard, Cunningham, & Rechnitzer, 1976), the present study did not show support for this. These results are of some importance in view of the finding in this study that Type A directly affected stress perceptions, particularly since job satisfaction had such a strong relationship to stress. It appears then that Type A is an independent predictor variable of stress, regardless of the level of job satisfaction.

Partial support was found for Hypothesis Four. Jungian types did have a direct effect on job satisfaction, but the types were not directly associated with stress perceptions. Although no empirical evidence was provided for a direct path from Jungian types to stress, conceptually, differences in perceptual dimensions as found in Jungian typology should demonstrate differences in how Jungian types perceive stressors. Because little empirical

evidence is available on Jungian types and stress, further work needs to be done in this area.

Surprisingly, the Sensing type was not found to be associated with job satisfaction. This was unexpected given the predominance of Sensing types in paramilitary organizations such as police work and firefighting. Since Sensing types prefer standardized procedures, routine work, and details, they would be expected to have a high level of job satisfaction in a work environment that places an emphasis on conformity and adherence to rules and regulations.

As predicted, Thinking and Judging types did affect job satisfaction. Thus, it appears that the Thinking type's valuing of order and logical thinking is predictive of job satisfaction in firefighting. Similarly, the Judging type's valuing of order and overachievement also appears to be predictive of job satisfaction in the firefighting organization.

The significant relationship between Jungian types and job satisfaction and the indirect effect on stress and burnout provides further evidence for Lofquist and Dawis' "person-environment fit" theory. Thus, the high job satisfaction found for Extravert, Thinking, and Judging firefighters as opposed to Introvert, Feeling, and Perceiving types suggests a good fit with the firefighting environment.

Although not predicted, a path from Jungian types to leadership may have been found if leadership was differentiated by Jungian type. Thus, for Jungian types it may not be structuring and considerate supervisory behaviors that cause stress but rather conflict between types (e.g. Thinking supervisor and Feeling subordinate).

Partial support was provided for Hypothesis Five by the findings of an indirect effect to burnout from leadership (consideration) via job satisfaction and stress. Thus, firefighters with supervisors high on consideration reported higher job satisfaction which led to lower stress and lower burnout. This latter finding is consistent with research which demonstrates that supervisors who are rated high on consideration have employees with significantly higher job satisfaction (Stout, 1984). Although a relationship has been shown between low structure and low consideration and higher stress levels (Stout, 1984), no direct effect was found from either leadership variable to stress in this study. Instead, job satisfaction had a moderating effect between consideration and stress. This finding of a direct effect from consideration to job satisfaction and an indirect effect to stress also lends support to the view that leadership can function as a social support variable to lessen perceptions of stress and indirectly, burnout. Job

satisfaction appears to be an important intervening variable in this process.

Although an indirect path was found from leadership to burnout via job satisfaction and stress, no evidence was provided for a direct path to burnout. This contradicts earlier findings that supportive leader behavior reduced the emotional exhaustion component of burnout (Cherniss, 1980a; Freudenberger, 1974, 1977; Maslach, 1976). It appears from the present research that high considerate leadership will not directly predict low burnout unless the individual has high job satisfaction and low perceptions of stress as well.

Interestingly, the organizational variable of leadership was found to affect a non-work variable, marital satisfaction. Thus, high consideration from leaders was associated with high satisfaction with one's marriage. Although the stress literature has predominantly addressed the effect of job stressors on employee work behaviors and feelings (e.g., job satisfaction), a few studies have found relationships between employees' reactions and quality of family life (Burke, Weir, & DuWors, 1979; Jackson & Maslach, 1982). Thus, high considerate leadership may be viewed as supportive which may make it easier for the marital partner to be supportive than if the employee had a high structure leader. In addition, it may be that the

commonality of perceived support shared by these two variables accounts for their relationship.

Although not predicted, structure was found to have a direct positive effect on consideration, a common finding in the literature on consideration and structuring behaviors (Fleishman & Harris, 1962). It appears then that considerate behaviors can compensate for the effect of structuring behavior. Thus, if a leader is perceived as highly structuring, high consideration will mediate the effect of the structuring behavior and lead to high job satisfaction. These results are consistent with previous findings of the moderating role of consideration on structure (Fleishman & Harris, 1962). Although structuring behavior was indirectly related to stress and burnout via consideration and job satisfaction, this was a very weak effect.

