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THE RELATIONSHIP BETWEEN
WORK-RELATED STRESS, COPING, AND SOCIAL SUPPORT

by

LILLIAN ANTOINETTE BARGAGLIOTTI

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF NURSING SCIENCE

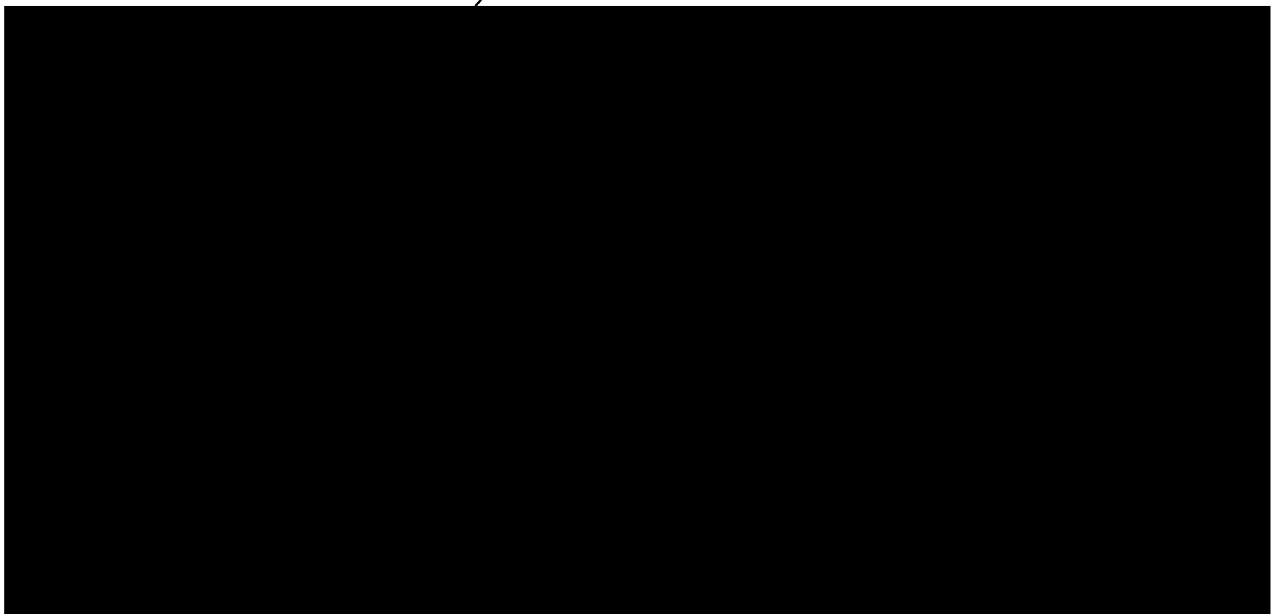
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of the

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ABSTRACT

The purposes of this cross-sectional analytic study of work-related stress among medical-surgical ($n=63$) and critical care nurses ($n=67$) were to: a) explore the relationship between environmental demands (stressors), personal resources (Work-Related Conditioners, coping, and social support) and outcomes of stress among nurses; b) identify the personal factors which might account for variance in the nurse's responses to work-related stress; c) identify the coping and social support resources that are helpful in mediating the effects of stress; and d) identify the stressors of medical-surgical and critical care nurses. Stress outcomes were assessed by self-report measures of depression, trait anxiety, burnout, satisfaction with nursing care, tenure, stressfulness of work, and independence in making patient care decisions. A linear relationship between environmental demands (stressors) and the personal resources of Work-Related Conditioners, coping, and social support accounted for 23% of the variance in stress outcomes. The strongest predictor of stress outcomes (accounting for 14% of the variance) was the tendency not to use Wishful Thinking as the way of coping with the most stressful work-related incident.

This sample described their work environment as encouraging work pressure and an orientation toward tasks and minimally encouraging innovation. Management was perceived as

being minimally supportive.

Using a critical-incident technique, a stress audit of the three greatest stressors occurring in the past six months, indicated that 94% of stressors reported by this sample were in the areas of management (53%), patient care (26%), and communication (15%). The occurrence of stressors in one stressor category was not related to the occurrence of stressors in other categories. Although the study indicated that medical-surgical nurses and critical care nurses did not significantly differ in the types of stressors reported, medical-surgical nurses were perhaps more stress vulnerable because they entered the situation with fewer Work-Related Conditioners (experience, education, certification in practice, and autonomy). This may explain why medical-surgical nurses reported feeling emotionally exhausted more frequently than did critical care nurses.

Nurses in this sample had high levels of trait anxiety and experienced moderate levels of burnout.

Acknowledgments

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Although my nine month-old son Ben was too young during this study to understand any of it, he was a constant source of joy.

Most of all, I want to thank my husband Bill for his constant support throughout my doctoral program. His computer expertise, organizational skills, and many thoughtful suggestions greatly expedited this study. Beyond that, his love, understanding, and marvelous sense of humor made it all possible.

L. A. B.

Dedication

This work is lovingly dedicated

To my parents
Benard and Anne McIlwain

To my husband
Bill Bargagliotti and to our son Ben

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CHAPTER ONE

The Problem

Work-related stress is a significant problem for workers and their employers in many occupations. Although certain occupations such as air traffic control and nursing have been characterized as being particularly stress prone, it is unclear why stress appears to be endemic to these work settings. Equally important, and, as yet unanswered, are the questions of what workers and employers can do to prevent or mediate the effects of work-related stress.

Identification of the causes, mediators, and outcomes of work-related stress has captured the attention of stress researchers from multiple disciplines resulting in the recent exponential increase in occupational stress studies. If work-related stress is the result of transactions between the person and the work environment where environmental demands exceed personal resources (Lazarus, 1967, 1981), then the relationship between environmental demands, personal resources and outcomes of stress becomes a matter for empirical inquiry.

The present investigation employs this relational or transactional perspective to investigate stress in the nursing profession. Research findings over the past fifteen years have suggested that the practice of nursing is inherently stressful, especially on nursing units such as intensive care, oncology, and

hospice care centers. However, the specific relationship between the causes, mediators, and outcomes of stress has yet to be identified (Gentry et al, 1972; Huckaby and Jagla, 1979; Bailey et al, 1980; Barstow, 1980; Maloney, 1982; Chiriboga, Jenkins, and Bailey, 1983).

The overarching research question posited in this study was "What combinations of environmental demands and personal resources in the work setting of nurses are associated with positive and negative responses to stress?" Since it has been suggested that determining the stressful commonalities that occur within and across work situations is pragmatically more useful than the evidence that any particular occupation is stressful (Margolis, Kroes, and Quinn, 1974), this analytical, cross-sectional study compared stressors and personal resources with outcomes of stress among two sub-groups of nurses, namely, medical-surgical and critical care unit nurses. For the purposes of the investigation, personal resources included Work-Related Conditioners, coping strategies, the use of social support systems. To increase the generalizeability of findings, the sample was selected from two Northern California hospitals, Hospital A and Hospital B. These hospitals are similar in terms of their size and types of health care services offered. They differ in their nursing managerial structure, and in their funding resources: one is privately owned and the other has the

capability of generating tax-supported revenues.

Purposes of the study

The primary purposes of this study were to: a) explore the relationship between environmental demands (stressors) and personal resources (work-related conditioners, coping, social support), and outcomes of stress among nurses; b) identify some of the person factors which may account for variance in responses to work-related stress; and c) identify the coping and social support resources that are helpful in mediating the effects of stress; and d) identify the environmental demands (stressors) that commonly occur in two areas of nursing practice.

Definition of terms

For the purposes of this study, specific terms were conceptually defined in the following manner:

Stress is the response which occurs when the individual believes that personal resources are inadequate to meet the demands of the situation (Lazarus, 1981).

Stressors are the environmental demands occurring in the work setting.

Role ambiguity is the uncertainty that one has about what is required in the job (Caplan, Cobb, French, Harrison and Pinneau, 1975).

Role conflict is an intrapersonal problem that occurs when there are two or more conflicting demands made upon the person in the work setting.

Personal resources are those personal or social factors that can be relied upon to be helpful in preventing or mediating the effects of stress. These include Work-related Conditioners, coping strategies, and the use of social support.

Work-Related Conditioners are conceptually defined as constituting those work-related experiences which directly or indirectly facilitate the nurse's ability to meet demands imposed by work-related stressors. Operationally, work-related conditioners was defined to include educational preparation in nursing, certification in the area of practice, years of experience in nursing practice, and autonomy in the work setting.

Coping strategies are the specific behaviors one uses to manage stress. They are viewed as falling into two main categories: problem-focused coping and emotion-focused coping (Folkman and Lazarus, 1980). Problem-focused coping strategies are those actions that are taken to improve the situation.

Emotion-focused coping strategies are the ways in which one neutralizes the effects of stress by controlling the meaning of the stressful experience (Folkman and Lazarus, 1980).

Social support is the emotionally positive relationship with significant others that can be counted upon to provide instrumental or emotional assistance (House and Wells, 1978).

Burnout is the personal response to chronic work-related stress that is characterized by: a)depersonalization; b)lowered

productivity; and c) physical and/or emotional exhaustion (Perlman and Hartman, 1982).

Depersonalization is a negative, cynical, and calloused caregiver response to clients that is characterized by an unfeeling and impersonal manner (Maslach and Jackson, 1981).

Productivity is operationally defined to be the amount of personal accomplishment the individual derives from work.

Assumptions of this study

Underlying this self-report study of occupational stress were several assumptions. A primary assumption was that stress is a personal and highly individualized experience, thus any measure of stress must be reported by the individual rather than by an observer. A second assumption was that subjects are aware of what is stressful and how they cope with stress in the work setting. The third assumption was that there are some persons who have more Work-Related Conditioners than do others.

Significance of the problem

Work related stress in nursing practice achieves significance as a problem for two reasons: a) its potential effect upon patients and nurses; and b) the administrative potential to prevent or diminish the negative outcomes of work-related stress by either altering environmental demands and/or supporting the use of positive coping strategies by employees. The findings may be particularly helpful to the following groups of nurses: a) occupational health nurses who advise management about

preventive and corrective measures for stress-related problems in the work setting; b)clinicians who counsel patients about managing work related stress; c)nurse administrators who manage the work environment where nursing is practiced; and d)staff nurses who are seeking ways to diminish the causes and effects of work-related stress.

The assumption has been made that there are stressful areas of nursing practice and that patient care is adversely affected by the heightened stress level of the nurse. Empirical support for this concern derives in part from the research on the phenomena of "burnout", which suggests that distancing from clients is a coping behavior of highly stressed clinicians in nursing as well as in other helping professions (Maslach, 1976). Underscoring the concern of nurses about the effects of their work-related stress upon clients, members of the American Association of Critical Care Nurses recently identified measures to reduce the stress of staff nurses as one of their major research priorities for the 1980's (Lewandowski and Kositsky, 1983).

Administrators in nursing, as well as in other occupations, significantly influence the work setting through their selection of organizational goals and specific organizational structures to achieve them, their administrative control of human and material resources, and their creation and maintenance of an

organizational climate (Peters and Waterman, 1982). From an organizational perspective, there are numerous administrative theories and philosophies designed for the purpose of improving organizational effectiveness (Taylor, 1916/1978; Fayol, 1916/1978; Bennis, 1966; and Argyris, 1971). Additionally, recent studies by Wandelt (1981), the Commission on Nursing (1981), and McClure et al (1983) have suggested changes that should be made in departments of nursing. Specifically, these have included two-way communication patterns between management and staff, participatory management, autonomy for nurses in their caregiving roles, and recognition of nurses for their contribution to the overall objectives of the organization. However, the specific effect of administrative practice upon the stress levels of employees has not been empirically addressed. It is suggested that empirical evidence of what is stressful and what is helpful to reduce undesirable stress would provide nurse administrators with needed information to make informed decisions.

Context of the problem

Inextricably related to work related stress among nurses is the context in which nursing is practiced. For the purposes of this study, the focus is the acute care hospital setting.

Fundamental to any description of the hospital setting is the realization that while a variety of non-nursing services are provided in hospitals, one prerequisite for hospitalization is the need for skilled nursing care. It is thus paradoxical that

the hospital setting has been characterized as being one over which the nurse has little control, with the position of nurses being described as that of "low man [sic] on the totem pole" (Lewis, 1976, p. 24). Also paradoxical is the description of hospitals as being primarily patriarchal and misogynous (Ashley, 1980), thus suggesting a less than ideal working climate for this occupational group which is predominantly female.

Perhaps the clearest indicator of the value which the hospital setting places upon nursing services is the traditional practice of including the cost of nursing services as an unretrievable part of the room rate, thus nursing becomes a cost for the hospital rather than an income producing center (Walker, 1983). This distinction is one which is shared with nutritionists and social workers, who also are historically female (Cleland, 1983). Recognizing that a negativistic characterization of hospitals represents only one of several differing perspectives, it was this perspective which was used to provide a frame of reference for this investigation of the interaction between environmental demands (stressors) and personal resources among nurses practicing in hospitals.

Limitations of the study

There are both conceptual and pragmatic limitations to this study. An investigation into the relationship between work-

related stress, coping, and social support requires a transactional approach. While investigating several aspects of adult life may be helpful, it remains a simplification of what in fact remains a highly complex process. Moreover, although the process of selecting the variables for this study took approximately one year and was accomplished by an exhaustive literature review as well as a pilot study, the use of a quantitative research methodology necessarily limits the scope of the investigation to only those variables being considered in this study. Any interpretation of the findings from this study must consider the possibility that for nurses there may well be equally significant stressors, mediators of stress, and outcomes of stress that were not considered in this study.

The generalizeability of these findings to other nurses is also limited by the sample size, the geographic location of the study, and the socio-economic conditions operative at the time of this study. The extent to which the depressed and changing economic climate evident in the local community was reflected in the stress experience for these nurses is unknown. The generalizeability of the findings of this study to other occupational groups is also limited. Although nursing shares some common experiences with other health science disciplines and non-health related helping professionals, it is unclear whether the findings from nursing can be applied to any other occupational group or to nurses practicing in other settings,

such as community health.

Organization of the study

This study is reported in five chapters. Building upon the introduction to the study in Chapter One, Chapter Two provides the theoretical framework for the study and a review of relevant research. Chapter Three explains the methodology used to investigate the problem and includes a description of the sample, the instruments that were employed, and the process used for data analysis. Chapter Four presents the findings of the study. Chapter Five contains a summary of findings and conclusions, implications for future research, and recommendations from the study for nurses and nurse administrators.

CHAPTER TWO

Review of the Literature

Theories of the nature of stress, work-related stress, coping, and social support provide the theoretical framework for the present study. This framework together with the empirical evidence on stress and coping among other occupational groups and specifically among intensive care and medical-surgical nurses provides the background for this study.

Prototype Models of Stress

The current conceptualization of stress derives from Selye's biological model and Lazarus' cognitive appraisal model. Although it is Lazarus' model which provides the theoretical basis of this study, Selye's major contributions to the field of stress research will be briefly reviewed. The conceptualization of stress as a response to external stimuli derives from Selye's seminal work on stress. His description of stress as a triphasic physiological sequence of arousal with the potential for harming the individual attracted empirical attention to stress as a potential cause of numerous health related problems. Although Selye (1956) discovered this triphasic response, known as the General Adaptation Syndrome, serendipitously while experimenting on animals to find an ovarian hormone, his model of stress builds upon Cannon's earlier work. It includes, for example, Cannon's emphasis on homeostasis as the

tendency of living organisms to return to their original state when acted upon by an external agent. Cannon's work on the "fight or flight" response is also reflected in Selye's model. It was Selye (1956) who contended that there is a finite amount of energy available for adaptation to stressors, thus suggesting that controlling stress is necessary for survival. Selye (1975) also suggested that the variability of response among persons exposed to the same stressor can be accounted for by internal or external "conditioning factors" that have the capability of enhancing or diminishing the response to a stressor.

A different approach to the question of variability of response to a stressor is offered by Lazarus' psychological model of stress. In contrast to Selye's non-specificity of response model, Lazarus (1967, 1981) contended that the response to a stressor reflects the situation and is the result of one's cognitive appraisal of the event. A basic assumption of Lazarus' middle range theory of stress, which had its roots in both theory and research, is that stress is the response which occurs when environmental demands are believed to exceed available resources. Lazarus (1981) postulated that stress arises from the transactions occurring between the person and his environment. Included in these transactions are environmental and personal variables. Cognitive appraisal of what is at stake in the transaction determines whether the situation is irrelevant, benign/positive or stressful. If perceived as

stressful, further appraisal categorizes the situation as either involving harm or loss, threat or challenge. According to Lazarus (1980), situations appraised as causing harm or loss are those that have already occurred, whereas threat and challenge refer to future events. A situation is appraised as threatening when there is the potential for harm or loss; it is appraised as challenging when there is the potential for growth, mastery, and personal gain.

Cognitive appraisal considers the degree of threat, location of the stressor, and the availability of viable options (Lazarus, 1967). In considering differences in vulnerability to stress, it has been suggested that the situation must be of a given intensity and of a given kind to produce stress in a particular person. According to Folkman and Lazarus (1980) the degree of stress experienced is dependent upon the appraisal of how much is at stake in the transaction as well as the potential for being able to achieve a positive outcome in this transaction. The Bailey et al (1980) descriptive study of stressors and satisfiers of critical care nurses (n=1800) lends empirical support to Lazarus' theory of cognitive appraisal. In this study, interpersonal relationships and patient care were two of the three most frequently cited stressors and satisfiers. Thus, the same type of situation could be satisfying to one nurse while being stressful to other nurses.

Although stress as a paradigm has enjoyed a wide sphere of influence, it has numerous theoretical problems. The lack of precision in defining the conceptual boundaries of the term "stress has resulted in its use as "stimulus, response, and intervening construct" (Eisdorfer, 1981, p. 175; Mason, 1975).

A second problematic issue for stress theorists is an almost inherent tautology of the stress paradigm. Based upon the outcomes or consequences of stress, one infers stress which occurred as a response to a stressor. Elliot and Eisdorfer (1982) suggest a revised model of activator, reaction, consequence research approach. Their model diagrammed in Figure 1 suggests that mediators account for individual variances in each of these variables. Although Elliot and Eisdorfer (1982) cite the need for normative data explicating the characteristics of each of these variables, the circularity of stressor, stress, and consequence remains.



Figure 1. Elliot and Eisdorfer Model of Stress

Models of Occupational Stress

Although there are differing models of occupational stress, they share several commonalities. Reflecting the Elliot and

Eisdorfer (1982) general analytic model of stress (depicted in Figure 1), the occupational stress models search for only those variables that effect the work situation. Directly or indirectly derived from the two dominant prototype stress theories of Lazarus (1981) and Selye (1975), all conceptualizations of occupational stress are primarily concerned with stress occurring in only aspect of adult life, namely stress associated with work. Consequently, they may represent a method of reducing the broad phenomena of stress into a more manageable phenomena for research purposes. Alternately, this approach to stress may impose an artificiality that does not actually exist outside of the theorist's conceptualization. The wisdom or folly of this approach to stress has not yet been demonstrated.

A second commonality shared by the occupational stress models are the variables with which they are concerned. Essentially, these are personal characteristics, work environment characteristics, job characteristics, and the effects of stress. The variables which are portrayed as the most significant and the postulated relationship between these major variables differentiate the numerous models of occupational stress. A second major area of difference between the occupational stress models is the relative emphasis placed upon subjective as opposed to objective appraisal of the work situation. Underlying this difference is the theorist's belief about whether stress resides

in the person, the situation, or is the net result of the transaction between the person and situation. Illustrative of the occupational stress models, and germane to this study, are the models of Caplan, Cobb, French, Harrison, and Pinneau (1975); House and Wells (1978); and McLean (1979).

The Caplan et al (1975) model of work related stress approaches stress from a sociological perspective and has heavily influenced the field. Their model suggests that the response occurs affectively, physiologically, and behaviorally; resulting in health-illness changes of morbidity, mortality, and accidents. These changes occur because of person characteristics, subjective and objective environmental characteristics, and the degree of person-environmental fit. To test this model, the degree of person-environment fit was operationalized to be the difference between desired versus actual levels of quantitative work load, responsibility for persons, job complexity, and role ambiguity. Social support, both tangible and emotional, was postulated to be a moderating variable enduring over time. Implicit in their model is the notion that work-related stress and its antecedent variables are stable over time.

The Caplan et al (1975) model is based upon the earlier work of Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) and French (1974). The earlier study (N=53) by Kahn et al (1964) had suggested that role conflict and role ambiguity were significant

dimensions of the work experience of supervisory staff. The effects of role conflict appeared to be mediated by the personality characteristics of introversion/extroversion and the degree of flexibility-rigidity. In Kahn's national study (N=1500) role ambiguity was modestly correlated with job dissatisfaction ($r=.30$), job related tension ($r=.50$), a sense of futility ($r=.40$) and with low self-confidence ($r=.30$). The goodness of fit theory tested in the Caplan et al study (1975) was based upon the earlier work of French and associates at the University of Michigan who postulated that there were two salient dimensions to the degree of person-environment fit in the work setting: a) the degree to which the skills and abilities of the person match the demands of the job, and b) the degree to which the needs of the person are supplied by the job. Their studies with space center workers suggested that there may be a curvilinear relationship between the degree of person-environment fit and outcome measures of job satisfaction and mental health (French, 1974).

The Caplan et al (1975) cross-sectional study (N=2010 men in 23 occupations) investigated the effects of person-environment fit upon psychological, behavioral, and physiological variables. Although this study investigated correlations between a large number of variables, the highest correlation ($r=.47$) occurred between the amount of person-environment fit for job complexity

and the amount of job dissatisfaction. The correlations between role ambiguity and job dissatisfaction ($r=.19$) and quantitative work load and job dissatisfaction ($r=.19$) were more modest as were correlations between these variables and psychological measures of depression, irritation, and anxiety. The correlations between job stressors and physiological and behavioral outcome measures were either statistically insignificant or less than .30 (Caplan et al, 1975).

The lack of correlation between job stressors and psychological, behavioral, and physiological outcome measures in the Caplan et al study (1975) raises a number of questions concerning their model and data analysis. Methodologically, it might be questioned whether the heterogeneity of the sample "washed out" the correlations that might occur in a more homogeneous group. Secondly, it is questioned whether singular job stressors are able to provide a sufficient stimulus for these outcome measures, which suggests the need for multivariate analysis. Two studies by Beehr (1976a, 1976b) support this latter objection. In Beehr's study (1976a) of technical and clerical employees, the correlation between role ambiguity and job dissatisfaction was substantially higher ($r=.51$) than that suggested by the Caplan et al study. However, Beehr's (1976b) second study, which is somewhat more explanatory, suggests that the relationship between role ambiguity and job dissatisfaction is mediated by the amount of autonomy of the respondent.

Although there are numerous conclusions that might be drawn from the modest correlations of the Caplan et al study, the Beehr studies (1976a, 1976b) lend support to the notion that the Caplan et al model may be an overly simplistic approach to the complex phenomena of work stress.

Closely related to the latter concern is the methodological problem in the Caplan study created by the use of correlational techniques to test a multivariate model. A re-analysis of the Caplan et al data using multivariate techniques demonstrates this problem (LaRocco, French, and House, 1980). Although the LaRocco et al (1980) findings are significant to a discussion of work-related stress, their methodology is particularly instructive for future research in this area. Their analysis of data based upon a stratified random subsample ($N=636$) of the original data set ($N=2010$) reflects the relationships that were originally postulated in the Caplan et al model. Reflecting French's (1974) hypothesis concerning the curvilinear nature of person-environment fit, LaRocco et al (1980) entered the stress scores from the Caplan et al data into the regression equation as a quadratic term. Because social support had been hypothesized to buffer the effects of stress, stress and support were entered as an interaction term. Age, education, and occupation prestige were entered as confounding variables. This re-analysis of data supported several of the predictions concerning social support.

