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CAUSAL INFERENCES AMONG PERCEIVED WORK AND NONWORK STRESS
AND SATISFACTION, AND PSYCHOLOGICAL DISTRESS:
EMPIRICAL TESTS OF PATH-ANALYTIC MODELS

BY

JOCELYN J. JOHNSON

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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IN
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ABSTRACT

The present investigation was designed to integrate work and nonwork domains in the study of perceived stress, satisfaction, and psychological distress. Causal inferences among perceived work and nonwork stress and satisfaction, and psychological distress were determined by empirically testing two basic path-analytic models depicting causal relationships among those variables.

Data were obtained from a sample of 105 female clerical workers on five variables (work stress, nonwork stress, work satisfaction, nonwork satisfaction, and psychological distress) and support for the contention that work and nonwork domains are interdependent was found. Nonwork variables contributed more to perceived psychological distress than work factors.

Results of a decomposition of the organizational variables (work stress and work satisfaction) revealed that organization-wide (macro) factors contributed significantly more to work stress than job-specific (micro) factors. Moreover, with respect to work satisfaction, the sample was equally and most satisfied with supervision and co-workers, and significantly less satisfied with the work itself, followed by pay, followed by promotion.

A significant overall difference among groups of female clerical workers ($n = 105$), female teachers ($n = 30$), and female registered nurses ($n = 20$) on a linear combination of all five variables was found. Univariate analyses of variance and a Newman-Keuls follow-up test revealed that teachers reported significantly more perceived psychological distress than the other two groups, who did not significantly differ in terms of perceived psychological distress.

Implications of this research and directions for future research are discussed.

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CHAPTER I

THEORETICAL ISSUES AND LITERATURE REVIEW

Introduction

The study of stress and satisfaction in personal and work life has been a popular research topic in the past decade. In industry, occupational stress is recognized as a major health and productivity hazard. Lau and Jelinek (1984) contend that estimates on productivity loss arising from job stress run as high as sixty billion dollars per year. They also state that a major cost of health care in both private and public sectors arises from job-related stress illnesses and disabilities.

The study of relationships among occupational stress, satisfaction, and health has important organizational, individual, and societal ramifications. Within the industrial/organizational sphere, the consequences of an overabundance of job stress, and/or low job satisfaction are manifested in a variety of ways. Some organizational consequences are absenteeism, potential and actual turnover, decreased productivity, and poor performance (Bedeian & Armenakis, 1981; Beehr & Newman, 1978; Parasuraman, 1982; Parasuraman & Alutto, 1984). Individual consequences include a loss of self-esteem, anxiety, depression, resentment and hostility, and fatigue, to name a few (Beehr & Newman, 1978). These effects cost industry enormous amounts of money, to say nothing about the deleterious consequences to individuals.

It is likely that the accumulation of widespread organizational and individual effects of stress and dissatisfaction, if widespread, has a detrimental effect on society as a whole. For example, it is argued

(Beehr, 1985) that when absenteeism and turnover increase, and when productivity decreases, the nation's Gross National Product does not grow as rapidly as it might, or might even decline. Moreover, people become ill due to copious amounts of stress, resulting in a great drain on national medical and mental health resources; consequently, unemployment and workers' compensation taxes increase, taking this money away from other societal uses.

This author feels that job stress and dissatisfaction are not the sole factors involved in financial losses to industry. Stresses outside of the work realm no doubt contribute to poor psychological and physical health, and ultimately, to decreased productivity on the job. However, the literature on work and nonwork stress and satisfaction in relation to physical and mental health is fragmented; several theorists (e.g., Beehr & Bhagat, 1985; Beehr & Newman, 1978; Martin & Schermerhorn, 1983; Schuler, 1980) emphasize the importance of an interdisciplinary approach which combines both domains as a direction for research. House (1974) states: "The analysis of work and non-work environmental causes of mental and physical health remains fragmentary, scattered, and theoretically unintegrated, due both to the disciplinary diversity of researchers and the nebulous status of mental and physical health as a concept or theoretical framework" (p. 12). Clinical, community, and social psychologists, medical researchers, physicians, etc. tend to focus upon life stress and satisfaction in relation to psychological and physical health, whereas industrial/organizational psychologists and consultants, business academicians, etc. study job stress and satisfaction in relation to such

organizational consequences as performance, productivity, and potential turnover.

Another problem with previous research is that when integration has been realized (i.e., when work and nonwork factors have been considered), results remain inconclusive. Equivocal results are due to problems such as the lack of comprehensive empirical and theoretical models, lack of agreement on operational definition of variables, poor measurement instruments, and poor choice of statistical techniques in the analysis of data.

Not much progress has been made in integrating the work/nonwork research areas since House's 1974 statement regarding the state of that research. Kasl (1978) asserts: "It still remains true that research on work and on the family is quite segregated and that it is quite rare to find a study which focuses on more than one role" (p. 37). Furthermore, Martin and Schermerhorn (1983) contend that scholars have yet to respond to the need for an interdisciplinary approach to developing a comprehensive model of work and nonwork influences on physical and mental health.

It is the purpose of the present research to proffer an integrated, interdisciplinary approach to studying causal inferences among perceived work and nonwork stress and satisfaction, and psychological distress within a path-analytic framework. Industrial/organizational psychologists, consultants, personnel directors, etc. must consider the importance of work and nonwork influences on health outcomes since various organizational consequences will result from factors in those two domains operating together. Moreover, clinical psychologists, family therapists, psychiatrists, etc. must be aware that various work

factors may be important influences on psychological health, and ultimately, how an individual functions in society.

Conceptualization of Organizational Stress

. . . work is, by its very nature, about violence--to the spirit as well as to the body. It is about ulcers as well as accidents, about shouting matches as well as fistfights, about nervous breakdowns as well as kicking the dog around. It is, above all (or beneath all), about daily humiliations. To survive the day is triumph enough for the walking wounded among the great many of us (Terkel, 1972, p. xiii).

Terkel's statement exudes a pessimistic view of work; but in this fast-paced, high-technological society, in which dramatic changes are transpiring every day, work is perceived as an increasing source of stress, humiliation, and disappointment. Occupational stress is becoming an important concern to many academic researchers and organizational practitioners. However, there is still a great deal to be determined about this topic (Schuler, 1980).

The occupational stress literature remains disorganized and disintegrated. The primary reason for the chaotic state of the research is that various theorists and investigators present different conceptual and operational definitions of stress. Both physiological and psychological interpretations of stress have been offered. For example, Hans Selye (1956) defines stress as a nonspecific biological response to any demand; stress is viewed as a reaction to a stressor. Each demand made upon the body results in a specific response (e.g., cold temperature causes shivers); but in addition, the body adapts to a new state by a more general reaction of the body's defense system --the nonspecific response, or stress.

The conventional physiological view of stress is that stressful stimuli (e.g., various work and nonwork stressors) evoke the pituitary-adrenal response to stress, in which the posterior hypothalamus

stimulates the adjacent anterior pituitary gland. The pituitary produces a hormone known as adrenocorticotrophic (ACTH) which, along with the arousal provided by the autonomic nervous system, activates the adrenal glands. The adrenals produce critical hormones (catecholamines), including adrenaline, noradrenaline, and corticoids, which are released into the bloodstream (Bovard, 1959; Selye, 1956). Physiological stress level is commonly assessed by testing for catecholamine levels in the bloodstream. Moreover, animal studies show that one of the eventual effects of stress is that norepinephrine and searatonin, substances responsible for transmitting impulses across synapses between nerve cells, are not available in normal amounts (see Beehr, 1985). Therefore, an interplay between the circulatory and nervous systems is thought to be responsible for some of the physical and/or psychological consequences of stress to the individual.

Hall and Mansfield (1971) contend that stress is an external force operating on a system and strain is the change in the state of the internal system which results from that external force. Margolis, Kroes, and Quinn (1974) define occupational stress as a condition at work interacting with worker characteristics to disrupt psychological or physiological equilibrium. Moreover, McGrath (1976) contends that stress involves an interaction of person and environment; something occurs in the environment which presents a person with a demand, a constraint, or an opportunity for behavior. Situations have a potential for stress when they are perceived by the individual as threatening (because the individual feels that she/he does not have the capability to meet the demands posed by those situations). Stress occurs under conditions where individuals expect a substantial differential in the

rewards and costs from meeting the demands as opposed to not meeting them.

As an extension of McGrath's (1976) proposals, Schuler (1980) states:

Stress is a dynamic condition in which an individual is:

- a. confronted with an opportunity for being/having/ doing what (s)he desires and/or
- b. confronted with a constraint on being/having/ doing what (s)he desires and/or
- c. confronted with a demand on being/having/ doing what (s)he desires and for which the resolution of is perceived to have uncertainty but which will lead (upon resolution) to important outcomes (p. 189).

Corresponding to a person-environment fit theory (French, Rogers, & Cobb, 1974) of occupational stress, Caplan, Cobb, French, VanHarrison, and Pinneau (1975) refer to organizational stress as "any characteristics of the job environment which pose a threat to the individual. Two types of job stress may threaten the person: either demands which he may not be able to meet or insufficient supplies to meet his needs" (p. 3). Thus, the extent to which an individual's skills and abilities match the demands and requirements of the job represent one type of fit. Another kind of fit is exemplified by the extent to which the person's needs are satisfied by the job environment. Consequently, occupational stress is conceptualized as a misfit of either of those relationships between the employee and the work environment.

Another view of occupational stress is proposed by Kahn, Wolfe, Quinn, and Snoek (1964), who equate job stress with an individual's experience of being "bothered" by work-role ambiguity and conflict; these researchers operationalize job stress as such, as do the majority

of researchers in this area (e.g., Abush & Burkhead, 1984; Axelrod & Gavin, 1980; Pardine et al., 1981), a practice which is highly questionable due to the very poor validity of the measurement instrument (The Job-Related Tension Index, Khan et al., 1964).

Beehr and Newman (1978) define job stress as "a situation wherein job-related factors interact with a worker to change (i.e., disrupt or enhance) his or her psychological and/or physical condition such that the person (i.e., mind-body) is forced to deviate from normal functioning" (p. 670). The implication that low levels of stress are potentially beneficial (eustress) to an individual (Seyle, 1974) is inherent in the former definition. Beehr and Newman (1978) also outline a comprehensive facet design; this design indicates the potential elements of the job stress domain. They identify seven facets: the "environmental" facet (elements of the employee's work environment, both organization-wide and job-specific, that are likely to be involved in job-related stress); the "personal" facet (characteristics of the individual that are likely to affect the exposure and susceptibility to stress, experience of stress, and reaction to stress); the "process" facet (physiological processes such as alterations in the nervous system, and psychological processes such as complex cognitive and perceptual mechanisms that link the environmental and personal facets to each other, and to the consequences and adaptive responses facet); the "human consequences" facet (which lists all negative psychological and physical health reactions to occupational stress); the "organizational consequences" facet (which lists some of the key aspects of organizational effectiveness that may be positively or negatively affected by job stress); the "adaptive responses" facet

(which represent various adaptive approaches, or coping mechanisms to handling stress); and a "time" facet (which runs through all other facets since their elements require some time passage for their development, or to exhibit their effects).

The concept of stress lacks precision in that it has been both narrowly and broadly defined, and has been treated as a stimulus, a response, an environmental characteristic, an individual attribute, and an interaction between the person and environment (Parker & DeCotiis, 1983). Moreover, the concept "is discussed as though it were unidimensional, less often as multidimensional, and least often as multidimensional and variable, with a potential for variation in the level of intensity associated with each dimension (Schuler, 1980)" (cited in Parker & DeCotiis, 1983, p. 161). There is no consensus on the concept of stress, and it has been called "the most imprecise term in the scientific dictionary" (Ivancevich & Matteson, 1980, p. 5).

Since the conceptual definition of stress lacks precision, operational definitions also vary for different investigators. Physiological (objective) measures of stress have been used in various studies (e.g., ACTH and catecholephine levels, heart rate, blood pressure), as well as different types of subjective self-report measures, (most often measures of role conflict and role ambiguity), which often lack validity (see Sharit & Salvendy, 1982 for a thorough review of the measurement of occupational stress).

This researcher has combined two prevalent definitions of occupational stress into a conceptualization which is precise, parsimonious, and considers the multidimensional and variable nature of the term. One definition is proposed by Cooper and Marshall (1976) who indicate

that occupational stress is synonymous with the presence of negative work factors or stressors (e.g., role conflict, role ambiguity, poor physical working conditions) associated with a particular job. That is, the presence of a job stressor(s) is a measure of job stress. However, some individuals may not feel stressed by the presence of certain stressors due to individual difference factors such as coping style, tolerance for ambiguity, and locus of control, to name a few. Furthermore, certain types of stressors and not others may evoke stress in individuals, and in varying degrees.

The other definition (Parker & DeCotiis, 1983) states that job stress is "a particular individual's awareness or feeling of personal dysfunction as a result of perceived conditions or happenings at work" (p. 161).

This author asserts that perceived occupational stress is a particular individual's awareness or perception of feelings of pressure, strain, or emotional upset evoked by various noxious conditions (stressors) at work, as Ivancevich and Matteson (1979) define the variable. Thus, in this research, individuals are asked to indicate how frequently various noxious organizational and job-related situations are a source of pressure, strain, and emotional upset. These situations are not limited to role conflict and role ambiguity, but are comprehensive organization-wide and job-specific types of stressors, which have not been considered in unison in previous research. Furthermore, these stressors were delineated by Beehr and Newman (1978) in the "environmental" component of their facet design mentioned previously.

If asked to define stress, both researchers and individuals in the general population would most likely attach different meanings to this concept. But the aforementioned definition of perceived occupational stress proffered by Ivancevich and Matteson (1979) and this author possesses "logical validity" (see Locke, 1976 for a complete discussion of "logical validity"); that is, the definition is "integrated in noncontradictory fashion with all pertinent information relevant to the phenomenon being measured" (Locke, 1976, p. 1337). It must also be noted that individuals subjectively cognize, can feel, and can report frequency and levels of stress even if the construct does not possess a universally agreed-upon definition.

Organizational Stressors

Noxious conditions at work are classified into two types--"macro" and "micro" stressors.

Macro stressors reflect the large organizational structure and culture. The emphasis in macro issues is on the "conflict or power of major subsystems of organizations and the contextual, as opposed to individual, factors that help explain and manage these features of organizational life" (Miles, 1980, p. 3). Essentially, macro organizational stressors concern structures and processes within major subsystems, organizational technologies and their environments, and the linkages among them. Macro stressors are global and organization-wide, and include organizational politics, human resource development, reward systems, participation in decision-making, underutilization of skills and abilities, supervisory style, organizational structure, sexual harassment, and lack of concern for individual

needs, the last two stressors reflecting organizational culture or climate.

Conversely, micro stressors focus on individual behaviors, the design of individual jobs, and role relations. Micro issues pertain to structures and processes (cognitive, emotional, and physical) within individuals, small groups, and the linkages among them (Miles, 1980). Micro stressors are job-specific rather than global-organizational and include role ambiguity, role conflict, quantitative and qualitative role overload, career progress, responsibility for people, time pressure, and job scope.

The following sections present definitions of all macro and micro conditions which have been found to evoke stress in employees (e.g., see Cooper, 1983; French & Caplan, 1973; and Ivancevich & Matteson, 1980 for complete reviews of all studies), and which are used in the measure of perceived job stress in this research. At the end of each facet, item numbers are listed which correspond to the stressful conditions associated with that particular facet. All items are found in Appendix A, Part II.

Macro Stressors

Politics. Miles (1980) defines organizational politics as the "processes whereby individuals or interest groups exercise whatever power they can amass to influence the goals, criteria, or processes used in organizational decision making to advance their own interests" (p. 154). Organizational politics consist of nonrational (outcomes sought are different from those espoused by the organization as a whole) influences on decision-making in complex organizations. For example, an "organizational politics" stressor is present when an individual

perceives that other employees exchange favors with people of higher rank in the organization (item 19; other "politics" stressor items are 11, 26, and 34).

Human Resource Development. Human resource development involves viewing workers as having the potential to exercise a great deal of self-direction and self-control at work, and fitting people to jobs so that employees are allowed to fully use their talents in contributing to organizational goals. It also concerns the development and implementation of training programs so that qualified and capable candidates inside and outside of the organization are able to fill positions (Steers, 1984). For example, one "human resource development" stressor is the perception that the organization does not make any effort to develop people to handle more authority and responsibility in their jobs (item 35; other "human resource development" stressor items are 12, 20, and 28).

Rewards. Reward systems in organizations refer to the reinforcements (e.g., salary, hourly wages, praise, piece-rates, profit-sharing, etc.) given to employees based on a variety of factors, including productivity, quality of work, skill level or experience, or simply on the basis of individual needs. Rewards may be tailored to individuals or work groups, or they may may apply relatively uniformly throughout the organization (Miles, 1980). Stressors associated with reward systems include perceptions that promotions are not based on performance, rewards are not fairly distributed, people are not rewarded on the basis of solid performance, and the relationship between job performance and rewards is ambiguous. (Items 13, 21, 29, and 37.)

Participation. Participation refers to the extent to which employees perceive that they have influence on the decision processes of an organization (French & Caplan, 1973). These decisions must be non-trivial and significant so that employees feel that they really have some influence over the nature of specific jobs or the total organization. Lack of participation in decision-making has been found to induce stress in individuals, and a positive relationship has been found to exist between nonparticipation and employee's poor mental health (Beehr, Walsh, & Taber, 1976; French & Caplan, 1973). (See items 14, 22, 30, and 38.)

Supervisory Style. This facet concerns the perceived leadership style and personality of supervisors or superiors. A supervisor who is perceived as unsupportive, disrespectful, suspicious, and unconcerned about the welfare of others may be a source of stress to subordinates, other supervisors, and/or other employees in the organization. (Items 17, 24, 32, and 40.)

Underutilization. Underutilization refers to employees' perceptions of work tasks being too easy, non-challenging, and failing to tap individual capabilities (Francis & Milbourn, 1980). (Items 17, 24, 32, and 40.)

Organizational Structure. Another potential source of occupational stress is related to organizational structure. Miles (1980) contends that organizational structure concerns the different kinds of units that must work together, who reports to whom, the control mechanisms that are operating, and the various rules and procedures that guide behaviors toward the accomplishment of organizational tasks and goals. He defines organizational structure as:

. . . those features of the organization that serve to control or distinguish its parts. Structure is generally expressed in terms of the division and specialization of work and the methods of coordination and control. Division and specialization refer to how the organization divides the work and assigns resources among work units. These resources include capital, personnel, material, knowledge, and space. Coordination and control refer to how the working parts are articulated to achieve both general and specific organizational goals These . . . factors . . . create a setting in which objectives, too complex for individuals working alone, may be achieved (p. 18).

Thus, "structure stressors" include perceptions of overly restrictive organizational policies and ambiguous arrangements of jobs as fitting into an overall comprehensive organization-wide plan. (Items 18, 25, 33, and 41.)