As predicted in Hypothesis Six, job satisfaction had a direct negative effect on stress and an indirect effect on burnout. In fact, the primary source of perceived stress was dissatisfaction with one's job. Firefighters with low job satisfaction reported higher stress and higher burnout. This is consistent with findings from a number of studies indicating that attitudes toward the job can play a role in stress perceptions and that low job satisfaction can be evaluated as a stressor.

As expected in Hypothesis Seven, perceptions of work stress had a direct positive effect on burnout. In fact, stress had the only direct effect on burnout in the initial analysis. These findings emphasize the importance of individual differences in determining what is stressful and ultimately if burnout will develop. Thus, a cognitive appraisal of being under stress is critical to the burnout process. It is not enough that a situation is conducive to stress, the individual must perceive and evaluate the situation as stressful prior to a burnout outcome.

Interestingly, lower scores were found in the present sample on the burnout measure, compared to those reported by Maslach and Jackson (1981) in their normative sample of 2118 public service workers. One possible explanation of the lower burnout scores obtained in the present study may relate to gender differences in the two samples. Over half (54%) of the normative group was comprised of females, whereas the present sample was composed solely of males. Maslach and Jackson (1981) reported higher scores for females than males on the emotional exhaustion (intensity) dimension. Similar findings of higher scores among females on frequency of emotional exhaustion were reported by Gaines and Jermier (1983) in a sample of police officers. Thus, sex differences between the two groups may be a factor in explaining the lower burnout scores found in the present study.

Another explanation for the lower burnout scores in the present sample relates to differences in occupational groups in the two samples. Whereas the present sample was composed only of firefighters, Maslach and Jackson's (1981) normative group was comprised of different types of human services workers (e.g., social workers, counselors, etc.) It may be that some items on the burnout measure are less relevant to firefighting than in other public service professions which would account for lower scores than the normative group.

The results did not support an indirect path from stress to burnout via coping efficacy. It was predicted in Hypothesis Seven that coping efficacy would mediate the effect of stress on burnout since there is support in the literature for coping's mediating role between stress and health outcomes (Cohen & Lazarus, 1979). First, these results could be explained by recent findings that individual coping efforts are unsuccessful in moderating work stress (Shinn, Rosario, Morch & Chestnut, 1984). Thus, the individual may not perceive personal coping strategies as having much impact on organizational sources of stress. Second, it may also be that coping efficacy plays an important role in reducing perceptions of stress rather than mitigating the impact of stress on burnout. Thus, perceptions of low coping efficacy could lead to higher stress perceptions and ultimately, burnout.

Longitudinal studies would be necessary to detect this type of effects. Third, the mediating role of coping may not have been supported due to the instrument used. This measure required the subject to identify a specific stressor and then rate his or her perceived coping effectiveness in coping with that stressor. Because the stress measure assessed perceptions of work stress only, coping responses identified on the coping measure may not have related to stressors from the work environment.

It was also predicted that marital satisfaction, functioning as a source of social support, would moderate the effects of work stress on a burnout outcome. However, an indirect path from stress to burnout via social support was not found, nor was a direct path to burnout found. Since the literature does provide evidence that the marital partner can act as a buffer against the effects of stress, it may be that a longitudinal study is necessary to elicit these effects across time. Another explanation may be that high marital satisfaction is not a guarantee that one's spouse will function in a supportive role with regard to work stress.

In contrast to what was predicted in Hypothesis Eight, coping efficacy did not emerge as a direct predictor of burnout or a moderator between stress and burnout. Because few systematic studies have been conducted examining the relation of coping efficacy to

burnout, it may be that burnout affects coping responses rather than the reverse. Further, an instrument that examines particular coping styles rather than just perceived helpfulness of coping may clarify the relationship with burnout. For example, Kobasa's (1979) concept of the "hardy personality" has been suggested as a moderator of stress. It may be that the "hardy personality" provides a style of coping that buffers the effects of stress or burnout. In addition, the findings may be explained by possible psychometric weaknesses of the instrument which has not been the subject of stringent empirical examination.