Social support of supervisors significantly buffered the effects of job stress upon irritation and social support of co-workers buffered the effects of job stress upon depression and somatic complaints.

The House and Wells (1978) model of work related stress is closely related to the Caplan et al model and focuses primarily upon the effect of social support. In this model the effect of work-related stress upon health is dependent upon the respondent's level of social support. House and Wells predicted that stress occurs when the individual is confronted with a situation exceeding his abilities. In this model, the perception of stress is buffered by individual and situational variables. These include the presence of social support which may buffer the perception of stress, the response to stress, and/or the outcomes of stress. Reflective of the Caplan et al model, the outcomes of stress in the House and Wells model are physiological, cognitive/affective, and behavioral. In this model, stress is conceptualized as an individualized experience which may not be stable over time.

House and Well's (1978) cross-sectional study (N=1930) used self-reported measures to examine the effects of social support upon health outcome and perceived occupational stress measures. Regression analysis suggested that perceived social support from supervisors and wives conditioned the effects of occupational stress upon health outcomes of gastric ulcers and

neurosis (House and Wells, 1978; 1980). The mechanism by which this occurs was unclear. Although House and Wells (1978, 1980) hoped to measure the amount of instrumental/tangible and emotional support provided by spouses, friends, supervisors, and co-workers, their instrument failed to discriminate between instrumental and emotional support. Supervisor support correlated most highly with measures of job satisfaction ($r = .38$) and concern for quality ($r = .39$). A surprising finding which may be more reflective of the type of job of the respondents (factory workers) was the weak effect of co-worker support upon occupational stress and health outcome. The correlations between job stressors and measures of smoking, angina, hypertension, neurotic symptoms, pulmonary function, and dermatitis are less than .30 although they are statistically significant (House, Wells, Landerman, McMichael, and Kaplan, 1979). However, a finding of interest to further development of work stress instruments was the high inter-item correlations ($r = 0.29-0.62$) between the job stress variables which suggests that these stressors are interdependent (House et al, 1979).

McLean's model of work related stress approaches stress from a different perspective which is more reflective of the Lazarusian theory of stress. McLean's model (1979) postulates that there are three significant variables which contribute to stress: a) the context in which the person-environment interaction

occurs, b)the stressor, and c)individual vulnerability. Conceptualized as a venn diagram in which these three variables are seen as circles in motion, symptoms of stress occur when they overlap with each other. Stress therefore is a highly individualized phenomenon occurring when the individual is particularly vulnerable to a stressor occurring within a specific context. In contrast to the Caplan model, stress is not a stable construct and is highly dependent upon the degree of interaction between the variables of context, stressor, and vulnerability of the individual.

The three models presented and their related research suggests that occupational stress is a complex phenomena that has not yet been well described. The central questions of what is stressful and why it is stressful remain unanswered. The organizational, situational, and personal variables that ameliorate or intensify the stress response have not been fully identified. How stress is successfully managed in the work situation to achieve positive outcomes has not been addressed in the occupational stress models which have been reviewed. Outcome variables for work-related stress continue to be focused toward negative outcomes, reducing the possibility of finding positive effects of job stress (Holt, 1982). In summary, there are still more questions than answers in this area of stress research.

Coping

How one manages stress is referred to as coping. Although

coping is believed to be a significant part of day to day living, it continues to be an obscure construct that is difficult to measure and to assess. Because of the embryonic stage of theory development concerning coping, research in this area continues to be more exploratory than confirmatory. Whether coping is a personal trait stable across situations or a range of behaviors generated in response to the situation has not yet been empirically established. The range of coping behaviors commonly used in stressful situations and the relative efficacy of these behaviors in ameliorating stress continues to be open to speculation. Providing the conceptual foundations for most of the current investigations of coping are the approaches of Pearlin and Schooler (1978) and Lazarus and Folkman (in press).

Pearlin and Schooler define coping as the set of behaviors employed to avoid being harmed by life-strains, the enduring problems of everyday life. According to Pearlin and Schooler (1978) coping behaviors are protective to the individual to the extent that they serve to do one or more of the following: a)eliminate or modify the problematic condition; b)change the meaning the situation holds for the individual; and/or c)maintain the emotional consequences of the situation within tolerable limits. Their cross-sectional multivariate study of Chicago adults, ages 18-65, (N=2300), investigated: a)the incidence of life strains in the areas of marriage, parenting, work, and

household economics; b) the coping behaviors used to deal with them; and, c) the emotional stresses engendered by these life strains. While the coping efforts included in this study were relatively effective in the areas of marriage and parenting, they were relatively ineffective in the areas of work and household economics. A related finding was the efficacy of the personal resources of self-esteem, an absence of negative attitudes about self, and a sense of mastery in reducing work related stress. These two findings led Pearlin and Schooler to conclude that in situations where the individual has little control, personal resources may be more potent stress reducers than are coping behaviors. A second finding of interest to work - related stress research with women was the relatively high correlation ($r=0.22$) between being female and using the coping behavior of selectively ignoring adverse working conditions.

A dominant, yet unexplained, finding of the Pearlin and Schooler (1978) study was the more frequent use of emotive rather than problem-solving coping behaviors. Perhaps this occurred because in their cross-sectional study subjects were only responding to the unsolved problems in their lives which Pearlin and Schooler refer to as enduring life strains. Perhaps, in these situations, problem-focused efforts had been used at an earlier time and had been discontinued because they were found to be ineffective.

In the cognitive appraisal model of stress and coping

postulated by Lazarus, coping refers to the behaviors employed to manage stressful situations (Lazarus and Folkman, in press). In this model coping is described as a process that evolves as the environmental encounter unfolds. Reflective of the person-environment transactional model proposed by Lazarus are the potential determinants of coping behaviors he cites. These include situation factors such as uncertainty, social resources such as a social network and types of social support, and personal factors such as motivation and personal control (Lazarus and Folkman, 1983). In the Lazarusian model of stress and coping, coping behaviors are characterized as being either problem-focused or emotion-focused (Folkman and Lazarus, 1980). Problem-focused coping strategies are those which seek to change or manage the person-environment stressful transaction while emotion-focused strategies attempt to regulate the stressful emotions generated by the person-environment transaction (Folkman and Lazarus, 1980). Perhaps, as suggested by Lazarus, it is the goodness of fit between the coping strategy and the stressful situation which determines the effectiveness of coping strategies. Within this context, effective coping would involve taking action in situations that can be corrected and accepting those situations that are unchangeable.

In the Folkman and Lazarus study (1980) of 100 middle-aged men and women which used the Ways of Coping Checklist, both

emotion - focused and problem-focused coping strategies were employed in 98% of the 1,332 stressful episodes described by subjects. In contrast to the findings of Pearlin and Schooler (1978), Folkman and Lazarus (1980) found that the context and appraisal of the situation appeared to be determinant factors in the type of coping strategy employed. Specifically, an increase in problem-focused coping was noted with work-related situations and in those situations which the individual believed could be ameliorated by action. The finding that there was no significant difference between men and women in the use of problem-focused as opposed to emotion focused coping is of interest since it suggests that men and women are more similar in coping that had been indicated by Pearlin and Schooler (1978). The only significant gender difference was noted in those situations which the individual believed must be accepted or in those situations in which more information was needed. In both of these situations, men were more frequent users of problem-solving strategies than were women.

Although problem-focused versus emotion-focused coping represents a convenient way of conceptualizing coping strategies, it is questionable whether this categorization adequately reflects the actual structure of coping strategies. In the Chiriboga, Jenkins, and Bailey (1983) exploratory study of stress and coping of 100 hospice nurses, factor analysis of a modified version of the Ways of Coping Instrument revealed nine rather

than the two postulated factors. These factors were rational action, fantasized action, emotional avoidance, meditation, professionalism, emotional response, anticipated coping, conflicted behavior, and concerned behavior.

As with the field of stress, overall there are more questions than answers concerning the nature and effects of coping. Implicit in much of the coping literature is the belief that coping occurs secondarily to stressors. Perhaps as Ilfield (1980) suggests, coping may precede as well as follow a stressful episode. If coping is, as Lazarus suggests, contextually embedded, generalizeability is a serious issue. An additional problem for research in this area is the reliance upon self-report which assumes that the subject is aware of all of the coping strategies employed. If coping is an integral part of daily living, coping behaviors may be occurring so automatically that the subject is no longer aware of them.

Social Support

Social support has received empirical attention as a potential mediator of stress during the past decade. Whether social support exerts a protective function against exposure to stressful events or a buffering effect upon the outcomes of stress remains to be theoretically and empirically answered (Thoits, 1982). Although it has been postulated that social support is significant in influencing the outcomes of stress,

this notion has considerable face validity for clinicians. However, the sequencing of social support within a stress and coping framework is both critical and unknown. Because social support involves a social network, measures of social support may also be measures of social competence. If so, the apparent protective and ameliorative functions of social support will need to be empirically separated from the possibility that persons with adequate social support systems also possess and employ more effective coping strategies than those who do not have functioning social support systems. Thus, any investigation of the effects of social support upon stress and outcomes of stress must also be concerned with coping. Most studies of social support fail to do this, which is a serious omission.

A review of the literature indicates that there is considerable controversy about what constitutes social support. While Cobb (1976) has suggested that social support consists of information that one is valued, loved, and belongs to a "network of communication and mutual obligation"; House (1981) has suggested that social support consists of information about the environment and the person, as well as expressive and instrumental aid. The reciprocity of social support that is suggested by Cobb (1976) also raises several theoretical questions. For example, is social support situation - specific or transferrable across situations? The relationship between the

quality and quantity of the social support network has not yet been determined. Finally, there is the unanswered question of whether social support must be used in order to be helpful. Implicit herein is the personalogical variable of self-reliance versus help-seeking behavior. The contribution of personal variables to the presence of social support is suggested by the modest correlations obtained between the need for inclusion and affection (as measured by the FIRO-B) and self-reports of the amount of available social support among a sample (N=136) of university employees (Norbeck, Lindsey, and Carrieri, 1982).

Despite the lack of clarity concerning the dimensions of social support, there are several variables which are of interest to investigators in this field. These include the number of persons in the network, the degree of adjacency density (Tolsdorf, 1976), and the type of help that is provided by the socially supportive relationship. Adjacency density refers to the number of dyadic relationships in the network relative to the possible number of relationships occurring among the members of a social network. The importance of density of the network is suggested by Hirsch's study (1980) of widows (N=20) and mature women (N=14) returning to college. The higher correlation between lower density support systems and mental health measures led Hirsch to conclude that while higher density systems may be more of a cultural ideal, lower density systems may be more

adaptive in situations involving major life changes.

Closely related to density is the notion that certain persons within the network provide specialized functions for which there are no substitutes. The concept of non-substitutability is particularly salient to studies of work-related stress since there may be specific types of work-related support that must be provided by specific types of persons in the work environment. This concept is tentatively supported by Weiss' (1974) study of persons involved in Parents Without Partners and newcomers to a community (N = six couples) (Weiss, 1974). In the former study, the loneliness reported outside of a former marriage relationship became more manageable, but not ameliorated, by the relationships formed in the self-help support group. In the newcomer group, Weiss (1974) found that non-working wives experienced a type of loneliness, similar in intensity to the Parents Without Partners group, because of the lack of friendships. Thus, in the former situation, friendships could not be substituted for the relationship of marriage, and in the latter situation, marriage could not substitute for the lack of friendships. Litwak and Szelenyi's (1969) study of a new Detroit neighborhood (N=300) and a new Hungarian neighborhood (N= 573) also support this differential provisional function of relationships. In both samples, they found that persons tended to rely more upon neighbors for help with an immediate problem

while relying more upon extended family members for help with a long-term problem.

The role of social support in work-related stress has not been clearly delineated. Although House and Wells's study (1978) suggests that social support may play a significant role in effecting the outcomes of stress, the mechanism by which this occurs remains obscure. Additionally, because the instrument used by House and Wells measured only emotional support, the potential contribution of instrumental support to stress outcomes remains speculative. The non-substitutable concept of social support raises the question of whether there is a specific type of support from supervisors, co-workers, friends, and spouses that may be particularly helpful to the individual in coping with work-related stress.

Stress Resistance

Closely related to the concepts of coping and social support is the notion that perhaps there are personalogical characteristics that mitigate the untoward effects of stress. Both Kobasa (1979) and Antonovsky (1979) have investigated personalogical characteristics which they believe serve to buffer or mediate the effects of stress. From his observations of Israeli's who lived with the daily realities of war and Holocaust survivors, Antonovsky (1979) developed the concept of coherence as a stress mediator. Coherence is the ability to perceive and

find meaning in the gestalt of life.

Closely related to coherence is Kobasa's (1979) emerging concept of hardiness. Proceeding from the premise that it is personality which determines both the appraisal of stress and the coping strategies that are employed, Kobasa (1979) postulated that hardiness is personalogical characteristic that serves as a mediator of stress. Hardiness is comprised of three primary components: a)challenge which is evidenced by a positive orientation toward change; b)commitment which is characterized by curiosity and a sense of the meaningfulness of life; and c)control which is demonstrated by the belief that the individual is able to influence the course of day to day events (Kobasa, Maddi, and Courington, 1981). In a study of business executives who were experiencing a large number of stressful life events, Kobasa (1979) found that higher scores on hardiness differentiated the high stress-low illness group from the high stress-high illness group. In a more comprehensive, five year longitudinal study of male executives (N=259), Kobasa et al (1981) found that while the incidence of illness was increased by the number of stressful life events and constitutional predisposition, as measured by parents' health; it was decreased by higher scores for hardiness.

In a study of medical-surgical and critical care nurses, Maloney (1982) found that medical-surgical nurses exhibited more untoward effects of work-related stress than did their intensive

care counterparts. Questioning whether hardiness might account for the variance in outcomes of stress among these two groups, Maloney and Bartz (1983) investigated the presence of hardiness among a second sample of intensive care ($N=34$) and medical-surgical Army nurses ($N=34$). Although differing characteristics of hardiness were found among both groups, conclusions concerning hardiness as a buffering mechanism are limited because it is unknown whether the outcomes of stress demonstrated in the first study were also true for this sample.

It has yet to be determined whether there are personalogical variables or a constellation of variables which serve a protective function either by preventing stressors from occurring, or by ameliorating the potential effects of the stressor upon the person. Perhaps those individuals who appear to be somewhat resistant to the untoward effects of stress have developed more social competence which includes the use of more effective coping strategies.

Burnout

An emerging construct that has generated a number of research studies over the past ten years is that of burnout. Conceptualized as an outcome of chronic work-related stress (Freudenberger, 1974), burnout appears to be most prevalent among persons working in jobs that are emotionally demanding and involve

high person contact (Pines and Kanner, 1982). This outcome of stress has been observed in nurses, child care-givers, social workers, poverty attorneys, and policeman (Pines and Kanner, 1982; McElroy, 1982; Maslach, 1976). Described as a state of physical and emotional exhaustion that occurs gradually over a period of time, burnout is of concern to both employees and employers because it leads to diminished productivity, a negative self-concept, and a loss of any positive feelings for clients (Perlman and Hartman, 1982; Maslach, 1978).

Burnout has both physiological and behavioral manifestations. The occurrence is so gradual that often the individual is unaware that anything is amiss (Yasko, 1983). Physical symptoms of burnout include chronic fatigue and frequent minor illnesses, such as colds, that resolve slowly. Burned - out employees spend an overabundance of time at work, but are disorganized, easily angered, and accomplish little. Because individuals who are burned-out believe they have "done it all", they convey to others their sense of omnipotence (Freudenberger, 1974). The most distinguishing, and perhaps the most problematic, feature of burnout is the manner in which the burned-out distance themselves from clients. Distancing is accomplished through depersonalization of clients and their problems and referral to them in a derogatory manner (Freudenberger, 1974; Maslach, 1978). Of concern to employers

are the common responses to burnout which include the following exit behaviors: changing jobs, moving into a more administrative position which doesn't involve client contact, or leaving the profession (Maslach, 1978).

Although the incidence of burnout is unknown, it is clearly a serious problem without well delineated solutions. Perhaps, as Maslach (1978) has suggested, the solution lies in prevention. Modifiable contextual factors that have the potential for creating a susceptible host for burnout include the following: a)unrealistic personal expectations that are reinforced by professional preparation; b)overloaded work-settings with "needy" client populations; and c)cultural beliefs about work (Maslach, 1976; Pines and Kanner, 1982; Maslach, 1978; Jacobson, 1983b).

The commonly cited personal characteristics of the burned-out are idealism and professional commitment (McElroy, 1982). These people are highly committed to the work they do and believe that their work makes a significant difference. They over-identify with clients and ineffeciently over-invest their time and energy in work (Yasko, 1983). Work is frequently substituted for a personal life and, therefore, plays a significant role in their lives.

Professional preparation that is highly idealized contributes to the susceptibility to burnout (McElroy, 1982). Edelvich and Brodsky (1980) describe the "at risk" professional

as those who are relatively unaware of the realities of their work setting but are enthusiastic about the social contribution their work will make. Jacobson (1983b) describes a type of "professional mystique" that is burnout producing because of the unrealistic expectations that are generated. This mystique includes believing that academic preparation leads to competence and success and that professionalism insures autonomy. Further, there is the idealized belief that clients will be cooperative and grateful for their care and that professional relationships will be supportive. The interaction between these professional expectations and the work setting in which they are thwarted appears to be the major contributor to burnout. Supporting the potential contribution which the idealized professional mystique makes to burnout are the findings from a study ($N=185$) of oncology clinical nurse specialists (Yasko, 1983) and a study of baccalaureate prepared staff nurses ($N=110$) (Cook and Mandrillo, 1982). In the former study, the best predictors of burnout among this sample were: a) dissatisfaction with work; b) high levels of work-related stress; c) apathy and withdrawal from clients; and d) inadequate psychological support at work (Yasko, 1983). Unfortunately, some of these are also indicators of burnout thus yielding tautological results. In the latter study, the amount of perceived stress negatively correlated with job satisfaction ($r = -0.58$) (Cook and Mandrillo, 1982). As Jacobson's (1983)

conceptualization of the professional mystique would have predicted, correlating most highly with job satisfaction were co-worker relationships ($r=0.49$) and task characteristics ($r=0.44$). Task characteristics included being able to do challenging work, the opportunity to use skills and abilities in doing a variety of tasks, the opportunity to attain status, and to grow professionally and personally (Cook and Mandrillo, 1982).

There are a number of specific factors in the work setting that are believed to produce burnout. These include work overload, a lack of positive reinforcement, role ambiguity, and work with clients who have chronic problems that are not easily resolved (Freudenberger, 1974; Seuntjens, 1982; Yasko, 1983; Maslach, 1978). Perhaps the distinguishing feature of these work stressors is that they reinforce the idealized, unrealistic self-expectations held by the employee. Pines and Kanner (1982) have also noted that work settings which are characterized by an abundance of negative conditions and a lack of positive working conditions are burnout producing.

Cultural and societal expectations have also been implicated as early causes of burnout. In the United States, there has been an increasing demand for human services and a concomitant loss of confidence in the providers of those services (Jacobson, 1983b). Additionally, it has been suggested that the social reform programs that dominated the 1960's, such as the War on Poverty, created the naive expectation among both consumers and

caregivers that social changes can occur quickly (Jacobson, 1983b). Thus, along with the demands for increases in social services have come consumer and societal demands for positive outcomes of those services.

From an employee perspective, increasing levels of education among United States employees have been accompanied by increasing expectations for work satisfaction. To the formerly held belief that a good job was one that provided financial security has been added the requirement that work should provide for growth and self-actualization (Jacobson, 1983b).

Thus, the human services professional in the 1980's would seem a prime candidate for burnout. Instead of the self-fulfilling, socially meaningful type of work that was anticipated, professionals find themselves coping with increasingly heavy caseloads, client problems that are not resolvable because of their chronic nature, and bureaucratic systems that are not particularly supportive (Maslach, 1978). Rather than the anticipated gratitude from clients, there is often only anger and frustration from clients who feel powerless to obtain the services they expected to receive from the "system" (Maslach, 1978). Having no preparation to face these realities, it has been suggested that the coping strategies used by these professionals are not only inadequate but produce burnout. The contribution of inadequate coping strategies to burnout was

supported in a comparative study between Israeli nurses ($N = 169$) and United States nurses ($N = 352$). This study suggested that United States nurses were more burned-out because they tended to cope with stress by internalizing the blame for personal failure; whereas, their less burned-out Israeli counterparts tended to seek external causes for personal failures (Pines and Kanner, 1982).

In summary, burnout is an inductively derived concept. As such, the conceptual boundaries of burnout have yet to be clearly delineated. There are areas of agreement in the literature concerning burnout and areas of disagreement as well as areas in which burnout appears to overlap with other phenomena. For example, among nurses, burnout bears a striking resemblance to the phenomena of "reality shock" popularized by Kramer (1970, 1974). Despite the lack of clarity in this construct, for the purposes of comparison with other occupational groups, Maslach's conceptualization of burnout will be used.

Stress Research Among Nurses

Occupational stress research with nurses has been of an exploratory nature, with the initial studies being primarily concerned with a description of stressors. More recent investigations reflect an increased level of methodological sophistication and a more comprehensive approach to the complex phenomena of work-related stress and coping. To reflect an

historical perspective and methodological trends in stress research, studies will be discussed according to the decade in which they were done. Case studies dominated the 1960's (Menziés, 1960; Koumans, 1965; Vreeland and Ellis, 1965; Holsclaw, 1965). This might well be referred to as the consciousness - raising era. Stress in the 1970's began to be measured with instruments. Although some of the instruments were standardized, most of them were developed for the specific study (Gentry, Foster, and Froehling, 1972; Cassem and Hackett, 1972; Jacobson, 1978; Huckaby and Jagla, 1979; Oskins, 1979). The first of several studies of coping appeared in 1979 (Oskins, 1979), which reflected a growing awareness of the inter-related nature of stress and coping. Coping strategies of nurses has continued to be of interest in the more recently reported studies (Jacobson, 1983; Chiriboga, Jenkins, and Bailey, 1983). Research in the 1980's has proceeded with larger scale studies, the use of more refined instruments as well as comparative groups, and the development and testing of work-related stress models (Bailey et al, 1980; Ivancevich and Smith, 1982; Albrecht, 1982; Maloney, 1982; Jacobson, 1983; Chiriboga, Jenkins and Bailey, 1983).

The 1960's

Of the four studies of the 1960's chosen for review, all are empirically limited by the subjectivity of the research method employed and the small sample sizes. However, they served to

identify potentially stressful situations among this occupational group, thereby providing the groundwork for subsequent investigations.

Menzies' (1960) case study of a 700 bed British hospital first drew attention to nursing as a potentially stressful profession. Proceeding from a psychoanalytical perspective, Menzies studied "nursing anxiety", its causative factors and defensive mechanisms. Although the British hospital system differed markedly from American hospitals, the face validity of findings from this study twenty years hence is striking. Menzies (1960) subjective observations of hospital staff over a four year time frame led to her conclusion that nurses coped with the anxiety of nurse-patient relationships by: a)emotionally distancing themselves from clients through a primary orientation toward tasks; b)depersonalizing the nurse and patient; and c)denying and detaching themselves from feelings associated with their work. The anxiety of decision-making was obviated by regimenting tasks to diminish the numbers of decisions to be made and requiring consultation for the few decisions that needed to be made. Responsibility was managed by vaguely delineating accountability, and projecting responsibility either upward toward administration, or downward to more junior staff. The potential stressfulness of change was avoided by clinging to outmoded systems.