Sexual Harassment. Sexual harassment involves "any unwanted sexual advancement toward another individual, thus resulting in conflict" (DuBrin, 1984, p. 353). It may include sex-oriented verbal "kidding" or abuse, subtle pressure for sexual activity, and/or physical contact such as patting, pinching, or constant brushing against another's body. It may also include demands for sexual favors, accompanied by implied or overt promises of preferential treatment or threats concerning an individual's employment status (National Labor Relations Board Policy, 1980).

Sexual harassment usually takes the form of an unwanted action by a male toward a female, but may also include female against male, male against male, and female against female. Moreover, it is considered to be a form of job discrimination and is therefore illegal under Section VII of the Civil Rights Act. However, the federal government has ruled that if a boss sexually harasses members of both sexes, that boss is not violating the Civil Rights Act (Greenlaw & Kohl, 1981).

Despite this ruling, called a "bisexual exclusion," all sexual harassment, by definition, is a source of job stress to employees (DuBrin, 1984). (Items 15, 53, 70, and 77.)

Lack of Concern for Individual Needs. Stress may be evoked in employees who perceive that their organization does not treat them as individuals, with specific personal needs related to nonwork situations. The stressors in this category may affect all employees, but are particularly relevant to those who are responsible for children (primarily women in this society). These stressors include non-flexible work time (which adversely affects both the individual and the organization, Cohen & Gadon, 1978), lack of provisions for child day-care, and lack of flexibility to leave work when personal problems arise at home. (Items 27, 36, 61, and 78.)

Micro Stressors

Role Ambiguity. Role ambiguity is a "state in which the person has inadequate information to perform his role" (French & Caplan, 1973, p. 4); it is a perceived "lack of clarity about one's role, job objectives, and the scope of the responsibilities of one's job" (Ivancevich & Matteson, 1980, p. 111). (Items 42, 50, 59, and 68.)

Role Conflict. If role ambiguity reflects a situation where there is a lack of information, role conflict reflects a situation where the information arouses conflict. A combination of the expectations and demands employees place upon themselves and those of other members of the organization results in a set of forces called role pressures. When a situation arises in which two or more role pressures are perceived to be in conflict with one another, a condition of role conflict ensues. Role conflict is salient whenever compliance with one

set of pressures makes compliance with another set difficult, objectionable, or impossible (Ivancevich & Matteson, 1980). There are several styles of role conflict--two typical examples are intersender conflict and intrasender conflict (Beehr, 1985). Intersender role conflict is "the situation in which the expectations, pressures, or demands from one member of one's role set (perhaps a supervisor, a co-worker, a subordinate, or a customer) are in conflict with the demands of at least one other member of the role set" (Beehr, 1985, p. 71). Intrasender role conflict occurs when the same member of a role set demands that the worker perform duties that are incompatible with each other. Both types of role conflict have been found to elicit stress (Bedeian & Armenakis, 1981), and are assessed in this research. (Items 43, 51, 60, and 69.)

Quantitative Role Overload. When employees perceive that they have too much work to do, too many difficult things to do, and/or have to take work home to stay caught up, a condition of quantitative overload exists (Ivancevich & Matteson, 1980). (Items 44, 52, 62, and 71.)

Qualitative Role Overload. Qualitative role overload is prevalent when employees perceive that they lack the ability to complete their tasks, and/or that performance standards are too high, regardless of how much time they have (Ivancevich & Matteson, 1980). (Items 45, 54, 63, and 72.)

Career Progress. Career development stressors deal with aspects of the individual's interaction with the organizational environment which influence that person's perception of the quality of his or her career progress. Employees may be stressed by career factors when

they perceive a lack of job security, are concerned about real or imagined obsolescence, feel that promotion progress is inadequate, and/or are generally bothered by the match between career aspirations and their current level of attainment (Ivancevich & Matteson, 1980). (Items 46, 55, 64, and 73.)

Responsibility for People. Perceived degree of responsibility for people and their safety also appears to be a potentially significant occupational stressor (Caplan, 1983). Responsibility for persons includes their work activities, their careers and professional development, and their job security. Part of the reason that responsibility for people is a potent stressor is due to the specific nature of the responsibility, particularly as it relates to the need to make unpleasant interpersonal decisions which affect others. Another reason is that people responsibility positions lend themselves to role overload and perhaps role conflict and ambiguity as well (Ivancevich & Matteson, 1980). (Items 47, 56, 65, and 74.)

Time Pressure. Time pressure stressors include employee perceptions of unreasonable time deadlines for which to complete work, not enough time to complete all work, and/or having to work too quickly to finish tasks (Ivancevich & Matteson, 1979). (Items 48, 57, 66, and 75.)

Job Scope. Job scope pressures include employees' perceptions that they are performing unimportant, repetitive tasks, they have no freedom to do the job as they see fit, and they receive no feedback on performance (Ivancevich & Matteson, 1979). (Items 49, 58, 67, and 76.)

Conceptualization of Extraorganizational Stress

The problems which abound in the occupational stress literature also prevail in research on life stress. That is, no consensus exists with respect to conceptual and operational definitions of perceived life stress, and theoretical models explaining its nature and causes are incomplete and inadequate. Kasl (1983) states: ". . . one cannot make much progress in the stress field until investigators agree on definitions, achieve greater conceptual precision, and improve on operational methodology" (p. 81). He also declares that stress has been used as an environmental condition, as an appraisal of an environmental situation, as the response to that condition, and as some form of a relationship between the environmental demands and the person's ability to meet the demands.

Foundations of life stress research can be traced to the work of W. B. Cannon. Cannon (1929) postulated and demonstrated with animals that emotion-provoking stimuli produce various physiological and bodily alterations (increased adrenaline, blood sugar, blood pressure, heart rate, etc.). He professed that the presence of stimuli that evoke strong reactions leads to persistent disturbance of bodily functions. Cannon noted that pathology appeared to follow directly after severe emotional trauma in the lives of patients; his research suggested that traumatic events are capable of producing physiological reactions that could lead to illness.

Meyer (1951) extended Cannon's argument by suggesting that life events might be important factors in the etiology of disease and that these events need not necessarily be pathogenic in order to produce physiological reactions and illnesses. That is, ordinary changes in the

lives of individuals (e.g., the death of a loved one, marriage, changes in financial situations, etc.) might play a part in the etiology of disease.

The majority of research on life stress (see Bhagat, 1985; Kasl, 1983; and Rabkin & Struening, 1976 for reviews) conceptually and operationally defines that concept as synonymous with the existence of recent events in individuals' lives to which they must adapt. Other researchers have defined life stress in terms of the perceived undesirability of those same events (e.g., Mueller, Edwards, & Yarvis, 1977; Sarason & Johnson, 1979; Sarason, Johnson, & Siegel, 1978; Vinokur & Selzer, 1975).

Research has shown that psychological disturbance is more highly correlated with total perceived undesirable change rather than the total amount of change (Bhagat, 1985); in other words, perceived undesirable life event changes are better predictors of psychological outcomes than the total amount of change with respect to those events. Bhagat (1985) states:

. . . several of these studies demonstrate that when effects of undesirable events are controlled, total life event changes fail to predict psychological outcomes. I believe it is important for organizational researchers to focus on the cumulative effects of those undesirable events which have been found to be predictive of psychological distress. This line of research will be more useful compared to one focusing on the cumulative changes of all events experienced by the individual (p. 208).

In any event, whenever perceived life stress is used as a variable, it is defined in terms of self-reports of the occurrence of recent life changes and/or their undesirability.

Golden and Dohrenwend (1981) assert: "Although the task of conceptual and operational refinement of constructs of the life stress process is not finished, we believe that future research on life stress should be designed to test hypotheses that integrate constructs regarding life events, personal dispositions, and social environmental situations" (p. 258). Bhagat (1985) also contends that in addition to measuring and estimating the impact of life event changes, it is important to incorporate the stressful effects of daily hassles (e.g., having to clean up snow covered driveways, having to cook meals for children, etc.). Consequently, in addition to life events, nonwork role-related conditions are also a source of stress to individuals.

In order to increase clarity and enhance integration between the work and nonwork domains, they will be made to parallel each other in this research. Thus, definitions and theories in the work domain are generalized to the nonwork domain. As such, this author defines perceived life stress as an individual's awareness or perception of feelings of pressure, strain, or emotional upset evoked by various life events and role-related conditions (stressors). In this research, individuals are asked to indicate the level or amount, or frequency of stress (feelings of pressure, strain, or emotional upset) they perceive as a result of the occurrence of various life events and various conditions associated with their extraorganizational roles (i.e., role ambiguity, role conflict, role overload, and responsibility for people and things). Consequently, nonwork stressors consist of various life events, role conflict, role ambiguity, role overload, responsibility for people, and responsibility for things.

Extraorganizational Stressors

Recent Life Events. Life events are any set of circumstances which signify or require change in the individual's ongoing life pattern (Holmes & Rahe, 1967). Experiences of perceived undesirable life events such as divorce, the death of a loved one, etc. evoke stress in people, and it has been found that such events precipitate psychological and physical illness (Bhagat, 1985). However, this author feels that perceived undesirable and desirable events may evoke stress. Therefore, in this research, the amount of perceived stress associated with particular events is a measure of life event stress, higher scores indicating more perceived stress. A list of these events or situations is given in Appendix A, Part III, Items 79 through 127.

Role Ambiguity. Role ambiguity is prevalent when individuals are unclear about what is expected of them when they come home from work and/or are uncertain as to what their nonwork lives will be like in the future (see Appendix A, Part III, Items 131 and 134).

Role Conflict. Whenever compliance with one set of nonwork role requirements makes compliance with another nonwork set difficult, objectionable, or impossible, role conflict, a life stressor parallel to the work stressor mentioned previously, exists (see Appendix A, Part III, Items 130 and 136).

Role Overload. When people perceive that they have too much to do, and/or too many different things to accomplish when they are not at work, a condition of role overload exists (see Appendix A, Part III, Items 129 and 137).

Responsibility for People. Perceived degree of responsibility for others is a life stressor. For example, a mother or father may be

responsible for her/his children's welfare or care when home from work. Or, an individual may have to care for an ill live-in relative (see Appendix A, Part III, Items 133 and 135).

Responsibility for Things. Individuals may also be stressed by having the responsibility to take care of things at home such as housework, painting, fixing things, going to the market, etc. (see Appendix A, Part III, Items 128 and 132).

Conceptualization of Organizational Satisfaction

[Work] is about a search, too, for daily meaning as well as daily bread, for recognition as well as cash, for astonishment rather than torpor; in short, for a sort of life rather than a Monday through Friday sort of dying (Terkel, 1972, p. xiii).

Locke (1976) defines job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1300). He further contends that a job is a complex inter-relationship of tasks, roles, responsibilities, interpersonal interactions, incentives, and rewards; a thorough comprehension of job attitudes requires that the job be analyzed in terms of its integral components.

Smith, Kendall, and Hulin (1975) propose that five dimensions represent the most salient characteristics of a job about which people have affective responses. These authors developed the Job Descriptive Index (JDI), a self-report rating scale measure of job satisfaction, which is comprised of the following five facets:

Work itself. The extent to which tasks performed by employees are interesting and provide opportunities for learning and accepting responsibility.

Pay. The amount of pay received, the perceived equity of the pay, and the method of payment.

Promotional opportunities. The availability of realistic opportunities for advancement.

Supervision. The technical and managerial abilities of supervisors, the extent to which supervisors demonstrate consideration for and interest in employees.

Co-workers. The extent to which co-workers are friendly, technically competent, and supportive (Steers, 1984, p. 430).

Other dimensions have been identified (e.g., satisfaction with benefits, physical working conditions, and company policy), but the aforementioned facets are utilized most frequently in the measure of job satisfaction.

Locke (1976) has summarized the job satisfaction literature and concludes that, for the majority of employees, work which is valued, personally interesting, mentally challenging, which allows autonomy, and which is not physically fatiguing is most conducive to job satisfaction. Satisfaction with rewards such as pay and promotion depends on the fairness or equity with which they are administered, and the degree to which they match an individual's personal aspirations. Moreover, satisfaction with supervisors and co-workers stems from the degree to which an individual perceives these relevant others as facilitating the attainment of the person's work goals and rewards. Satisfaction with co-workers and supervisors is also enhanced by the degree that these agents are perceived as having values congruent to an employee's own value system.

Several theories attempt to explain the nature and determinants of job satisfaction, and may be classified into two prevalent types: process theories and content theories. Process theories specify the types or classes of variables (e.g., needs, perceptions, values, expectancies) which are considered causally relevant to job satisfaction, as well as how those variables combine to produce overall job contentment. Process theorists (e.g., Katzell, 1964; Likert, 1961; Locke, 1969, 1976; Pelz & Andrews, 1966; Rosen & Rosen, 1955; Smith et al., 1975) postulate that job satisfaction may be viewed as the "pleasurable emotional state resulting from the perception of one's job as fulfilling one's important job values, provided that those values are compatible with one's needs" (Locke, 1976, p. 1307). These theorists refer to values as an individual's consideration of what is beneficial,

and needs as conditions that are actually required for a person's well-being.

The two most salient process theories are discrepancy theory and equity theory. Attitudes such as job satisfaction are the product of associated beliefs and values; these two factors operate to cause differences in job satisfaction even when two jobs are identical. Employees may differ in their beliefs about the job in question (i.e., they may differ in their perceptions concerning the nature of the job). Moreover, even if individuals perceive their jobs as equivalent, they may differ in terms of what they want from the jobs. These desires are preferences which are dictated by the workers' value systems. The former propositions comprise a discrepancy theory of job satisfaction (Locke, 1969). Discrepancy theory essentially asserts that work satisfaction is a function of the discrepancy between the job outcomes that a person wants and the outcomes that are perceived to be obtained, less discrepancy indicating more job satisfaction.

Equity theory (Adams, 1963) avows that inputs which an individual perceives as investing in a job and the resulting outcomes of the job are compared to the inputs and outcomes of some other relevant person or group. Equity exists when the ratio of a person's inputs to outcomes is equal to the relevant other's ratio of inputs to outcomes. Inputs consist of anything that individuals consider relevant to their exchange with the organization, anything that they give up, offer, or trade to the organization (e.g., education, training, hard work, high quality work). Outcomes are the elements that the organization is perceived to offer in return for the inputs. The most apposite outcomes are represented by pay, promotions, supervision,

the nature of the work, and co-workers, the composites of job satisfaction noted earlier. The "relevant other" in equity theory might be another co-worker, a number of co-workers, or one's conception of all individuals in one's occupation.

Equity theory has two primary implications for job satisfaction. First, if inequity exists (i.e., if the ratio of a person's inputs to outcomes does not equal the ratio of the relevant other's inputs to outcomes), and an individual is, or feels "cheated" or treated unfairly, then job dissatisfaction will inevitably result. For example, if an employee frequently works extra hours (input) and receives no extra pay (outcome) and observes that a co-worker stays after regular work hours and obtains extra pay, the former employee will perceive inequity and experience job dissatisfaction.

Equity considerations also have an indirect effect on job satisfaction by influencing what people want from their jobs. For example, an employee who receives a Masters Degree will demand a raise if the organization provides higher pay for extra education.

Figure 1 illustrates the manner in which discrepancy and equity affect job satisfaction.

In this model, work satisfaction is a function of the discrepancy between the job outcomes a person desires and the outcomes that are perceived to be received. Greater job satisfaction will be experienced to the extent that these outcomes are met or exceeded, and to the extent that they are perceived as equitable compared to the outcomes others receive. The desired outcomes are a function of employees' personal value systems, moderated by equity considerations. The

Figure 1. How discrepancy and equity affect job satisfaction.
(From Organizational Behavior: Understanding Life at Work, p. 111, by G. Johns, 1983, Illinois: Scott, Foresman.)

outcomes that people perceive themselves as obtaining from the job represent their beliefs about the nature of that job; job satisfaction represents a set of attitudes about the job stemming from the beliefs and values of the worker (Johns, 1983).

It must be noted that research generally supports the discrepancy and equity theories of job satisfaction (Carrell & Dittrich, 1976; Locke, 1976).

Content theorists (e.g., Herzberg, Mausner, & Snyderman, 1959; Maslow, 1943) have attempted to identify the specific needs or values most conducive to job satisfaction (i.e., they have established what determines job contentment, as opposed to how it is engendered, as process theories elucidate). The two most prominent content theories are Maslow's Need Hierarchy theory and Herzberg's Two-Factor theory.

Maslow (1943) declares that individuals have five needs, arranged in a hierarchy from the most basic to the highest level: physiological (the body's requirement for food and water); safety and security (a person's desire for security and protection); love and belongingness (a person's hunger for affectionate relationships with others); self-esteem (a person's desire for mastery and competence, reputation and prestige); and self-actualization (an individual's striving to reach his or her fullest potential). Essentially, Maslow contends that the lowest unsatisfied need becomes the prepotent, or most powerful and significant need, the one which motivates a person to act or fulfill it; satisfied needs do not motivate. Moreover, if a need is not met, dissatisfaction is experienced; when a need is met, satisfaction results. Thus, Maslow would say that job satisfaction results when people perceive the job as fulfilling their needs.

Research which has tested Maslow's theory has not provided consistent support for it (e.g., Porter, 1961; Wahba & Bridwell, 1976).

Two-Factor theory (Herzberg et al., 1959) suggests that there are only two sets of needs. These are motivators (e.g., achievement, autonomy, self-esteem, self-actualization opportunities, recognition, the work itself), which are psychological growth needs, and hygiene factors (e.g., pay, physical working conditions, supervision, and security), which are pain-avoidance needs. When motivating needs are met, satisfaction results; however, hygiene needs must be met in order to avoid dissatisfaction (but do not necessarily provide satisfaction, if met). Research has not found much support for Herzberg's Two-Factor theory (House & Wigdor, 1968).

After a thorough critical review of process and content theories, Locke (1976) combined the most defensible aspects of each theory, and presents the following expanded definition of job satisfaction:

It is hypothesized that job satisfaction results from the appraisal of one's job as attaining or allowing the attainment of one's important job values, providing these values are congruent with or help to fulfill one's basic needs. These needs are of two separable but independent types: bodily or physical needs, and psychological needs, especially the need for growth. Growth is made possible mainly by the nature of work itself (p. 1319).

The instrument that is used in this research as a measure of perceived job satisfaction is the JDI (Smith et al., 1975). The rationale for the scale's development is consistent with process theory. The authors define job satisfaction as "feelings or affective responses to facets of the situation" (Smith et al., 1975, p. 6). They hypothesize that:

. . . these feelings are associated with a perceived difference between what is expected as a fair and reasonable return (or, when the evaluation of future prospects is involved, what is aspired to) and what is experienced, in relation to the alternatives available in a given situation. Their relation to behavior depends upon the way in which an individual expects that form of behavior to help him achieve the goals he has accepted (Smith et al., 1975, p. 6).