It was also predicted in Hypothesis Nine that marital satisfaction would directly affect coping efficacy. Instead, no relationship was found between the two variables. These results are inconsistent with findings that a social support network enables individuals to cope better than those without social supports. Some researchers have suggested that family and friend social support should be studied separately (Lyons, Perrotta, & Hancher-Kvam, 1988). They found differences in the effects on health status between these two variables. Thus, it may be that a measure of friend support may have affected coping efficacy although none was found for spouse support.

Differences were found when the supplementary path analysis was compared to the initial path analysis. However, the difference in variance accounted for by each model was insignificant (33% versus 36%). Sensing-Intuition and marital satisfaction were found to be additional predictors of burnout, in conjunction with stress. The personality dimensions of Extraversion-Introversion, tenure, and death anxiety of others' deaths were all found to be significant predictors of coping efficacy. In addition to the contribution of death anxiety, high tenure and low leadership (structure) were associated with high marital satisfaction. Significant predictors for leadership (consideration) were leadership (structure), marital satisfaction, and death anxiety/self. The differences between the two models should be interpreted with caution, however, since these findings were achieved only by relaxing the conventional level of significance (p's > .05).

Limitations

One of the limitations of this study relates to the overlap in meaning of some of the variables (e.g., stress and burnout). Although only one of the correlation coefficients was large enough to warrant concern about multicollinearity, there was still moderate correlation among some of the variables indicating some overlap of constructs. This problem reflects the larger problem of

ambiguity in the stress and burnout literature, namely, that the variables are all-encompassing making it difficult, if not impossible, to separate interactions.

Another limitation was the dependent variable in the path analyses which was self-reported and not objectively defined. Firefighters may as a group be less willing to report emotional experiences of burnout because such reports are inconsistent with possible self-perceptions of being in control. Further, they may not even be aware of burnout or its symptoms. It might be the case that there is some factor unique to firefighters that causes them to minimize self-report of negative stress outcomes. Further research is needed to clarify this issue.

Another limitation of this study relates to the use of self-reports. Because the data were obtained through firefighter self-reports, the relationships among the variables may have been inflated due to shared method variance. A more accurate assessment of the relationship among the variables could be elicited through the addition of objective methods of assessment (e.g., physiological indicators of stress, behavioral observations of Type A behavior, etc.) Another issue related to using self-reports is the possibility of distorted responses due to social desirability effects. This has been particularly a problem in the stress literature where the tendency to deny negative qualities has resulted in decreased reports

of stress symptoms and life stress events. Including a subscale on "tendency to deny bad qualities" from the Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1960) would lessen the possibility of a social desirability effect.

Another limitation of this study relates to causality. Because these variables were not measured at different points in time, they cannot be said to cause each other. Further, some of these variables may have reciprocal influences with each other which further complicates the problem of causality. In addition, a problem often found in causal modeling studies is the possibility of measurement error which may have reduced the statistical power of the model. This could be resolved with the inclusion of more than one measure per construct (Fassinger, 1987). Another problem with causal models is the possibility of omitting important mediators which can bias the estimates found. Thus, the effects of outside variables may have resulted in spurious correlations. A longitudinal design that includes multiple variables and multiple assessments over time can help resolve this issue.

Other limitations of the study relate to the sample. The generalizability of these findings is limited given that the sample was comprised of males only. Although firefighters are predominantly male, female firefighters

are increasing in numbers. In addition, generalizability to occupations other than firefighters are limited since women have shown increased entry into the work force during the past 30 years (Haw, 1982). Thus, future replications with a more representative population in terms of gender is needed. Another issue related to the nature of the sample was ethnicity. Because race was not controlled for in this study, ethnicity may have biased the results.

Another problem was the small sample size ($\underline{n}$ = 100). Because of the small ratio of predictors to sample size, the stability of findings may have been decreased. Thus, a larger sample would increase the power of the analysis. In addition, the ratio of predictors to small sample size increases the risk of multicollinearity which can make it difficult to make causal inferences.

The present study should be replicated with another sample in order to determine if the results differ from one sample to another. Replication will help establish estimates of error variation and will determine the degree of shrinkage from the original findings.

Implications

Although this was an exploratory study, the results illustrate the importance of a multidimensional model in predicting job burnout. Although a single direct predictor of burnout was found, perception of stress,

other variables indirectly affected burnout through their effects on stress. Thus, demographics, Type A personality, Jungian types, death anxiety, job satisfaction, and leadership all play roles in leading to burnout.