Holsclaw's descriptive study (1965) sought to identify

areas carrying "high emotional risk" for nurses. This study suggested that situations threatening the nurse's personal and/or professional self-esteem were high risk areas and included situations requiring close physical contact with patients, working with dying patients, and working with clients who didn't support the nurse's "restorative self-concept".

Kouman's (1965) case study of the Intensive Care Unit (ICU) at Massachusetts's General Hospital first directed attention to Intensive Care as a stressful area of practice. The rapid turnover of staff and patients; as well as interpersonal relationships between nurse and patient, nurse and physician, and among nurses were identified as "crisis-producing" factors.

Vreeland and Ellis (1969) sought to identify the stressors of ICU nurses at the National Institute of Health. They also found interpersonal relationships to be stressful for intensive care nurses, which corroborated the findings of the earlier study by Koumans (1965). Additional stressors identified by Vreeland and Ellis included the level of responsibility, the requisite skill level, the patients' condition, and the urgency of situations requiring constant vigilance.

The 1970's

Stress research among nurses in the 1970's demonstrated an increasing focus on methodology, with greater attention being directed toward the development of instrumentation. It is

interesting to note that the one study in the 1970's which used standardized instruments (Gentry, Foster, and Froehling, 1972) was rejected for publication in two nursing journals. At that time it was "considered 'too scientific, too empirical' for the nursing audience" (Gentry and Parkes, 1982).

Cassem and Hackett's (1972) descriptive study of stressors among coronary care unit nurses represents the first attempt to rank order stressors. Using a 44 item questionnaire reflecting the expressed concerns of nurses in a coronary care unit, they asked subjects to rate the frequency and magnitude of stressors associated with scheduling difficulties, the unit environment, patient care, physicians, co-workers, management, and research. Although the findings are limited by the size of their sample of convenience (N=16) and the lack of demonstrated validity and reliability of their instrument, the findings are important. They found the highest ranking stressors to include interpersonal relationships, the nature of patient care, and the lack of staff.

Gentry, Foster, and Froehling's (1972) comparative study of intensive and non-intensive care unit nurses (N= 34) in two different hospitals represented the first attempt to quantify and compare the psychological responses of these two groups. Using standardized instruments to measure anxiety, hostility, and depression, they found that nurses who had more job "dislikes " scored significantly higher on these instruments than their more satisfied counterparts.

Jacobson's (1978) study of neonatal intensive care unit (NICU) nurses (N=87) introduced the use of stress vignettes to rank order stressors. From a Q-sorting of 52 incidents, highest stressors again included those of interpersonal relationships, staffing and work overload. Perhaps reflecting the context of neonatal intensive care practice, philosophical-emotional problems were the highest ranked stressor.

Huckaby and Jagla's (1979) study of intensive care unit nurses from six California hospitals (N=46) also attempted to rank order stressors. Using a stress vignette approach, highest ranking stressors were work load, interpersonal relationships, and the death of patients.

Oskin's study (1979) of intensive care unit nurses (N=79 nurses from five hospitals), also used a stress vignette approach. This study reflects the first attempt to study coping and to investigate the perception of stressors as being either threatening or challenging. The striking finding of this study is that the three most frequently used coping strategies in these simulated situations involved taking direct action. Unfortunately, the relationships between the type of stressor, the appraisal of stress, and the subsequent coping strategies selected for use were not reported.

The 1980's

A review of seven studies reported since 1980 suggests a

growing awareness of the complexity of work-related stress. Theory testing and model building replaced the former singular focus upon stressors. The analysis of data is beginning to reflect the multivariate nature of work-related stress.

Ivancevich and Matteson's (1980) study (N=82) of nurses in a large Southwestern public hospital investigated the frequency and amount of stress associated with selected job factors. Their questionnaire measured organizational factors, such as policies and procedures and type of managerial style; personal factors, such as Type A and Type B behavior; and job-related factors, such as responsibility for people, role conflict and overload. The most stressful job factors are similar to those reported in previous studies. These include interpersonal relationships, responsibility for people, role conflict and overload. Organizational factors reported as most stressful were human resources development, politics, working conditions, and rewards. Although the study reports the rank-ordering of stressors according to whether respondents are primarily Type A or Type B people, the omission of statistical analysis of these differences limits the meaningfulness of this data.

The Bailey et al (1980) study of stressors and satisfiers of critical care nurses (N=1800) represents the largest study reported. Proceeding from Lazarus' theory of cognitive appraisal, the investigators elicited both satisfiers and

stressors and found them to be frequently occurring in almost the same areas. For example, interpersonal relationships and patient care were both satisfiers and stressors for this sample.

Aside from the power of the sample size, a significant strength of this study was the approach to identification of stressors. Utilization of free-response questions avoided the problem of artificial limits on the possible set of stressors. The method used for analysis of this data is supported by previous research (Bailey, 1956). An additional finding that is worthy of note and further investigation was the low percentage of nurses (14.9%) who considered their intensive care practice to be stressful (Grout, Steffen, and Bailey, 1981).

The Albrecht (1982) study (N=105) explored the coping behaviors and reactions of nurses to stressors. Although generalizeability is limited by the omission of all statistical analysis of data, their conclusions raise some interesting questions concerning the specificity of social support. They report exit behaviors and talking with spouse or roommates as having the highest positive correlation with symptoms of burnout, whereas, talking with supervisors and co-workers manifested the most negatively correlations.

The Maloney study (1982) compared the stress levels of ICU nurses (N=30) and non-ICU nurses (N=30) in an Army medical center. Using a battery of standardized instruments measuring anxiety and job satisfaction / dissatisfaction, they found non-

ICU nurses to have significantly higher levels of anxiety, somatic complaints, dissatisfaction with work load, and personal and family problems. Contrary to the findings reported ten years earlier by Gentry, Foster, and Froehling (1972), Maloney found no significant difference in job dissatisfaction between these two groups.

The Ivancevich and Smith study (1982) of job difficulty among a random sample of engineers (N=159) and medical-surgical unit nurses (N=130) compared job difficulty factors with job satisfaction, job tension, and performance ratings from peers and supervisors. Although gender may have been different for these two groups, this was not reported in their description of the sample. From factor analysis of an instrument measuring job difficulty among nurses, three factors explaining 63% of the common variance were extracted. These included work overload (38% of the variance), conflict (18% of the variance) and supervisory practices (7% of the variance). Using stepwise multiple regression, job difficulty was not related to performance ratings, nor was job conflict related to job tension. However, overload was included in all regression equations for this occupational group.

Jacobson's (1983a) study of stress and coping among Neonatal Intensive Care Unit (NICU) nurses (N=60) compared the type of coping strategy used by nurses with the stressfulness of

a work-related situation. A stress vignette approach was used to measure the stressfulness of the event and which of the 13 coping strategies the nurse would most commonly employ. The coping behaviors investigated in this study were obtained from nurse subjects, clinical observations of the researcher, and the stress and coping literature. From a factor analysis of coping strategies, three factors were extracted. These were the use of cognitive processing, the use of personal skills, and escape. The use of personal skills was the highest rated coping strategy reported in high stress situations and the lowest rated strategy in low stress situations. Although burnout was not explored in this study, it is interesting to note that escape was the second highest rated coping strategy in both the high and low stress situations.

The Chiriboga, Jenkins, and Bailey (1983) study of stress and coping among hospice nurses (N=100 nurses in twenty hospice units) partially tested a multivariate, interactive model of stress and coping. Nurses with the most favorable outcomes were those who reported higher levels of stress when they began working in hospice units, had fewer experiences with the death of a significant other, and reported less personal financial pressure. The first two factors perhaps suggest that these nurses achieved more positive outcomes because they entered the situation with fewer preconceived ideas about death and were more reality-based in their initial perceptions of the

stressfulness of their work. From a social support perspective, although supportive friendships were not related to outcomes for multivariate analyses, nurses who reported higher levels of support from co-workers and spouses had more adaptive outcomes. Coping strategies that were effective for this sample included the use of more cognitive, rational coping behaviors, and a more professional orientation, as well as being able to express emotion.

Summary

Twenty-three years of exploring work-related stress among nurses yields a striking similarity of findings and a definite methodological trend. The stability of findings across groups, agencies, and time suggests that there may be some inherently stressful situations occurring for this occupational group. These are presented in Table 1.

Although a synthesis of findings from these studies and those of other occupational groups is impaired and necessarily limited by the absence of a consistent model of occupational stress, there are implications for future research in this area. A superficial comparison of these findings with those from other occupations suggests that quantitative work load appears to be a stressor which nurses share with other professionals and workers. More importantly, the three categorizations of stressors reflect the highly interactive nature of nursing practice and demonstrate

why nurses are in a "high risk" category for burnout.

Table 1. Types of Stressors Investigated Across 3 Decades

Stressors	Time of Study		
	1960's	1970's	1980's
Interpersonal relationships	Menzies (1960) Koumans 1965) Vreeland & Ellis (1965)	Gentry, Foster, & Froehling (1972) Jacobson (1978) Huckaby & Jagla (1979)	Bailey (1980)
Quantitative Work Overload	Koumans (1965)	Cassem & Hackett (1972) Gentry et al (1972)	Ivancevich & Smith (1982) Maloney (1982)
Nurse-Patient Relationship	Menzies (1960) Koumans (1965) Holsclaw (1965) Vreeland et al (1965)	Cassem et al (1972) Jacobson (1978) Huckaby & Jagla (1979)	Bailey (1980) Ivancevich et al (1982)

How nurses effectively cope with work-related stress remains speculative. Whether effective coping is situation specific or stable across situations (person specific) has yet to be empirically demonstrated. The question of who can be most helpful to nurses in coping with work-related stress has only recently begun to be investigated. Finally, the relationship between stress, coping, and social support is in its infancy and empirically based studies are needed.

CHAPTER THREE

Research Design and Methodology

The primary purposes of the study were to: a)expore the relationship between environmental demands (stressors), personal resources (work-related conditioners, coping, and social support), and outcomes of stress among nurses; b)identify some of the person factors which may account for variance in the responses to work related stress; c)identify the coping and social support resources that are helpful in mediating the effects of stress; and d)identify the stressors that commonly occur in medical-surgical and critical care areas of nursing practice. This chapter will provide descriptions of the research design, the model used for this study, and the subjects who participated in the study. Additionally, the procedures for sampling, protection of subjects, instrumentation, and analysis of data are also included in this chapter.

Research Design

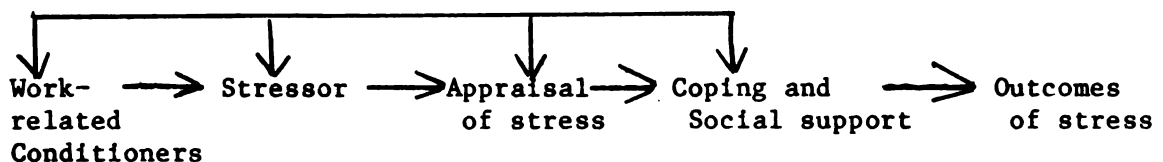
A comparative, cross-sectional survey design was used in this analytic study to test the proposed relationships between stress, coping, and social support. As described below, a model was developed to describe the interactive relationship between stress, coping, and social support.

Theoretical Framework

The model builds upon a general analytic stress model (Elliot and Eisdorfer, 1982) of activator, reaction, consequence with mediators accounting for individual variances in each of the variables (Elliot and Eisdorfer, 1982). A question that arises from this fundamentally linear model is: "why do some individuals appear to be more stressor prone and to suffer more negative outcomes, while others, in similar situations, are not only able to avoid some stressors, but also appear to be more resistant to their effects?" Work-related conditioners may account to some degree for the individual variance relative to the effects of stress.

As noted in the model presented in Figure 2, work-related conditioners are hypothesized to influence the occurrence of stressors, to mediate their appraisal, and to influence coping and social support. Figure 2 also indicates that the appraisal of stress calls forth coping strategies and social support to buffer the effects of the stressor and thus influence the outcomes of stress.

Figure 2. The Relationship Between Stress, Coping, and Social Support



Hypotheses

From a review of work-related literature and the model described above, the following hypotheses were derived:

1) Individuals with more work - related conditioners are more likely to appraise stressful work stressors as challenging than are individuals with fewer work-related conditioners who are more likely to appraise work stressors as harmful or threatening.

2) The appraisal of stress exerts a stronger influence upon the type of coping strategy used than does the type of stressor to which the individual is responding.

3) Negative working conditions are more positively related to the use of emotion-focused coping than to the use of problem-focused coping.

4) The use of problem-focused coping and problem-focused social support is more predictive of positive stress outcomes than is the use of emotion-focused coping and social support.

5) There are no significant differences in the types of stressors reported by medical-surgical and critical care nurses.

Additionally, the research question of "What is the relationship between work-related stressors, coping, social support, and outcomes of stress " was posited in this study. Specific hypotheses explicating the linkages between these constructs were not developed because of the exploratory nature of

research in this area.

In this multidimensional study, work-related conditioners served as the independent variable for the dependent variable of stressors. In turn, stressors and work-related conditioners became the independent variables for the dependent variable of stress appraisal. The interaction between stressor and appraisal together with coping strategy, and the use and type of social support effected the outcome stress variable. The stress outcome for each subject was conceptualized as a continuous, rather than a dichotomous positive or negative variable.

Pilot Study

A pilot study was conducted to test the instrument package for readability, completion time, and relevance of items to the sample. A sample of convenience for the pilot study was drawn from three hospitals that were not included in the main study. These hospitals were identified as Hospital D, Hospital E, and Hospital F. For the pilot study, the instrument package was completed by medical surgical nurses (n=5) and critical care nurses (n=5) from Hospital D, a supervisor from Hospital E, and a director of nursing from Hospital F.

Sample Universe

The sample (N=130 registered nurses) for the study was drawn from the nursing departments of two Northern California acute care hospitals, Hospital A and Hospital B. Hospital A is a private, non-profit hospital located in an urban area. The

average daily census in Hospital A during the month in which this study was done was 158, representing an occupancy rate of 55% for licensed acute care beds. The Nursing Department of Hospital A employs 113 registered nurses in medical-surgical areas and 40 registered nurses in critical care areas. Hospital B is a non-profit hospital located in a suburban community. During the month in which this study was done, the average daily census was 212, representing an occupancy rate of 59% for licensed acute care beds. The Nursing Department employs 98 registered nurses in medical-surgical areas and 60 registered nurses in critical care areas. The above figures include only those registered nurses who are involved in direct patient care.

Sampling Procedure

The nurse managers of all medical-surgical and critical care units in Hospitals A and B were asked to provide the researcher with a list of all registered nursing staff on their units meeting the criteria for this study. From a computer-generated random number list, 70 nurses from the medical-surgical units of Hospital A were selected. However, this proved to be a faulty sampling frame in that managers indicated nurses as being eligible for the study who did not meet the study criteria and there was noted to be duplication of nurses in the lists provided to the researcher. Because of the difficulty in obtaining an accurate sampling frame and the limited size of the critical

care population, randomization was not continued.

Criteria for selection included: a)employment for at least one year as a registered nurse in the nursing unit; and b)involvement in direct patient care for at least two days per week for the preceding month; and c)working during the time in which data was collected. All nurses who met the criteria for the study and who were practicing during the time of data collection were invited to participate in the study. Because of the staffing variability between the day, evening, and night shifts, the sampling procedure was not designed to select equal numbers from each shift.

Method of Data Collection

One hundred and forty-one nurses (96 % of those asked) agreed to participate in the study. These included 57 nurses (40% of the sample) from Hospital A and 84 nurses (60% of the sample) from Hospital B. Six questionnaires were not returned and five questionnaires were not usable because of incomplete information.

The high rate of participation is attributed to the visibility of the study and the personal contact between the subjects and the researcher during the time in which data was collected. Prior to the data collection period, a brief announcement of the study was posted in a high visibility area in each nursing unit. Each subject was then individually contacted during his/her work hours by the researcher who explained the

study and the requirements for participation. At this time, the researcher also welcomed any questions the prospective subject might have about the study and requested the subject to determine the date and time at which the completed questionnaire could be returned. The researcher personally collected all questionnaires except for a minimal number who preferred to return them by mail. Because data were collected on all three shifts for a consecutive two week time period in each hospital, the researcher and the study soon became known to all nurses in the unit. Because subjects were contacted during their work hours, this often required waiting for subjects to have the time to talk with the researcher about the study. The willingness of the researcher to accommodate the time constraints of patient care often met with favorable comments from the nursing staff and presumably favorably influenced the high rate of participation.

Sample Characteristics

The demographic data suggested that this was a study of middle-adult nurses (mean age of 36) with experience in nursing. Their education preparation was as follows: a) baccalaureate in nursing (34%), b) associate degree in nursing (34%), and c) diploma in nursing (31%).

Only 49.6% of this sample were practicing nursing on a full time basis at the time of the study and 46% of the sample had never practiced part time. In contrast, only 11% had never practiced

on a full time basis. The sample average for full time practice was seven years and four years for part time practice. A one way analysis of variance by hospital and by unit indicted that nurses in Hospital B ($\underline{M} = 4.96$ years) had been more involved in part-time practice $\underline{F} (1,124) = 5.267$ $p < .05$ than had their Hospital A counterparts ($\underline{M} = 2.63$ years).

Sixty-six percent of the sample reported that they generally provide nursing care to the same patients for two to three days. Only 12% reported taking care of the same patients for more than five days. Nurses in Hospital A provided nursing care for the same patients for a longer period of time ($\underline{M} = 3.33$ days) $\underline{F} (1,124) = 12.644$ $p = .001$) than did nurses in Hospital B ($\underline{M} = 2.56$ days).

Ten of the subjects were male and a chi-square analysis by unit indicted that they tended to practice in critical care units $\chi^2(\underline{N} = 130) = 6.02$ $p < .05$. Fifty-two percent of the sample were married with the remainder being either single (35%), divorced (12%), or widowed (.8%). Although higher rates of divorce have often been associated with stressful occupational groups, an analysis of marital status by unit of employment indicated that more critical care nurses were married $\chi^2(\underline{N} = 130) = 18.782$ $p < .005$ than were their medical-surgical unit counterparts. Fifty-four percent of the sample do not have children.

Because this is a study of stress and coping, the percentage

of subjects who had completed a stress management course within the past two years was also a demographic variable of interest. Although 25% of the sample had completed a stress course, a chi square analysis of this variable by unit and by hospital yielded no significant differences among these groups for participation in a stress management course.

Protection of Subjects

Approval of the study (number 937706-01) was obtained on November 21, 1983, from the Human and Environmental Protection Committee of the University of California, San Francisco. Because of the non-invasive nature of the study and the approval obtained from the University of California, San Francisco, both hospitals deemed it to be unnecessary to obtain approval from their respective Protection of Human Subjects Research Committees. Informed consent was obtained from all subjects according to the protocol of the Human and Environmental Protection Committee. A copy of the consent form is included in Appendix A.

The confidentiality of all subjects was protected by the coding of instruments with the names of respondents known only to the investigator. Although the general results of the study will be made available to participants, individual results will not be reported, either to subjects or to the participating hospitals.

INSTRUMENTATION

Subjects were asked to complete the following instrument package: a)the WSS - Form A comprised of a demographic questionnaire, a stress questionnaire, the Ways of Feeling checklist, which is a modified version of the depression subscale of the Symptom Checklist - 90 (SCL-90) (Derogatis and Cleary, 1977), the Means of Coping Instrument, and a Checklist of Hassles; b)the full version of Form R of the Moos Work Environment Scale (WES) (Moos, 1981); c)Form Y of Spielberger's State/Trait Anxiety Scales (STAI) (Spielberger, 1983); and d)the full version of Maslach's Burnout Inventory (MBI) (Maslach and Jackson, 1981). A copy of the instrument package is included in Appendix A.

The Stress Questionnaire

The stress questionnaire identified as the Work Stress Survey, was developed specifically for the study. Identification of stressors and the type of social support offered by co-workers and supervisor was accomplished using the critical incident technique formerly used in the Bailey et al (1980) study of stress among critical care nurses. In this stress audit, subjects were asked to describe their three greatest work-related stressors that had occurred in the past six months. They were also asked to rate the amount of distress associated with the stressor using a reverse-scored three point Likert scale with a score of one indicating "very distressing"

and a score of three indicating "only a little distressing". Additionally, they were asked to describe how frequently the stressor occurs using a four point Likert scale with a score of one indicating "rarely" and a score of four indicating "almost always". They were also asked to indicate whether the stressor had been perceived as having been more challenging, threatening, or harmful.

The Work Stress Survey also contained frequency measures for 12 role related items. Frequency of occurrence was measured on a four point Likert scale with a score of one indicating "rarely" and a score of four indicating "almost always". Eight of these role related items were derived from the Caplan et al study (1975) of job stress. These included two items measuring role conflict, four items measuring role ambiguity, and two items measuring underutilization of skills. Inter-item correlations from the Caplan et al study (1975) for items measuring these variables were as follows: a) underutilization of skills $r = 0.67$; b) role ambiguity, $r = 0.48-0.72$; and c) role conflict, $r = 0.52$. The present study deviated from the Caplan et al (1975) testing procedure by the use of a four point, rather than a five point Likert scale. A four point Likert scale was used in the study to force high and low choices. Additional role related items included one item measuring the frequency with which the nurse must attend to many unrelated details and the frequency

with which tasks required their total concentration for longer than fifteen minutes. The Work Stress Survey also asked subjects to rate the stressfulness of their job and their satisfaction with care.

The Work Stress Survey also included several items concerning the type and source of social support. Using a free response format, subjects were asked to recall one of the stressors mentioned previously and to describe what their co-workers or supervisor had done that had been particularly helpful to them in coping with the stressor. They were also asked using a free response format to describe anything that could have been done by co-workers or supervisors that would have been helpful. When given only the choices of supervisor or head nurse, co-workers, friend, or spouse, they were also asked to indicate whom they most often rely upon for help or support. Using a structured format of three choices with the option of describing a fourth choice, they were asked what this primary support person does that is helpful.

The Ways of Feeling

The Ways of Feeling is a fourteen item self-report inventory derived from the depression subscale of the SCL-90 Form R (Derogatis and Cleary, 1977). The Ways of Feeling uses a five point frequency of occurrence scale, ranging from "not at all" which is scored as zero for that item, to "often" which is scored as four for the item. In the current study, summary depression

scores for subjects were obtained by summing the scores for each item.

The SCL-90 represents the revised version of the Hopkins Symptom Checklist (HSCL) that was derived from the Cornell Medical Index (Derogatis, Lipman, Rickels, Uhlenhuth and Covi, 1974; Derogatis and Cleary, 1977). A confirmatory factor analysis of the SCL-90 (Derogatis and Cleary, 1977) compared the hypothesized factor structure of this subscale with the empirical results from a heterogeneous, psychiatric, outpatient sample ($N=1,002$). Substantial agreement on factor loadings was demonstrated for all 13 of the items in this subscale. Although one of the items "loss in sexual interest or pleasure" did not appear in the varimax rotation, it had a factor loading of 0.35 in the hypothesized procrustes solution. A fourteenth item "feeling lonely even when you are with people", which is not a part of the depression subscale, also correlated ($r=0.61$) highly with the depression subscale and is thus included in the Ways of Feeling checklist (Derogatis and Cleary, 1977). The stability of the factor structure of the thirteen item SCL-90 Form R depression subscale was also demonstrated in a second study of heterogeneous, psychiatric outpatients ($N=327$) (Evenson, Holland, Mehta, and Yasin, 1980).