The authors assert that different feelings correspond to different components of the job (i.e., nature of the work itself, pay, promotional opportunities, supervision, co-workers), and that job satisfaction is a "function of perceived characteristics of the job in relation to an individual's frames of reference (p. 12). A frame of reference is defined as an internal standard (or standards) that a person uses when making an evaluation. This standard is related to a person's prior experience, predilection for making a particular response, and expectations. If a large discrepancy exists between what the person obtains from the job and what that individual values or imagines as important and necessary, then dissatisfaction will result (Smith et al., 1975).

In sum, the rationale for measurement of job satisfaction in this research (and in most other investigations) is explained by process theory, where perceived job satisfaction is viewed as an individual's positive affects about various dimensions of the job (i.e., pay, promotion, nature of work, co-workers, supervision). If there is a large discrepancy between what a person needs and values in a job and what they perceive to be actually obtaining, then dissatisfaction will result. Furthermore, if employees perceive that what they are getting out of a job in relation to what they put into it is unequal to comparable others' ratio of inputs to outcomes, dissatisfaction will consequently

follow, when the former employees somehow feel they are being cheated or "short-changed."

Conceptualization of Extraorganizational Satisfaction

The literature is abundant with respect to theory and research in the specific areas of occupational stress and satisfaction, and extra-organizational stress. However, research which considers perceived extraorganizational satisfaction as a theoretical concept and/or operational variable are more scarce. Investigators in the academic sphere (e.g., Andrews & Withey, 1976; Bradburn, 1969; Campbell, 1976; Campbell, Converse, & Rogers, 1976; Land, 1971), and in the political field (e.g., Environmental Protection Agency, 1973; Executive Office of the President, 1973) studied the overall quality of life in America; unfortunately, adequate conceptual definitions and the nature and causes of perceived life satisfaction are not discussed in satisfactory detail. Moreover, other researchers who use the variable in their studies (e.g., Near, Smith, Rice, & Hunt, 1983, 1984; Orpen, 1978; Palys & Little, 1983; Rice, Near, & Hunt, 1979; Scott & Stumpf, 1984; Spreitzer, Snyder, & Larson, 1975) make no attempt at conceptual definitions, and operationalizations are diverse and inadequate. The measurements of perceived life satisfaction which are used lack validity, often treat the concept as unidimensional, are highly restricted in range, and produce skewed data.

In order to improve this state of affairs, perceived life satisfaction is made to parallel perceived job satisfaction in this research. Essentially, definitions and theories of job satisfaction are generalized to life satisfaction, with minor alterations. Thus, paralleling Locke's (1976) definition of job satisfaction, life satisfaction is defined as the pleasurable or positive emotional state resulting from the appraisal of one's life or life experiences. Furthermore, as job satisfaction is

multifaceted (Smith et al., 1975), so is life satisfaction. In other words, there are different aspects of an individual's life with which to be satisfied, as there are different aspects of an individual's job with which to be satisfied. Thus, perceived life satisfaction is a multidimensional concept, subject to a wide range of individual variability.

Andrews and Withey (1976) developed the Delighted-Terrible Scales of Affective Evaluations of Specific Concerns (D-T Scales), which are used as the measure of perceived nonwork satisfaction in the present research. Essentially, these authors conceive of well-being, or life satisfaction indicators as occurring at several levels of specificity. At a specific level are general evaluations of what they call "life concerns." Life concerns are aspects of life about which people have feelings. Andrews and Withey (1976) performed factor analyses of a multitude of specific concerns and found 34 clusters. These authors assert that some of the clusters, and some of the items which comprise certain clusters, may be deleted in the measure (without a loss of validity) due to their irrelevancy to life satisfaction and/or their redundancy. Remaining facets of perceived life satisfaction in the present research are family relations, friends, self, leisure time, treatment by others, community, standard of living, national government, local government, societal standards, and media. In essence, individuals are asked to state how they feel (from "delighted" to "terrible") with respect to the items comprising those facets.

As the nature of perceived job satisfaction is explained by the process theories of discrepancy and equity, so is the nature of perceived life satisfaction. Within a process theory framework,

perceived life satisfaction is viewed as the pleasurable emotional state resulting from the perception of one's life as fulfilling one's important life values, provided that these values are compatible with one's psychological and physiological needs. If there exists a large discrepancy between what a person needs and values in life and what that individual actually perceives to be obtaining, then life dissatisfaction will result (discrepancy theory). Furthermore, if an individual perceives that the ratio of what he/she strives to obtain in life (input) to what that person is getting out of life in return (output) is unequal to another individual or individuals ratio of input to outcomes, the former may perceive that he/she is being cheated and that life is unfair; thus, life dissatisfaction ensues (equity theory).

Conceptualization of Psychological Distress

Psychological distress is defined in this research as a general emotional reaction to work and nonwork stress and dissatisfaction. The Profile of Mood States (POMS), a brief psychiatric self-report rating scale developed by McNair, Lorr, and Droppleman (1971/1981) is used as a measure of perceived psychological distress.

Several researchers (e.g., Dohrenwend, Oskenberg, & Shrout, 1982; Dohrenwend, Shrout, Egri, & Mendelson, 1980; Mellinger, Balter, Manheimer, Cisin, & Parry, 1978; Vernon & Roberts, 1981) contend that psychiatric rating scales such as the POMS measure the global construct of "Nonspecific Psychological Distress Syndrome" (Dohrenwend et al., 1980), rather than specific clusters of symptoms indicative of discrete psychiatric disorders such as "schizophrenia," "depression," "anxiety disorder," or "antisocial behavior." In other words, these types of scales do not reflect clearly specified conceptual domains since no correspondence exists between the content of the scales and various types of psychopathology.

Statistical and clinical explanations (see Dohrenwend et al., 1980) are given to support the "global dimension" contention. Statistically, the subscales comprising the total scales possess properties which meet the requirements for being collectively defined as a single factor or dimension (i.e., high intercorrelations among those subscales); clinically, ambiguity exists with respect to exactly what psychopathologic entities (other than a global psychological distress dimension) are being measured. Thus, elevated scores indicate that something is wrong, but a specific diagnosis cannot and should not be given on the basis of scale results only.

Subscales of the POMS used in this research (tension-anxiety; depression-dejection; anger-hostility; fatigue-intertia; and confusion-bewilderment) are moderately to highly intercorrelated (McNair et al., 1971/1981; Norcross, Guadagnoli, & Prochaska, 1984), thus supporting the presence of one unified measure of emotional distress, or negative affective state. Respondents scoring high on the POMS perceive themselves to be depressed, anxious, fatigued, angry, and confused individuals--they are experiencing psychological distress.

Relationships Among Perceived Stress, Satisfaction and Psychological Distress

Work Domain

Mental health dysfunctions appear to be a direct and obvious result of job stress (Caplan et al., 1975). According to Ivancevich and Matteson (1980), some consequences of occupational stress are depression, anxiety, nervous exhaustion, disorientation, loss of self-esteem, feelings of inadequacy, lowered tolerance for ambiguity, apathy, loss of achievement motivation, and increased irritability. Perceived job stress has been shown to be significantly and positively related to one or more of the following measures of psychological distress, or poor mental health: neuroticism, tension, boredom, psychological fatigue, depression, irritation, and anxiety for a variety of occupational groups (e.g., Beehr, 1976; Beehr et al., 1976; Cameron, 1971; Caplan & Jones, 1975; Caplan et al., 1975; Coburn, 1975; Cooper & Marshall, 1976; French & Caplan, 1970; Gemmil & Heisler, 1972; House, Wells, Landerman, McMichael, & Kaplan, 1979; House & Harkins, 1975; House & Rizzo, 1972; Ivancevich, 1974; Kornhauser, 1965; Lyons, 1971; Margolis et al., 1974; Orpen, 1982; Patkai, Frankenhaeuser, Rissler, & Bjorkvall, 1967; Quinn & Shepard, 1974; Sales, 1970; Schark Reeder, & Dirken, 1973; Shirom, Eden, Silberwasser, & Kellermann, 1973).

For example, Orpen (1982) found significant positive relationships between three role stressors (conflict, ambiguity, and overload) on the job and an overall measure of psychological distress comprised of anxiety, depression, and resentment. Another study (House et al., 1979) found job stress to be significantly and positively related to

such symptoms as insomnia, trembling, loss of appetite, vertigo, weakness, and profuse sweating. Job stress was operationalized by participants responding to questions relating to their perceptions about having too much responsibility for people, process, or products, and insufficient human or material assistance; having concern about not being able to do good work as one could or should; receiving ambiguous and/or conflicting expectations from others at work; feeling that the job interferes with family life; and reporting not having enough time to complete a large quantity of work. All five stressors were significantly and positively related to overall anxiety and depression in this study. Moreover, Caplan and Jones (1975) found significant positive relationships between role ambiguity and anxiety, depression and resentment, and between subjective work load and anxiety.

In their classic study, Caplan and his colleagues (1975) found significant positive relationships between perceived job stress (as defined by characteristics in the work environment which pose a threat to the individual--either excessive demands or insufficient supplies to meet a person's needs) and psychological distress (as assessed by self-report measures of anxiety, depression and irritation).

In sum, it appears that significant positive relationships exist between perceived occupational stress and mental distress.

There also appears to be a direct relationship between job satisfaction and psychological health (Martin & Schermerhorn, 1983). Locke (1976) contends that the experience of dissatisfaction itself is an unpleasant psychological state; the existence of this state implies conflict since it means that the employee is in a job that she or he would prefer to avoid (at least in some respects). The result of this

conflict is psychological strain or distress; thus, there is a strong possibility of a relationship between job satisfaction and mental health. The literature has found the previous assertion to be plausible (e.g., Caplan et al., 1975; Gechman & Weiner, 1975; House et al., 1979; Kasl, 1973; Kavanaugh, Hurst, & Rose, 1981; Kornhauser, 1965). For example, Kornhauser (1965) found consistent significant positive relationships between job satisfaction and a total index of mental health (consisting of indices of anxiety and tension, self-esteem, hostility, sociability, life satisfaction, and personal morale) among three levels of blue-collar workers. Furthermore, House et al. (1979) found a significant negative relationship between job satisfaction and neurosis for a sample of 1,809 males in a large manufacturing plant. Caplan et al. (1975) discovered significant positive correlations between job dissatisfaction and depression, anxiety, and irritation. Finally, Kavanaugh et al. (1981) found significant positive relationships between job dissatisfaction and anxiety, depression, poor impulse control, and alcohol abuse. That the negative relationship between perceived job satisfaction and psychological distress has been unequivocally established is evidenced by the general consensus which exists in the literature among researchers involved in the study of organizational behavior (Martin & Schermerhorn, 1983).

Perceived occupational stress and dissatisfaction have also been found to be consistently and positively related (e.g., Beehr, 1976; Beehr et al., 1976; Caplan et al., 1975; Coburn, 1975; French & Caplan, 1973; Ivancevich, 1974; House, 1974; House & Rizzo, 1972; Margolis et al., 1974; Lyons, 1971; Quinn & Shepard, 1974; Schar, Reeder, & Dirkin, 1973). Kavanaugh and his colleagues (1981)

suggest that job satisfaction-dissatisfaction can be broadly classified as being reflective of job-related stress because it is a summary index of an employee's experiences and perceptions about the work environment. Job satisfaction is seen as an outcome variable that is partially caused by a person's job stress experiences.

All of the aforementioned studies have primarily been correlational so that directions of causality between and among variables can only be inferred on the basis of theory. Causal-correlational techniques such as cross-lagged panel designs and path analysis are increasingly being employed in data analysis, so that directional causation between and among variables can be more definitively inferred. Essentially, this research has shown the nature of causal relationships between job stress and job satisfaction; it must be noted that no causal studies have been found which consider these variables as influencing psychological distress.

Research testing causal models in the work domain is still in its infancy. Thus far, no definite conclusions can be made as to causative relationships among job stress, job dissatisfaction, and psychological distress considered in unison, although support has been found for the proposition that job stress will lead to job dissatisfaction, and not vice versa. For example, Teas (1983) found a moderate negative path coefficient ($-.30$) between job stress (with respect to role conflict) and job satisfaction of industrial salespeople; Bedeian and Armenakis (1981) also found a moderate negative path coefficient ($-.33$) between those same variables. Oliver and Brief (1977-78) note moderate path coefficients between role conflict and ambiguity, and job satisfaction ($-.31$ and $-.24$, respectively). Szilagyi

(1977) found that role conflict and role ambiguity were sources of causal inference with job satisfaction by employing a cross-lagged panel analysis of longitudinal data.

The aforementioned studies provide some support for causal inference between job stress and job satisfaction (although coefficients tend to fall within a moderate range, as in the correlational studies), with direction of causality being job stress → job dissatisfaction.

In sum, research has shown significant positive relationships among job tension, job dissatisfaction, and psychological distress. Specifically, it has been determined that job stress and job dissatisfaction are significantly and positively related to psychological distress, and that job stress is significantly and positively related to job dissatisfaction. It must be noted that job satisfaction has been used as both an independent and dependent variable in this literature. Moreover, organizational researchers (e.g., Martin & Schermerhorn, 1983) have theorized that occupational stress will influence psychological health both directly and indirectly through job satisfaction. Support has been found for the assertion that job stress will lead to job dissatisfaction, and not vice versa.

Nonwork Domain

Research efforts in the nonwork domain have essentially considered relationships between perceived life stress (as predominately measured by recent life changes) and psychological health; research is abundant in this area. However, studies relating life satisfaction to psychological health, and life stress to life satisfaction are sparse.

Direct positive relationships between life stress and psychological distress have been established. Andrews, Tennant, Heuson, and

Valliant (1978) state that little doubt remains that psychiatric symptoms can result from adverse life events. Life stress (as predominately assessed by the occurrence of stressful life changes and/or their undesirability, and in respect to family, situations, economic characteristics, social status indicators, and residential considerations) and indices of psychiatric symptomatology such as depression, neurosis, anxiety, fatigue, irritability, acute episodes of schizophrenia, and suicide attempts have all been found to be significantly and positively correlated for samples of psychiatric patients and normal individuals (e.g., Andrews & Tennant, 1978; Andrews et al., 1978; Birley & Brown, 1970; Coates, 1970; Coates, Burnside, Moyer, & Wellman, 1972; Coates, Moyer, Kendall, & Howat, 1976; Coates, Moyer, & Wellman, 1969; Cooper & Sylph, 1973; Holmes & Masuda, 1974; Lin, Ensel, Simeone, & Kuo, 1979; Markush & Favero, 1974; Miller, Ingham, & Davidson, 1976; Mueller, Edwards, & Yarvis, 1977; Myers, Lindenthal, & Pepper, 1971, 1972, 1974, 1975; Paykel et al., 1969; Paykel, Prusoff, & Myers, 1975; Rahe, 1975; Rahe, Meyer, Smith, Kjaer, & Holmes, 1964; Vinokur & Selzer, 1975).

For example, Vinokur and Selzer (1975) found that an accumulation of undesirable life events is significantly and positively correlated with self-reported tension and distress; disturbances resulting from that tension were depression and anxiety, and paranoid thinking, to name a few. Myers et al. (1975) found significant relationships between life events (as defined by experiences involving a role transformation, changes in status or environment, or imposition of pain) and psychiatric symptoms; changes in those relationships during a two-year period indicated that the greater the number of life events,

or the greater the increase over the two years, the greater the number of, or increase, in psychiatric symptoms, except for individuals who were socially isolated (i.e., stagnant individuals who were not integrated within the social system, and thus less apt to experience life changes). These segregated individuals displayed significant symptomatology, but reported few life changes; this result can be explained by the proposition that isolation in itself may contribute to psychological impairment.

Miller et al. (1976) found that the number of threatening life events was significantly related to severity of anxiety, depression, fatigue, and irritability. That is, the greater the number of threatening life events, the more severe the symptoms.

The literature that relates life stress to psychological distress is abundant and points to the established status of that positive relationship. As noted previously, studies which directly relate life satisfaction to psychological health are less frequent, but a logical assumption is that if an individual is not satisfied with her or his life, that person will experience one or more psychological strain outcomes such as depression, anxiety, fatigue, lower self-esteem, or resentment (Kahn, 1981). Significant positive relationships between life satisfaction and mental health have indeed been found (e.g., Bradburn, 1969; Warr, 1978).

The relationship between life stress and life satisfaction can be hypothesized to parallel the relationship between job stress and job satisfaction. That is, if job stress affects job satisfaction (and support has been found for that proposition), then it is logical to assume that life stress will affect life satisfaction. Although causal

research testing that assumption cannot be found in the literature, life stressors have been shown to be significantly and positively related to life dissatisfaction (Ivancevich & Matteson, 1980; Ivancevich et al., 1982; Kasl, 1973).

In sum, it has been demonstrated that significant positive relationships exist between life stress and life dissatisfaction, and between both of those variables and psychological distress. The literature in the nonwork domain parallels that in the work domain in that correlational analyses have primarily been performed on data. However, Golden and Dohrenwend (1981) have proposed a path-analytic model for testing various causal hypotheses about life stress in relation to health outcomes; they did not empirically test their model, nor have any other researchers to date.

Coates et al. (1976) employed a cross-lagged longitudinal panel design in order to determine the directional relationship between stressful life events and mental health and found that undesirable events had a greater effect on self-esteem than the opposite; thus, minimal support is provided for the contention that undesirable life events will lead to psychological health outcomes and not vice versa. In concordance with the work domain, it seems reasonable to theorize that life stress will influence psychological health, both directly and indirectly through life satisfaction (Martin & Schermerhorn, 1983).

Work and Nonwork Domains Combined

Studies exploring relationships among work and nonwork stress and satisfaction and effects on psychological well-being are currently emerging as an active research interest. Jamal and Mitchell (1980) reviewed the literature on work and nonwork factors contributing to

mental health and conclude that variables in the work domain generally contribute more to positive mental health than factors in the nonwork sphere.

London, Crandall, and Seals (1977) demonstrated that job satisfaction and satisfaction with leisure activities contribute independently to individuals' assessment of their quality of life. Moreover, they stated that people seem to segment their experiences so that feelings derived from work and leisure are basically unrelated (segmentation theory). Overall, they found that leisure items were better predictors of quality of life than job satisfaction. Another study (Sarason & Johnson, 1979) investigated the relationship between changes (experienced both within the personal lives of individuals and within the work environment) and job satisfaction. Their results suggested that, perhaps paradoxically, positive and negative changes experienced within one's personal life were significantly related to lower levels of job satisfaction, while positive changes experienced within the work domain were significantly and positively related to job satisfaction.

Pardine et al. (1981) examined the role that nonwork stressors play in the job stress, worker strain relationship and found that only the combined pressures of work and nonwork stress created strain in the worker. In another study (Burke & Weir, 1981), independent variables were measures of job stress such as role conflict, ambiguity, and overload, responsibility for people, and complexity. Dependent variables included negative-feeling states, marital and life satisfaction, satisfaction with home and family life, social support and participation, life style, physical health, and psychosomatic symptoms. Regression

analyses indicated that occupational stressors significantly predicted negative nonwork experiences.