In addition to establishing a framework by which to conceptualize job burnout, this research is also important because of the implications for therapeutic intervention. Treatment studies that comprehensively address variables leading to job burnout are few, with a longitudinal study by Golembiewski (1985) the most notable exception. The present study points out the necessity of having a multifaceted framework in designing a treatment program. It is clear that a focus on reducing only one predictor of burnout is inadequate. For example, merely attempting to increase job satisfaction in individuals suffering from burnout may reduce their perception of stress, but does not suggest any change in other related variables, such as the Type A pattern or leadership.

This study also points to the need to aim treatment not only at individual strategies to deal with burnout, but at organizational variables as well. For example, perceptions of leadership behavior were directly predictive of job satisfaction and indirectly related to stress and burnout. It appears then that supervisory training programs aimed at helping leaders to be more

supportive of their employees, such as participative management training, will be an important preventive and treatment component of burnout intervention.

Since perception of stress was the critical variable in predicting burnout, it is obvious that any treatment program for burnout should include a component aimed at reducing the individual's cognitive appraisal of stress. As Lazarus (1966) points out, whether a situation will elicit a stress outcome (e.g., burnout) depends on the individual's appraisal of the demands of the situation as well as the resources he or she has to deal with these demands. Thus, this research indicates the need for a cognitive component to burnout treatment.

This research also has implications for prevention of burnout. Because this study identifies variables that may be predictive of burnout, preventive programs can be designed in order to intervene before burnout develops rather than after burnout has developed. Unfortunately, a preventive approach is not without its hazards since candidates for burnout may not be motivated to take action until they are already experiencing burnout. Therefore, any attempt to intervene before burnout develops will require a clear indication of cost-benefit analysis, both to the organization and the individual.

The results of this study have very little implication for selection procedures in organizations at

present. Although personality variables were found to have an indirect relationship to burnout and burnout has been related to absenteeism and turnover, the usefulness of personality tests as job selection devices is questionable. Burnout is not an important criterion for job performance, therefore, burnout cannot be used as a substitute for performance measures.

Directions for Future Research

The findings of this study, while tentative, suggest the need for further testing of causal models in order to clarify the role of a network of variables in predicting burnout. Further attention should be given to the role of mediating variables, such as individual perceptions of stress, in leading to burnout. Further, the effect of other potential moderating variables, such as coping efficacy and social support, remain unclear. Prospective longitudinal studies that study reciprocal relationships between moderator variables and stress need to be conducted in order to see how these mechanisms operate over time. In addition, it appears that burnout is a process rather than a static state. Recently, it has been found that burnout is comprised of progressive phases (Burke, 1986; Golembiewski, Munzenrider, & Carter, 1983). Consequently, well-designed longitudinal studies are imperative in order to establish causal relationships.

Finally, the integrative framework presented here may have useful applications for designing multidimensional intervention programs (e.g., targeting both organizational and personal strategies). However, much more needs to be understood about the complex phenomenon of stress and the role of antecedent variables in contributing to burnout. In conclusion, research on burnout has resulted in a great deal of important findings, however, more complex methodologies need to be used to further delineate the precise factors involved in predicting burnout.

APPENDIX A

Tables

Table 1

Correlation Matrix Between the Scales Used

Scales	X 1	X 2	X 3	X 4	X 5	X 6	X 7	X 8	X 9	X 10	X 11	X 12	X 13	X 14
X Age 1	-	.89***	.00	-.27**	.00	-.18*	-.15	-.08	-.12	-.31**	-.07	-.07	.04	-.19
X Tenure 2		-	-.07	-.25**	.05	-.16	-.08	-.02	-.16	-.35***	-.17*	-.03	.10	-.29
X Education 3			-	.08	-.12	-.19	-.07	-.01	-.30**	.27	-.21	-.06	.01	.03
X Mar Stat 4				-	.09	.05	.05	.08	.07	.15	-.07	.04	-.10	.03
X Oth/Slf 5					-	.39***	.48***	.48***	.13	.03	-.06	.03	.23**	.01
X Oth/Oth 6						-	.38***	.32***	.21*	.07	.21*	-.03	.06	.11
X Dy/Slf 7							-	.49***	.15	-.04	.04	.10	.07	.05
X Dy/Oth 8								-	.15	.08	.03	.10	.03	-.10
X Type A 9									-	.18	.47***	.60***	.03	.06
X Type A/JI 10										-	.05	.20*	-.21	.23
X Type A/HD 11											-	.08	.12	-.06
X Type A/SI 12												-	.09	.05
X MBTIEI 13													-	-.11
X MBTISN 14														-