The Means of Coping

The Means of Coping is a 65 item checklist that was

modified by Chiriboga from the original 68 item Ways of Coping instrument developed by Folkman and Lazarus (1980). The Means of Coping asked subjects to describe their most stressful work-related event that occurred in the past month and to check the frequency with which they used the 65 coping behaviors listed. Items for the original instrument, the Ways of Coping, were derived from the "domains of defensive coping (e.g. avoidance, intellectualization, isolation, suppression, information seeking, problem-solving, palliation, inhibition of action, direct action, and magical thinking)" (Folkman and Lazarus, 1980, p. 224). Reflective of Lazarus' (1980) cognitive appraisal theory of stress and coping, the Ways of Coping is designed to be a situation specific instrument rather than a trait measure. Although the Ways of Coping was developed to measure two general components, problem-focused coping and emotion-focused coping, an oblique factor analysis of data from this instrument with a divorced sample (N= 238) yielded eight factors: growth, self-blame, wish-fulfilling fantasy, helpseeking, cognitive control, fatalism, active mastery, and emotive action (Chiriboga, in press). Cronbach's alpha measures for internal consistency of these factors ranged from 0.54 - 0.80.

A modified version of the Ways of Coping instrument was developed for use with a sample of hospice nurses (N=100) (Chiriboga, Jenkins, and Bailey, 1983). Based upon a pilot study, some of the original Ways of Coping items were deleted and

others more specific to the hospice sample were added. Scaling of the instrument was changed from the original binary yes or no scale developed by Folkman and Lazarus (1980) to a three point frequency of use scale (never, some, a lot). Factor analysis of this expanded 74 item instrument with the hospice sample yielded nine factors: rational action, fantasized action, emotional avoidance, meditation, professionalism, emotional response, anticipated coping, conflicted behavior, and concerned behavior. Internal consistency for each of the factors was estimated using Cronbach's alpha which ranged from 0.54- 0.78.

Based upon the results of the hospice study (Chiriboga, Jenkins, and Bailey, 1983) and the divorce study (Chiriboga, in press), the 65 item Means of Coping instrument was developed. Primarily these changes involved the deletion of items more specific to the divorce and hospice samples.

The Daily Hassles Checklist

The Daily Hassles Checklist is a nine item instrument that measures chronic stressors or hassles in major areas of daily life. The checklist uses a five point frequency of occurrence Likert - type scale to measure hassles in the areas of work, clients, co-workers, supervisor, children, parents, friends, financial situation, and health. This "hassles" approach to life stressors evolved from the life events approach to stressors pioneered by Holmes and Rahe (1967) and is closely related to the

concept of life strains advanced by Pearlin and Lieberman (1979).

An earlier version of the Daily Hassles Checklist was employed in a seven year longitudinal study of stress among persons (N=163) experiencing major life transistions (Chiriboga and Cutler, 1980). Analysis of the data from daily hassles, a life events questionnaire, and other measures of stress suggested that four of the daily hassle categories significantly contributed to the stress of this sample.

The Moos Work Environment Scale (WES)

The Moos Work Environment Scale (WES), Form R, is a 90 item self report instrument comprised of ten subscales that measure the dimensions of work relationships, personal growth, and system maintenance and system change (Moos, 1981). The ten subscales measure involvement, peer cohesion, supervisor support, autonomy, task orientation, work pressure , clarity, control, innovation, and physical comfort, and they are defined as follows:

1. involvement - the extent to which employees are concerned about and committed to their jobs
2. peer cohesion - the extent to which employees are friendly and supportive of one another
3. supervisor support - the extent to which management is supportive of employees and encourages employees to be supportive of one another
4. autonomy - the extent to which employees are encouraged to

be self-sufficient and to make their own decisions

5. task orientation - the degree of emphasis on good planning, efficiency, and getting the job done
 6. work pressure - the degree to which the press of work and time urgency dominate the job milieu
 7. clarity - the extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated
 8. control - the extent to which management uses rules and pressure to keep employees under control
 9. innovation - the degree of emphasis on variety, change, and new approaches
 10. physical comfort- the extent to which the physical surroundings contribute to a pleasant work environment
- (Moos, 1981, p. 2).

Form R of the WES represents the third refinement of the original 200 item Form A WES (Moos, 1981). Items for Form A were obtained from structured interviews from employees in a variety of work settings. As a result of pretesting, the instrument was reduced to the 138 Form B WES. Testing of Form B with a wide variety of employees ($N=624$) in 44 diverse work settings resulted in the 90 item Form R WES. The psychometric criteria applied to the selection of items for Form R controlled for response set bias and items that have limited generalizeability. An

additional concern was the amount of intercorrelation between the subscales which was kept at a low to moderate level ($r = -0.03$ to 0.54) and the ability of the instrument to discriminate between work settings. Using a sample of 1,045 employees, internal consistency measures for the subscales ranged from 0.69 for peer cohesion to 0.86 for innovation (Moos, 1981). Stability of the subscales over a one month time period ($N = 75$) yielded test-retest correlations ranging from a low of 0.69 for clarity to a high of 0.83 for involvement. Test-retest correlations over a 12 month time period ($N=254$) continued to be within an acceptable range with the lowest correlation being 0.51 for supervisor support and the highest correlation being 0.63 for work pressure.

Normative data for Form R of the WES were obtained from employees ($N = 1442$) in a wide variety of settings and a sample of health care employees ($N = 1607$) (Moos, 1981). The health care employee group included administrative and supervisory nurses from four intensive care units and medical units (Moos, 1981). Significant to the current study were the findings that occurred when samples of employees involved in patient care were compared with employees in non-patient care health care settings. The patient care employee group, which included nurses, psychologists, and social workers, rated their work environment more negatively for the subscales of peer cohesion, supervisor support, autonomy, task orientation, and clarity than did their

non-patient care counterparts. The health care givers also rated their work environment more highly on work pressure than did non-patient care employees (Moos, 1981).

Speilberger State-Trait Anxiety Inventory (STAI)

The Speilberger State-Trait Anxiety Inventory, Form Y, is a 40 item instrument in which 20 items measure state anxiety and 20 items measure trait anxiety (Speilberger, 1983). State anxiety is defined as a momentary feeling state, whereas, trait anxiety measures a more stable personality characteristic described as anxiety-proneness (Speilberger, 1983). Persons with higher trait anxiety have a tendency to perceive situations as being more threatening and to respond to those situations with a more intense degree of state anxiety.

Form Y is the third revision of the STAI, a widely used instrument. The changes in the earlier Form X included the following: a)deletion of items more related to depression and elation than to anxiety or the absence of anxiety, such as "I feel blue"; b)deletion of ambiguously worded items; and c)improved balance between the number of items measuring the presence and absence of anxiety. Internal consistency of the two scales has been estimated using a sample of Federal Aviation Administration employees (N=1,387 males and 451 females). Coefficient alphas for both males and females were 0.93 for the state anxiety scale and 0.91 for the trait anxiety scale. The

stability of the trait measure for anxiety was demonstrated by test-retest reliability coefficients of 0.75 for females and 0.71 for males over a 30 day period and 0.65 for males and 0.68 for females over a sixty day time period (Speilberger, 1983). Test-retest reliabilities for the state anxiety scale were predictably lower with a median reliability of .33 being reported (Speilberger, 1983).

Construct validity of Form X of the STAI has been demonstrated by the comparison of STAI scores from groups who should have higher anxiety scores, such as psychiatric inpatients and prisoners, with those who would be expected to have lower anxiety scores, such as patients with characterological disorders (Speilberger, 1983). Sensitivity of Form X state anxiety scores to stressful situations has been demonstrated with numerous comparative studies of college students under normal conditions, after receiving relaxation training, and under stressful conditions, such as examinations and after the viewing of stress provoking films (Speilberger, 1983).

Of importance to the current study is that age, gender, and the desire to "look good" appear to exert considerable influence upon STAI scores. In the study of Federal Aviation Administration employees ages 25-69 ($N=1838$), women aged 25-29 exhibited the highest state and trait anxiety scores, while women over the age of 50 exhibited the lowest state and trait scores (Speilberger, 1983). The potential for the Speilberger

(1983) instrument to underestimate anxiety due to the subject's social desirability response set is also of concern to the present study.

The Maslach Burnout Inventory (MBI)

The Maslach Burnout Inventory is a 22 item instrument that is comprised of three subscales: a) emotional exhaustion which measures the degree of feeling fatigued and overextended by work; b) personal accomplishment which assesses the feelings of work success and achievement; and c) depersonalization which measures the degree of unfeeling and impersonal responses to clients (Maslach and Jackson, 1981). Because burnout is conceptualized as a continuous, rather than a dichotomous variable, the instrument was designed to measure the frequency and intensity of these feelings. Both dimensions of these three subscales are scored separately, yielding six scores for each subject.

Preliminary testing of the original 47 item MBI instrument was conducted with a sample of 605 people who worked in a variety of occupations involving intense contact with people who either have problems or who have the potential for having problems. Factor analysis of this data yielded the 25 items and three subscales now present on the MBI. A confirmatory study of the factor structure conducted with a second sample ($N=420$) supported the findings of the first study (Maslach and Jackson, 1981).

Internal consistency of the subscales using Cronbach's alpha

ranged from 0.71 for frequency of personal accomplishment to 0.90 for frequency of emotional exhaustion. Stability of the measure has been demonstrated from test-retest reliability coefficients of 0.53 to 0.82 obtained over a two to four week period of time for a sample of social work graduate students and health service administrators (N=53) (Maslach and Jackson, 1981).

Construct validity of the three dimensions of burnout that are measured by the MBI has been demonstrated in several studies. A study of policemen and their spouses (N=142) reported significant correlations between the spouse's reporting of symptoms of emotional exhaustion and personal accomplishment and the policeman's MBI scores on these dimensions (Maslach and Jackson, 1979). Similarly, a study of mental-health workers (N=40) also reported significant correlations between MBI scores and evaluations by the subject's co-workers for the dimensions of depersonalization and emotional exhaustion (Maslach and Jackson, 1981).

Studies of social service and mental health workers (N=91) and nurses, social service and mental health workers (N=180) have been done to compare MBI scores with scores for similar dimensions on the Job Diagnostic Survey (JDS) (Hackman and Oldham, 1975; Maslach and Jackson, 1981). In the first study, high scores on the JDS dimension on feedback from the job itself correlated with low scores for depersonalization and emotional exhaustion and high scores for personal accomplishment. In the

second study of nurses, social service, and mental health workers, scores for the JDS dimension of growth satisfaction positively correlated with MBI personal accomplishment scores and negatively correlated with MBI scores for emotional exhaustion and depersonalization (Maslach and Jackson, 1981). Similarly, low scores on the JDS dimension on knowledge of results correlated with higher MBI scores on emotional exhaustion and depersonalization and lower MBI scores for personal accomplishment.

The ability of the MBI to discriminate between burnout and the closely related construct of job dissatisfaction was demonstrated in the study of social service and mental health workers (N=91) (Maslach and Jackson, 1981). Measures of job satisfaction on the JDS correlated modestly with MBI measures of personal accomplishment and negatively correlated with MBI measures of emotional exhaustion and depersonalization. However, these correlations were all less than 0.24 and accounted for less than 6% of the variance.

The distortion of MBI scores from a social desirability response set is of concern because many of the items are contrary to the professional ideals espoused by nurses. A study of social welfare graduate students (N=40) found no significant correlation between MBI scores and scores obtained on the Crowne-Marlowe (1964) Social Desirability Scale.

Analysis of Data

Several data reduction techniques were used to analyze the data from this study. Demographic data were analyzed using the appropriate descriptive statistics.

The qualitative data on stressors were categorized using Bailey's (1980) categorization schema. Coding of free - response questions for stressors and social support was accomplished by two raters and inter-rater reliability was assessed.

A one-way analysis of variance was used to assess the relationship between the type of stressor and type of coping strategy used. The chi square statistic was employed to assess whether medical-surgical and critical care nurses differed in the types of stressors they reported.

Although adequate validity and reliability data have been established for the Moos Work Environment Scale, the depression subscale of the Symptom Checklist -90, the Spielberger State/Trait Anxiety Scale, and the Maslach Burnout Inventory, an independent estimate of reliability for this sample was obtained using Cronbach's alpha. Factor structures were assessed using principal components factor analysis with orthogonal rotation. The mean scores of this sample for the Moos Work Environment subscales were compared with the normative scores using the Student's t test for independent samples.

Work-Related Conditioners is a multidimensional variable comprised of the following: a)education in nursing,

b)certification in the area of practice, c)years of experience in practice, and d)autonomy as measured by the WES. To give equal weights to each of the dimensions, standardized scores for this sample were derived and the sum of these scores became the subjects score for Work-Related Conditioners. Education was ranked in the following order: a)baccalaureate in nursing, b)associate degree in nursing, and c)diploma in nursing. Experience was calculated by summing the years of full-time practice with one-half the number of years of part time practice.

Hierarchical multiple regression techniques were employed to test the relationship between Work-Related Conditioners, stressors, coping, social support, and outcomes of stress.

Summary

This chapter described the theoretical framework, the research hypotheses, the instruments, and the data collection and analytic methods used to quantitatively explore the interactive relationship between stress, coping, social support, and the outcomes of stress among a medical-surgical and critical care sample of nurses. The basic demographic characteristics of this sample are also presented.

CHAPTER FOUR

Analysis of Data

This chapter presents the analysis of data from the study of stress, coping, and social support among nurses. The findings are presented in three sections: a) the comparative demographic data for the medical-surgical and critical care samples in this study, b) the findings related to the research question concerning the relationship between work-related stressors, coping, social support, and outcomes of stress, and c) the findings related to each of the hypotheses of this study. Although collection of anecdotal data was not a formal part of the research design, several incidents observed by the researcher in these work settings are included in this chapter to illustrate findings.

Comparative Demographic Data

In the analyses of demographic data, comparisons were made between the two hospitals and the type of unit (either medical-surgical or critical-care). There were both similarities and differences between the medical-surgical and critical care samples. In contrast, and as presented in Chapter Three there were no statistically significant differences between the medical-surgical and critical care sample in demographic characteristics such as the number of dependents.

As noted in Table 2, there were statistically significant differences among medical-surgical and critical care nurses in

the following areas: a)age, b)Work-Related Conditioners, and c)the length of time care is provided for the average patient. A two-way analyses of variance design was used to determine if medical-surgical nurses and critical care nurses differed in age or in the length of time for which they provide care for the same patients. The blocking factor was hospital, which allowed the effects of unit to be adjusted for the effects of hospital.

Table 2. Comparison Between Medical-Surgical (MS) and Critical Care (CC) Nurses

	<u>Mean</u>		<u>Statistical Test</u>
Age	MS	38 years	$F(1,119) = 7.465 **$
	CC	34 years	
Work-Related Conditioners	MS	-.3998	$t(119) = -2.36 +$
	CC	.3846	
Length of Care	MS	3.24 days	$F(1,124) = 11.463 ***$
	CC	2.51 days	

+ $p < .05$, two-tailed

** $p < .01$

*** $p < .001$

Table 2 suggests that medical-surgical and critical care nurses differ on some demographic and work-related variables. For example, critical care nurses were younger and had more work-related conditioners than did their medical-surgical counterparts. These differences, which have both pragmatic and empirical implications, raise an interesting question. Why are the nurses in the critical care areas more likely to be better

prepared? If critical care represents a more desirable place in which to practice nursing, what is it about the setting or the client group that is most attractive? From an organizational perspective, a striking difference between these areas which might account for the attractiveness of this area of practice to the younger and better prepared nurse is the expanded decision-making nursing role in critical care practice. It may also be that: a) older nurses do not enjoy the faster pace of the critical care unit, and b) older nurses are less conversant with the latest technology, or may resist keeping abreast of so many new technologies.

The difference in the amount of Work-Related Conditioners between medical-surgical and critical care nurses is particularly relevant to future stress and coping research among nurses. Recalling that stress from a theoretical standpoint is predicted to occur when resources are inadequate to meet situational demands, it is interesting that in this study it is the critical care group who have more of the tools necessary to meet the demands of the work setting. Theoretically, they should be less vulnerable to job specific stressors than are medical-surgical nurses. This finding suggests that continuing to focus stress research solely upon critical care nurses while excluding other potentially vulnerable nursing groups may be faulty.

Although there is a statistically significant difference in the average amount of time in which medical-surgical and critical

care nurses provide nursing care to one client, the difference of less than one day may not be of practical significance in this study of stress and coping. It would be erroneous to conclude anything concerning the patient's length of stay from this data because these figures may well represent the scheduling pattern or scheduling preference of the nurse.

Stressors

Using open-ended questions, subjects were asked to recall the three greatest stressors they had faced in their work in the past six months. For each stressor, they were also asked to rate stressfulness on a three point Likert scale ranging from a score of three for "only a little distressing" to a score of one for "very distressing". Thus, the amount of distress or stressfulness associated with the stressor is a reverse scored item with low scores indicating high distress and higher scores indicating minimal distress. Subjects were also asked to estimate how frequently this stressor occurs on a four point Likert scale ranging from a score of one for "rarely" to a score of four for "almost always". These three greatest stressors were independently categorized by two raters with an inter-rater agreement rate of 88%. As presented in Table 3, the three general categories under which 94% of all stressors fell were: a) management of the unit, b) patient care, and c) communication.

 Table 3. Frequency of Stressors, By Category

<u>Stressor</u>	<u>Percentages of responses</u>
<u>Management</u>	(52.5)
Understaffed	23.6
Management of the unit	15.6
Working with inadequately trained peers	5.6
Being required to float to another unit	4.4
Required to do non-patient care activities for which subject feels unprepared such as being the charge nurse,	2.8
Poorly functioning equipment	.5
<u>Patient Care</u>	(26.4)
Routine Nursing Care ^a	14.7
Working with dying patients	5.0
Resuscitating patients	3.1
Resuscitating terminally ill patients	2.8
Feeling pressured by families	0.8
<u>Communication</u>	(15.0)
Communication problems with nursing staff	7.8
Communication problems with physicians	7.2

- ^a Routine Nursing Care included stressors such as working with incontinent patients, lifting or turning heavy patients.

relationships. In subsequent comparative analyses to be reported in the next section, each of the stressor categories was handled separately. In these analyses, the three stressor situations reported by each subject were examined to determine which of the stressor categories were included. Theoretically, a subject could have reported three stressors concerned with management, or one stressor in each of the three stressor categories.

Relationship Between Stressors and Other Variables

Patterns of stressors was a question of interest in this study. To determine if there was any association between stressor categories, chi-square analyses were done using 2 x 2 contingency tables in which occurrence and non-occurrence of one stressor category was compared with occurrence and non-occurrence of a second stressor category (see Tables 4, 5, and 6). These chi-square analyses failed to identify any relationship between occurrence and non-occurrence of stressor categories for the entire sample. Thus, the occurrence or absence of one stressor area was not statistically associated with the occurrence or absence of other stressor categories. One explanation for this lack of association is that the stressors occur independently of each other. An alternative explanation is that the categorization of stressors into broad categories may be responsible for "washing out" any relationships between

stressors that actually do exist.

Table 4. Crosstabulation Tables for Occurrence and Non-occurrence of Stressors Concerned with Management and Patient Care

		Patient Care Stressors		
		Non-Occurrence	Occurrence	Total
Management Stressors	Non-Occurrence	7	15	22
	Occurrence	49	59	108
	Total	56	74	130

$\chi^2 = 1.36895, p=0.2420$

Table 5. Crosstabulation Tables for Occurrence and Non-Occurrence of Stressors Concerned with Communication and with Patient Care

		Patient Care Stressors		
		Non- Occurrence	Occurrence	Total
Communication Stressors	Non-Occurrence	37	46	83
	Occurrence	19	28	47
	Total	56	74	130

$\chi^2=2.1104, p=0.6460.$

Table 6. Crosstabulation Tables for Occurrence and Non-Occurrence of Stressors Concerned with Communication and with Management

		Communication Stressors		Total
		Non-Occurrence	Occurrence	
Management Stressors	Non-Occurrence	15	7	22
	Occurrence	68	40	108
	Total	83	47	130

$$\chi^2=2.1566, p=0.6424$$

Perceiving management of the unit, communication, and direct patient care to be stressful areas for critical care nurses is a consistent finding replicated in numerous research studies over the past twenty years (Bailey and Bargagliotti, 1983). The consistency of this finding across time and differing samples has a number of pragmatic implications for nurses, for nurse administrators, and for educators who prepare nurses for practice. For example, these findings reflect significant problems between staff and nursing management that require resolution. However, problems with management are perhaps not easily corrected by staff nurses. Of more importance to staff nurses is whether or not these three stressor categories could reflect a common problem. For example, one common thread woven throughout these three stressor areas is that of faulty communication. More specifically, it might be questioned whether

these stressor categories perhaps reflect the inadequate use of collaboration and negotiation skills by staff nurses.

Although the model for this study suggested that Work-Related Conditioners (i.e. having the skills and experience to successfully meet the demands of the work setting), has an effect upon the stressors that occur, the effect was not noticeable in this data set. T-tests were computed for each of the three stressor categories comparing the amount of Work-Related Conditioners for selectors and non-selectors in each stressor category. As shown in Table 7, the mean scores for work-related conditioners among selectors and non-selectors were in the predicted direction with selectors having consistently lower scores than did non-selectors. However, the differences were not statistically significant.

Table 7. Comparison of Work-Related Conditioner (WRC) Mean Scores Among Selectors and Non-Selectors of the Three Stressor Categories

	Selector	Non-Selector	<u>T</u> Value
Communication Stressors	-0.1191	0.0375	0.45 N. S.
Management Stressors	-0.1558	0.6389	1.81 N. S.
Patient Care Stressors	-0.2047	0.2148	1.25 N. S.

N. S. = not statistically significant with alpha set at .05 level.

Although not statistically significant with alpha set at the .05 level, people with more work-related conditioners tended to report management related stressors less often ($t(120) = 1.81, p = .07$). To identify if there was an optimum linear combination of the work-related conditioner dimensions which would better predict the selection of management as a stressor category, a linear discriminant analysis was performed, using the dimensions of Work-Related Conditioners as predictors, with the outcome variable being the selection of management of the unit. The results of this analysis when all four dimensions of Work-Related Conditioners entered are presented in Table 8.

Table 8. Work-Related Conditioners (WRC) as Predictors of Stressors Concerned with Management

Work-Related Conditioners	Significance of F to Remove	Wilk's Lambda	F	P
Experience	0.2719	0.9819	0.4976	0.4976
Certification	0.2995	0.9808		
Educational Preparation	0.3020	0.9807		
Autonomy	0.5538	0.9748		

As shown in Table 8, Wilk's Lambda indicates that with all four work-related conditioners entered into the analysis, 97% of the variance in the selection of stressors concerned with management remains unexplained. Thus, work-related conditioners were not

adequate predictors of the selection of stressors associated with management.

Anecdotal Data Related to Stressors

Notably, the most frequently reported single stressor (24%) was the problem of being understaffed. To place this stressor within the proper context from which generalizations can be made, both hospitals in this study have a predominantly registered nursing staff. For example, in the medical surgical units, the budgeted hours of care per patient per day ranged from five to six hours. The number of hours of care per day refers to the number of nursing hours budgeted for each patient on a unit for a 24 hour time period. In this study, nurse managers were not included in these budgeted patient care hours although unit clerks were included and each nursing unit had one unit clerk on the day and evening shifts. Theoretically, if six hours of care were budgeted for each day, this might mean that on the day, evening, and night shifts each nurse would provide care for four patients thus yielding two hours of care per patient per shift. The amount of budgeted staffing reported does not account for the differences in the acuity level of patients. However, in this community, five to six hours of care per day for medical-surgical patients is an industry standard and thus understaffing should not be a problem.