Job satisfaction has been found to have a significant positive relationship with life satisfaction (Andrews & Withey, 1976; Campbell et al., 1976; Near, Rice, & Hunt, 1980). Using a cross-lagged panel design, Orpen (1978) found results which strongly suggest that the direction of causality from work to nonwork satisfaction is stronger than in the opposite direction. However, Schmitt and Mellon (1980) reported that life satisfaction contributes more to job satisfaction than the reverse. Cummings (1982) contends that "such contradictory findings call for much richer theory and more complex contingency frameworks" (p. 566).

Janet Near and her colleagues have begun to contribute to an understanding of how work and nonwork factors contribute to life satisfaction (e.g., Near et al., 1980; Near et al., 1983, 1984; Rice et al., 1979). These researchers examined the relation between the social systems of the nonwork and work environments and conclude that the two systems are much more closely linked and interdependent than is normally thought. They state that friendship roles, status, and privilege systems, and general behavioral styles are frequently generalizable across both work and nonwork domains. One study (Rice et al., 1979) found evidence for the proposition that work-related variables influence general life satisfaction, and extraorganizational factors influence job satisfaction. Near et al. (1980) state that ". . . future research is needed to assess the relative strength of direct and indirect paths between work structures and extra-work reactions" (p. 421).

In sum, after a thorough review of the literature, it appears that work stress is significantly and positively related to psychological distress, and to job dissatisfaction, which is also significantly and positively related to psychological distress. Life stress is significantly and positively related to psychological distress, and to life dissatisfaction, which is also significantly and positively related to psychological distress. Furthermore, significant positive correlations have been discovered between life stress and job dissatisfaction, between job stress and life dissatisfaction, and between job satisfaction and life satisfaction.

Causal-correlational studies have found support for the contention that job stress leads to job dissatisfaction, and not vice versa; life stress has been found to lead to psychological distress. Results are mixed as to whether work satisfaction influences life satisfaction, or the opposite; nor has it been unequivocally demonstrated whether work factors or nonwork factors are more important in influencing psychological health. Table 1 presents a summary of the results of the previous literature review.

Sex as an Individual Difference Factor

Consensus exists regarding the importance of studying individual difference factors in perceived stress and satisfaction, and effects on psychological health, and other consequences (Beehr & Newman, 1978; Cooper & Marshall, 1976; Ivancevich & Matteson, 1980; Schuler, 1980). One individual difference variable that has been virtually ignored in the past is sex. Many of the samples in studies previously reviewed primarily consist of all males, or combinations of males and females. At the present time, an increasing number of studies are being

Table 1
Summary of Literature Review

Correlational Studies

- + Work Stress & Psychological Distress
- Work Satisfaction & Psychological Distress
- Work Stress & Work Satisfaction
- + Nonwork Stress & Psychological Distress
- Nonwork Satisfaction & Psychological Distress
- Nonwork Stress & Nonwork Satisfaction
- Nonwork Stress & Work Satisfaction
- Work Stress & Nonwork Satisfaction
- + Work Satisfaction & Nonwork Satisfaction

Causal-Correlational Studies

- Work Stress → Work Satisfaction
- + Nonwork Stress → Psychological Distress
- + Work Satisfaction → Nonwork Satisfaction
- + Nonwork Satisfaction → Work Satisfaction

Note. + and - indicate significant positive and negative correlations (correlational studies), or significant positive and negative path coefficients or cross-lagged correlations (causal-correlational studies).

performed which use all-female samples (e.g., Abush & Burkhead, 1984; Baruch, Barnett, & Rivers, 1983; Cooper & Davidson, 1982; Krausz & Friebach, 1983; Martin, 1981; McIlwee, 1982; Stewart & Salt, 1981; Waldron, 1978; Warr & Parry, 1982), and research has begun to consider the importance of sex differences (e.g., Forgionne & Peeters, 1982; Murray & Atkinson, 1981; Staats & Staats, 1982; Varca, Shaffer, & McCauley, 1983; Voydanoff, 1980) in the study of work and nonwork stress, satisfaction, and psychological well-being.

It has been found (Baruch et al., 1983; Rodgers, 1985; Warr & Parry, 1982) that psychological well-being is enhanced when women work outside of the home, and when they balance multiple work and nonwork roles. However, this author feels that the results of these studies may be overly optimistic. The nature of paid employment and the constitution of nonwork life are important factors in the study of overall well-being. For example, one study (Haynes, as reported by Rodgers, 1985) showed that women with children who work at low-status, low-paid clerical jobs were almost twice as likely to develop coronary heart disease than managerial or blue-collar female workers.

Psychological health is enhanced by jobs that are conducive to commitment, responsibility, and control--jobs that are challenging, interesting, and rewarding (Rodgers, 1985). However, because of sex-segregation and discrimination, and being trapped in jobs that offer few promotional opportunities, women are traditionally excluded from work that is challenging, highly paid, and interesting (e.g., managerial jobs where only 27% of all managers are women).

According to Labor Force Statistics (1982), approximately 60% of all employed females fall into the following occupational categories:

nurse, clerical worker, preschool, kindergarten, and elementary school teacher, and service employee. Eighty percent of all clerical workers are female, and approximately 53% of all white-collar females are clerical workers. Moreover, 86% of all preschool, kindergarten, and elementary school teachers, and 97% of all nurses are females. Approximately 62% of all white-collar female workers are clerical employees, preschool, kindergarten, and elementary school teachers, and registered nurses.

If low-prestige, low-promotional opportunity, non-challenging jobs are indeed a source of occupational stress and dissatisfaction, then it is speculated that the latter variables (along with nonwork stress and dissatisfaction) would lead to psychological distress in females occupying sex-segregated positions. Thus, the major purpose of this research is to determine causal inferences among perceived work and nonwork stress and satisfaction, and psychological distress for a sample of white-collar females in sex-segregated occupations, a group that has been virtually ignored in past research, and a group that represents the large majority of women in the work force.

Another consideration is that as women enter the work force in increasing numbers, the nature and causes of stress and effects on satisfaction and well-being may be different than for men due to cultural and sex-role socialization considerations, and to the prevalence of sex-segregation of occupations. The present research will consider the measurement of pertinent factors involved in work and nonwork stress which are particularly relevant to females in the work force: occupational stressors such as sexual harassment, lack of provisions for child day-care, and non-flexible work time, and nonwork stressors

such as role overload, role conflict, role ambiguity, and responsibility for people and things. These stressors may also increasingly affect males' satisfaction and well-being if sex roles become more congruent, and if the movement towards an "androgynous" society accelerates. For example, if cultural sex roles progress toward more equalization, men may increasingly share in, or be solely responsible for the care of children and/or the household. Thus, the aforementioned factors may increasingly affect males in future times, although the stressors are presently more significant to females.

CHAPTER II

PATH-ANALYTIC MODELS

Martin and Schermerhorn (1983) have proposed the path-analytic model depicted in Figure 2 in an attempt to answer the question---"How do variables in the work and nonwork domains of an individual's life experience interrelate with one another to influence the individual's physical and mental health" (p. 650)?

This model incorporates three sets of exogenous variables (individual difference factors, work factors, and nonwork factors), two endogenous variables (job and life satisfaction), and a dependent health variable divided into physical and mental health dimensions. The model proposes that the three sets of exogenous variables produce indirect effects on both dimensions of the dependent health variable through both endogenous variables; the three exogenous variables also produce direct effects on both endogenous variables. Finally, both endogenous factors produce direct effects on the dependent health factor and both are presumed to reciprocally cause each other.

This model is generally consistent with past research and theory except for the prediction that individual difference factors will directly influence job and life satisfaction and health. Most other studies have considered individual difference factors as moderator variables (e.g., Batlis, 1978, 1980; Beehr, 1974, 1976; Beehr et al., 1976; Johnson & Stinson, 1975; Morris & Snyder, 1979; Orpen, 1982; Schuler, 1977). A moderator variable acts to suppress or increase the magnitude of a relationship between other variables. For example, Orpen (1982) found the relationship between occupational role conflict and psychological strain to be significantly positive and higher among Type A

Figure 2. Individual difference, work, and nonwork factors affecting satisfaction and health. (From "Work and nonwork influences on health: A research agenda using inability to leave as a critical variable" by T. N. Martin and J. R. Schermerhorn, Jr., 1983, *Academy of Management Review*, 8, p. 652.)

personalities than among Type B personalities. Thus, personality type was shown to moderate the relationship between role conflict and psychological distress. In contrast, Martin & Schermerhorn (1983) would assert that personality type is a direct cause of psychological distress, as is role conflict.

Although Martin and Schermerhorn's (1983) model is one of the most comprehensive and integrated models to date, it has not yet been tested. The present research attempts to investigate how work and nonwork stress and satisfaction interrelate with one another to influence a person's psychological health and tests the path-analytic model depicted in Figure 3 derived from that proposed by Martin and Schermerhorn (1983).

In this new model proposed by the present author, work and nonwork stress are exogenous variables; work and nonwork satisfaction and psychological distress are endogenous variables. The reciprocal arrow between work stress and nonwork stress depicts a non-causal relationship (i.e., it is assumed that no causal relationship exists between job stress and life stress). The previous assertion is consistent with past research (e.g., Pardine et al., 1981; Seeman, 1967). The relationship between exogenous variables in path-analytic systems remains unanalyzed. Furthermore, this schema is recursive in that the causal flow is unidirectional (i.e., at a given point in time, a variable cannot be both a cause and an effect of another variable). Thus, neither feedback loops nor reciprocal causations are projected.

All hypothesized paths in Figure 3 are consistent with past research and/or theory, as previously reviewed. However, since some researchers profess that work satisfaction leads to nonwork satisfaction

Model 1

Figure 3. Causal inferences among perceived work and nonwork stress and satisfaction and psychological distress: A path-analytic model.
(Adapted from Martin & Schermerhorn, 1983.)

(e.g., Orpen, 1978), and others state the opposite (e.g., Schmitt & Mellon, 1980), the model depicted in Figure 4 will be tested. In Model 2 (Figure 4), nonwork satisfaction is hypothesized to lead to work satisfaction; in Model 1 (Figure 3), the opposite is hypothesized. It will ultimately be determined whether work satisfaction leads to nonwork satisfaction or vice versa.

The models in Figures 3 and 4 are consistent with a "spillover" or generalization interpretation rather than a "segmentation" theory (Kornhauser, 1965; Quinn, Staines, & McCulloch, 1974). Essentially, the spillover theory states that attitudes, feelings, or behavior from one domain generalize ripplelike to others. That is, an employee's favorable or unfavorable feelings in one domain (work or nonwork) will carry over to produce corresponding feelings in the other. The segmentation theory states that work and nonwork domains are independent; that is, people tend to segment their experiences so that feelings derived from one domain are unrelated to the other. The models depicted in Figures 3 and 4 will be tested in order to determine whether work factors are more important in influencing nonwork factors, or vice versa. It will also be determined whether work or nonwork factors contribute more to perceived psychological distress.

Within a path-analytic framework, hypotheses are all of the proposed direct and indirect paths within both models (depicted in Figures 3 and 4). These hypothesized paths are presented in such a way as to maximize parsimony, rule out competing theories, and to empirically test causal inferences between and among variables.

Certain paths within the models have been found to be significant by various researchers, and other paths are essentially exploratory.

Model 2

Figure 4. Causal inferences among perceived nonwork and work stress and satisfaction and psychological distress: An alternative path-analytic model.
(Adapted from Martin & Schermerhorn, 1983.)

With respect to the models depicted in Figures 3 and 4, the path work stress leads to work satisfaction (negative path coefficient) has been established by research (Bedeian & Armenakis, 1981; Oliver & Brief, 1977-78; Szilagyi, 1977; Teas, 1983); moreover, the path nonwork stress leads to psychological distress (positive path coefficient) has also been found to be significant (Coates et al., 1976).

Equivocal findings (Orpen, 1978; Schmitt & Mellon, 1980) have resulted with respect to the paths work satisfaction leads to nonwork satisfaction (positive path coefficient), and nonwork satisfaction leads to work satisfaction (positive path coefficient). Thus, as mentioned previously, both alternatives will be tested in order to determine which path the data best fit.

Exploratory hypothetical paths in both models are the following, and it must be noted that these paths are consistent with previous correlational research; they are exploratory hypotheses due to the fact that no studies have been found which test causal inferences between and among the variables depicted in Figures 3 and 4. The direct exploratory hypotheses, or paths common to both models are:

1. Work stress will lead to psychological distress (positive path).
2. Work stress will lead to nonwork satisfaction (negative path).
3. Nonwork stress will lead to work satisfaction (negative path).
4. Nonwork stress will lead to nonwork satisfaction (negative path).
5. Work satisfaction will lead to psychological distress (negative path).
6. Nonwork satisfaction will lead to psychological distress

(negative path).

Indirect exploratory hypotheses common to both models (unless otherwise noted) are:

7. Work stress will lead to psychological distress indirectly through work dissatisfaction (positive path).
8. Work stress will lead to psychological distress indirectly through nonwork dissatisfaction (positive path).
9. Work stress will lead to nonwork dissatisfaction via work dissatisfaction (positive path, Model 1).
10. Work stress will influence work dissatisfaction via nonwork dissatisfaction (positive path, Model 2).
11. Nonwork stress will influence psychological distress via nonwork dissatisfaction (positive path).
12. Nonwork stress will lead to psychological distress via work dissatisfaction (positive path).
13. Nonwork stress will lead to work dissatisfaction through nonwork dissatisfaction (positive path, Model 2).
14. Nonwork stress will influence nonwork dissatisfaction through work dissatisfaction (positive path, Model 1).
15. Work dissatisfaction will indirectly affect psychological distress through nonwork dissatisfaction (positive path, Model 1).
16. Nonwork dissatisfaction will lead to psychological distress via work dissatisfaction (positive path, Model 2).

The main objective of this research is to determine which model best fits the data (which model proposed a priori, or an a posteriori reduced model after nonsignificant paths, if any, are deleted).

CHAPTER III

METHOD

Participants

A total of 155 women who work 32 hours or more per week in sex-segregated occupations in various organizations throughout Rhode Island constituted the sample (105 clerical workers, 30 preschool, kindergarten, and elementary school teachers, and 20 registered nurses). A tabular summary of demographic characteristics of the sample is presented in Appendix B, Tables 18 and 19.

Clerical Workers. The majority of the clerical workers in this study were secretaries, receptionists, and clerk typists employed in law firms, banks, hospitals, and educational institutions. The mean age for these participants was 36.31, with ages ranging from 19 to 62. Mean number of months employed was 86.37, or 7.19 years, with length of service ranging from 2 months, or .17 years to 324 months, or 27 years. Average income was \$14,500, with salary ranging from \$6,700 to \$25,000. Mean number of hours devoted to work each week was 36.45, with hours ranging from 32 to 42 per week. Moreover, 53.33% of these clerical workers had 0 dependents; 25.71% had 1 dependent; 14.29% had 2 dependents; 4.76% had 3 dependents; and 1.90% had 5 dependents. With respect to marital status, 61.90% of the clerical workers were married; 26.66% were single; 6.66% were divorced; 2.86% were separated; and 1.90% were widows. The majority (77.14%) completed high school, or had some college education.

Preschool, Kindergarten, and Elementary School Teachers. The school teachers who participated in this study were employed in private or public schools in Rhode Island. The mean age of the

sample of teachers was 36.17, with ages ranging from 23 to 50 years. Average number of months employed was 98.89, or 8.24 years; the range of length of service was 3 months, or .25 years to 312 months, or 26 years. Average income was \$21,000, with salaries ranging from \$8,000 to \$30,000 per year. Average number of hours devoted to work each week was 40.88, with hours ranging from 32 to 60 per week. With respect to number of dependents, 43.33% of the teachers had 0 dependents; 20.00% had 1 dependent; 20.00% had 2 dependents; 13.33% had 3 dependents; and 3.33% had 5 dependents. Married individuals constituted 66.66% of the sample of teachers; 23.33% were single; 6.66% were divorced, 3.33% were separated; and 0.00% were widows. The majority of teachers (76.66%) completed college with an advanced degree.

Nurses. The registered nurses were employees of various hospitals in the state of Rhode Island. The mean age of these participants was 36.35, with age ranging from 27 to 49. Average number of months employed by their present organization was 60.95, or 5.08 years; length of service ranged from 12 months, or 1 year to 240 months, or 20 years. The nurses' mean income was \$25,890, with salary ranging from \$18,000 to \$38,000 per year. Average number of hours devoted to work each week was 39.88, with hours per week ranging from 32 to 55. Furthermore, 60.00% of the sample of nurses had 0 dependents, 5.00% had 1 dependent; 15.00% had 2 dependents; 15.00% had 3 dependents; and 5.00% had 4 dependents. With respect to marital status, 50.00% of the nurses were married; 35.00% were single; 15.00% were divorced; and no individuals were separated or

widowed. The majority of the sample (80.00%) had some college or completed college.

Measures

Demographic Characteristics. Ten items were devised by the present researcher in order to obtain information about demographic characteristics of the sample. These items deal with sex, age, marital status, number of dependents, education, occupation, income, the number of hours devoted to work each week, the type of organization in which they are employed, and the number of years or months they have been working in that organization (see Appendix A, Part I). The previous description of the participants was derived from this information.

Work Stress Measurement Instrument. Ivancevich and Matteson (1979) developed the Stress Diagnostic Survey (SDS), a 60-item self-report instrument which purports to assess perceived job stress. This device requires the respondent to rate on a scale of 1 (never) to 7 (always), how frequently various workplace conditions are a source of stress to that individual (e.g., "Promotions are not based on performance."). The SDS assesses the frequency of stress (as defined by the individual experiencing feelings of pressure, strain, or emotional upset at work) associated with two general types of organizational conditions. One group of conditions is classified as "macro" in nature, and concerns stress connected with organizational politics, human resource development, rewards, participation, underutilization of skills, supervisory style, and structure. The other group of conditions is "micro" in nature and pertains to stress associated with role ambiguity, role conflict, qualitative and quantitative role overload, career progress, responsibility for people, time pressure, and job

scope. In essence, "macro" stressors reflect global aspects of the organization, while "micro" stressors are more job specific.

Additional items assessing the perceived frequency of felt stress associated with work stressors which are not included in the SDS were added by the present writer (see Appendix A, Part II, items 15, 27, 36, 53, 61, 70, 77, and 78). These stressors are particularly relevant to women in the work force (Kanter, 1977). The stressors are sexual harassment, non-flexible work time, and lack of provisions for child day-care. Thus, two new "macro" facets (since these conditions reflect global aspects of the organizational culture or climate, rather than situations associated with a particular job) were added to the existing components of the SDS. These new facets are "Sexual Harassment," and "Lack of Concern for Individual Needs." A total of 8 items (4 items each) were written for the two new facets since 4 items comprise each "macro" and "micro" component of the SDS. An example of an item is: "Provisions for child day-care are not made by this organization." It must be noted that the additional 8 items are tied to the same scale which is used for the 60 SDS items.