Table 1--continued   120

Scales	X15	X16	X17	X18	X19	X20	X21	X22	X23
X1 Age	.05	-.14	-.12	.18*	.12	.09	.18*	.21*	.10
X2 Tenure	.03	-.10	-.24**	.07	.05	.12	.18*	.21*	.07
X3 Eductn	-.02	-.04	.15	.06	-.11	-.22	.04	.06	-.12
X4 MarStat	.03	-.15	.15	.00	-.16	.15	.06	-.02	.17
X5 Dth/Slf	-.22	-.07	-.02	-.10	-.06	.08	.07	.29**	.02
X6 Dth/Oth	.01	-.02	-.10	-.02	.19*	.17*	.13	.02	.13
X7 Dy/Self	-.16	-.04	-.03	-.07	-.08	.11	-.04	.13	.05
X8 Dy/Oth	-.27**	.00	.12	.00	.04	.07	-.05	.02	.07
X9 Type A	-.04	.04	.07	.04	.07	.23*	-.06	-.03	.19
X10 TypA/JI	-.02	.21*	.18*	-.07	.05	.08	.07	-.16	-.04
X11 TypA/HD	-.17*	-.07	.10	.06	.20*	.29**	.06	-.00	.13
X12 Typ/SI	-.14	.20*	-.06	-.14	.02	.07	-.15	-.07	.08
X13 MBTIEI	-.18*	-.15	-.28	-.06	-.21*	.12	-.19*	.01	.17
X14 MBTISN	.00	.45	.04	-.01	-.01	-.01	-.04	-.08	-.15
X15 MBTITF	-	-.07	-.22	-.01	.13	.12	-.03	-.04	.11
X16 MBTIJP		-	-.08	.00	-.02	-.05	-.03	-.06	-.12
X17 Job Satf.			-	.48***	.11	-.46***	.00	-.02	-.34
X18 Ldrshp/Con				-	.23	-.25	.10	.20	-.11
X19 Ldrshp/Struc					-	.00	.05	-.16	-.04
X20 Stress						-	.11	.07	.58
X21 Coping							-	.15	-.06
X22 Martl Sat.								-	-.08
X23 Burnout									-

* p < .05   ** p .01   *** p < .001

Table 2

Decomposition of Path Analysis Effects and Original

Correlations

Variables	Direct	Indirect	Total	r
		Burnout		
Stress	.5776	None	.5776	.5776
Job Satisf.	None	-.2645	-.2645	-.3413
Type A (H-D)	None	.1971	.1971	.1364
Marital Stats.	None	.1503	.1503	.1727
Ldrshp (Con)	None	-.1479	-.1479	-.1131
MBTIEI	None	.0911	.0911	.1688
MBTITF	None	.0839	.0839	.1185
Tenure	None	.0776	.0776	.0686
Ldrshp (Struc)	None	-.0604	-.0604	-.0492
MBTIJP	None	.0506	.0506	-.1297
		Stress		
Job Satisf.	-.5326	None	-.5326	-.4580
Type A (H-D)	.3634	None	.3634	.2937
Marital Stats.	.2602	None	.2602	.1544
Ldrshp (Consd)	None	-.2561	-.2561	-.2493
MBTIEI	None	.1577	.1577	.1236
MBTITF	None	.1453	.1453	.1154
Tenure	None	.1344	.1344	.1156
MBTIJP	None	.0876	.0876	-.0497
Ldrshp (Struc)	None	-.0503	-.0503	.0040

Table 2--continued   122

Marital Satisf.