Related to the frequency with which insufficient staffing

was cited as a stressor was the amount of indirect nursing care that was noted on these nursing units. Indirect nursing care is defined as nursing hours that are not spent in direct patient care. For example, in one of the hospitals, patient care report between shifts began with each nurse individually reporting to the charge nurse who then reported to the oncoming shift charge nurse who then gave report to the staff nurses on that shift.

Patient care problems requiring medical intervention were also noted to take a similar circuitous route. For example, on some of the medical-surgical units, registered nursing team members reported to team leaders who reported to the charge nurse who then contacted the physician. Thus, the stressor of being understaffed may well represent a problem with the way in which staff are utilized rather than a budgetary deficiency. Indeed, these nurses appear to be paying a high price for their continued dependency upon others.

Unit Management

The amount of time required in each nursing unit to collect the data for this study provided the investigator with numerous opportunities to observe the staff and their interactions with each other and with nurse managers. Because of these observations, the frequency with which management of the unit was cited as a stressor was not surprising. The most extreme incident concerning management skills occurred on one unit when the researcher entered a nursing unit and was greeted by a charge

nurse who said:

"I don't care who you are or what you are doing, I want you off this unit now."

A later discussion with the unit manager as to whether data could be collected from this particular group of nurses resulted in the unit manager brusquely demanding an apology from the charge nurse involved in the above interchange. Although this nurse manager stated that she was working with the nurse to improve the nurse's communication skills, in this interchange, her own behavior modelled for the nurse the very behavior that she was trying to change. Thus, while the frequency with which management was cited as a stressor may represent some degree of scapegoating, the interactional skill levels of managers suggested that perhaps there are indeed problems with management.

Role Related Stressors

In the Work Stress Survey, there were eight items derived from the earlier work of Caplan et al (1975) which were designed to measure the role-related problems of role conflict, role ambiguity, and utilization of skills. Inter-item correlations for the potential scales measuring role conflict, role ambiguity, and utilization of skills are presented in Table 9. The relatively weak correlations between the items measuring role conflict and between the items measuring utilization of skills

indicated that combining items would result in two scales with low internal reliabilities.

Table 9. Inter-Item Correlations for Items Measuring Role Conflict, Role Ambiguity, and Utilization of Skills

Dimension	Number of Items	Correlation
Role Conflict	2	.30
Role Ambiguity	3	.51 - .68
Utilization of Skills	2	.39

Because the conflict, ambiguity, and skill items appeared highly relevant to work-related research, a principal components analysis with varimax rotation was computed with these items. Also included were items related to utilization of skills, concentration, attention to multiple details, and work with students and interns. This factor analysis yielded one rotated factor, labelled person-job compatibility, which is described in Table 10. This factor accounted for 33% of the total variance. Because person-job compatibility was beyond the scope of this study, it was not included in further data analysis. However, it may be fruitful for future work-related stress research.

Work Environment Dimensions

In order to provide a perspective on the work environment of the study sample, Figure 3 presents average scores on seven work

environment dimensions measured by the Work Environment Scale (WES) for both the present study and the normative data collected by Moos(1981). The normative data presented in Figure 3 is from a diverse health care work group (N=1607 employees)

Table 10. Person-Job Compatibility Factor

Eigenvalue = 3.98243

Coefficient alpha =.81

<u>Item</u>	<u>Item Loading</u>
How often are you clear on what your job responsibilities are?	.81
How much of the time are your work objectives well defined?	.80
How often does your job let you use the skills and knowledge that you have learned	.71
How often can you predict what others will expect of you on the job	.68
There is uncertainty about what others expect of you	-.64
How often are you given a chance to do the things you do best?	.63
There are adequate supplies and equipment	.41

comprised of

. . . employees from four outpatient psychiatric clinics and groups of patient care personnel; personnel not involved in patient care (such as janitors, maintenance workers, and office clerks); and administrative and supervisory personnel from a community mental health center, a children's

residential treatment center, two state hospitals, a Veterans Administration medical center, two long-term care facilities, and four intensive care and general medical hospital units (Moos, 1981, p. 4).

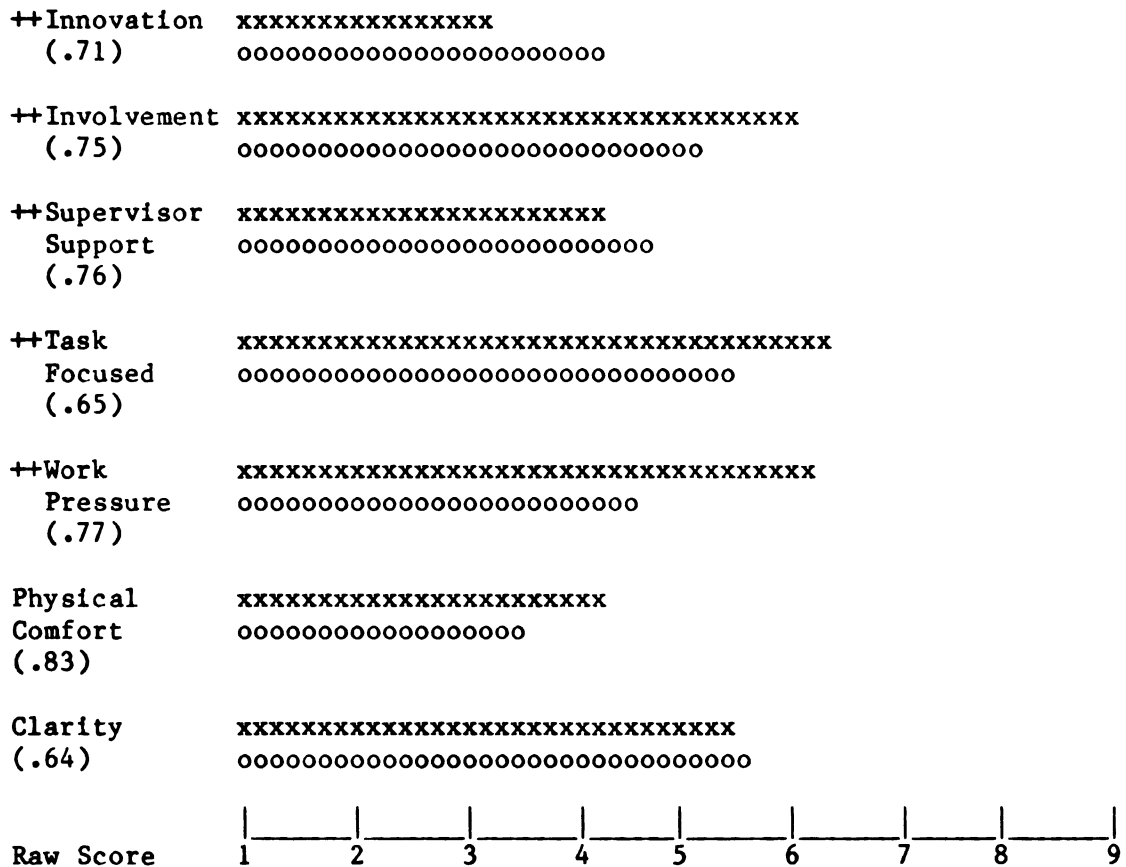
It should be noted that Autonomy, Control, and Peer Cohesiveness were not included in Figure 3 because the reliabilities for these factors in this study using Cronbach's Alpha was less than .60, which required modification of the scale. Analysis of the Autonomy factor indicated that Cronbach's alpha could be improved by deleting two of the Autonomy items: a) few employees have any responsibility, and b) employees generally do not try to be unique and different. With the deletion of these two items, the alpha improved to .63 and the remaining seven items became the revised autonomy subscale.

Similarly, two items were deleted from the Control factor to improve Cronbach's Alpha to an acceptable level of .68. These deleted items included: a) supervisors do not often give in to employee pressure, and b) if an employee comes in late, he can make it up by staying late. The remaining seven items became the Control factor for subsequent analysis.

The Peer Cohesiveness factor from the WES was of interest to the present investigation since it was potentially related to the social support data. However, Cronbach's alpha for this factor was .57 and deletion of items would not have improved this

estimate of reliability. The scale was therefore dropped from subsequent analysis.

Figure 3. Comparison of Mean Scores on WES Dimensions With Health Care Work Group



() = Cronbach's Alpha computed for present study
 xxx = mean scores for the sample
 ooo = mean scores for normative health care work group
 ++ p < .01, two tailed t-test results.

As shown in Figure 3, the sample in this study reported their work environment to place significantly higher emphasis upon involvement in work, work pressure, and orientation toward

tasks than did the health care normative group. These findings are consistent with the finding that the single largest stressor reported by this sample was working in understaffed conditions. This sample also perceived their work environment to place less emphasis upon innovation. They also described lower levels of supervisor support than did the normative health care group. Again, these findings reflect the frequency with which stressors concerning management of the unit were cited. It is surprising that this sample describes higher levels of involvement in work since they also describe a work focused atmosphere that is less supportive. Perhaps the continued involvement of the sample in their work is a reflection of their socialization into the nursing role rather than an outcome of the conditions under which they practice. There were no statistically significant differences between this sample and the normative health care group in the amount of physical comfort of the work environment and the amount of role clarity.

Combination of Work Environment Scales

A data reduction technique involving the summation of variables was employed in this study to estimate whether these work environment dimensions contributed either positively or negatively to the amount of stressfulness of work. Stressfulness of work was measured by one item which asked the subject to rate their job in comparison with other jobs on a four point Likert scale which ranged from a score of one for "not stressful at all"

to a score of four for "extremely stressful".

The two summated variables that were created from the WES scales were labelled positive working conditions and negative working conditions. The sum of the standardized mean scores for Autonomy, Supervisor Support, Involvement, and Innovation, became the variable labelled positive working conditions. The sum of the standardized mean scores for the WES dimensions of Work Pressure, Task-Focused, and Control (by management), was added to the mean score for Work Hassles to yield the variable of negative working conditions. In this study, Work Hassles was a frequency measure of how often the subject feels hassled in the following four areas: a) work in general, b)their co-workers, c)their supervisor, and d)their clients. Cronbach's Alpha for the four Work Hassles items was .60. There was not a statistically significant correlation between negative and positive working conditions ($r = -.06, p = .25$). Positive working conditions negatively correlated ($r = -.24, p < .01$) with the amount of perceived stressfulness of the job and negative working conditions positively correlated ($r = .25, p < .01$) with the amount of perceived stressfulness of the job as was predicted.

Although the correlations between positive working conditions and job stress and negative working conditions and job stress are in the predicted direction, they each account for only 6% of the variance. The small amount variance accounted for may be

due to the lack of sensitivity of the working condition and outcome measures used. Alternatively, there may well be other job-related factors that are associated with job stress. Clearly, the WES is a convenient instrument to use either for empirical or diagnostic reasons. However, the problems encountered in this study with the internal consistency of the WES scales suggests that reliabilities for each of the scales should be reassessed when it is used for other samples. Further, the instrument should be used with extreme caution with samples that are not large enough to support the use of a factor-analytic check on the proper scales to be used.

Appraisal of Stress

Because this study used a cognitive appraisal model of stress, the relationship between how stressful the event was for the subject and its appraisal as challenging, threatening, or harmful became a question of interest. The following question emerged: "are the most stressful situations appraised as being more threatening or harmful or more challenging?"

The appraisal of stressors was accomplished by asking subjects to identify their three greatest work-related stressors as challenging, threatening, or harmful. As noted in the Work Stress Survey included in Appendix B, definitions of challenge, threat, and harm were included in the Work Stress Survey question. Subjects were also asked to rate the stressfulness or intensity of each stressor on a three point Likert scale ranging

from 3 which denoted "only a little distressing" to a score of 1 which denoted "very distressing". Thus, the scores are in the reverse direction with lowest scores (1) denoting "very distressing" and higher scores (3) denoting only "a little distressing".

The analysis of this data did not include specific content of the stressor. Data concerning the stressfulness of the stressor and its appraisal as challenging, threatening, or harmful were analyzed separately for the first mentioned stressor, the second mentioned stressor, and the third mentioned stressor. One-way analyses of variance were computed for each of the stressor events. In the analyses of variance, mean scores for stressfulness served as the dependent variable and the appraisal of challenge, threat, or harm served as the independent variable. The means, standard deviations and effect sizes for the first mentioned stressor are presented in Table 11. Table 13 indicates the means, standard deviations, and effect sizes for the third mentioned stressor. Tables 12 and 14 provide the analysis of variance data for the first and third mentioned stressors. Data for the second mentioned stressor are omitted since, although results are similar to those obtained for the first and third mentioned stressors, the differences were not significant. As noted in Tables 11 and 13, in the first and third mentioned stressor situation, perceiving the stressor to be

Table 11. Comparison of Stressfulness Mean Scores, Standard Deviations, and Effect Sizes Across Three Types of Appraisal for First Mentioned Stressor Situations.

	Challenge	d_{CT}	Threat	d_{TH}	Harm	d_{HC}
Mean	1.5294	.63**	1.1935	.59**	1.0571	1.05***
Standard Deviation	.6622		.4016		.2355	

d = effect size calculated by dividing the difference between mean scores by the average standard deviation of the two mean scores (Cohen and Hyman, 1981). Subscripts indicate comparison, where C=challenge, T=threat, and H=harm.

** = moderate effect size according to Cohen's (1977) criteria of $d = .50$

*** = large effect size according to Cohen's (1977) criteria of $d = .80$.

Table 12. ANOVA Data for the Effect of Appraisal on Rated Stressfulness of the First Mentioned Stressor

Source	SS	df	MS	F	Eta ²
Between Groups ^a	4.0450	2	2.0225	9.256***	.16
Within Groups	21.1950	97	.2185		
Total	25.2400	99			

* $p \leq .001$.

Eta² = percentage of stressfulness variance accounted for by appraisal of the stressor

^a Post hoc analysis using Tukey's HSD indicated significant differences between Challenge and Harm and Challenge and Threat with alpha set at the .05 level.

Table 13. Comparison of Stressfulness Mean Scores, Standard Deviations, and Effect Sizes Across Three Types of Appraisal for Third Mentioned Stressor Situation.

	Challenge	d_{CT}	Threat	d_{TH}	Harm	d_{HC}
Mean	1.8947	.69**	1.5000	.31*	1.1667	1.41***
Standard deviation	.6489		.6882		.3835	

d = effect size determined by dividing the means scores by the average of the two standard deviations (Cohen and Hyman, 1981). Subscripts indicate comparison, where C=challenge, T=threat, and H=harm.

* = small effect size using Cohen's (1977) criteria of $d=.20$

** = moderate effect size using Cohen's (1977) criteria of $d=.50$

*** = large effect size using Cohen's (1977) criteria of $d=.80$

Table 14. ANOVA Data for Effect of Appraisal on Rated Stressfulness of Third Mentioned Stressor

Source	SS	df	MS	F	Eta ²
Between Groups ^a	6.8553	2	3.4276	9.240 ***	.20
Within Groups	27.0789	73	.3709		
Total	33,9342	75			

*** $p < .001$

Eta² = percentage of variance in stressfulness accounted for by appraisal

^a Post hoc analysis using Tukey's HSD indicated significant differences between Challenge and Harm with alpha set at the .05 level.

challenging is associated with the highest mean score suggesting less distress, threat with a a medium range mean score, and harm

with a mean score suggesting subjects were most distressed. Although the effect sizes between challenge and threat are small to moderate, the effect size between challenge and harm is consistently large suggesting that it is easier to discriminate between the amount of stressfulness in challenging and harmful situations.

While the results demonstrated significant variations in stressfulness based upon appraisal, the percentage of variance in stressfulness accounted for by appraisal was of interest to this study and was estimated using the more liberal Eta squared statistic (Kennedy, 1978). Eta results can be found in Tables 12 and 14, and show that appraisal accounted for 16% of the variance in the stressfulness of the first mentioned stressor, and 20% of the second. Given the exploratory nature of this research accounting for 20% of the variance suggests that appraisal is a significant contributor to the stressfulness of an event.

Coping

In this study, coping was initially conceptualized as a situation specific phenomenon (Lazarus, 1981), rather than as a trait measure with stability across situations. The identification of relationships between stress and coping was of primary interest in this study as was the identification of predictors of a specific type of coping. The findings concerning the relationship between appraisal and coping are described in

the Hypotheses testing section (see below) of this chapter.

The Means of Coping instrument provided in Appendix B asked subjects to recall the most stressful incident experienced in the previous month and to indicate the coping items they used to manage this particular incident. For subjects ($n = 105$) who used one of the three stressors they had earlier cited, there were data concerning the following three areas: a) stressfulness of the stressor as measured on a three point Likert scale ranging from one being "very distressing" to three being "only a little distressing"; b) the frequency of occurrence as measured on a four point Likert scale ranging from one denoting "rarely" to four denoting "almost always"; and c) the appraisal of the stressor as being either challenging, threatening, or harmful.

A principal components analysis using pairwise deletion of the Means of Coping items yielded three unrotated factors labelled Adaptive Coping, Emotional Control, and Wishful Thinking. These three factors accounted for only 26% of the variance. The relatively small proportion of the instrument variance which was accounted for suggests that exclusive reliance on these three factors would omit a considerable amount of the variance. However, in the interest of data reduction, these three factors form the focus of the following presentation. It should also be noted that the 2:1 subject-to-item ratio in this analysis of Means of Coping data was less than ideal. As derived

scales presented in Tables 15, 16, and 17, the three factors represent a modification of the factors that were originally extracted from a principal components factor analysis. Specifically, there were some negatively loaded factors that met the loading criteria for inclusion (loading of $\geq .40$). However, these items also detracted from Cronbach's alpha, suggesting a failure to contribute to the internal consistency of the scale. Reverse scoring of these items did not improve the situation and they were deleted from the scale and from subsequent analysis.

Adaptive Coping. When the items comprising Adaptive Coping, (see Table 15) were compared with Folkman and Lazarus' (1980) definition of problem-focused and emotion-focused coping, it was noted that this coping factor includes almost equal numbers of both problem-focused and emotion-focused items. The problem focused items are oriented toward resolving the problem such as "asked someone I respected for advice and followed it". The emotion-focused items are oriented toward changing the meaning of the stressor to the individual, such as "rediscovered what is important in life".

Emotional Control. The second factor, labelled Emotional Control, describes behaviors oriented toward containing and avoiding emotional responses to the stressor. The factor does not include any problem-focused items suggesting a certain amount of fatalism concerning the stressor.

Table 15. Adaptive Coping Factor

Eigenvalue 7.45	Coefficient alpha .84
Percentage of variance 11.5	
<u>Item</u>	<u>Item Loading</u>
(e) Rediscovered what is important in life	.62
(e) Talked to others about my feelings	.57
(p) Discussed the situation with a colleague at work	.56
(e) Let my feelings out somehow	.55
(p) Changed myself so that I could deal with it better	.52
(p) Took deep breaths and or meditated	.49
(e) Sought emotional support from family & friends	.48
(e) Counted my blessings	.47
(p) Asked someone I respected for advice and followed it	.47
(p) Tried to learn from the situation	.46
(e) Had fantasies or wishes about how things would turn out	.45
(p) Changed something so things would turn out all right	.45
(p) Chose my words very carefully	.45
(e) Felt better by crying	.44
(p) Waited to see what would happen	.44
(e) Changed or grew as a person in a good way	.44
(p) Came up with a couple of different solutions	.43
(p) I was inspired to do something creative	.42

(e) Wished that I could change what happened .40

(p) = problem-focused items

(e) = emotion-focused items

Table 16. Emotional Control

Eigenvalue = 4.78

Coefficient alpha = .75

Percent of variance = 7.4

<u>Items</u>	<u>Item Loadings</u>
Accepted it since nothing could be done	.60
Just kept my feelings to myself	.56
Maintained my pride and kept a stiff upper lip	.50
Just took one step at a time	.49
Looked for the "silver lining", looked on the brighter side	.48
Tried to appreciate some humorous aspect of the situation	.47
Tried to go on as if nothing happened	.46
Didn't let it get to me; refused to think about it much	.45
Tried to forget the whole thing	.43
<u>Deleted Items</u>	<u>Item Loading</u>
Talked to someone who could do something concrete about it	-.50
Asked someone I respected for advice and followed it	-.44

Wishful Thinking. The third factor labelled Wishful Thinking

involves fantasized thinking with items such as "wished the problem would somehow go away". Interestingly none of the items in this factor were oriented toward resolution of the stressor. This conclusion is supported by the fact that the two items indicated by Cronbach's Alpha to reduce internal reliability (and hence deleted) were both resolution-oriented items.

Table 17. Wishful Thinking Factor

Eigenvalue = 4.6825		Coefficient alpha = .68
Percent of variance = 7.1		
<u>Items</u>	<u>Item Loadings</u>	
Took it out on other people somewhat	.50	
Wished that the situation would go away somehow	.49	
Imagined a better time or place than I was in	.48	
Felt bad that I couldn't avoid the situation	.47	
Kept others from knowing how bad things were	.45	
Wished I was a stronger person - more optimistic, forceful	.43	
<u>Deleted Items</u>	<u>Item Loading</u>	
Came out of the experience better than I went in	-.43	
Asked someone I respected for advice and followed it	-.44	

To pursue a somewhat tangential path for a moment, the concept of adaptation suggests that change occurs with repeated exposure to environmental conditions. The question raised in

this study is whether or not coping changes because of the frequency of occurrence of a stressor. For example, would the coping scores for each of these three coping factors vary with the frequency of an event? More specifically, is problem-focused coping reserved for those situations which rarely occur and wishful thinking more often used in frequently occurring situations? In this data set, a T-test between scores on the three coping factors for frequently occurring stressors versus rarely and occasionally occurring stressors failed to demonstrate any significant differences.

Social Support

There were several questions of interest concerning the source of social support and the type of support provided. The following questions seem relevant: a) who is perceived as being most helpful, and b) what kind of help do they provide? When asked whom they relied upon most often for social support and given the options of supervisor or head nurse, co-workers, friend, or spouse, 65% per cent of the sample (n=121) cited the work-related options of co-worker and supervisor support as most helpful. However, co-worker support was cited as being the major source of support by 59% of the sample with only 6% reporting primary reliance upon the supervisor or head nurse. Given the frequency with which stressors concerning management of the unit were cited by this sample and the low levels of supervisor

support as measured by the WES, the small percentage of subjects who rely upon management for support is predictable.

In this study, there were two measures of the type of social support found to be helpful. The first question was a free response item which asked the subject to recall one of the three stressful situations they had listed and to describe anything that their co-workers or supervisor did that was particularly helpful to the subject in coping with the situation. Subjects were also asked whether in their situation there was anything which could have been done by co-workers or supervisors that would have been helpful. Because of the free response nature of these questions, two raters categorized the responses with an inter-rater agreement rate of 74%. From their free response answers, seven categories of the type of support emerged. These included: a)nothing, b)allowed to ventilate, c)provide direct assistance, d)understand, e)increase staffing, f)improve management, and g)give positive reinforcement. For the purposes of data reduction, these seven categories were collapsed into three main categories: a)nothing; b)problem-focused social support, which included direct assistance, increased staff, improvement in management; and c)emotion-focused social support which included understanding, positive reinforcement, and allowed to ventilate.