In sum, the final version of the perceived occupational stress measure contains 68 items, with a total of 9 "macro" and 8 "micro" elements (see Appendix A, Part II). The 9 "macro" item clusters are Politics, Human Resource Development, Rewards, Participation, Underutilization, Supervisory Style, Structure, Sexual Harassment, and Lack of Concern for Individual Needs (36 items comprise these facets--4 items for each cluster). Moreover, the 8 "micro" factors are Role Ambiguity, Role Conflict, Quantitative Role Overload, Qualitative Role

Overload, Career Progress, Responsibility for People, Time Pressure, and Job Scope (32 items comprise these elements--4 items per cluster).

An overall score of perceived occupational stress was obtained by summing scale numbers for all 68 items. As noted previously, the scale to which all items are tied ranges from 1 to 7. If the condition reflected in the item is never a source of stress for an individual, that item is given a score of 1; 2 if it is rarely a source of stress; 3 if it is occasionally a source of stress; 4 if it is sometimes a source of stress; 5 if it is often a source of stress; 6 if it is usually a source of stress; and 7 if it is always a source of stress. Thus, the possible range of scores is 68 to 476, higher scores indicating more perceived occupational stress than lower scores.

Ivancevich & Matteson (1979) possess norms for different occupational groups (business and medical personnel). They claim that the SDS should not be viewed or used as a highly valid scale, but they contend that it has acceptable construct and face validity, and can be used as a diagnostic instrument. They performed separate factor analyses on the two different occupational groups and found similar dimensions (i.e., the various "macro" and "micro" facets listed previously) across groups. They assert that the congruence of dimensions provides some evidence for the robustness of the SDS across diverse occupational groups.

The authors also declare that internal consistency reliabilities for each of the dimensions on the SDS are quite acceptable for diagnostic purposes. They report "macro" dimension coefficient alphas ranging from .58 to .87, with most dimensions possessing values greater than or equal to .77. "Micro" dimension coefficient alphas range from .64

to .95; the majority of these coefficients are greater than or equal to .79.

The authors developed the SDS in response to the need for an instrument to assess perceived occupational stress in organizational settings. They claim that its psychometric properties have not been sufficiently proven to warrant using the device as a prescriptive tool (i.e., it should not be used in the treatment of occupational stress), but it may be used to diagnose work stress. They advise individuals to use the SDS only to acquire a general view of employee perceptions of stressors that may influence behavior, performance, physical and mental well-being, and attitudes. Ivancevich and Matteson (1979) conclude that the SDS is easy to administer, and has acceptable construct validity and internal reliability for diagnostic and research purposes.

Nonwork Stress Measurement Instrument. A modified version of the Life Experiences Survey (LES), originally developed by Sarason et al. (1978), was used as a measure of perceived life stress. The LES assesses the extent to which individuals view life changes within the past year (e.g., divorce, death of a spouse, financial losses, etc.) as having either positive (slightly positive to extremely positive), negative (slightly negative to extremely negative), or no impact on their lives. The LES scale was modified for the present research so that respondents are not asked to rate the positive, negative, or neutral impact of an event, but are required to rate the amount or level of perceived stress connected with the event, if it occurred within the past year. Rationale for this alteration stems from the assertion that negative-impact and positive-impact events cause stress

in individuals, and not just negative-impact experiences. Moreover, it is unlikely that the incidents listed in the LES would have absolutely "no impact" on an individual. In other words, if people perceive events as having positive, negative, or no impacts on their lives, an indication of the amount of perceived stress associated with that event is not obtained. Thus, the modification will increase the face validity, and may increase the construct validity of the instrument as a measure of perceived life stress. Essentially, respondents are asked to rate on a 7-point scale from 1 (low) to 7 (extreme) the level of stress (defined as feelings of pressure, strain, or emotional upset) they experienced as a result of various life changes (a total of 43 events and 3 blank spaces for listing and rating their own events). For example, a respondent is asked to indicate whether or not she or he got married within the past year, and the level of stress associated with that experience.

Life stressors which are not associated with life changes, per se, were added in the measure of perceived nonwork stress by the present researcher. These stressors deal with aspects of life away from work such as role overload, or having too much to do when one gets home from work, and responsibility for things (e.g., housework) and people (e.g., children). Furthermore, when an individual's nonwork responsibilities conflict with leisure time and fun activities, role conflict can be said to exist. When a person is not sure about what to do, or what is expected of him or her when home from work, role ambiguity, another source of stress is the result. This researcher contends that role overload, conflict, ambiguity, and pressures for responsibility for people and things exist not only in the work domain, but are also

manifested in the nonwork domain; that is, life parallels work with respect to the aforementioned stressors.

A total of 10 items (2 items each for Role Overload, Role Conflict, Role Ambiguity, Responsibility for People, and Responsibility for Things) were devised and are tied to the same scale used to assess perceived work stress. That is, respondents are asked to indicate how frequently the condition reflected in each of the 10 items is a source of stress. An example of an item is: "I have too much to do when I am home from work." In sum, a total of 56 items comprise the measure assessing perceived life stress (46 LES items and 10 contrived items--see Appendix A, Part III).

Scale sums for the modified LES and scale totals for the devised 10 items will be added to produce a total score of perceived life stress. The modified scale which is tied to LES items consists of 7 intervals--if the event caused the individual a low amount of stress, a score of 1 is given for that item; a moderate amount of stress is given a score of 4; and an extreme amount of stress is given a score of 7. The remaining intervals (2, 3, 5, and 6) do not have specific labels due to a lack of appropriate adjectives, but are included in scoring. Numbers 2 and 3 indicate levels of perceived stress falling in between "low" and "moderate," with 3 connoting more perceived stress than 2. Similarly, the numbers 5 and 6 signify levels of perceived stress in between "moderate" and "extreme," with 6 indicative of more perceived stress than 5. As noted previously, the additional life stress items are tied to the same scale used to assess work stress. Thus, scores on the measure of perceived nonwork stress may range from 56 to 392, higher scores indicating more perceived life stress than lower scores.

Norms are provided for male and female college students who were administered the LES (Sarason et al., 1978). No significant sex differences were found. That is, scores for males and females on the impact of positive and negative events were generally equal.

Several validity studies were performed by the authors (Sarason et al., 1978). The results of these studies show that adequate validity exists for the LES. For example, negative change scores on the LES correlated positively and significantly with state (.46) and trait (.29) anxiety, as measured by the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), whereas positive change scores were not significantly related to that Inventory (.03 for trait, and .04 for state anxiety). The two former correlations provide evidence for convergent validity, and the non-significant latter correlations are evidence for discriminant validity.

Three test-retest reliability studies were performed on the LES (Sarason et al., 1978). Coefficients of .56, .72, and .88 were found for negative life change scores, values of .19, .53, and .61 were reported for positive change scores, and coefficients for total life change scores were .63, .64, and .82 over a six to eight week time interval between test and retest. The authors contend that variation in reliability values are due to the fact that individuals experienced a variety of new life events over time; thus, scores changed.

It must be noted that the psychometric properties of the LES do not exactly apply to the modified version; but a case can be made for the assertion that "low" to "extreme" perceived stress values on the modified scale may be somewhat congruent to scale values for the "total" impact of life events on the original LES. Therefore, it is

speculated that the validity coefficients obtained for the original LES, especially for total change scores, may apply somewhat to the modified version. It appears though, as noted previously, that the face validity of the LES as a measure of perceived life stress is increased with the use of the modified scale; it is also hypothesized that construct validity may increase with the modification. A direction for future research is to perform validity studies on the modified version of the LES.

Work Satisfaction Measurement Instrument. The Job Descriptive Index (JDI), a self-report rating scale developed by Smith et al. (1975) is used to assess perceived job satisfaction. The JDI measures satisfaction with work, pay, promotion opportunities, supervision, and co-workers. For each area of satisfaction on the job, there is a list of adjectives or short phrases; the respondent is instructed to indicate whether or not each word or phrase applies with respect to the particular facet of the job in question (e.g., "promotion"). If the word or phrase (e.g., "dead-end job") applies to the individual's promotion opportunities, that individual is asked to write "Y" (for Yes) beside that word or phrase. If it does not apply, the person is asked to write "N" (for No). The individual is required to enter a question mark (?) if he or she cannot decide whether or not the word or phrase applies to that particular facet (see Appendix A, Part IV).

All favorable answers on the JDI are scored 3, all unfavorable answers are scored 0, and all omissions or "?" responses are scored 1. For example, on the "present pay" facet, if one responds "Y" to the phrase, "income adequate for normal expenses," then 3 points are given for that item (favorable response); if one responds "N" to that

phrase, then 0 points are given (unfavorable response). Similarly, if one responds "Y" to the phrase, "barely live on income," then one gets 0 points for that item (unfavorable response); if the response to that phrase is "N", 3 points are given (favorable response).

A total of 72 items comprise the JDI. The "pay" and "promotion" scores on the measure are doubled in order to make them numerically equivalent to the scores on the other scales, since there are only 9 items in the "pay" and "promotion" facets, as compared to 18 items included in all other scales ("work," "supervision," and "co-workers"). Smith et al. (1975) contend that the grand total of the five subscale totals of the JDI gives a measure which is as psychometrically sound as other available summary measures, and avow that a simple sum is as good as any more complicated weighting. Thus, the grand total of all 5 scales (Work, Pay, Promotion, Supervision, Co-Workers) will be used as an overall measure of perceived job satisfaction; scores on the JDI may range from 0 to 270, higher scores indicating more perceived job satisfaction than lower scores.

The JDI has been cited as the most carefully developed scale to assess job satisfaction (Locke, 1976), and has been used in hundreds of studies. Schneider and Dachler (1978) state: "The methodological rigor employed during its construction and validation, its normative data, . . . and the fact that it assesses satisfaction with five of the most basic . . . aspects of a person's work role most likely account for the JDI's attractiveness to researchers" (p. 650).

The JDI has extensive normative data available; thirty-five tables are provided in the manual (Smith et al., 1975), which include summaries of the scores of thousands of people who have completed the

JDI. Norms are provided for employees according to their age, sex, education, income, job tenure, and type of community. For example, separate norms are presented for male and female workers. It was found that women are less satisfied overall than men because they receive less with which to be satisfied, as for example, satisfaction with pay. However, with a comparable level of income, women are more satisfied than men.

Several validity studies were performed for the JDI, and results are provided in the manual (Smith et al., 1975). The authors conclude that: "The JDI scales . . . show consistent discriminant and convergent validity" (p. 67). For example, they found the correlation between Interview ratings and JDI pooled items to be .68, and the correlation between a "Faces" (Kunin, 1955) measure of overall job satisfaction and JDI pooled items to be .64 (both correlations evidence for convergent validity). The "Faces" measure of job satisfaction requires respondents to choose the face which illustrates how they feel about their present job. There are six different "cartoon-like" faces from which to choose; the expressions on these faces vary in intensity from happy and smiling to sad and frowning. Discriminant validity is provided for the fact that low correlations exist between certain subscales of the JDI and other rating measures of job satisfaction. For example, the correlation between the "co-workers" facet of the JDI and the "Faces" rating scale was .19, lending credence to the fact that job satisfaction is, and should be viewed as a multifaceted construct.

Little information exists on the reliability of the JDI. Smith et al. (1975) found test-retest correlations from .45 to .75 on a sample of 45 employees over a period of three years. Schneider and Dachler

(1978) found test-retest reliability to be .57 over a 16-month period for a sample of 847 utility employees. Since job satisfaction is a dynamic construct, test-retest reliability coefficients are not expected to be high. Split-half estimates of internal consistency corrected by the Spearman-Brown formula were found to be .84, .80, .86, .87, and .88 for work, pay, promotion, supervision, and co-worker scales, respectively (Smith et al., 1975).

Nonwork Satisfaction Measurement Instrument. Perceived life satisfaction is assessed by Andrew and Withey's (1976) Delighted-Terrible Scales of Affective Evaluations of Specific Concerns (D-T Scales). The original measure consists of 123 items which were factor analyzed to yield several clusters or factors comprising life satisfaction. Thus, life satisfaction, like job satisfaction, is a multifaceted construct. In the present research, items were excluded which Andrews and Withey (1976) contend are redundant or non-relevant to general well-being, or life satisfaction (e.g., items assessing feelings about the weather, or traditions). Moreover, items assessing satisfactions with employment were deleted (the job cluster) in order to eliminate confounding and contamination, since perceived job and life satisfaction are two separate variables in this research. A total of 48 items were deleted, leaving a total of 75 items comprising the measure of perceived life satisfaction. Examples of remaining facets assessed by the retained items are satisfaction with Marriage, Children, Family Relations, Friends, Personal Accomplishments, Leisure Time, Health, Money, Community, Housing, Standard of Living, Self, Local Government, National Government, Media, Safety, and Independence.

Respondents are asked to rate on a scale of 1 (terrible) to 7 (delighted), how they feel about the aforementioned facets of their lives by rating items such as "the way you spend your spare time, your nonworking activities" (see Appendix A, Part V).

The D-T Scales range from 1 to 7, as noted previously. Terrible is scored 1; unhappy is scored 2; mostly satisfied is scored 3; mixed (about equally satisfied and dissatisfied) is scored 4; mostly satisfied is scored 5; pleased is scored 6; and delighted is scored 7. Scores on all items are summed to produce an overall measure of perceived life satisfaction; thus, scores may range from 75 to 525, higher scores indicating more satisfaction with life than lower scores.

Norms are provided by the developers of the D-T Scales (Andrews & Withey, 1976). Norms are reported for sex, age, race, and socioeconomic status. For example, the authors found no sex differences on perceived well-being, or life satisfaction (i.e., women and men were found to have the same levels of satisfaction or general well-being; averages for both sexes indicated that, in general, males and females were "mostly satisfied" with their lives).

Several types of validity studies were performed by the authors (Andrews & Withey, 1976). For example, they report construct validity (factorial validity) coefficients of .83, .69, .87, .79, and .82 for housing, leisure time, national government, standard of living, and freedom or independence facets of the D-T scales, respectively.

With respect to reliability, test-retest coefficients on the D-T Scales for three separate samples were found to be .61, .71, and .68. Andrews and Withey (1976) assert that by using their estimates of the validity and method effects of the D-T Scales, an obtained estimate of

reliability is .70, which falls within the range of observed reliabilities. (The joint impact of validity and method effects determines reliability.) It must be noted that perceived life satisfaction, like all other variables in this research, is a relatively dynamic construct, subject to fluctuation over time; thus, test-retest reliabilities are not expected to be very high.

Psychological Distress Measurement Instrument. The Profile of Mood States (POMS), developed by McNair et al. (1971/1981) is used as a measure of perceived psychological distress (see Appendix A, Part VI). The POMS is designed to measure seven dimensions of affect, or mood states: Tension-Anxiety (T); Depression-Dejection (D); Anger-Hostility (A); Vigor-Activity (V); Fatigue-Inertia (F); Confusion-Bewilderment (C); and Friendliness (F). This measurement device is a 65-item adjective rating scale. Respondents are asked to rate on a scale of 1 (not at all) to 4 (extremely), how they have been feeling the past few months (e.g., "miserable," an adjective within the "depression-dejection" scale).

A score for each mood factor is obtained by summing responses for the adjectives defining that factor. All items defined in each factor are keyed in the same direction except for two items, "relaxed" in the "tension-anxiety" scale, and "efficient," an item in the "confusion-bewilderment" scale. These items receive negative weights. Each adjective is tied to the following scale: not at all is scored 0; a little is scored 1; moderately is scored 2; quite a bit is scored 3; and extremely is scored 4. The "friendliness" scale is considered too weak for valid scoring (McNair et al., 1971/1981). The "vigor-activity" scale is an ambiguous factor with respect to psychological distress,

and is not highly intercorrelated with other scales (McNair et al., 1971/1981). Thus, scores on the remaining five scales (which are highly intercorrelated) are summed to produce an overall summary score of perceived psychological distress in this research. A total of 50 adjectives are presented to respondents, with resulting scores possibly ranging from -8 to 192, higher scores indicating more perceived psychological distress than lower scores.

Normative data on samples of psychiatric outpatients and college students are provided in the POMS manual (McNair et al., 1971/1981). Psychiatric outpatient norms are not of interest in the present research; thus, only college student norms are considered, which are stratified by sex. The scores of college women were significantly higher than college men on the "tension-anxiety," "depression-dejection," and "confusion-bewilderment" dimensions; sex differences on "vigor-activity" and "fatigue-inertia" were not significant.

Four areas of research provide evidence for the criterion-related and construct validity of the POMS. Essentially, these four areas are brief psychotherapy studies; controlled outpatient drug trials; studies of response to emotion-inducing conditions; and studies of concurrent validity coefficients and other POMS correlates. It is beyond the scope of this research to present a detailed review of these clinical studies, but let it suffice to say that a review of this research indicates that the POMS possesses criterion-related and construct validity (e.g., Haskell, Pugatch, & McNair, 1969; McNair, Fisher, Kahn, & Droppleman, 1970; Pillard & Fisher, 1967).

That adequate convergent validity has been established for the POMS is evidenced by the fact that moderate to high correlations were

found between scores on the "anxiety," "depression," and "somatization" facets of a modified version of the Hopkins Symptom Distress Scales (Parloff, Kelman, & Frank, 1954) and various POMS dimensions. For example, a correlation of .86 was determined between the "depression-dejection" scale of the POMS and the "depression" facet of the modified Hopkins Symptom Checklist for males, and a correlation of .83 was found for females. Moreover, a correlation of .80 was determined between the "tension-anxiety" dimension of the POMS and the Taylor Manifest Anxiety Scale (Taylor, 1953).

With respect to reliability, internal consistency coefficients (KR-20) range from .84 to .95. Test-retest stability coefficients range from .66 to .74 for all facets of the POMS for a time interval of approximately 20 days. Variation in reliability coefficients is expected since mood assessments are subject to variability and instability over time.

Procedure

Assessment packages (consisting of a cover letter, an informed consent form, and the questionnaire, all presented in Appendix A) were distributed to approximately 150 clerical workers, 40 teachers, and 35 nurses. (It must be noted that the original proposal plan was to distribute assessment packages to employees in a large private-sector business organization. However, permission to distribute questionnaires was not granted; thus, an alternative sample was acquired.) This researcher visited several organizations (e.g., hospitals, educational institutions, law firms, etc.), and asked employees to complete the questionnaire. The cover letter states the nature and goals of the research, and informs respondents that their participation in the research is voluntary; it also assures participants that the questionnaire is confidential and anonymous, and that they may obtain a copy of results by calling or writing the investigator. The informed consent form assures participants that their responses are voluntary, anonymous, and confidential, and that their jobs would not be affected by their participation. Questionnaires and consent forms were then retrieved by this investigator by returning to the organizations at a later date (approximately a week later). The return rate of questionnaires was approximately 68.88%. All questionnaires were scored by this researcher.