Dth Anx/Slf	.2923	None	.2923	.2873
Ldrshp (Consd)	.2682	None	.2682	.2001
Tenure	.1916	None	.1916	.2127
Ldrshp (Struc)	-.2234	.0527	-.1707	-.1681

Job Satisfaction

Ldrshp (Consd)	.4808	None	.4808	.4844
MBTIEI	-.2961	None	-.2961	-.2775
MBTITF	-.2729	None	-.2729	-.2196
Tenure	-.2524	None	-.2524	-.2429
MBTIJP	-.1644	None	-.1644	-.0758
Ldrshp (Struc)	None	.0944	.0944	.1109

Leadership (Consideration)

Ldrshp (Struc)	.1965	None	.1965	.2322

Table 3

Decomposition of Path Analysis Effects: Supplementary
Analysis

Variables	Direct	Indirect	Total
		Burnout	
Stress	.5862	None	.5862
MBTISN	-.1664	None	-.1664
Maritl Satsf.	-.1366	None	-.1366
Job Satisf.	None	-.3122	-.3122
Type A (H-D)	None	.2130	.2130
Marital Stats.	None	.1525	.1525
Dth Anx/Slf	None	-.0172	-.0172
		Stress	
Job Satisf.	-.5326	None	-.5326
Type A (H-D)	.3633	None	.3633
Marital Stats.	.2602	None	.2602
MBTIEI	None	.1577	.1577
MBTITF	None	.1453	.1453
MBTIJP	None	.0876	.0876
		Job Satisfaction	
Ldrshp (Consd)	.4808	None	.4808
MBTIEI	-.2961	None	-.2961
MBTITF	-.2729	None	-.2729
Tenure	-.2523	None	-.2523
MBTIJP	-.1644	None	-.1644

Table 3--continued

124

Ldrshp (Struc)	None	-.0483	-.0483
Dth Anx/Slf	None	-.0821	-.0821
Marital Satisf.	None	.1424	.1424

Leadership (Consideration)

Marital Satisf.	.2962	None	.2962
Ldrshp (Struc)	.2729	None	.2729
Dth Anx/Slf	-.1707	None	-.1707

Marital Satisf.

Dth Anx/Slf	.2683	None	.2683
Tenure	.2075	None	.2075
Ldrshp (Struc)	-.1632	None	-.1632

Coping Efficacy

MBTIEI	-.2229	None	-.2229
Tenure	.2277	None	.2277
Dth Anx/Oth	.1806	None	.1806

Table 4

Means and Standard Deviations on the Scales

Scales	M	SD
Death-Self	31.24	7.73
Death-Other	33.34	7.13
Dying-Self	23.50	5.30
Dying-Other	32.31	8.08
Type A	211.18	74.10
Type A (S&I)	164.56	68.13
Type A (JI)	196.73	39.80
Type A (H-D)	109.07	30.51
MBTI (E-I)	99.55	24.80
MBTI (S-N)	75.98	21.17
MBTI (T-F)	89.84	19.85
MBTI (J-P)	99.01	25.49
Ldrshp-Consd	40.50	11.29
Ldrshp-Struc	39.96	8.89
Job Satisf	183.45	34.94
Coping	14.24	13.61
Mar Satisf	30.81	10.31
Stress	23.72	8.43
Burnout	13.73	11.48

Note. The mean scores are based on a sample of 100 cases.

Comparison of Demographic Variables by Group

T test comparisons were performed on the demographic variables of age and tenure to test the hypothesis that there were no differences between the means of the original sample ($N = 243$) and the restricted sample ($n = 100$) on these two variables.

Age. The results indicated no significant differences between the two groups on the demographic variable of age ($F = 1.04$, $p > .05$). A mean of 33.15 and a standard deviation of 8.38 was obtained for participants in Group One ($N = 243$). A mean of 34.35 and a standard deviation of 8.24 was obtained for participants in Group Two ($n = 100$).

Tenure. The findings showed no signficant differences between the two groups on the demographic variable of tenure ($F = 1.08$, $p > .05$). A mean of 9.53 and a standard deviation of 7.43 was obtained for those in Group One ($N = 243$). A mean of 9.12 and a standard deviation of 7.28 was obtained for those in Group Two ($n = 100$).

Cross tabulation frequencies were calculated for marital status and education. To test the hypothesis that there were no significant differences between the original sample ($N = 243$) and the restricted sample ($n = 100$) on these two variables, chi square (X^2) statistics were computed.

Marital Status. The findings indicated a significant
difference between the two groups on the demographic
variable of marital status (X^2 = 6.36, df = 1, p < .05).
However, the responses indicated that the majority of
participants in both groups were married (68.8% in Group
1, N = 243, 84% in Group 2, n = 100).

Education. The results showed no significant
difference between the two groups concerning the
participants' level of education (X^2 = 2.57, df = 2, p >
.05).

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