The second set of questions concerning the type of social support asked what type of support is generally provided by their

primary social support person. In contrast to the specific social support data described above, this question asked about social support across situations. The "type of support" item used in this study provided the subject with four options: a)correct the situation, b)help you correct the situation, c)help you feel differently about the situation, and d) "other", which allowed the subject to write in another response. From the "other" responses, the following categories were added to the original three categories: a)a combination of correcting the situation and helping you to correct the situation, b)a combination of correcting the situation and helping you to feel differently, c)allowed you to ventilate, and d)listened and helped you to problem solve. Because of the free response nature of the "other" category, the data were coded along with the situation specific social support data by two raters; the inter-rater agreement rate as cited earlier was 74%.

For the purposes of data reduction, seven categories were collapsed into two main categories, problem-focused social support and emotion-focused social support. Any category which included problem-solving even though it might also include helping the subject to feel differently (emotion-focused social support) was labelled problem-focused social support. This was done because conceptually emotion-focused social support is an affective type of support that is not oriented toward

correcting or resolving the problem. The combined emotive and problem-focused categories, which accounted for less than 10% of the frequency, involved activities oriented toward correcting the problem. In the present study, problem-focused social support included: a)correcting the situation, b)helping you to correct the situation, c)a combination of correcting the situation and helping you to correct the situation, d)correcting the situation and helping you to feel differently, and e)listening and helping you to problem-solve. Emotion-focused social support included: a)helping you to feel differently, and b)allowing you to ventilate.

Sixty per cent of the sample ($n=124$) cited problem-focused social support as generally being the most helpful type of support, with 40% perceiving emotion-focused social support to generally be the most helpful type of support. However when asked about the type of support they found most helpful in a specific stressful situation, both problem-focused and emotion-focused social support from co-workers were selected an equal percentage of the time (see Table 18). This is notably different than the frequency with which problem-focused and emotion-focused social support was found to be helpful across situations.

Finding that 43% of the sample cited management as not being supportive reinforces the frequency with which management was cited as a stressor area. When asked whether in this same stressful situation, there was a needed type of support that

could have been given and wasn't, 40% of the sample cited improved management and staffing. Clearly, this sample perceives management to have been able to have provided support that they are not providing.

Table 18. Type and Source of Support in Specific Stressor Situation

	<u>Co-workers</u>	<u>Supervisor</u>
Problem-focused support	42%	14%
Emotion-focused support	42%	23%
Nothing	8%	43%

In order to determine whether there was a relationship between the type of co-worker and supervisor support deemed to be most helpful in a specific stressor situation, a chi-square analysis was done using a 2 by 2 contingency table in which the type of co-worker support was compared with the type of supervisor support. This analysis indicated that problem-focused social support from both co-workers and supervisors was more frequently used (87%) than any other combination of problem and emotion focused support from co-workers and supervisors [$\chi^2 (1, n=112) = 12.76, p < .001$].

A second area of interest concerning social support was the

possible relationship between the source and type of support. Specifically, did work-related sources of social support most often provide problem-focused social support? A chi-square analysis between the source of support and type of support failed to reveal a statistically significant relationship. Similarly, a chi-square analysis also did not produce a statistically significant relationship between the type of help and the type of unit.

It was anticipated that persons high in Work-Related Conditioners would be more likely to rely upon work-related sources of social support than personal sources of social support. However, a t-test failed to indicate differences in these conditioning factors. To determine if there was an optimum linear combination of work-related conditioners that would be predictive of reliance upon either work-related or personal sources of social support, a linear discriminant analysis was performed. This failed to indicate any significant relationships.

When analyzed by chi-square statistic, there were also no statistically significant relationships between the three broad stressor categories and the source of support.

Outcome Measures

Thirteen dimensions to the outcome stress measure included the measures of the following: depression, state anxiety, trait anxiety, frequency and intensity of depersonalization, frequency and intensity of emotional exhaustion, frequency and intensity

of personal accomplishment and items measuring tenure, satisfaction with care, stressfulness of the job, and having the desired amount of authority to make patient care decisions. Estimates of internal consistency for each of the scales were obtained using Cronbach's alpha and they were all above the criterion level set at .60 for their use in this study. To combine these dimensions into one stress outcome variable for use in subsequent analyses, standardized scores for each variable were computed and summated. All of the outcome measures except for state anxiety were used in the stress outcome measure. State anxiety was omitted from this measure because it measures a transitory feeling of anxiety.

For descriptive purposes, the data obtained from the STAI measures and the MBI dimensions were compared with the normative data available for these tools. As shown in Table 18, mean STAI scores from this sample were compared with the percentiles Spielberger (1983) assigned to STAI scores from his study of Federal Aviation white-collar employees. This normative Federal Aviation employee group ($N=1838$) were heterogeneous in their educational preparation and in their jobs, with jobs ranging from that of clerk to that of manager. In Table 19, mean STAI scores for this study are separated according to gender because Spielberger's (1983) work suggests that anxiety is affected by gender and by age. The age ranges given by

Speilberger for the normative STAI data are divided into three broad categories, 19-39, 40-49, and 50-69. Because the mean age of the sample in this study was 36 and thus closer to the 40-49 year old group than to the 19-39 aged group, data from the 40-49 aged normative group were used for comparison.

Table 19. Comparison of Mean STAI Scores For Medical-Surgical and Critical Care Nurses With Normative Data From a Health Care Work Group

	Mean	Normative Percentile*
State Anxiety (.93)	Males 27.4	22 percentile
	Females 38.26	67 percentile
Trait Anxiety (.91)	Males 35.40	60 percentile
	Females 38.26	70 percentile

() = Cronbach's Alpha computed for this study

* Normative population of working adults ages 40-49 as reported by Speilberger (1983).

As indicated in Table 19, the women in this study reported higher levels of anxiety than did their male ($n=10$) counterparts. The high trait anxiety scores for both the men and women in this study are particularly relevant to a study of stress and coping because trait anxiety is described as a stable person characteristic that is predictive of "anxiety-proneness". Persons who have high levels of trait anxiety react more intensely to stressful situations and are more likely to perceive them as threatening or dangerous (Speilberger, 1983). This finding suggests that nurses and nurse managers need to increase

their level of awareness and sensitivity to staff reactions to stressful situations. If the reactions are more intense, learning alternative coping behaviors would be of benefit to the nurse, to the nurse's co-workers, and to the nurse's patients. Unfortunately, the cross-sectional nature of this study does not allow for inference concerning the causation of high trait anxiety. A t test comparison of state and trait anxiety scores of medical-surgical and critical care nurses failed to demonstrate any statistically significant differences. Similarly, a chi-square analysis using a 2 by 2 contingency table comparing trait anxiety scorers above 38 with trait anxiety scorers below 38 in medical-surgical and critical care units did not demonstrate any significant differences on the basis of unit alone.

The three MBI scales used in this study have both intensity and frequency measures yielding six scales. Although both the frequency and intensity scales were used in this study, for data reduction purposes in future research, correlations were done between the frequency and intensity measures to determine if only one of the two scales might be used. These correlations are displayed in Table 20.

Although the correlations in Table 20 are consistently high for frequency and intensity measures of these three MBI dimensions, they do suggest that there are perhaps subtle

differences between intensity and frequency.

Table 20. Correlation Between Frequency and Intensity for the MBI Scales.

	Correlation Coefficient
Depersonalization	.79 ***
Personal Accomplishment	.73 ***
Emotional Exhaustion	.71 ***

*** $p < .000$

In order to evaluate levels of burnout, comparisons were first made with normative data for the MBI instrument. The normative MBI data presented in Table 21 were obtained from human services employees (Maslach and Jackson, 1981) in the following occupations: social security administration public contact employees ($N=845$), police officers ($N=142$), nurses ($N=231$), agency administrators ($N=125$), teachers ($N=222$), counselors ($N=97$), social workers ($N=91$), probation officers ($N=68$), mental health workers ($N=63$), physicans ($N=86$), psychologists and psychiatrists ($N=40$), attorneys ($N=31$) and others ($N=77$).

As shown in Table 21, the mean scores for all six of the MBI scales for this sample are within the moderate ranges for human service employees, suggesting a moderate level of burnout in the sample. Questioning whether high MBI scores were more associated with either the medical-surgical or critical care group, a chi-square analysis using a 2 by 2 contingency table was done for

each of the six scales. In these analyses the frequencies of low to moderate MBI scorers were compared with the frequencies of high MBI scorers in these two units. There was a statistically significant difference in one of the MBI dimensions. Of the 32 subjects with high scores for the frequency of emotional exhaustion, substantially more of these were medical-surgical nurses (75%) than critical care nurses (25%) [χ^2 ($N=130$)=11.97, $p<.001$]. This finding supports the earlier suggestion that medical-surgical nurses may indeed be more vulnerable to work-related stress than are their more often studied critical care colleagues.

Table 21. Comparison of Mean MBI Scores From the Present Study (SCSS) With Normative Ranges for the MBI Scales

Scales	SCSS Mean	Normative Ranges	
		Moderate	High
Depersonalization			
Frequency (.75)	7.17	6-11	>12
Intensity (.77)	9.73	7-14	>15
Emotional Exhaustion			
Frequency (.89)	22	18-29	>30
Intensity (.84)	30	26-29	>40
Personal Accomplishment^a			
Frequency (.76)	37	39-34	<33
Intensity (.80)	40	43-37	<36

() = Cronbach's Alpha computed for present sample.

^aNote that Personal Accomplishment is a reverse scored scale with lower scores representing higher levels of Personal Accomplishment.

Relationship Between Stress, Coping, Social Support

The research question posited in this study questioned the linear and interactive relationship between work-related stress, coping, and social support. Table 22 presents the findings when hierarchical regression was used with the independent variables entered in the following order: a) Work-Related Conditioners, b) the stressor categories of management of the unit, patient care, and communication; c) the coping factors of adaptive coping, emotional control, and wishful thinking, and d) the type of co-worker support, supervisor support, and the type of social support most generally found to be helpful across situations.

The dependent variable in the hierarchical regression equation was the stress outcome variable comprised of standardized scores for both positive and negative outcomes of stress. To derive this score, negative outcomes were subtracted from the standardized scores for the positive outcomes of stress. The negative stress outcomes were: depression, trait anxiety, frequency of depersonalization, intensity of depersonalization, frequency of emotional exhaustion, intensity of emotional exhaustion, and the amount of job distress. The positive outcomes were: tenure in the present unit, satisfaction with care, frequency of personal accomplishment in work, intensity of personal accomplishment in work, and extent to which the individual has the amount of desired independence in making

patient-care decisions.

Table 22. Hierarchical Regression of Stress Resistance, Stressors, Coping, and Social Support to Predict Stress Outcomes.

Independent Variable	Beta	MR	Set Change in R ²
Work-Related Conditioners	.22575*	.226*	.05*
Management as a Stressor	-.17957	.285	.03
Communication as a Stressor	.00259		
Patient Care as a Stressor	.06635		
Adaptive Coping	.16291	.466**	.14**
Emotional Control	.04764		
Wishful Thinking	-.42311***		
General Type of Social Support	-.06847	.480**	.01**
Type of Co-Worker Support	-.07899		
Type of Supervisor Support	.0832		

* $p < .05$

** $p < .01$

Note that negative social support Beta scores indicate problem-focused social support and positive scores indicate emotion-focused social support.

The data presented in Table 22 suggests that Work-Related Conditioners are significant predictors of the combined stress outcome score. Work-related conditioners were assessed by a summary score which included the following: a)nursing experience, b)educational preparation in nursing, c)certification in the area of current practice, and d)autonomy as measured by the WES. In contrast to conditioners, the stressor measures did not significantly contribute to the prediction of outcomes.

Coping strategies which was the next set entered, did make a contribution. Of the three variables in this set, Wishful Thinking made a significant contribution on its own. It was noted that those who were less likely to use Wishful Thinking had better outcomes. Finally, the social support set failed to contribute to outcomes. The social support variables contributed approximately 1% of the explained variance, in contrast to 14% of explained variance added by the coping set. Several tests for interaction performed for work-related conditioners and stressor categories and for coping and social support failed to demonstrate any degree of interaction. These interaction terms are not presented in Table 22.

The findings from the hierarchal regression analysis support the general conceptualization of stress as occurring when personal resources are inadequate to meet the demands of the situation. Clearly, having the tools to adequately meet the demands of the situation has a significant effect upon stress outcomes. The contribution of Wishful Thinking also supports the conceptualization of stress as Wishful Thinking does not enhance the available resources to meet the demands of the situation. Perhaps Wishful Thinking is counterproductive in managing work-related stressors because in the work setting there are performance requirements. Employees are expected to resolve problems rather than wish them away.

Because of the exploratory nature of this study and for

Because of the exploratory nature of this study and for future investigation, the contribution of each of the independent variables to the prediction of each of the dimensions of the dependent stress outcome variable was explored using stepwise multiple regression. The results from this analysis are included in Appendix C, Table 39. One significant finding from this exploratory analysis was the failure of the independent variables to predict depression as an outcome measure. Because the SCL-90 is a clinically oriented instrument, designed to measure depression, (rather than transitory states of milder depression), perhaps it is not the most sensitive measure of milder depression in a healthy population.

Additional findings from this stepwise regression analysis were in the predicted directions. Wishful Thinking accounted for 12% of the variance in trait anxiety and 18% of the variance in the frequency of depersonalization. Wishful Thinking and stressors associated with management and patient care accounted for 16% of the variance in the intensity of depersonalization. Adaptive Coping and problem focused social support across situations and the tendency not to use Wishful Thinking accounted for 11% of the variance in the intensity of Personal Accomplishment. Wishful Thinking and the tendency not to use Adaptive Coping accounted for 9% of the variance in the amount of job distress. Work-related conditioners and the tendency not to have stressors in the area of communication accounted for 8% of

the variance in satisfaction with care.

Hypotheses

In addition to the general research question posited in this study, there were four hypotheses predicting more explicit relationships between specific areas of stress, coping, and social support. For the pragmatic purposes of enlarging the sampling frame of stress vulnerable groups among nurses for future work-related stress and coping research with this occupational group, a fifth hypothesis predicting no differences between the stressors of medical-surgical and critical care nurses was also tested.

Hypothesis One

Individuals with more Work-Related Conditioners are more likely to appraise stressful work stressors as challenging than are individuals with fewer Work-Related Conditioners who are more likely to appraise work stressors as harmful or threatening.

Underlying this hypothesis was the assumption that persons having the tools to meet the demands of the situation would be more likely to appraise work stressors as challenging because they would have more resources to draw upon to meet the demands of the situation. Similarly, people with fewer of these tools would feel more threatened or harmed because of their limited amount of resources. A discriminant analysis to determine the optimum linear combination of work-related conditioners and stressor categories to predict challenge, harm, or threat did not

demonstrate any significant relationships between Work-Related Conditioners, stressor categories and the appraisal categories. In this analysis presented in Table 23, Work-Related Conditioners and stressor categories were entered simultaneously to predict membership in the challenge, threat or harm groupings.

Table 23. Work-Related Conditioners and Stressor Areas as Predictors of Appraisal

Independent Variables	Significance of F to Remove	Wilks' Lambda	P
Management as a Stressor	.9004	.93	
Pt. Care as a Stressor	.245	.96	
Resources	.717	.93	.3237

Note: Communication as a Stressor was not included because it did not account for enough of the variance to be included in the analysis.

Although Wilks' Lambda indicates that resources and stressors in the areas of management and patient care account for approximately 7% of the variance in appraisal, this was not statistically significant with alpha set at the .05 level. Thus, the data from this study do not support the hypothesis.

Hypothesis Two

The appraisal of stress exerts a stronger influence upon the type of coping strategy used than does the type of stressor to which the individual is responding.

This hypothesis postulates that the meaning of the stressor to the individual, the appraisal, is a more significant predictor of coping than is the content of the stressor situation. The hypothesis also suggests that coping behaviors differ because of the way in which the stressor is appraised. For example, stressors appraised as challenging would call forth coping strategies oriented toward meeting the demands of the situation as opposed to an appraisal of harm or threat which would perhaps call forth coping behaviors of a more defensive nature. Implicit in this hypothesis is the assumption that the type of stressor is predictive of the coping strategy employed.

The analyses of variance provided in Tables 24, 25, and 26 were computed to determine if the mean scores for each of the three coping strategies, Adaptive Coping, Emotional Control, and Wishful Thinking varied according to stressor type: management, communication, or patient care. These three analyses of variance, one for each dependent variable, did not indicate any significant differences in coping across stressor types. However, subjects citing patient care stressors tended [$F(2, 116) p=.0569$] to use Emotional Control more often ($M= 2.02$, where R 's score was the average on the nine items: the three point Likert scale ranged from one denoting "never used" to three denoting "used a lot") than did their counterparts citing management stressors ($M = 1.89$ mean item Emotional Control score)

or subjects citing communication stressors ($M = 1.75$ mean item Emotional Control score).

Table 24. ANOVA for Effect of Stressor Areas on Mean Item Scores for Adaptive Coping

Source	SS	df	MS	F
Between Groups	0.4489	2	0.2244	2.048 N.S.
Within Groups	12.7152	116	0.1096	
Total	13.1641	118		

N.S. = not significant at the .05 level.

Table 25. ANOVA for Effect of Stressor Areas on Mean Item Scores for Emotional Control

Source	SS	df	MS	F
Between Groups	0.8934	2	0.4467	2.938 N.S.
Within Groups	17.6349	116	0.1520	
Total	18.5282	118		

N. S. = not statistically significant at the .05 level

Table 26. ANOVA for the Effect of Stressor Areas on Mean Item Scores for Wishful Thinking

Source	SS	df	MS	F
Between Groups	0.0701	2	0.0351	0.196 N.S.
Within Groups	20.5616	115	0.1788	
Total	20.6317	117		

N. S. = not statistically significant at the .05 level.

Similarly, analyses of variance to detect statistically significant variations in coping scores (for Adaptive Coping, Emotional Control, or Wishful Thinking) in stressor areas appraised as challenging, threatening, or harmful did not indicate any statistically significant differences (see Tables 27, 28 and 29).

Table 27. ANOVA for Effect of Appraisal on Mean Item Scores for Adaptive Coping

Source	SS	df	M.S.	F
Between Groups	0.2010	2	0.1005	0.4190 N.S.
Within Groups	10.7576	94	0.1144	
Total	10.9585	96		

N. S. = not statistically significant at the .05 level

Table 28. ANOVA for the Effect of Appraisal on Mean Item Scores for Emotional Control

Source	SS	df	M.S.	F
Between Groups	0.2884	2	0.1442	0.949 N.S.
Within Groups	14.2818	94	0.1519	
Total	14.5701	96		

N. S. = not statistically significant at the .05 level

Table 29. ANOVA for the Effect of Appraisal on Mean Item Scores for Wishful Thinking

Source	SS	df	M.S.	F
Between Groups	0.1152	2	0.0576	0.284 N.S.
Within Groups	19.0441	94	0.2026	
Total	19.1594	96		

N. S. = not statistically significant at the .05 level.

In order to ascertain whether the amount of distress associated with a stressor area was related to the use of particular coping strategies, a t-test was used to determine if there were any statistically significant variation, within each of the three coping strategies, between the "very distressed" "somewhat distressed" groups (see Table 30).

Table 30. Comparison of Mean Coping Strategy Scores for the "Very Distressed" and "Moderately Distressed"

	Very distressed	Moderately distressed
Adaptive Coping	1.87	2.09 ++
Emotional Control	1.84	2.03 +
Wishful Thinking	1.67	1.67

+ $p < .05$, two-tailed t -test.

++ $p < .01$, two-tailed t -test.

Although there were statistically significant differences between the mean item coping scores of the "very distressed" and the "moderately distressed", it was anticipated that the "very distressed" would have had the higher scores, indicating more frequent use of these coping behaviors. However, the scores for the "very distressed" were significantly lower than the scores for the "moderately distressed". This may, in part, be due to the fact that these factors do not reflect how the "very distressed" cope with stress. Further, the data are dependent upon the ability of the subject to recall how they coped with their most stressful work-related situation. Perhaps being very distressed is not conducive to an accurate recall of the coping behaviors used.

Although the coping scores were lower for the "very distressed" on two coping strategies, a second analysis was done

to determine if the intensity of the stressor affected the association between coping strategies. Factor analytic studies by Chiriboga and his colleagues (Chiriboga and Pierce, 1981) have suggested that the relationship between indicators of functional status may vary systematically according to whether R is in a high or low stress context. As presented in Table 31, Pearson Product Moment Correlations were computed between the mean coping scores for the "very distressed" and the "moderately distressed".

Table 31. Comparison of Correlations Between Coping Strategies for the "Very Distressed" (V) and "Moderately Distressed" (M).

	Emotional Control	Wishful Thinking
Adaptive Coping	(V) $\bar{r}=.23$ * (M) N. S.	(V) $\bar{r}=.49$ *** (M) N. S.
Emotional Control		(V) $\bar{r}=.39$ *** (M) N. S.
Wishful Thinking	(V) $\bar{r}=.39$ *** (M) N. S.	

N.S. Not statistically significant

* $p < .05$

** $p < .01$

*** $p < .001$

Group variations in the magnitude of correlation between coping strategies suggests that the "very distressed" group is more likely to demonstrate linkages between coping strategies. These findings suggest that the amount of distress associated with a

stressor may be the stimulus for calling forth a variety of coping strategies, more or less simultaneously.

Hypothesis Three

Negative Working Conditions are more positively related to the use of emotion-focused coping than to the use of problem-focused coping.

Negative working conditions is a variable comprised of the sum of scores for the WES dimensions of Work Pressure, Task Focused, Control (which refers to control of employees by management), and Work Hassles. Because Negative Working Conditions reflect work conditions that are more chronic and are negative in nature, it was anticipated that subjects would use more emotion-focused coping than problem-focused coping. Underlying this hypothesis are two interdependent assumptions: a) if problem-focused coping had been used, the negative working conditions would have been resolved; and b) under conditions that are not amenable to change, the subject will shift to strategies more relevant to emotional management.

The ability to test the relationship between specific types of coping and negative working conditions was dependent upon being able to isolate both an emotion-focused and a problem-focused coping factor. Factor analysis of the Means of Coping items did not yield separate scales for problem-focused and emotion focused coping. Adaptive Coping is the coping factor in this study that includes both problem and emotion-focused coping. The Emotional Control factor isolated in this study from the

Means of Coping instrument is comprised of items that describe containing the emotive response to the stressor rather than items describing a change in the emotive meaning of the stressor.

Although the hypothesis could not be tested as stated, Pearson Product Moment Correlations were done between the scores for Negative Working Conditions and all three of the coping strategies, Adaptive Coping, Emotional Control, and Wishful Thinking (see Table 32). As predicted, the two types of coping behaviors that are not oriented toward resolution of the stressor significantly correlated with negative working conditions. The correlations, however, were relatively low in magnitude and therefore do not provide strong support for the hypothesis.

Table 32. Correlation Between Negative Working Conditions and Coping Strategies

	Adaptive Coping	Emotion-Focused Coping	Wishful Thinking
Negative Working Conditions	N.S.	$r = .26$ **	$r = .23$ **

** $p < .01$

Since Negative Working Conditions is a composite variable, further exploration of the relationship between Negative Working Conditions and coping was done. The procedure involved multiple regression analysis, and used the forward entry method of independent variables, with a liberal F to enter of .2 and

probability of F to remove of .25 (see Table 33). All of the scores in the regression equation were standardized scores. In the regression equations each of the dimensions of Negative Working Conditions were entered as independent variables to predict the dependent variable of Emotional Control and then secondly to predict the dependent variable of Wishful Thinking.