Statistical Analyses

Scatterplots and the original correlation matrix for all five variables in this research (work stress, nonwork stress, work satisfaction, nonwork satisfaction, and psychological distress) were obtained for the sample of 105 female clerical workers by use of the Biomedical Computer Program (BMDP, 1979). Path analyses were then performed on the original correlation matrix obtained for the sample of 105 female clerical workers. The Analysis of Linear Structural Relationships by the Method of Maximum Likelihood (LISREL VI) computer program (Joreskog & Sorbom, 1984) was used in analyses of path models.

This researcher originally planned to combine the total sample of clerical workers, teachers, and nurses in order to enhance the external validity of the study by generalizing results to females in white-collar female sex-segregated occupations. However, the group means were too diverse on some of the variables, with the threat to internal validity too great (see Lindeman, Merenda, & Gold, 1980 for statistical rationale relating to combining groups in correlational analyses); consequently, occupational type was controlled for in the design by using only clerical workers in testing path-analytic models. Moreover, separate path analyses could not be performed for the three different groups since not enough subjects comprised the sample of teachers and nurses.

Decompositions of the organizational variables (work stress and work satisfaction) through use of repeated-measures analyses of variance (ANOVAs) were performed on the sample of 105 clerical workers in order to determine whether or not significant differences exist

between and among the components of work stress and work satisfaction, respectively. The Biomedical Computer Program (BMDP, 1979) was used for those analyses.

Finally, a multivariate analysis of variance (MANOVA) was performed on data for the sample of 105 clerical workers, 30 teachers, and 20 nurses, using SPSSX, 1983, in order to determine whether or not a significant overall difference exists among those three groups on a linear combination of all five variables in this study.

RESULTS

Path Analyses

Certain assumptions must be met before meaningful path analyses can be performed (see Billings & Wroten, 1978; Feldman, 1975; and Kerlinger & Pedhazur, 1973). One assumption is that relationships among all variables in the system be linear and additive, and one-way (recursive) causation is presumed (i.e., no reciprocal causation or feedback loops can be postulated when data are cross-sectional). The first assumption has been met in this research. The recursive ordering among variables, and the linear and additive nature of relationships among the variables in this system are supported by well-defined theory and previous research (e.g., Ivancevich & Matteson, 1980; Martin & Schermerhorn, 1983). The linearity of relationships among all variables is also supported by observation of scatterplots; graphical representations of all possible intercorrelations indicate linear trends, rather than curvilinear or bimodal trends.

Another assumption states that when exogenous variables are correlated among themselves, they are treated as "givens," as fixed-effects exogenous variables, and remain unanalyzed in the system. The correlation between work stress and nonwork stress is .437 (see Table 2); those two exogenous variables in the models depicted in Figures 3 and 4 remain unanalyzed.

Next, all variables must be measured on interval scales. All variables in this system were measured on interval scales, except for job satisfaction. However, use of ordinal measures rather than interval scale measurement does not appear to weaken path-analytic assumptions (Bohrnstedt & Carter, 1971).

Table 2

Descriptive Statistics and Correlations for Study Variables

(n = 105)

Variable	<u>r</u>						
	<u>M</u>	<u>SD</u>	Work Stress	Nonwork Stress	Work Satisfaction	Nonwork Satisfaction	Psychological Distress
1. Work Stress	175.34	63.31	---	.437	-.576	-.333	.393
2. Nonwork Stress	55.29	30.30		---	-.345	-.604	.708
3. Work Satisfaction	144.99	39.32			---	.415	-.312
4. Nonwork Satisfaction	359.64	44.46				---	-.619
5. Psychological Distress	38.11	28.48					---

Note. All correlations in this table are significant at $p < .01$; critical value, $r = .254$.

Multicollinearity (high intercorrelations among variables) must not exist in path-analytic systems. The intercorrelation matrix presented in Table 2 indicates a low degree of multicollinearity. Multicollinearity exists when one or more correlations between the variables in a system is greater than .80 (Billings & Wroten, 1978).

A final assumption of path analysis is that measurements of variables must possess high degrees of reliability and validity. Reliabilities of measurements in this research range from .45 to .95, indicating moderate to high reliability of measures. Validity coefficients for measurements in this research are also moderate to high, ranging from .46 to .86. Since reliabilities and validities are not consistently high for the measurements in this research, results should be interpreted with caution. In general, however, the assumptions of path analysis have been met in this research.

Descriptive statistics and the original correlation matrix for the sample of 105 clerical workers are presented in Table 2. All correlations are significant ($p < .01$).

The original correlation matrix was analyzed in the path analyses on the two models depicted in Figures 3 and 4; results of the two initial path analyses are presented in Tables 3 and 4, respectively. For both models, all path coefficients whose t -values were greater than or equal to 1.96 (critical value of t , $p < .05$) were significant and were retained in the systems. However, the retention of paths is not performed solely on a statistical basis; paths may also be retained on a "meaningful criterion" (Pedhazur, 1982) basis. That is, path coefficients greater than or equal to .05 may be retained in path-analytic systems if there is a sound theoretical basis for so doing. In the

Table 3

Path Coefficients and t-values for Model 1

Variables	Work Stress	Nonwork Stress	Work Satisfaction	Nonwork Satisfaction	Psychological Distress
Work Stress	---	---	-.526*	-.051	.100 ^b
Nonwork Stress	---	---	-.115 ^b	-.537*	.495*
Work Satisfaction (.811) ^a	-5.889*	-1.292	---	.259*	-.043
Nonwork Satisfaction (.765)	-.521	-6.323*	2.773*	---	-.304*
Psychological Distress (.660)	1.186	5.735*	-.510	-3.564*	---

Note. Path coefficients are presented in the upper right half of the matrix, and t-values in the lower left half.

^aValues in parentheses are error coefficients, or residuals.

^bNonsignificant, but meaningful path coefficient left in the system.

*Significant t-values, t ≥ 1.96 , p $< .05$, and significant corresponding path coefficients.

Table 4

Path Coefficients and t-values for Model 2

Variables	Nonwork Stress	Work Stress	Nonwork Satisfaction	Work Satisfaction	Psychological Distress
Nonwork Stress	---	---	-.567*	-.038	.495*
Work Stress	---	---	-.085 ^b	-.503*	.100 ^b
Nonwork Satisfaction (.793) ^a	-6.490*	-.977	---	.271*	-.304*
Work Satisfaction (.782)	-.372	-5.816*	2.773*	---	-.043
Psychological Distress (.660)	5.735*	1.186	-3.564*	-.510	---

Note. Path coefficients are presented in the upper right half of the matrix, and t-values in the lower left half.

^aValues in parentheses are error coefficients, or residuals.

^bNonsignificant, but meaningful path coefficient left in the system.

*Significant t-values, $t \geq 1.96$, $p < .05$, and significant corresponding path coefficients.

present system, for both Models 1 and 2 (see Tables 3 and 4, respectively), the path, work stress to psychological distress was retained. The retention of that path is supported by previous well-defined theory and research. Moreover, the paths, nonwork stress to work satisfaction (Model 1 only), and work stress to nonwork satisfaction (Model 2 only) were retained because it is reasonable to expect that at one point in time, one or the other path will predominate. That is, either work stress will lead to nonwork dissatisfaction or nonwork stress will lead to work dissatisfaction.

After the deletion of nonsignificant or meaningless paths, both models became overidentified (i.e., fewer parameters are estimated than the amount of available information in the system) and tested for goodness of fit. Two additional path analyses were performed (one for Model 1 and another for Model 2) after the models were trimmed. Nonsignificant paths were fixed equal to zero.

Results of path analyses for the two trimmed models are depicted in Figures 5 and 6; original correlations, path coefficients, and residuals (error terms for endogenous variables) are presented.

Several indices of the goodness of fit of data to models are available (Joreskog & Sorbom, 1984). One is the ability to reproduce the original correlation matrix after paths in the just-identified model are deleted. Tables 5 and 6 present the original and reproduced (estimated) correlation matrices for reduced Models 1 and 2, respectively.

Tables 5 and 6 indicate that the majority of original correlations have been exactly reproduced for both models; differences in remaining correlations range from .002 to .037 (negligible differences,

Reduced Model 1

Figure 5. Path diagram of reduced Model 1.

Note. Original correlations are in parentheses, path coefficients are outside. Broken arrows depict paths deleted from the system. Residuals are to the right of the endogenous variables.

Reduced Model 2

Figure 6.

Path diagram of reduced Model 2.

Note. Original correlations are in parentheses; path coefficients are outside.

Broken arrows depict paths deleted from the system.

Residuals are to the right of the endogenous variables.

Table 5

Original and Estimated Correlation Matrix for Reduced Model 1

Variables	Work Stress	Nonwork Stress	Work Satisfaction	Nonwork Satisfaction	Psychological Distress
Work Stress	---	.437	-.576	-.333(.031) ^a	.393(-.009)
Nonwork Stress	.437	---	-.345	-.604	.708
Work Satisfaction	-.576	-.345	---	.415	-.312(.026)
Nonwork Satisfaction	-.364	-.604	.415	---	-.619
Psychological Distress	.402	.708	-.338	-.621(.002)	---

Note. The original zero-order correlations are presented in the lower left half of the matrix, and the estimated correlations of the reduced path diagram are presented in the upper right half.

^aNumbers in parentheses indicate differences between original zero-order correlations and estimated correlations. All other differences are zero.

Table 6

Original and Estimated Correlation Matrix for Reduced Model 2

Variables	Nonwork Stress	Work Stress	Nonwork Satisfaction	Work Satisfaction	Psychological Distress
Nonwork Stress	---	.437	-.604	-.345(.022)	.708
Work Stress	.437	---	-.333	-.576	.393
Nonwork Satisfaction	-.604	-.333	---	.415	-.619
Work Satisfaction	-.367	-.576	.415	---	-.312(.037)
Psychological Distress	.708	.393	-.619	-.349	---

Note. The original zero-order correlations are presented in the lower left half of the matrix, and the estimated correlations of the reduced path diagram are presented in the upper right half.

^aNumbers in parentheses indicate differences between original zero-order correlations and estimated correlations. All other differences are zero.

($|d| < .05$). Consequently, the data fit both models very well, as indicated by the near perfect reproductions of the original zero-order correlation matrices. Furthermore, Billings and Wroten (1978) state: "If a correlation cannot be reproduced, then something is amiss. A path was deleted when it should have been retained, residuals are correlated, or the ordering of variables is incorrect" (p. 684). Thus, the near perfect reproductions of the original correlation matrices provide more evidence that the assumptions of path analysis have not been violated in this research (specifically, the assumptions of recursive ordering of variables, and non-correlated residuals).

Several other indices of goodness of fit for both models are presented in Table 7. The squared multiple correlations (R^2) for endogenous variables indicate the proportion of variance in each endogenous variable which can be explained by a linear combination of exogenous variables. In other words, for reduced Model 1, 34.3% of the variance in work satisfaction, 41.3% of the variance in nonwork satisfaction, and 56.4% of the variance in psychological distress is explained by the linear combination of work and nonwork stress. For reduced Model 2, 38.8% of the variance in work satisfaction, 37.1% of the variance in nonwork satisfaction, and 56.4% of the variance in psychological distress is explained by a linear combination of work and nonwork stress. It is suggested (Joreskog & Sorbom, 1984) that large squared multiple correlation coefficients are associated with good models.

The coefficients of determination are the reliabilities of the overall models. These values are the same (.665) for reduced Models 1 and 2, and indicate that both models are reliable.

Table 7

Goodness of Fit Indices for Two Reduced Path-Analytic Models

	Squared Multiple Correlations (R ²)	Coefficient of Determination	Degrees of Freedom (df)	Chi-Square (X ²)	Probability of (p)	Goodness of Fit Index (GFI)	Root Mean Square Residual (RMR)		
Non- Work Sat. work Sat. Psych. Dis.									
Reduced Model 1:	.343	.413	.564	.665	2	.54*	.763	.998	.011
Reduced Model 2:	.388	.371	.564	.665	2	.41*	.816	.998	.011

*Do not reject the null hypotheses that the data fit the model; critical value, $\chi^2_{(2)} = 5.991$, $p = .05$.

In path analysis, the null hypothesis states that the data fit the models. Retention, or non-rejection of the null hypothesis signifies that the data fit the models; in this case, the null hypothesis for both models was not rejected ($\chi^2(2) = .54$ for Model 1; $\chi^2(2) = .41$ for Model 2). Moreover, large probability levels (close to 1.00) denote that the data fit the models very well, which is the case in this research ($p = .763$ for Model 1, and $p = .816$ for Model 2).

The goodness of fit indices (GFI) for both models are the same (.988); again, values close to 1.00 connote good fit. Finally, root mean square residuals (RMR) close to 0.00 indicate good fit; in this research, RMR values are .011 for both models, indicating good fit of the data to the models.

The following values provide more evidence for the goodness of fit of the data to the models. Standard errors range from .073 to .089 (values close to 0.00 indicate good fit, Joreskog & Sorbom, 1984), and normalized residuals range from .010 to .355 (values less than 2.00 indicate good fit, Joreskog & Sorbom, 1984) for both models. Furthermore, the Q-plot of normalized residuals (a plot of normalized residuals against a 45° line bisecting the ordinate and abscissa of the graph) indicates that the plot of normalized residuals is linear, and an estimated slope of the line is greater than 1.00 for reduced Models 1 and 2. The former values indicate that the data in this research fit reduced Models 1 and 2 very well.

In sum, the data fit the models depicted in Figures 5 and 6 very well based on several measurement indices of goodness of fit. The squared multiple correlations, or indications of the reliability of the endogenous variables are moderate, and perhaps should be higher.

Thus, results should be interpreted with some caution. However, all other indices of goodness of fit indicate that the models are plausible and consistent with previous theory.

A summary of direct and indirect paths for reduced Models 1 and 2, and corresponding path coefficients are presented in Tables 8 and 9. It can be seen from these tables (and from Figures 5 and 6) that all original hypothesized direct paths were retained in both models, except for the paths, work dissatisfaction to psychological distress (which was deleted from both models), work stress to nonwork dissatisfaction (deleted from Model 1), and nonwork stress to work dissatisfaction (deleted from Model 2).

The deletion of nonsignificant direct paths in the just-identified models caused the deletion of several original hypothesized indirect paths. The following indirect original hypothesized path dropped out of both models (refer to section entitled "path-analytic models"): work stress leads to psychological distress via work dissatisfaction (hypothesis number 7).

The indirect original hypothesized paths, work stress leads to psychological distress via nonwork dissatisfaction (hypothesis number 8), and nonwork stress leads to psychological distress via work dissatisfaction (hypothesis number 12) dropped out of Model 1. The paths, nonwork dissatisfaction leads to psychological distress via work dissatisfaction (hypothesis number 16), and nonwork stress influences psychological distress through work dissatisfaction (hypothesis number 12) dropped out of Model 2. Moreover, as can be seen in Tables 8 and 9, the paths, nonwork stress to nonwork dissatisfaction via work dissatisfaction (Model 1), work stress to work dissatisfaction via

Table 8
Summary of Direct and Indirect Effects--Reduced Model 1

Direct Effects		
	<u>Path</u>	<u>Path Coefficient</u>
1.	Work stress → Work satisfaction	-.526
2.	Nonwork stress → Nonwork satisfaction	-.523
3.	Nonwork stress → Psychological distress	.497
4.	Nonwork satisfaction → Psychological distress	-.293
5.	Work satisfaction → Nonwork satisfaction	.235
6.	Nonwork stress → Work satisfaction	-.115
7.	Work stress → Psychological distress	.078
Indirect Effects		
1.	Nonwork stress → Psychological distress via Nonwork dissatisfaction	.153
2.	Work stress → Nonwork dissatisfaction via Work dissatisfaction	.124
3.	Work dissatisfaction → Psychological distress via Nonwork dissatisfaction	.069
4.	Nonwork stress → Nonwork dissatisfaction via Work dissatisfaction	.027*

*Meaningless path coefficient.

Table 9

Summary of Direct and Indirect Effects--Reduced Model 2

Direct Effects

<u>Path</u>	<u>Path Coefficient</u>
1. Nonwork stress → Nonwork satisfaction	-.567
2. Nonwork stress → Psychological distress	.497
3. Work stress → Work satisfaction	-.492
4. Nonwork satisfaction → Psychological distress	-.293
5. Nonwork satisfaction → Work satisfaction	.251
6. Work stress → Nonwork satisfaction	-.085
7. Work stress → Psychological distress	.078

Indirect Effects

1. Nonwork stress → Psychological distress via Nonwork dissatisfaction	.166
2. Nonwork stress → Work dissatisfaction via Nonwork dissatisfaction	.142
3. Work stress → Psychological distress via Nonwork dissatisfaction	.025*
4. Work stress → Work dissatisfaction via Nonwork dissatisfaction	.021*

*Meaningless path coefficients.

nonwork dissatisfaction (Model 2), and work stress to psychological distress via nonwork dissatisfaction (Model 2) did not reach "meaningful" significance in the overidentified models. Paths whose coefficients are less than .05 are subjects for deletion (Kerlinger & Pedhazur, 1973); hence, those three indirect paths are deleted from the system, and the remaining indirect paths listed in Tables 8 and 9 are retained.

Organizational Variables

Two repeated-measures analyses of variance (ANOVAs) were performed on the components of the organizational variables (work stress and work satisfaction) for the sample of 105 clerical workers.

Total scores on work stress were separated into scores for a micro and a macro component for each individual as indicated by the authors (Ivancevich & Matteson, 1979). The micro scores were then divided by 32 (since 32 items comprise that component), and the macro scores were divided by 36 (since 36 items comprise that component). The respective mean and standard deviation for micro scores is 2.45 and .976, and for the macro component, 2.73 and 1.00. Results of the repeated-measures ANOVA are presented in Table 10. It can be concluded that the macro component contributes significantly more to perceived work stress than the micro component ($F(1, 104) = 14.70$, $p < .001$).

Table 11 presents the results of the second repeated-measures ANOVA. This ANOVA was performed on scores for the five components of perceived job satisfaction (i.e., Work, Pay, Promotion, Supervision, and Co-Workers). It can be concluded that an overall significant difference among the five components of perceived job satisfaction exists ($F(4, 416) = 153.98$, $p < .001$).

A Newman-Keuls test was then done in order to make specific comparisons among the means on all five components; results are presented in Table 12. Results of the Newman-Keuls indicate that all possible pairs of means differ significantly, except for supervision and co-workers. On a continuum from most satisfied to least satisfied, the sample is equally satisfied with supervision and co-workers, followed

Table 10
Repeated-Measures ANOVA Summary for Perceived Work Stress
 (n = 105)

Source	SS	df	MS	<u>F</u>
Between	1403.99	1	1403.99	
Within	174.43	104	1.68	837.11
Treatment	4.13	1	4.13	
Residual	29.23	104	.28	14.70*

*p < .001.

Table 11

Repeated-Measures ANOVA Summary for Perceived Work Satisfaction

(n = 105)

Source	SS	df	MS	<u>F</u>
Between	441,467.00	1	441,467.00	
Within	32,156.60	104	309.20	1,427.78
Treatment	64,812.52	4	16,203.13	
Residual	43,775.88	416	105.23	153.98*

*p < .001.

Table 12
Newman-Keuls Test for Differences Among Components of
Perceived Work Satisfaction

Component	1	2	3	4	5
Co-Workers					
M 40.75	---	.30	10.06*	20.05*	28.37*
<u>SD</u> 11.33					
Supervision					
M 40.46		---	9.76*	19.75*	28.08*
<u>SD</u> 11.81					
Work					
M 30.70			---	9.99*	18.31*
<u>SD</u> 11.31					
Pay					
M 20.71				---	8.32*
<u>SD</u> 13.59					
Promotion					
M 12.38					---
<u>SD</u> 12.24					
$q_{.99} (r, 416)$		2.77	3.31	3.36	3.86
$q_{.99} \sqrt{MS_{res}/n} (r, 416)$ (1.00)		2.77	3.31	3.36	3.86

* $p < .05$.

by significantly less satisfaction with work, followed by pay, followed by promotion.

Differences Among Groups

A multivariate analysis of variance (MANOVA) was performed on data for groups of 105 clerical workers, 30 teachers, and 20 nurses (all females) in order to determine whether or not significant differences exist among those groups with respect to the five variables in this study (work stress, nonwork stress, work satisfaction, nonwork satisfaction, and psychological distress). Table 13 provides means and standard deviations for the three groups on all variables. A test of homogeneity of variance reached significance ($F_{\max} = 4.31$, $p < .01$). However, an $F_{\max}$ value of 4.31 does not indicate a very large departure from the null hypothesis of equal variances; moreover, F tests are robust with respect to departures from equal population variances (Winer, 1971).

Table 14 presents a summary of the results of the MANOVA. The overall F reached significance ($F(10, 296) = 2.392$, $p < .01$). It can be concluded that the groups significantly differ on a linear combination of the five variables.

In order to determine on which variable(s) the groups differ, separate univariate analyses of variance (ANOVAs) were performed; results are presented in Table 15. It can be seen from Table 15 that the groups significantly differ on psychological distress ($F(2, 152) = 5.247$, $p < .01$). A summary of the results of the univariate ANOVA for perceived psychological distress is presented in Table 16. In order to determine specific group differences with respect to perceived psychological distress, a Newman-Keuls test was performed. Results are presented in Table 17.

Table 13
Means and Standard Deviations

Group		Variable				
		Work Stress	Nonwork Stress	Work Sat	Nonwork Sat	Psych Distress
Clerical (<u>n</u> = 105)	M	175.34	55.29	144.99	359.64	38.11
	<u>SD</u>	63.31	30.30	39.32	44.46	28.48
Teachers (<u>n</u> = 30)	M	179.73	69.07	149.77	356.77	58.57
	<u>SD</u>	56.84	27.76	37.94	48.66	37.25
Nurses (<u>n</u> = 20)	M	203.10	60.10	146.55	352.95	41.75
	<u>SD</u>	66.03	32.42	41.67	37.48	29.89

Table 14
Summary of MANOVA

Wilk's Lambda	df	<u>F</u>	Omega
.85605	10, 296	2.392*	.58

*p < .01.

Table 15
Univariate ANOVAs

Variable	<u>F</u>	<u>p</u>
Work Stress	1.658	.194
Nonwork Stress	2.474	.088
Work Satisfaction	.173	.841
Nonwork Satisfaction	.210	.811
Psychological Distress	5.247*	.006

*p < .01.

Table 16

Summary of Univariate ANOVA for Perceived Psychological Distress

Source	df	SS	MS	<u>F</u>
Between	2	9,774.73	4,887.37	
Within	152	141,585.75	931.49	5.25*

*p < .01.

Table 17
Newman-Keuls Test for Differences Among Groups
on Perceived Psychological Distress

Group	1	2	3
Teachers			
M 58.57	---	16.82*	20.46*
<u>SD</u> 37.25			
Nurses			
M 41.75		---	3.34
<u>SD</u> 29.89			
Clericals			
M 38.11			---
<u>SD</u> 28.48			
q _{.99} (r, 152)		2.77	3.31
q _{.99} $\sqrt{MS_{res}/n}$ (r, 152) (5.37)		14.88	17.77

* $p < .05$.

It can be concluded that the three groups significantly differ on perceived psychological distress; teachers reported significantly more perceived psychological distress than nurses and clerical workers, who did not significantly differ on that variable.

DISCUSSION

Path Analyses

On the basis of several indices of goodness of fit, data obtained on a sample of 105 female clerical workers fit the reduced (overidentified) models depicted in Figures 5 and 6 very well.

For both models, perceived work stress led to perceived work dissatisfaction. The more stress a person perceives on the job, the more likely that person will become dissatisfied with the job. This finding is in line with previous research, both correlational studies and causal-correlational investigations (e.g., Caplan et al., 1975; Teas, 1983). The path coefficients in the present research, however, are more substantial than what previous research has determined with respect to the aforementioned path. Coefficients of approximately $-.30$ have consistently been found in the past (e.g., Bedeian & Armenakis, 1981; Parasuraman & Alutto, 1984; Teas, 1983). In the present study, the path coefficient between work stress and work satisfaction averages $-.509$ ($-.526$ for Model 1, and $-.492$ for Model 2). The difference in path coefficients between previous research and the current investigation is explained by two speculations.

First, other researchers (e.g., Bedeian & Armenakis; Parasuraman & Alutto) did not control sex and type of occupation in their designs. That is, their samples consisted of men and women in diverse types of occupations (e.g., combinations of female clerical workers and male administrators); and only one path analysis was performed on those mixed samples. Sex and occupational differences probably exist in the causal relationship between perceived work stress and work satisfaction. Relationships between those two variables most

likely change as the nature of samples change. For example, a stronger causal relationship may exist for clerical workers than for managers, or for male managers versus female managers. It may be that managers experience the same amount, or more occupational stress than clerical workers, yet the former group may be more satisfied with the job than the latter group because managerial work is more interesting and challenging, and the pay and promotional opportunities are better than for clerical work. It may also be that female managers experience more occupational stress than male managers (because these women have to deal with deleterious factors common to women in male-dominated positions--see Kanter, 1977; Lott, 1981), yet experience the same amount of job satisfaction as male managers, since the work, pay, and promotional opportunities are generally the same for individuals in the same jobs. In any event, sex and type of occupation must be controlled in future path-analytic designs, and research is needed which compares different occupational groups in the study of relationships between job stress and job satisfaction.

Second, previous investigators did not consider a wide variety of occupational stressors in their measures of perceived occupational stress (e.g., stressors that affect women such as sexual harassment). The majority of researchers in the area of occupational stress use perceived role conflict and role ambiguity (two job-specific factors) as measures of occupational stress. The present research has considered a wide variety of factors that may cause stress at work (i.e., job-specific factors such as role overload, role ambiguity, and role conflict, and organization-wide factors such as organizational politics, sexual harassment, and lack of concern for individual needs).

Therefore, stronger relations are most likely found when a researcher taps into a wide variety of sources of occupational stress.

In any event, the significance of path coefficients in previous research, and the substantial path coefficients in the present research establish the relationship between perceived work stress and perceived work satisfaction for both men and women. That is, an increase in perceived work stress leads to an increase in perceived job dissatisfaction for both sexes in various occupations, but the strength of the relationship most likely varies for the sexes, and when different occupations are considered.

Studies reviewed thus far have not attempted to test causal relationships between nonwork stress and nonwork satisfaction, although correlations between the two variables have consistently been significant (e.g., Kasl, 1973). The present research makes a causal inference between perceived nonwork stress and perceived nonwork satisfaction as evidenced by the substantial path coefficients. That is, the more life stress a woman experiences, the more likely she will become dissatisfied with her life, in general.

In sum, it appears that the work domain parallels the nonwork domain; an increase in perceived work stress leads to an increase in perceived work dissatisfaction as an increase in perceived life stress leads to an increase in perceived life dissatisfaction. For both models depicted in Figures 5 (p. 88) and 6 (p. 89), the path coefficients for work stress to work satisfaction and for nonwork stress to nonwork satisfaction were very close in value, indicating that the strength of those relationships is essentially equal in both domains. That is, an increase in perceived work stress leads to an increase in perceived

work dissatisfaction with the same intensity as an increase in perceived nonwork stress leads to an increase in perceived nonwork dissatisfaction.

In the present research, work stress led to psychological distress, as did nonwork stress. Previous research has discovered significant positive correlations between work stress and psychological distress (e.g., Caplan et al., 1975; Vinokur & Selzer, 1975). Furthermore, causal inferences have been made between nonwork stress and psychological distress (Coates et al., 1976). Since the path, nonwork stress to psychological distress (path coefficient = .497) is much more substantial than the path, work stress to psychological distress (path coefficient = .078), it can be concluded that nonwork stress is a better determinant of psychological distress than is work stress for female clerical workers. Stated differently, 50% of the standard deviation in psychological distress is explained by nonwork stress, whereas only 8% is explained by work stress.

More evidence for the contention that nonwork factors contribute more to psychological distress than work factors for this sample is provided by the fact that the path, work dissatisfaction to psychological distress was not significant in the just-identified models, and by the fact that the path, nonwork dissatisfaction to psychological distress was significant in the just-identified and overidentified models. It appears that job dissatisfaction does not necessarily lead to psychological distress, but that dissatisfaction with life will lead to a general state of anxiety, depression, fatigue, confusion, and anger.

The present research clearly indicates that nonwork factors affect psychological distress more than work factors. In general, results of

studies carried out previously are mixed in terms of whether work or nonwork factors are more important in the prediction of psychological distress (see Jamal & Mitchell, 1980). An explanation for equivocal results is that in past research, work variables were confounded with nonwork variables. For example, measures of nonwork satisfaction contain items related to work stress and work satisfaction. Furthermore, relevant variables such as sex, occupational type and level, and number of hours worked per week were not controlled in most research designs. Relationships among work and nonwork stress and satisfaction, and psychological distress most likely change for different types of samples (i.e., diverse occupations, male versus female, and full-time versus part-time workers), as noted earlier. The present investigation was designed to eliminate confounding of variables (e.g., by excluding work items from the measure of perceived nonwork satisfaction); moreover, the sample consists of full-time female clerical workers so that sex, occupation, and number of hours worked per week are controlled in the design.

Explanations for this researcher's discovery that nonwork factors contributed more to perceived psychological distress than work factors are the following.

First, a possible explanation for the findings that the path coefficient from perceived work stress to perceived psychological distress was low (.078), and that the path, work satisfaction to psychological distress (negative) was not significant in this research is that women are not conscious of the extent to which they are discriminated against (Weaver, 1979), and of the extent to which conditions on the job can be improved. Thus, they do not become psychologically distressed by

poor work conditions; "what they don't know, doesn't hurt them." Another explanation is that individuals in limited jobs accommodate their desires to limited opportunities (Gruenber, 1980); therefore, clerical workers are happy with what they have, and do not expect more from their jobs.

This researcher contends that such interpretations of the aforementioned results are not so simple. Women have traditionally been expected to care for the house and children (this expectation has especially been ingrained in women who choose female sex-segregated occupations--see Lemkau, 1979). Therefore, these women are probably content just to get out of the house during the day because of their previous confinement. Housework and child-care are tedious tasks which do not lead to intrinsic and extrinsic rewards such as enhanced self-esteem and pay, respectively. In contrast to Weaver's (1979) contention, this author feels that most women are aware of the extent to which they are discriminated against. However, they rationalize poor job conditions by asserting that they have taken one important step toward self-improvement (i.e., getting out of the house and working). Furthermore, since the majority of the present sample is married, paid employment probably leads to a better standard of living (which may compensate for poor working situations), especially if their pays are combined with their spouse's salaries. In addition, half of the sample has one or more dependents. Child-rearing does not increase self-esteem and personal growth (self-actualization) as does paid employment. Paid employment has been found to enhance psychological well-being, self-esteem, feelings of accomplishment, and

an overall better standard of living (Baruch et al., 1983; Rodgers, 1985; Warr & Parry, 1982), even if job conditions are not the best.

It is this researcher's contention that in the future, women may not settle for the types of jobs they traditionally hold, and/or may demand better work conditions. The previous explanation as to why poor work conditions (especially conditions associated with job satisfaction like pay, promotion, work itself, co-workers, and supervision) do not always lead to psychological distress can be likened to an analogy. A poor starving individual who likes the taste of steak (which he or she found in a rich person's garbage) will appreciate donated hamburgers. Eventually, if given enough hamburgers, that person will desire, and eventually ask his or her sponsor for some steak. If the steak is not obtained, the person is no longer happy with just hamburgers. Similarly, most women are aware of sex discrimination, and realize that conditions at work could be better, but they are just happy to be out of the house at the present time ("one step for womankind"). However, in time, they may not settle for deleterious job conditions.

An explanation as to why nonwork factors (perceived life stress and perceived life dissatisfaction) led to psychological distress in the present research is reflected in Terborg's (1985) statements:

Women seem able to add the role of wage earner but often have considerable difficulty in dropping the roles of housewife and mother. Consequently, the full-time employed wife and mother might feel harassed, overburdened, and resentful about holding two jobs (p. 259).

When women have to care for the house, a husband, and a family, they must make many social readjustments, which contribute to nonwork stress, and which will ultimately lead to psychological

distress. Furthermore, it has been found (Makosky, 1980) that "women experience more life event changes than men, interpret those changes as more stress-provoking, and are affected more strongly by events they cannot control" (Terborg, 1985, p. 260).

The measure of perceived life stress in the present research tapped perceived felt stress due to life event changes, and due to nonwork role-related responsibility, conflict, ambiguity, and overload. A logical explanation for the finding that nonwork factors influenced psychological distress is that women in the present sample (the majority of these women are married and half have children) must balance multiple roles (i.e., work and nonwork roles) which causes stress, and ultimately psychological distress (in the form of an overall state of anger, anxiety, depression, fatigue, and confusion). Moreover, women are more affected by life changes than men (find them more stress-provoking) because the former group has been socialized to rely on men to solve their problems, and/or look for faults in themselves if something goes wrong. Consequently, a typical reaction to life stress is psychological distress. The resultant psychological distress (particularly depression) is explained by the phenomenon of "learned helplessness" (Seligman, 1975). Lott (1981) states:

People susceptible to depression may have too often experienced situations in which they could not influence the outcome: too seldom experienced situations in which they could be successfully influential; and too often been in the position of assistant, dependent upon someone else's direction or instructions. In our society, women, not exclusively but more often than men, have experienced such powerlessness by virtue of membership in a low status group (p. 346).

In sum, women feel that they have no control over their lives, and do not know how to affect positive change or deal with negative

change. They feel overwhelmed by responsibilities and changes in their nonwork lives, which causes dissatisfaction with life; these feelings of lack of control and powerlessness lead to psychological distress.

Both paths, nonwork satisfaction to work satisfaction, and work satisfaction to nonwork satisfaction were significant in both models, and path coefficients are very similar, although the path coefficient for nonwork satisfaction to work satisfaction (.251) is minutely higher than the path coefficient for work satisfaction to nonwork satisfaction (.235). Hence, a reciprocal relationship is indicated: nonwork satisfaction $\longleftrightarrow$ work satisfaction. As mentioned previously, results are mixed as to whether work satisfaction leads to nonwork satisfaction or the opposite (e.g., Orpen, 1978; Schmitt & Mellon, 1980). A probable reason for equivocal results is that some researchers did not consider the possibility of a reciprocal relationship between the two variables (i.e., nonwork satisfaction may lead to work satisfaction, which in turn will lead back to nonwork satisfaction). Stated another way, dissatisfaction with one's life (or job) may lead to dissatisfaction with one's job (or life), which in turn may lead to more dissatisfaction with one's life (or job). A reciprocal relationship could not be tested in this research since data are cross-sectional. However, a longitudinal study would confirm or disconfirm the reciprocity hypothesis. It should be noted that the fact that path coefficients between work and nonwork satisfaction reached significance in both models in the present research lends support to the spillover theory (Ivancevich & Matteson, 1980; Kornhauser, 1965; Terborg, 1985).

The spillover theory states that stress and/or dissatisfaction in one domain (work or nonwork) permeates (or "spills over" to) the other domain (work or nonwork). That is, people do not segment experiences in one domain from the other (i.e., they do not forget about the job when home, and/or do not forget about life problems when at work). For example, with respect to the reciprocal path, work satisfaction $\longleftrightarrow$ nonwork satisfaction, if people are dissatisfied with their nonwork lives (e.g., dissatisfied with their marriages, children, and leisure time activities), they will become dissatisfied with their jobs. That is, life dissatisfaction spills over, or permeates the work domain, causing dissatisfaction with work (e.g., the individuals begin to dislike their boss and co-workers). The feelings of dissatisfaction intensify at work, which cause even more dissatisfaction at home (kind of a "snowball effect").

It also appears that at one point in time, either work stress leads to nonwork dissatisfaction, or nonwork stress leads to work dissatisfaction. This contention is evidenced by the fact that the path, work stress to nonwork satisfaction was not significant in Model 1, but was significant in Model 2. Moreover, the path, nonwork stress to work satisfaction was significant in Model 1, but not in Model 2. For both models, the significant path coefficients are very similar in value (-.115, Model 1; -.085, Model 2), indicating that one or the other path is tenable at one point in time. The significance of these path coefficients also lends support to the spillover theory, that work and nonwork domains are interdependent.

For example, an individual who perceives an abundance of work stress may go home and displace the resulting negative emotional state

(caused by the work stress) onto the spouse. In turn, marital problems intensify between the couple, which causes life dissatisfaction for both individuals.

Significant indirect path coefficients lend even more support to the spillover theory. For Model 1, work stress led to nonwork dissatisfaction through work dissatisfaction. Stated differently, stress on the job will lead to job dissatisfaction, which in turn will lead to dissatisfaction with life. In addition, nonwork stress will lead to psychological distress through nonwork dissatisfaction. That is, individuals who experience an abundance of life stress (i.e., who have experienced stressful life changes and/or much nonwork role ambiguity, and/or conflict, and/or overload, and/or too much responsibility for people and things) will become dissatisfied with their lives (e.g., marriage, children, leisure time, etc.). In turn, life dissatisfaction will lead to psychological distress. Finally, individuals who are dissatisfied with their jobs will become dissatisfied with their lives; life dissatisfaction will then lead to psychological distress.

With respect to Model 2, life stress led to life dissatisfaction, which in turn led to work dissatisfaction and psychological distress.

All of the aforementioned indirect paths indicate that work factors influence nonwork factors, and vice versa, which means that the two domains are interdependent.