Table 33. Contributions of Negative Work Dimensions to the Prediction of Coping Strategy

Independent Variable	Simple R	Beta	Dependent Variable	MR	R ²
Control	.23	.23202**	Emotional	.23**	.05
Task Focused	.15	.12541	Control	.26	
Work Hassles	.10	.13454		.29**	.07
Work Pressure	.23	.22972**	Wishful	.23**	.05
Work Hassles	.15	.12085	Thinking	.26*	.07

* $p < .05$

** $p < .01$

As shown in Table 33 the strongest predictor of Emotional Control and the strongest predictor of Wishful Thinking was Work Pressure.

The amount of variance in coping strategy accounted for by these work stress dimensions is small. However, it does suggest that chronic working conditions that are negative in nature are related to the use of certain coping behaviors - those that do not directly lead to either improving the situation or changing

the way in which one feels about the situation. The question that arises is whether containing the emotional response to the situation and/or wishing it way is perhaps costly to the individual and to the organization. Demonstrating this empirically requires sensitive stressor, coping, and outcome measures. In addition, future research in the area of coping with chronic stressful conditions requires a longitudinal research methodology in order to demonstrate a causal relationship.

Hypothesis Four

The use of problem-focused coping and problem-focused social support is more predictive of positive outcomes than is the use of emotion-focused coping and emotion-focused social support.

This hypothesis postulated relationships between specific types of coping and specific types of social support to predict specific types of stress outcomes. Gathering support to assist in resolving a stressful situation and doing something to resolve the situation should lead to a more positive outcome than would changing the way one feels about the situation.

Testing this hypothesis was not possible since it was dependent upon the ability to isolate a coping factor that was problem-focused and a coping factor that described emotion-focused coping. However, given the three coping factors that were available for analysis, multiple regression techniques were employed to predict positive outcomes. In this study, positive

outcome was a composite variable comprised of tenure, having the desired amount of independence in making patient care decisions, satisfaction with care in the nursing unit, an intensity measure of personal accomplishment, and a frequency measure of personal accomplishment. The type of help generally found to be most helpful, adaptive coping, and emotional control were simultaneously entered into the regression equation to predict positive outcomes (see Table 34). Wishful Thinking was not entered into this regression equation since analysis using stepwise regression had demonstrated its predictiveness of negative outcomes.

Table 34. Contributions of Type of Help, Adaptive Coping, and Emotional Control to Positive Outcomes.

Independent Variable	Simple R	Beta	MR	R ²
Type of Help	-.08	-.07214	.206	.04 N.S.
Adaptive Coping	.19	.179*		
Emotional Control	.07	.034		

$p < .05$

The regression equation did not indicate a linear relationship between the type of social support and type of coping used and positive outcomes. The simple correlations between these variables were all less than .20 which suggested that there was no need to repeat the regression equation using only one of the coping factors.

The failure to empirically demonstrate the relationship between type of support, coping, and positive outcomes may be largely due to the instrumentation problems of measuring the constructs of coping, the type of social support and positive outcomes of stress. However, the failure to predict the relationship may also be due to the complexity of these phenomena and the effects of other environmental and or personalogical variables that were not considered in this study.

Hypothesis Five

There are no significant differences in the types of stressors reported by medical-surgical and critical care nurses.

This hypothesis was included in the study primarily to empirically demonstrate that other groups of nurses may be coping with stressors similar to those of critical care nurses. Excluding the medical-surgical population, as well as other groups of nurses, in stress and coping research increases the difficulty to obtain adequate sample sizes in future investigations and reduces the generalizeability of findings. From a more pragmatic perspective, these findings may serve as a useful reminder to staff nurses and to nurse managers who view critical care nurses as being the stress vulnerable population.

To test Hypothesis Five, chi-square analyses were done using 2 by 2 contingency tables in which medical-surgical and critical care nurses were compared for their frequencies in selection and non-selection of each stressor category (see Tables

selection and non-selection of each stressor category (see Tables 35, 36, and 37).

Table 35. Comparison of Medical-Surgical and Critical Care Nurses for Selection of Stressors Associated with Management.

	Non- Selection	Selection	Total
Medical-Surgical Nurses	11	52	63
Critical Care Nurses	11	56	67
Total	22	108	130

$$\chi^2 = .025, p = .87$$

Table 36. Comparison of Medical-Surgical and Critical Care Nurses for Selection of Stressors Associated With Communication.

	Non-Selection	Selection	Total
Medical-Surgical Nurses	35	28	63
Critical Care Nurses	48	19	67
Total	83	47	130

$$\chi^2 = 3.63992, p = .06$$

Table 37. Comparison of Medical-Surgical and Critical Care Nurses for Selection of Stressors Associated With Patient Care.

	Non-Selection	Selection	Total
Medical-Surgical Nurses	32	31	63
Critical Care Nurses	24	43	67
Total	56	74	130

$$\chi^2 = 2.96853, p = .08$$

This analysis failed to demonstrate any statistically significant differences in the stressor categories of these two groups.

Similarly, as shown in Table 38, a t test comparing mean scores for the negative working conditions of Control by management, Work Pressure, Task Focused, and Work Hassles indicated that the scores for medical-surgical and critical care nurses did not significantly differ. Also, t-tests comparing scores for medical-surgical and critical care nurses were not significantly different in the following stress outcome measures: a) positive stress outcomes, measured by a composite variable comprised of standardized scores for tenure, satisfaction with care in the nursing unit, personal accomplishment, the frequency of personal accomplishment, and the intensity of personal accomplishment; b) negative stress outcomes, measured by a variable comprised of

standardized scores for depression, trait anxiety, frequency of emotional exhaustion, intensity of emotional exhaustion, frequency of depersonalization, intensity of depersonalization, and the amount of job stress; and c) the stress outcome measure derived by subtracting the negative outcome scores from the positive stress outcome scores.

Table 38. Comparison By Type of Unit for Mean Scores of Negative Working Conditions, Positive Outcomes, Negative Outcomes, and Stress Outcomes.

	Mean Scores	t-test	P
Negative Working Conditions	(MS) 9.6825 (CC) 9.1940	1.03	.903
Positive Outcomes	(MS) - .0645 (CC) - .0601	1.10	.704
Negative Outcomes	(MS) .5874 (CC) - .5523	1.27	.345
Composite Outcome	(MS) -.6518 (CC) .6124	1.38	.198

(MS) = Medical Surgical Nurses; (CC) = Critical Care Nurses

Summary

An analysis of stress, coping, social support, and outcomes of stress is necessarily a complex study. The complexity of the phenomena is compounded by the lack of standardized and sensitive measures.

This chapter includes the findings related to the research questions and the hypotheses. Since much of the stress,

coping, and social support research is of an exploratory nature, what fails to be statistically significant remains important to future research in this area and thus was included in this chapter. Although there were a number of statistically significant findings, there was also a large amount of statistical manipulation of data. Thus, it is likely that some of the statistically significant findings, especially at the .05 level may have occurred by chance.

The items measuring role conflict and utilization were not used in the analysis of data because of the scale inadequacies. However, instrument development with these role items did yield a scale, person-job compatibility, which may be of use in future research in this area. For this reason, reliability data for this scale were also included.

CHAPTER FIVE

Conclusions, Implications, and Recommendations

The relationship between work-related stressors, coping, and social support is of interest to nurses, nurse managers, and to investigators in the area of stress and coping. A review of the literature indicated that the conceptual boundaries for these constructs remain unclear. Moreover, the occupational stress and coping research relative to nurses has been focused primarily on critical care nurses as a stressed occupational group.

The theoretical framework for the study was derived from Lazarus' cognitive appraisal model of stress. The specific occupational stress model in the study postulated linear and interactive relationships between work-related conditioners, stressors, coping, social support, and outcomes of stress.

The overall purposes of the study included the following:

- a) explore the relationship between environmental demands (stressors), personal resources (work-related conditioners, coping, and social support), and outcomes of stress among nurses;
- b) identify the personal factors which might account for variance in the nurse's responses to work-related stress
- c) identify the coping and social support resources that are helpful in mediating the effects of stress; and
- d) identify the stressors of medical-surgical and critical care nurses.

Methodology

Data were collected from medical-surgical nurses ($n=63$) and critical care nurses ($n=67$) who were practicing in two acute care hospitals of comparable size in Northern California. The usable data from 130 nurses represented 88% of the number of nurses invited to participate in the study. The questionnaire packet was comprised of items assessing: a) demographic descriptors of the sample, b) stressors and their frequency and intensity, c) role-related stressors, d) descriptive measures of the work environment dimensions of work relationships, personal growth, and system maintenance and change, e) coping behaviors used to manage the most distressing work-related stressor in the past month; and e) general and situational specific sources and types of social support. The outcomes of stress were assessed by self-reported measures of depression, trait anxiety, burnout, satisfaction with care, tenure, stressfulness of work, and independence in making patient-care decisions.

The qualitative data were categorized by two independent raters with inter-rater reliability of 88% for the stressor data and 74% for the social support data. Principal components factor analysis was used for data reduction purposes with the internal consistency of the scales being estimated through the application of Cronbach's alpha. Data were analyzed using descriptive and multivariate statistical analyses.

Findings

A number of findings emerged from the study of work-related stress, coping, and social support. Findings are organized and presented under the headings of stressors, coping, social support, outcomes of stress and the relationship between these variables.

Stressors

The three most frequently cited categories of work-related stressors included management of the unit, patient care, and communication. Medical-surgical and critical care nurses did not significantly differ in the areas in which they reported stressors. Similar findings of stressors of nurses practicing in different patient care environments suggested that perhaps there are environmental variables, such as the organizational structure and the status of staff nurses in acute care hospitals that generate stressors. As indicated by McClure (1984), Poulin (1984), Wandelt (1981), and the National Commission on Nursing (1981), nurses have not been fully recognized as "knowledge workers" who demonstrate control over their practice and the way in which their work is organized (Drucker, 1974).

Finding a negative correlation ($r = -.24$) between Positive Working Conditions (comprised of Autonomy, Supervisor Support, Involvement, and Innovation) and job stress suggests that nurses perceive themselves to be "knowledge workers" who need

flexibility and the opportunity for creativity in their practice.

The positive correlation ($r=.25$) between Negative Working Conditions [comprised of Work-Related Hassles, and the work environment dimensions of Work Pressure, Task Orientation, and Control (by management)] and the amount of job stress suggested that there are actions that nurse administrators could take to improve the quality of work-life for staff nurses. Moreover, finding that management is a problem for this "knowledge worker" group is consistent with Drucker's concern (1974) that management has not adequately addressed management of the knowledge worker.

Although the stressors reported by nurses suggest work-environment problems, further analysis of data suggested that perhaps the way in which nurses interface with their work environment may be stressor producing. One common theme throughout the three main categories of stressors indicated ineffective communication. This theme suggested that management needs to find ways to maximize human and material resources in an effort to minimize work related stressors of nurses. The finding that Work-Related Conditioners contributes significantly to stress outcomes indicated the importance of personalogical variables to the outcomes of work-related stress.

Appraisal

The only predictor of appraisal in this study was the amount of distress associated with the stressor. "Very distressing" situations were perceived as being harmful, however, lesser

distressing situations were perceived as challenging. Whether or not the appraisal of harm, threat, and challenge has an effect upon coping was not demonstrated in this study. Although the model for this study hypothesized that Work-related Conditioners would have an effect upon appraisal, this was not demonstrated in the present study.

Of interest to future researchers was the finding of high trait anxiety among this sample of nurses which suggested that perhaps nurses are more likely to react to situational demands with a higher level of arousal. Thus, it might be postulated that nurses perceive more situations as harmful or threatening than do other occupational groups.

Coping

A direct relationship between stressors, appraisal, and coping was not demonstrated in this study. In addition, the frequency with which a stressor occurred was not associated with the type of coping behaviors used. Although the appraisal of the stressor as challenging, harmful, or threatening did not have an effect upon coping, the amount of distress associated with stressors did effect both the quality and quantity of coping behaviors. Specifically, the "very distressed" had statistically significant correlations between Adaptive Coping and Wishful Thinking ($r=.49$, $p<.001$).

Exploring the contribution of Negative Working Conditions to

coping indicated that the amount of work-related hassles, feeling controlled by management, feeling pressured by work and time urgency, and task orientation in the work setting were related to the use of Wishful Thinking and efforts oriented toward Emotional Control. These work climate dimensions were not related to the use of problem and emotion-focused coping behaviors.

Social Support

This study gathered descriptive data concerning the type and source of social support which were found to be helpful in contending with work related stress. Secondly, the study conceptualized social support as a mediator of the effects of work-related stress. Although nurses relied most often upon their co-workers for support, the type of support they generally received did not significantly differ because of the source of support. Nurses reported that problem-focused support was most often provided by their primary support person. However, in a specific situation, the co-workers of nurses provided emotion-focused types of support as often as they provided problem-focused types of support. The fact that the most often used type of support across situations differs in a specific situation, suggests that social support may be both a trait and state phenomenon. Although a direct relationship between stressors and social support was not an area investigated in this study, the finding that management was the most frequently cited area of

stressors and the least frequently endorsed source of support suggests the inter related nature of support and stressor exposure.

Outcomes of Stress

In contrast to other stress investigations, this study explored both positive and negative stress outcomes. Stepwise multiple regression suggested that although work-related conditioners and the tendency not to use Wishful Thinking significantly predicted the positive outcomes of Personal Accomplishment and having the desired amount of independence in decision-making, the amount of accounted for variance was small.

Reinforcing the belief that nurses are a highly stressed occupational group was the finding that nurses in this sample had high levels of trait anxiety and experienced moderate levels of burnout. The finding that medical-surgical nurses reported feeling emotionally exhausted more frequently than did critical care nurses suggests their stress vulnerability.

The Relationship Between Stressors, Coping, and Social Support

As stated earlier, a primary purpose of the study was to explore the relationship between work-related conditioners, stressors, coping, and social support. The study was able to demonstrate a statistically significant linear relationship between these variables which accounted for 23% of the variance in stress outcomes. Specifically, Work-related conditioners, the

absence of stressors associated with management or patient care, the tendency not to having used Wishful Thinking as the way of managing the most stressful work-related event in the past month, and using problem-focused social support were linearly related to the outcomes of stress.

Conclusions

The data provided by 130 medical-surgical and critical care nurses led to several conclusions about work-related stress and social support among nurses and about the stress and coping paradigm. However, because of the exploratory nature of this research, the relatively small ($N=130$) sample size from one geographic area, and the rudimentary assessment of appraisal, coping, and social support used in the study, the following conclusions must be construed as somewhat tentative in nature:

1. Although, medical-surgical and critical care nurses contend with the same categories of stressors, medical-surgical nurses appeared to be more stress vulnerable since they enter stressful situations with substantially fewer Work-Related Conditioners. This may explain why medical-surgical nurses report feeling emotionally exhausted more frequently, although this explanation is not supported in the nursing literature.

2. Staff nurses perceive management to be a frequent source of work-related stressors and an infrequent source of support. Concomitantly, staff nurses have the expectation that nurse

managers should be supportive in specific situations, but in reality managers do not meet this expectation.

3. A finding of this study was that the type of social support which was helpful across work-related stressor situations may differ in a specific work-related stressor situation. For example, the most frequently used type of social support across situations may not be the most frequently used type of support in a specific situation.

4. Wishful Thinking may not be helpful in contending with work-related stressors. Perhaps this occurs for two reasons: a) in contrast to stressors occurring in other areas of adult life, stressors encountered in the work-setting require resolution; and b) the items comprising Wishful Thinking are not oriented toward resolution of problem areas nor are they oriented toward changing the emotive meaning of the situation.

5. The amount of distress associated with a stressor is directly related to an appraisal of challenge, harm, or threat and to the type of coping behaviors used.

6. There is a linear relationship between personal resources and environmental demands that is predictive of stress outcomes. More specifically, the personal resources of Work-Related Conditioners, the tendency not to have used Wishful Thinking as a way of managing stressors, and the tendency to use problem-focused social support accounted for 23% of the variance in stress outcomes.

Implications

There are a number of pragmatic and empirical implications from the findings of this study. It should be noted that the theoretical framework for this study suggested that stress is an outcome of the interaction between the person and his/her environment. From an environmental perspective, measures of the work environment in this study indicated that the climate in which nurses practice is one which minimally emphasizes creativity and highly emphasizes work pressure and an orientation toward accomplishing tasks. Additionally, management is perceived to offer minimal support. Thus, the work environment might be characterized as less than ideal for the personal growth and development of staff nurses.

Similarly, the contribution of personal variables to the person-environment transaction is underscored by the finding that the same categories of stressors affecting this sample are similar to those which have been reported in other investigations of the past 20 years (Bailey and Bargagliotti, 1983). The stability of these stressors over time, given the dramatic changes that have occurred in the health care industry, in the patient care population in acute care hospitals, and in the roles of nurses and nurse managers suggests that there are personal variables that contribute to stressor exposure. The small subset of personal variables which were

investigated in this study included the combination of nursing experience, education, certification, and autonomy. Finding that these personal variables positively effected stress outcomes suggested that the person enters a stressful situation with work-related personal resources that can have an effect upon stress outcomes. Similarly, the potential effect of person variables upon the type of stress exposure was suggested by the finding that the most frequently cited single stressor of understaffing may, in part, be an outcome of the staff nurse's apparent use of other nurses as decision-makers and communicators. This finding suggests that the continued dependency of staff nurses upon other nurses may be costly in terms of stress exposure.

The finding that medical-surgical and critical care nurses contend with the same categories of stressors and that medical-surgical nurses are perhaps more stress vulnerable than their critical care counterparts is a reminder that work-related stress is not endemic only to critical care areas. Clearly, the areas of stressors indicated by these two groups suggested the need for collaborative problem-solving by management and staff. It would appear that participative management, that involves shared decision-making and shared accountability for the outcomes, needs to be considered as an approach to dealing with work-related stress.

The negative association of Wishful Thinking with stress

outcomes suggests that this coping strategy is not helpful in dealing with work-related stress. The failure to find coping patterns which positively contributed to stress outcomes indicates the need for further research and instrument development in this area.

Theoretical Implications

From a theoretical perspective, the findings provide support for transactional stress models such as Lazarus (1981) psychosocial stress paradigm. The findings also indicate that the amount of distress caused by stressors is important to stress appraisal and to the quality and quantity of coping behaviors used. Moreover, the findings underscore the complex nature of the interactions between stress, coping, and social support.

It should also be pointed out that in a cross-sectional study such as this, certain problems are inherent. For example the data captures only a single time frame and thus the linear relationship that was demonstrated between stressor, coping, social support and outcomes of stress may be a distortion of what is actually occurring. Although stressors are conceptualized as the stimulus for coping and social support, perhaps the environmental stressors as perceived by the nurse are the outcome of inadequate coping and support in the environment.

Empirical Implications

It would appear that understanding the relationship between

stress, coping, and social support requires further study. This study reinforces the belief that nurses are a stressed occupational group and suggests that medical-surgical as well as critical care nurses should be included in future work-related stress and coping investigations.

The effect of distress on appraisal and coping suggests that the amount of distress associated with stressors should also be investigated. The finding that the kinds of social support reported to be helpful across situations differ from the kinds of support found to be helpful in a specific stress encounter suggested that state and trait support should be clearly differentiated in future investigations. Further, considering trait anxiety to be an outcome measure of work-related stress may be inappropriate.

Recommendations for Future Research

From the findings of this study, the following recommendations for future work-related stress and coping research were made:

1. In order to develop a predictive stress model, longitudinal measures of work-related stressors, coping, and social support are needed.

2. Developing a gestalt of the stress experience requires investigations which consider person variables, environmental variables, stressors, appraisal, coping, social support, and

outcomes of stress.

3. The major finding of the study indicated that issues related to nursing management are the major stressor area for staff nurses. This finding suggests that the preparation and experience of top level and middle management and their effect upon the stress of unit staff should have a high priority for future investigations.

4. Further development of work environment measures are also needed to clearly delineate the qualities of stress generating work-environments as opposed to supportive work environments.

5. Investigating the ways in which staff nurses cope with communication problems is an area of study that might provide an understanding of the stressors related to management, patient care, and communication.

6. Further refinement of the measures of appraisal, coping, social support, and the work environment are needed.

7. Qualitative and inductive investigations of stress are needed to describe the richness and complexity of the myriads of transactions that are occurring between the person and the work environment in stressful situations.

Summary

This investigation of work-related stress, coping, and social support of medical-surgical and critical care nurses demonstrated a linear relationship between environmental demands

(stressors) and the personal resources of Work-Related Conditioners, coping, and social support as predictors of stress outcomes. The strongest predictor of stress outcomes in this study was the tendency of the study group not to use Wishful Thinking as the way of coping with the most stressful work-related incident. Both medical-surgical and critical care nurses were found to experience moderate levels of burnout suggesting that they are indeed contending with work-related stress in their nursing practice.

Appendix A

January 15, 1984

Dear Nurse,

Thank you for agreeing to participate in this important study of stress and coping among staff nurses. Your participation involves signing a consent form to participate and answering the questionnaires included in this packet.

Inside this packet, you will find the following:

- 1) a consent form - in order to use your data I must have a signed consent form. If you wish to retain a copy of the form, please detach the blank copy for your use.
- 2) WSS - Form A - a blue booklet
- 3) Work Environment Scale - a booklet
- 4) The Human Services Survey
- 5) The Self-Evaluation Questionnaire

If you wish to be sent an abstract of the findings from this study, please write your address on the consent form. When you have completed all parts of the packet, place inside this envelope and seal the envelope. I will collect these from you at work.

Thank you in advance for your cooperation and participation in this research study.

Sincerely,

Toni Bargagliotti

Toni Bargagliotti, R. N., M. S.
Doctoral Candidate, U. C. S. F.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
CONSENT TO BE A RESEARCH SUBJECT

"The Relationship Between
Work-Related Stress, Coping, and Social Support"

L. A. (Toni) Bargagliotti, a nurse and doctoral candidate in the School of Nursing at the University of California, is doing a research study to learn more about stress, coping, and the use of social support by staff nurses. I have been invited to participate in this study because I am a staff nurse in a medical-surgical or critical care nursing unit.

My participation in this study will involve answering a questionnaire which asks some general questions about myself and more specific questions about my work as a nurse. Some of the questions may be upsetting or uncomfortable to me and I have the right to refuse to answer any such questions. The questionnaire will take approximately one hour to complete and may be completed at a time and place that is convenient to me. The specific results of my own questionnaire will not be released to anyone. If I have requested to know the general findings from this study, Toni will send to me an abstract of the study.

During the conduct of this study, every effort will be made to protect the confidentiality of my responses. Although my name will not appear on my questionnaire, the questionnaire will be coded. The list which associates my name with this coding will be kept by Toni in a locked area until the research is completed and then it will be destroyed.

There are no direct benefits to me from participating in this study. The results of this study about what is stressful in nursing practice and what is helpful in coping with work-related stress may be helpful to practicing nurses and to nurse managers.

If I have any questions about the study or my participation in it, I can contact Toni Bargagliotti at (415) 666-4335 or by writing to 345 HSE, University of California, San Francisco, Ca., 94143. In addition, I may also contact the Committee on Human Research, which is concerned with the protection of volunteers in research projects. I may reach the committee office by calling: (415) 666-1814 from 8:00 A. M. to 5:00 P. M. Monday to Friday, or by writing to the Committee on Human Research, University of California, San Francisco, Ca. 94143.

I have received a copy of this consent form that I may keep. My participation in this study is voluntary. I have the right to refuse to participate and the right to withdraw at a later time.

Date
10/31/83

Subject's Signature

Appendix B

WSS - FORM A

INSTRUCTIONS

There are a number of questions in this booklet that ask about your work, some things about yourself, and a number of questions asking how you feel about certain things. There are no right or wrong answers to any of these questions. The questions were selected to apply to a wide variety of nurses, and, you may find that some do not apply to you.

Please try to answer every question. If there are questions you choose not to answer, please place an X over the question. If there are any comments you would like to make about your work that you think would be helpful to this study of stress and coping, please write them in this booklet.

IDENTIFICATION No. _____
Shift _____

BIOGRAPHICAL QUESTIONNAIRE

1. In which type of unit are you currently employed?
 - Medical-surgical
 - Critical Care (ICU, CCU)

2. How long have you been working in this unit?
 - less than 1 year
 - 1-2 years
 - 2-3 years
 - 3 - 4 years
 - more than 4 years

3. What is the average number of days that you care for any given patient?
 - one day
 - two days
 - three days
 - four days
 - more than four days

4. What is your date of birth? _____

5. Sex:
 - Male Female

6. What is your current marital status?
 - single
 - married
 - divorced
 - widow (er)

7. Age(s) of dependent(s) _____

8. How many years have you actually been practicing as an RN?

full time _____

part time _____

9. Please check your highest degree achieved in nursing.

associate in arts/science

diploma

baccalaureate

master's

post masters

doctorate

10. Highest degree (s) held in Major (s) other than nursing:

associate

baccalaureate

master's

doctorate

11. Have you completed any stress management courses in the past 2 years?

yes

no

12. Are you certified in a specific area of nursing practice?

yes

no

If yes, in what area of practice? _____

(Please write answer here)

THE WORK-STRESS SURVEY

Now I would like to focus on your work here at the hospital.

1. Thinking back over your work, could you tell me what the three greatest stressors are that you have faced on the job in the past six months and tell me how distressing this actually was?

Stressor	Very Distressing	Somewhat Distressing	Only a little Distressing
_____	1	2	3
_____	1	2	3
_____	1	2	3

2. Referring to the stresses you have listed above, how often does this stressor (stressful situation) occur in your practice as a nurse?

(Please circle your answer).

	Rarely	Occasionally	Frequently	Almost Always
Situation 1	1	2	3	4
Situation 2	1	2	3	4
Situation 3	1	2	3	4

3. People often feel stressed by situations they believe have caused damage in some way, are threatening to them (may cause damage or harm) or are challenging. When you look back at the three sources of stress you have listed here, would you describe any of them as involving damage/harm, threat, or challenge?

Situation 1 _____

Situation 2 _____

Situation 3 _____

4. Recalling one of the stressful situations you have listed, was there anything that your co-workers or supervisor did that was particularly helpful to you in coping with this situation?

Co-worker _____

Supervisor _____

5. Was there anything your co-workers or supervisors could have done that would have been helpful to you in dealing with this situation?

7. What do think the chances are that you could be laid off, involuntarily?

- remote, never could happen
 only a slight chance
 there is a fair chance
 there is a strong possibility
 I am sure it will happen.

8. When you think of your job in comparison with other jobs, how would you rate it in terms of stressfulness? (circle your answer)

Extremely stressful	Moderately stressful	Challenging	Not stressful at all
4	3	2	1

9. Approximately how many interruptions occurred during your last workday? (An interruption is anytime you must stop what you are doing to attend to something else).

- | | |
|--------------------------------|---------------------------------------|
| <input type="checkbox"/> 1-5 | <input type="checkbox"/> 16-20 |
| <input type="checkbox"/> 6-10 | <input type="checkbox"/> 21-25 |
| <input type="checkbox"/> 11-15 | <input type="checkbox"/> more than 25 |

10. How much independence and freedom do you have in your job to make decisions that you believe you should be making about patient care?
- none
 - not enough
 - as much as I want
 - too much
11. If you had a close friend who was ill, how satisfied would you be if that friend was placed in your unit?
- not satisfied at all, I would worry about the adequacy of care.
 - somewhat satisfied
 - satisfied
 - I would be very satisfied with the adequacy of care.
12. When you are feeling stressed in your work, whom do you count on MOST for support or help? (Please select only one answer)
- supervisor or head nurse
 - co-workers
 - friend
 - spouse
13. When this person is helpful to you in dealing with work-related stress, are they helpful to you because they
- can correct the situation
 - can help you find a way of correcting the situation
 - help you feel differently about the situation
 - other (please specify) _____
14. Do you usually work
- full time
 - part time

 - an 8 hour shift
 - a 10 hour shift
 - a 12 hour shift

15. How often do the following occur in your practice as a nurse?
(circle your answer)

- | | | | | |
|--|---|---|---|---|
| a) Persons whose request should be met
ask you to do things which conflict
with other work you have to do..... | 4 | 3 | 2 | 1 |
| b) Tasks require your <u>total</u>
concentration for longer than
15 minutes..... | 4 | 3 | 2 | 1 |
| c) Your work requires you to attend to
many unrelated details..... | 4 | 3 | 2 | 1 |
| d) There is uncertainty about what others
expect of you?..... | 4 | 3 | 2 | 1 |
| e) There are adequate supplies/
equipment | 4 | 3 | 2 | 1 |
| f) You work with interns or students..... | 4 | 3 | 2 | 1 |
| g) Persons with equal rank and authority
over you ask you to do conflicting
tasks | 4 | 3 | 2 | 1 |
| h) How often can you predict what others
will expect of you on the job?..... | 4 | 3 | 2 | 1 |
| i) How often does your job let you use the
skills and knowledge that you have
learned? | 4 | 3 | 2 | 1 |
| j) How often are you clear on what your
job responsibilities are?..... | 4 | 3 | 2 | 1 |
| k) How much of the time are your work
objectives well defined?..... | 4 | 3 | 2 | 1 |
| l) How often are you given a chance to
do the things you do best?..... | 4 | 3 | 2 | 1 |

General Feelings Survey

Now I would like to know how often you feel certain ways.

How often do you feel:

	Never	rarely	sometimes	freq.	often
1. low in energy or slowed down	1	2	3	4	5
2. loss of sexual interest or pleasure	1	2	3	4	5
3. have thoughts of ending your life	1	2	3	4	5
4. like crying easily	1	2	3	4	5
5. trapped or caught	1	2	3	4	5
6. blaming yourself for things	1	2	3	4	5
7. lonely	1	2	3	4	5
8. blue	1	2	3	4	5
9. you worry too much about things	1	2	3	4	5
10. have no interest in things	1	2	3	4	5
11. hopeless about the future	1	2	3	4	5
12. everything is an effort	1	2	3	4	5
13. feelings of worthlessness	1	2	3	4	5
14. feel lonely even when you are with people	1	2	3	4	5

CHECKLIST OF HASSLES

Now I would like to find out how hassled or pressured you feel in certain areas of your life. That is, I want to know about the day to day things that really annoy you. For each area please tell me whether you feel hassled all the time, very often, fairly often, once in a while, or never.

	All the time	Very often	Fairly often	Once in a while	Never
For example, how often do you feel hassled by:					
Work in general5		4	3	2	1
Your clients5		4	3	2	1
Your co-workers5		4	3	2	1
Your supervisor5		4	3	2	1
Your children5		4	3	2	1
Your parents5		4	3	2	1
Your friends5		4	3	2	1
Your financial situation5		4	3	2	1
Your health5		4	3	2	1

MEANS OF COPING

Now we would like for you to think about the most stressful situation you faced at work during the last 30 days. Please write down very briefly that situation.

Keeping this situation in mind, please tell us how frequently you did the following things to help you deal with the situation. Please note that you are not expected to have responded to the situation in all the ways listed.

	Never	Some	A Lot
Concentrated on just one thing at a time ...	1	2	3
Went over the problem again and again trying to understand it	1	2	3
Turned to another activity to take my mind off things.....	1	2	3
Reexamined my goals regarding the situation	1	2	3
Reassured myself that my patients needed my services	1	2	3
Told myself that stress is a natural process	1	2	3
Focused on what I might learn from the situation.....	1	2	3
Asked my supervisor for advice	1	2	3
Blamed myself.....	1	2	3
Prayed.....	1	2	3

	Never	Some	A Lot
Got some vigorous exercise	1	2	3
Hoped a miracle would happen	1	2	3
Went out and socialized	1	2	3
Tried to go on as if nothing happened	1	2	3
Felt bad that I couldn't avoid the situation	1	2	3
Just kept my feelings to myself	1	2	3
Looked for the "silver lining", looked on the brighter side	1	2	3
Slept more than usual	1	2	3
Anticipated difficulty and prepared myself emotionally	1	2	3
Sought emotional support from family and friends.....	1	2	3
Told myself that I had done well	1	2	3
I was inspired to do something creative	1	2	3
Tried to forget the whole thing	1	2	3
Changed or grew as a person in a good way ...	1	2	3
Waited to see what would happen	1	2	3
Chose my words very carefully	1	2	3
Made a plan of action and followed it	1	2	3
Let my feelings out somehow.....	1	2	3
Came out of the experience better than when I went in	1	2	3
Talked to someone who could do something concrete about it.....	1	2	3
Got away from it for a while.....	1	2	3

Felt better by eating, drinking, or smoking	1	2	3
Took a big chance or did something risky...	1	2	3
Tried not to act too hastily	1	2	3
Tried to appreciate some humorous aspect of the situation	1	2	3
Maintained my pride and kept a stiff upper lip.....	1	2	3
Rediscovered what is important in life.....	1	2	3
Changed something so things would turn out all right.....	1	2	3
Avoided being with people for a while.....	1	2	3
Didn't let it get to me; refused to think about it too much.....	1	2	3
Asked someone I respected for advice and followed it	1	2	3
Kept others from knowing how bad things were.....	1	2	3
Followed my first hunch	1	2	3
Felt better by crying	1	2	3
Took deep breaths and/or meditated.....	1	2	3
Took it out on other people somewhat.....	1	2	3
Drew on my past experience of a similar situation	1	2	3
Just took one step at a time.....	1	2	3
Did what I knew had to be done	1	2	3
Discussed the situation with a colleague at work	1	2	3

	Never	Some	A Lot
Came up with a couple of different solutions for it	1	2	3
Accepted it, since nothing could be done....	1	2	3
Wished I was a stronger person - more optimistic, forceful	1	2	3
Accepted my strong feelings, not letting them affect work	1	2	3
Wished that I could change what happened	1	2	3
Changed myself so that I could deal with it better.....	1	2	3
Imagined a better time or place than the one I was in	1	2	3
Had fantasies or wishes about how things would turn out	1	2	3
Wished that the situation would go away/be over with somehow.....	1	2	3
Observed that the situation seemed to improve afterwards	1	2	3
Counted my blessings	1	2	3
Talked to others about my feelings	1	2	3
Accepted my limitations	1	2	3
Told myself that I was not responsible	1	2	3
Tried to learn from the situation	1	2	3

Human Services Survey

Christina Maslach and Susan E. Jackson

The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide your service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

On the following page there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your job*. If you have *never* had this feeling, write a "0" (zero) in both the "HOW OFTEN" and "HOW STRONG" columns before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. Then decide *how strong* the feeling is when you experience it by writing the number (from 1 to 7) that best describes how strongly you feel it. An example is shown below.

Example:

HOW OFTEN:	0	1	2	3	4	5	6	
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day	
HOW STRONG:	0	1	2	3	4	5	6	7
	Never	Very mild, barely noticeable			Moderate			Major, very strong

<u>HOW OFTEN</u>	<u>HOW STRONG</u>	
0-6	0-7	Statement:
_____	_____	I feel depressed at work.

If you *never* feel depressed at work, you would write the number "0" (zero) on both lines. If you *rarely* feel depressed at work (a few times a year or less), you would write the number "1" on the line under the heading "HOW OFTEN." If your feelings of depression are *fairly* strong, but not as strong as you can imagine, you would write a "6" under the heading "HOW STRONG." If your feelings of depression are very mild, you would write a "1."

Human Services Survey

HOW OFTEN:	0 Never	1 A few times a year or less	2 Once a month or less	3 A few times a month	4 Once a week	5 A few times a week	6 Every day	
HOW STRONG:	0 Never	1 Very mild, barely noticeable	2	3	4 Moderate	5	6	7 Major, very strong

HOW OFTEN 0-6	HOW STRONG 0-7	Statements:
1. _____	_____	I feel emotionally drained from my work.
2. _____	_____	I feel used up at the end of the workday.
3. _____	_____	I feel fatigued when I get up in the morning and have to face another day on the job.
4. _____	_____	I can easily understand how my recipients feel about things.
5. _____	_____	I feel I treat some recipients as if they were impersonal objects.
6. _____	_____	Working with people all day is really a strain for me.
7. _____	_____	I deal very effectively with the problems of my recipients.
8. _____	_____	I feel burned out from my work.
9. _____	_____	I feel I'm positively influencing other people's lives through my work.
10. _____	_____	I've become more callous toward people since I took this job.
11. _____	_____	I worry that this job is hardening me emotionally.
12. _____	_____	I feel very energetic.
13. _____	_____	I feel frustrated by my job.
14. _____	_____	I feel I'm working too hard on my job.
15. _____	_____	I don't really care what happens to some recipients.
16. _____	_____	Working with people directly puts too much stress on me.
17. _____	_____	I can easily create a relaxed atmosphere with my recipients.
18. _____	_____	I feel exhilarated after working closely with my recipients.
19. _____	_____	I have accomplished many worthwhile things in this job.
20. _____	_____	I feel like I'm at the end of my rope.
21. _____	_____	In my work, I deal with emotional problems very calmly.
22. _____	_____	I feel recipients blame me for some of their problems.

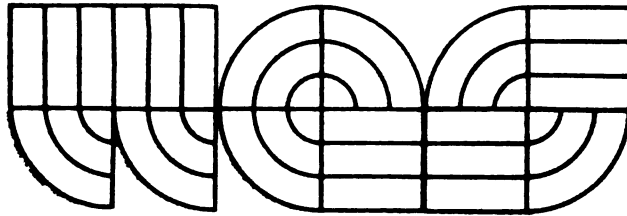
(Administrative use only)

cat.	cat.
EE:F _____	EE:I _____
DP:F _____	DP:I _____
PA:F _____	PA:I _____

A SOCIAL CLIMATE SCALE

WORK ENVIRONMENT SCALE FORM R

PAUL M. INSEL & RUDOLF H. MOOS



INSTRUCTIONS

There are 90 statements in this booklet. They are statements about the place in which you work. The statements are intended to apply to all work environments. However, some words may not be quite suitable for your work environment. For example, the term supervisor is meant to refer to the boss, manager, department head, or the person or persons to whom an employee reports.

You are to decide which statements are true of your work environment and which are false. Make all your marks on the separate answer sheet.

If you think the statement is *TRUE* or mostly *TRUE* of your work environment, make an X in the box labeled T (true).

If you think the statement is *FALSE* or mostly *FALSE* of your work environment, make an X in the box labeled F (false).

Please be sure to answer every statement.



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1. The work is really challenging.
2. People go out of their way to help a new employee feel comfortable.
3. Supervisors tend to talk down to employees.
4. Few employees have any important responsibilities.
5. People pay a lot of attention to getting work done.
6. There is constant pressure to keep working.
7. Things are sometimes pretty disorganized.
8. There's a strict emphasis on following policies and regulations.
9. Doing things in a different way is valued.
10. It sometimes gets too hot.
11. There's not much group spirit.
12. The atmosphere is somewhat impersonal.
13. Supervisors usually compliment an employee who does something well.
14. Employees have a great deal of freedom to do as they like.
15. There's a lot of time wasted because of inefficiencies.
16. There always seems to be an urgency about everything.
17. Activities are well-planned.
18. People can wear wild looking clothing while on the job if they want.
19. New and different ideas are always being tried out.
20. The lighting is extremely good.
21. A lot of people seem to be just putting in time.
22. People take a personal interest in each other.
23. Supervisors tend to discourage criticisms from employees.
24. Employees are encouraged to make their own decisions.
25. Things rarely get "put off till tomorrow."
26. People cannot afford to relax.
27. Rules and regulations are somewhat vague and ambiguous.
28. People are expected to follow set rules in doing their work.
29. This place would be one of the first to try out a new idea.
30. Work space is awfully crowded.
31. People seem to take pride in the organization.
32. Employees rarely do things together after work.
33. Supervisors usually give full credit to ideas contributed by employees.
34. People can use their own initiative to do things.
35. This is a highly efficient, work-oriented place.
36. Nobody works too hard.
37. The responsibilities of supervisors are clearly defined.
38. Supervisors keep a rather close watch on employees.
39. Variety and change are not particularly important.

40. This place has a stylish and modern appearance.
41. People put quite a lot of effort into what they do.
42. People are generally frank about how they feel.
43. Supervisors often criticize employees over minor things.
44. Supervisors encourage employees to rely on themselves when a problem arises.
45. Getting a lot of work done is important to people.
46. There is no time pressure.
47. The details of assigned jobs are generally explained to employees.
48. Rules and regulations are pretty well enforced.
49. The same methods have been used for quite a long time.
50. The place could stand some new interior decorations.
51. Few people ever volunteer.
52. Employees often eat lunch together.
53. Employees generally feel free to ask for a raise.
54. Employees generally do not try to be unique and different.
55. There's an emphasis on "work before play."
56. It is very hard to keep up with your work load.
57. Employees are often confused about exactly what they are supposed to do.
58. Supervisors are always checking on employees and supervise them very closely.
59. New approaches to things are rarely tried.
60. The colors and decorations make the place warm and cheerful to work in.
61. It is quite a lively place.
62. Employees who differ greatly from the others in the organization don't get on well.
63. Supervisors expect far too much from employees.
64. Employees are encouraged to learn things even if they are not directly related to the job.
65. Employees work very hard.
66. You can take it easy and still get your work done.
67. Fringe benefits are fully explained to employees.
68. Supervisors do not often give in to employee pressure.
69. Things tend to stay just about the same.
70. It is rather drafty at times.
71. It's hard to get people to do any extra work.
72. Employees often talk to each other about their personal problems.
73. Employees discuss their personal problems with supervisors.

74. Employees function fairly independently of supervisors.
75. People seem to be quite inefficient.
76. There are always deadlines to be met.
77. Rules and policies are constantly changing.
78. Employees are expected to conform rather strictly to the rules and customs.
79. There is a fresh, novel atmosphere about the place.
80. The furniture is usually well-arranged
81. The work is usually very interesting.
82. Often people make trouble by talking behind others' backs.
83. Supervisors really stand up for their people.
84. Supervisors meet with employees regularly to discuss their future work goals.
85. There's a tendency for people to come to work late.
86. People often have to work overtime to get their work done.
87. Supervisors encourage employees to be neat and orderly.
88. If an employee comes in late, he can make it up by staying late.
89. Things always seem to be changing.
90. The rooms are well ventilated.

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
in collaboration with
R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S _____
Age _____ Sex: M ____ F ____ T _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

NOT AT ALL
MODERATELY
SOMEWHAT
VERY MUCH SO

- | | | | | |
|--|---|---|---|---|
| 1. I feel calm | 1 | 2 | 3 | 4 |
| 2. I feel secure | 1 | 2 | 3 | 4 |
| 3. I am tense | 1 | 2 | 3 | 4 |
| 4. I feel strained | 1 | 2 | 3 | 4 |
| 5. I feel at ease | 1 | 2 | 3 | 4 |
| 6. I feel upset | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes | 1 | 2 | 3 | 4 |
| 8. I feel satisfied | 1 | 2 | 3 | 4 |
| 9. I feel frightened | 1 | 2 | 3 | 4 |
| 10. I feel comfortable | 1 | 2 | 3 | 4 |
| 11. I feel self-confident | 1 | 2 | 3 | 4 |
| 12. I feel nervous | 1 | 2 | 3 | 4 |
| 13. I am jittery | 1 | 2 | 3 | 4 |
| 14. I feel indecisive | 1 | 2 | 3 | 4 |
| 15. I am relaxed | 1 | 2 | 3 | 4 |
| 16. I feel content | 1 | 2 | 3 | 4 |
| 17. I am worried | 1 | 2 | 3 | 4 |
| 18. I feel confused | 1 | 2 | 3 | 4 |
| 19. I feel steady | 1 | 2 | 3 | 4 |
| 20. I feel pleasant | 1 | 2 | 3 | 4 |



Name _____ Date _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

ALMOST NEVER
SOMETIMES
OFTEN
ALMOST ALWAYS

- 21. I feel pleasant ① 2 3 4
- 22. I feel nervous and restless ① ② 3 4
- 23. I feel satisfied with myself ① 2 3 4
- 24. I wish I could be as happy as others seem to be ① 2 3 4
- 25. I feel like a failure 1 2 3 4
- 26. I feel rested 1 2 ③ 4
- 27. I am "calm, cool, and collected" 1 2 3 4
- 28. I feel that difficulties are piling up so that I cannot overcome them ① 2 3 4
- 29. I worry too much over something that really doesn't matter 1 2 3 4
- 30. I am happy ① ② 3 4
- 31. I have disturbing thoughts ① 2 3 4
- 32. I lack self-confidence ① 2 3 4
- 33. I feel secure ① ② 3 ④
- 34. I make decisions easily ① 2 3 4
- 35. I feel inadequate ① 2 3 4
- 36. I am content ① 2 ③ 4
- 37. Some unimportant thought runs through my mind and bothers me ① 2 3 4
- 38. I take disappointments so keenly that I can't put them out of my
mind ① 2 3 4
- 39. I am a steady person ① 2 3 ④
- 40. I get in a state of tension or turmoil as I think over my recent concerns
and interests ① ② 3 4

Appendix C

Table 39. Stepwise Multiple Regression of Stressors, Coping, and Social Support as Predictors of Each Stress Outcome Dimension

Independent Variable	Simple R	Beta	Dependent Variable	MR	R ²
Wishful Thinking	.15	.15	Depression	.15	.02
Wishful Thinking	.29	.29**	Trait Anxiety	.29**	.08
Co-Worker Support	.19	.18		.34**	.12
Work-Related Conditioners	-.19	-.13		.36**	.13
Wishful Thinking	.42	.42****	Depersonalization	.42****	.18
Management as Stressor	.20	.16*	(Frequency)	.45****	.20
Pt. Care as Stressor	.15	.16*		.45****	.20
		.19*		.48****	.23
Wishful Thinking	.31	.31**	Depersonalization	.31**	.09
Pt. Care as Stressor	.21	.21**	(Intensity)	.37**	.14
Management Stressor	.14	.15		.40**	.16
Wishful Thinking	.27	.27**	Emotional Exhaustion	.27**	.07
			(Frequency)		
Wishful Thinking	.21	.21*	Emotional Exhaustion	.21*	.04
			(Intensity)		
Wishful Thinking	.18	.18	Job Stress	.18	.03
Adaptive	-.12	-.26		.29**	.09

Table 39. (Continued)

Independent Variable	Simple R	Beta	Dependent Variable	MR	R ²
Type of Support	-.05	-.16	Personal Accomplishment	.16	.02
Wishful thinking	-.16	-.14	(Frequency)	.21	.05
Adaptive Coping	.11	.21		.28*	.08
Type of support	-.19	-.18	Personal Accomplishment	.19	.04
Adaptive Coping	.17	.15	(Intensity)	.24*	.06
Wishful Thinking	-.15	-.27*		.33*	.11
Work-Related Conditioners	.22	.22*	Satisfaction with Care	.22*	.05
Communication as a stressor	-.18	.17		.28*	.08
Management as a Stressor	-.14	-.14	Tenure	.14	.02
Work-Related Conditioners	.22	.22*	Job Independence	.22*	.05
Wishful Thinking	.10	.13		.26*	.07

* $p < .05$ ** $p < .01$ *** $p < .001$ **** $p < .0000$

Negative Beta scores for Social Support Variables indicate Problem-Focused Social Support and Positive Scores indicate Emotion-Focused Social Support.

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