In sum, it appears that nonwork factors are better predictors of perceived psychological distress than are work factors for the sample of female clerical workers. Furthermore, evidence for the spillover theory has been provided in this research.

Results are applicable to female clerical workers. Relationships among all the variables in this study may change as the nature of various samples change. Consequently, future research should consider the determination of causal inferences among the variables for different samples (e.g., all-male samples, all-female samples in various occupations) and compare the groups in terms of results obtained for path models. As a result of such studies, stress management programs can be tailored to fit the individual needs of diverse groups.

Future research should also consider the effects of work and nonwork stress and satisfaction on outcomes other than psychological distress. For example, Stewart and Salt (1981) found that job stress is associated with physical illness, and life stress with psychological disturbance (depression) for a sample of adult women. Moreover, Ivancevich and Matteson (1980) report that rates of heart disease and peptic ulcer are rapidly increasing among working women under the age of 45. Cooper and Davidson (1982) found that female managers smoked more frequently than either male managers or female nonmanagers, and smoked in response to stress, whereas males smoked for enjoyment or out of habit.

The relatively low path coefficient between perceived work stress and perceived psychological distress (.078), and the comparatively higher path coefficient between perceived nonwork stress and perceived psychological distress (.497) in the present research further supports the speculation that in women, job stress may lead to consequences other than psychological distress. Research has not yet adequately tested the previous assumption that different consequences result from work and nonwork stress and dissatisfaction for men

versus women in different occupations. Thus, a direction for future research is to study relationships among perceived work and nonwork stress and satisfaction as predictors of individual outcomes such as physical illness and drug abuse, and organizational outcomes such as performance, absenteeism, turnover, and job commitment, while controlling for sex and type of occupation.

The path, job dissatisfaction to psychological distress was not significant in this research, although the correlation between those two variables was significant. Consistent significant negative correlations have been found between job satisfaction and psychological distress (e.g., Caplan et al., 1975; Kasl, 1973). Thus far, no studies have tested the causal nature of the relationship. It is very possible that a causal inference truly does not exist between job dissatisfaction and psychological distress for the present sample; it is also possible that job dissatisfaction leads to consequences other than psychological disturbance for this group of women. On the other hand, the path may have not reached significance because the measure of perceived job satisfaction used in this research possesses moderate validity, and is non-interval. However, as stated previously, the use of non-interval measures does not appear to weaken path-analytic assumptions (Bohrnstedt & Carter, 1971). In any event, the field of industrial/organizational psychology desperately needs new measurement instruments. The measurement devices currently in use at best possess moderate validities and reliabilities, as do the measurements in this research. Consequently, results in this study must be interpreted with some caution.

Another methodological consideration in this research is that data are cross-sectional. Longitudinal studies are needed in this area in order to test reciprocity hypotheses. Results of longitudinal research would more assuredly confirm causal relationships among work and nonwork stress and satisfaction, and psychological and physical health for different samples since variations in relationships could be traced over time. Moreover, long term effects of stress and satisfaction on mental and physical health could be determined. It may be that the effects of prolonged stress do not become salient until later in an individual's life.

Self-report measures were used in the present research. Studies using objective measures of stress are needed, perhaps using them in conjunction with self-report indices so that comparisons between the two types of measures can be made. It can therefore be determined how well, if at all, self-report measures reflect objective reality. Future research should concentrate on determining how well subjective and objective measures predict psychological and physical illness for various groups.

The results of the present research have important implications for organizational consultants and industrial psychologists. The results no doubt point to the need for on-site stress management programs in organizations. However, these programs must be designed with the special needs of various groups in mind. For example, women may be stressed by different organizational and nonwork factors than men, and white-collar workers may be stressed by different factors than blue-collar workers. Moreover, occupational stress may lead to

psychological distress (or other consequences) for one group (e.g., female clerical workers), and not another (e.g., male managers).

Implementers of stress management programs must also realize that nonwork factors are just as important, if not more important, than work factors in the determination of psychological distress for certain groups (e.g., female clerical workers). Therefore, these programs must also deal with the management of stress outside of the work realm. In other words, since work and nonwork domains are interdependent, both realms must be considered in stress management programs. After these programs are tailored to fit individual groups' needs (based on research like the present study), the program could then be evaluated in terms of its effects on reducing work and nonwork stress, increasing work and nonwork satisfaction, decreasing physiological and psychological illness, and noting final effects on productivity, absenteeism, job commitment, and turnover.

In sum, organizational stress management programs must consider the special needs of various groups, and the fact that work and nonwork domains are interdependent. Moreover, these programs should be evaluated in terms of their effectiveness in reducing work and nonwork stress and dissatisfaction, and physical and psychological disturbance; ultimate effects on organizational outcomes such as turnover, absenteeism, and productivity should be assessed.

Organizational Variables

This research found that macro (organization-wide) factors contributed significantly more to organizational stress than micro (job-specific) factors. Stated differently, for the sample of 105 female clerical workers, organization-wide factors such as lack of participation in decision-making, underutilization of skills, sexual harassment, lack of concern for individual needs, the presence of organizational politics, lack of human resource development, unfair reward systems (e.g., low pay), unsupportive supervisors, and poor organizational policies contributed significantly more to organizational stress than job-specific factors such as role conflict, role ambiguity, role overload, lack of career progress, responsibility for people, time pressure, and job scope (unimportant, repetitive tasks, no freedom to do the job as one sees fit).

This finding is useful to organizational psychologists, and ultimately, to employees. The Stress Diagnostic Survey (Ivancevich & Matteson, 1979) used in the present research could diagnose organizational stress for different occupational groups in various companies. Consequently, job redesign and enrichment would not be performed haphazardly. Specific sources of organizational stress would be discovered, and jobs would be redesigned according to those specifications. Moreover, job redesign may not be the most important concern in the alleviation of job stress. Organization-wide redesign may be needed in order to diminish occupational stress. For example, policy reformation and the implementation of new reward systems and flex-time may have to be considered in organizational development and

reconstruction, if indeed situations connected with those factors were salient stressors.

If this researcher was employed in a large organization, an in-depth decomposition of perceived work stress would be performed. The measure of perceived work stress in this study contains 9 macro facets and 8 micro facets; specific sources of stress would be determined by analyzing all 17 facets. Moreover, results would be followed by interviews with a random sample of employees in various departments so that particular sources of job stress would assuredly be specified.

With respect to the measure of perceived job satisfaction in this research, the sample was equally satisfied with supervision and co-workers, and significantly less satisfied with the work itself (clerical work), followed by pay, followed by promotion. These results are not surprising. Low pay, frustrating repetitive tasks, lack of promotional opportunities, autonomy, and power, and intrinsically unsatisfying work all characterize clerical occupations.

Low job satisfaction did not lead to psychological distress in this research, but may lead to other factors such as poor physical health, lowered productivity, and high degrees of absenteeism and turnover, and does lead to less satisfaction with life, in general, which in turn leads to psychological distress. Thus, organizational consultants and administrators must consider redesigning reward systems and promotional policies, and reconstructing jobs to make them intrinsically more satisfying. However, the problem is deeper than what appears on the surface. The majority of low paying, intrinsically unsatisfying, poor promotional opportunity positions are occupied by women. Women

must have more opportunity to share in the benefits (e.g., challenge, authority, high pay) that accompany high-status jobs (e.g., managerial and administrative positions).

One predominant stereotype in this society is that women prefer and value relationships more than men (see Lott, 1981). This belief seems to be supported in this research. However, the reason that women are more satisfied with their supervisors and co-workers than with work, pay, and promotion may not be because they intrinsically cherish and desire good interpersonal relationships, but because they are trying to find some "salvation" in their jobs. In other words, they may form tight interpersonal bonds at work in order to compensate for more serious, deleterious job-related conditions such as low pay, poor promotional opportunities, and boring work. "This job isn't so bad, at least my boss is nice and I like the people with whom I work" might be a typical rationalization of some women. Women must learn to stop settling for the little they have, and bond together to strive for better conditions at work, or they must raise their aspirations toward administrative positions. The latter is difficult to achieve, however, because men are in power and largely determine whether or not women will obtain high-status positions (see Lott, 1981 for a discussion of "Obstacles to Job Satisfaction and Achievement," pp. 294-327, and Terborg, 1985 for a comprehensive review of women and work).

In sum, the results of the decomposition of organizational variables indicate that the sample of 105 female clerical workers is most stressed by macro (organization-wide) factors, and least satisfied with promotion, pay, and the work itself. In this case, it appears that

organizational policies would have to be reformulated in order to give these employees more opportunities for promotion, higher pay, and better benefits. Furthermore, job enrichment would have to be performed in order to make their jobs more varied and interesting, and more conducive to increased responsibility, participation in decision-making, and skill utilization (human resource development). Finally, intervention in organizational culture is needed so that supervisors and administrators would become more aware of individual employee's needs.

Differences Among Groups

The present study found that female preschool, kindergarten, and elementary school teachers reported significantly more perceived psychological distress than groups of female clerical workers and registered nurses. The groups did not significantly differ on any other variable (work stress, nonwork stress, work satisfaction, and nonwork satisfaction), although the teachers did report more perceived nonwork stress than the other two groups.

One reason for the finding that teachers perceived significantly more psychological distress is that they receive less social support on the job than other groups. Increased social support on the job weakens relationships between perceived work stress and psychological distress (House, 1981). That is, the perceived effects of work stress (e.g., anxiety) diminish if an individual receives emotional support from others.

Teachers are with students for most of the work day (in this case, students who are approximately four to thirteen years old); the former are socially isolated from co-workers. As a consequence, teachers receive less social support on the job than clerical workers or nurses, which may have caused them to report more perceived psychological distress.

Furthermore, as a result of teachers' shortened work year (they work nine out of twelve months, unlike the groups of nurses and clerical workers), they are probably predisposed to experience more nonwork stress (i.e., they may experience more life changes) than the other groups. Thus, they perceive more nonwork stress (though not significantly more) than other groups, which may have caused them to

perceive more psychological distress (since nonwork stress leads to psychological distress).

In sum, teachers probably receive less social support from other adults at work, and do perceive more life stress than clerical workers or nurses, two factors which may have caused them to report significantly more psychological distress.

Another explanation concerns coping mechanisms. Since teachers are socially isolated from other adults for most of the work day, their coping mechanisms may be less developed than other groups of employees. The effects of stress will lessen if an individual has good coping skills. Observation of other adults who must cope with stress helps individuals learn how to cope with their own stress. Teachers may not have the opportunity to learn adequate coping skills since they are with children all day; the former may be a reason for teachers' report of more psychological distress than other groups.

Phillips (1980) states that the major source of occupational stress for teachers is student discipline, and poor physical working conditions (e.g., noise, overcrowding). The measure of occupational stress in the present research did not assess perceived amounts of stress associated with those factors. Therefore, perhaps teachers did not have the opportunity to report as much occupational stress as they actually perceive; it is possible that teachers experience more perceived occupational stress than other groups, which caused them to report more psychological distress.

Finally, the questionnaire in the present research was distributed to teachers toward the end of the academic year when they are most

exhausted (another explanation for their report of significantly more psychological distress).

In sum, explanations for the finding that teachers perceive significantly more psychological distress than clerical workers and nurses are that teachers lack occupational social support and adequate coping mechanisms; they are predisposed to experiencing more life stress than other groups; they may perceive more work stress than they actually reported, and they were given the measurement instruments at a time when they may have been emotionally vulnerable.

Future research should determine the specific effects of individual difference factors such as sex, type of occupation, coping styles, and social support systems on relationships among perceived work and nonwork stress and satisfaction, and individual and organizational outcomes such as psychological and physical disturbances, and turnover, absenteeism, productivity, and job commitment. Also, special seminars and teacher support groups should be composed for teachers. The seminars would teach effective coping mechanisms, and the support groups would facilitate understanding and solutions to problems shared by all teachers.

APPENDIX A

COVER LETTER

To Respondents:

I am a Ph.D. Candidate in Psychology at the University of Rhode Island, and am currently in the process of doing my dissertation. I am studying relationships among stress and satisfaction in the work and nonwork domains of individuals' lives, and noting resulting effects on their psychological well-being.

My goal is to obtain information which will help improve environmental conditions so that people may live happier and more productive lives. Thus, your participation in this research is extremely valuable since your contribution will ultimately make life easier for many people.

Answers to all items on the questionnaire are COMPLETELY CONFIDENTIAL AND ANONYMOUS, so do not write your name on any part of the survey. Your participation in this study is also VOLUNTARY. If you find the questionnaire (or any particular items) offensive, you do not have to respond. Also note that in no way will your position in your organization be affected by this research, as I am an independent investigator.

Please complete and sign the consent form. Then, complete the questionnaire by carefully following directions for each section, and seal in the envelope. DO NOT ENCLOSE THE CONSENT FORM AND COVER LETTER. When you are finished, the sealed envelope and the consent form will be retrieved. You may keep this letter for future reference.

I am very grateful for your assistance. A summary of final research results will be available sometime this summer, and you may obtain a copy by writing to me at 1260 Mineral Spring Avenue, North Providence, Rhode Island, 02904. If you have any questions concerning any aspect of this research, do not hesitate to write or call my home (401-722-7015).

Sincerely,

Jocelyn J. Johnson

INFORMED CONSENT

I freely consent to participate in this study. I understand that:

1. Relationships among work and nonwork stress and satisfaction, and psychological distress are being determined in this research.
2. In no way will my position in the organization in which I am employed be effected by my participation, or lack thereof, in this study; also, the results of this research will not affect my job in any way.
3. I am to complete an anonymous and confidential questionnaire related to work and nonwork stress and satisfaction, and psychological distress, which will take approximately 30 to 40 minutes.
4. I am under no pressure to participate in this study and may discontinue at any time without prejudice.
5. The investigator, Jocelyn J. Johnson will answer any questions that I have and will provide me with a detailed clarification of the nature of this research.

Signature: _____
(Participant)

Date: _____

Signature: _____
(Investigator)

Date: _____

PART II

NOTE: As individuals we differ in the way we respond to various situations and conditions. Items 11-78 are designed to provide you with information with respect to one form of response, namely organizational and job stress. There are no "right" or "wrong" answers to the survey. The best answer to each item is the one that most nearly describes the way you really feel or respond to actual conditions at work.

FOR ITEMS 11 THROUGH 78 STRESS IS DEFINED AS EXISTING WHENEVER YOU EXPERIENCE FEELINGS OF PRESSURE, STRAIN, OR EMOTIONAL UPSET AT WORK.

INSTRUCTIONS: For each item in the survey you are asked to indicate the frequency with which the condition the item describes is a source of stress to you. Some items may describe conditions which are never a source of stress; others will describe conditions which are constant sources of stress; some items will describe conditions which are the source of varying amounts of stress. Simply write the appropriate number (1, 2, 3, 4, 5, 6, or 7) in the space provided to the left of the item, how frequently that item is a source of workplace stress.

KEY FOR ITEMS 11 THROUGH 78

Write 1 if the condition described is NEVER a source of stress

Write 2 if it is RARELY a source of stress

Write 3 if it is OCCASIONALLY a source of stress

Write 4 if it is SOMETIMES a source of stress

Write 5 if it is OFTEN a source of stress

Write 6 if it is USUALLY a source of stress

Write 7 if it is ALWAYS a source of stress

THE EXTENT TO WHICH:

- ___ 11. People tend to take credit for someone else's work achievements.
- ___ 12. As job openings occur, available candidates from within the organization are not properly trained to fill them.
- ___ 13. Promotions are not based on performance.
- ___ 14. People working here do not have the opportunity to participate in making significant decisions.
- ___ 15. Another individual or other individuals make sexual advances toward me in front of others when I am at work.
- ___ 16. Employees are not able to use their full skills and abilities

while doing the job.

- ___ 17. Supervisors do not go to bat for their subordinates with their superiors.
- ___ 18. The formal policies employees are expected to follow are too restrictive.
- ___ 19. There is a tendency to exchange favors with people of higher rank in the organization.
- ___ 20. The organization has no sound program to attract needed and capable people.
- ___ 21. There does not seem to be a clear relationship between job performance and rewards.
- ___ 22. Opinions of employees about the job are not listened to by management.
- ___ 23. Job assignments are not challenging.
- ___ 24. Supervisors are not concerned about the personal welfare of their subordinates.
- ___ 25. The chain of command around here is not clearly understood.
- ___ 26. There is a lot of game playing on the part of employees trying to obtain power and authority.
- ___ 27. I am not allowed to take time off from work when personal problems arise at home.
- ___ 28. Our organization makes no real attempt to keep good people.
- ___ 29. People are not rewarded on the basis of solid performance.
- ___ 30. Employees have no influence over how to do their jobs.
- ___ 31. Job assignments in this organization do not make use of the talents of the employee.
- ___ 32. Supervisors show a lack of trust in their subordinates.
- ___ 33. The way my work fits in with others in the overall plan is confusing.
- ___ 34. One way to get ahead around here is to know the right person.
- ___ 35. The organization does not make an effort to develop people to handle more authority and responsibility.
- ___ 36. The organization does not consider the special needs of individuals, but tends to treat everyone alike.
- ___ 37. The rewards for working here are not handed out fairly.
- ___ 38. Employees are only asked to participate in making trivial decisions.
- ___ 39. Employees feel like they are not as involved in their work as they should be.
- ___ 40. Supervisors do not show enough respect for their subordinates.
- ___ 41. The way this organization is set up (organized) is too impersonal.
- ___ 42. The goals and objectives for my job are not clear.
- ___ 43. I am asked to do a lot of unnecessary projects.
- ___ 44. I have to take work home to stay caught up.
- ___ 45. The work quality standards here are unrealistic.
- ___ 46. There are insufficient opportunities for advancement in this organization.
- ___ 47. I am held too accountable for the work of my co-workers.
- ___ 48. The time deadlines for completing work assignments are too unrealistic.
- ___ 49. The jobs I am assigned are just not important.

- ___ 50. It is not clear to me what my job responsibilities are.
- ___ 51. I seem to receive conflicting requests from different people (e.g., co-workers, bosses).
- ___ 52. I spend too much time in unimportant meetings which take me away from my work.
- ___ 53. Another individual or other individuals hint at sexual encounters between us when we are alone on the job.
- ___ 54. My assigned tasks are too difficult for me to do.
- ___ 55. I do not have the opportunity to develop myself for the future.
- ___ 56. I am expected to be a source of help for too many people.
- ___ 57. I have to rush in order to complete my job.
- ___ 58. I do not receive enough feedback on how well I am doing my work.
- ___ 59. I am not sure of exactly what is expected of me.
- ___ 60. I do things on the job that are accepted by one person and rejected by another person.
- ___ 61. The organization does not provide for flexible work hours.
- ___ 62. I am responsible for too many different activities.
- ___ 63. I am asked to do things that I have not been trained to do.
- ___ 64. I am hurting my career progress by staying in my job.
- ___ 65. I am too responsible for providing needed information to others.
- ___ 66. There is just not enough time to do my work.
- ___ 67. My job lacks any variety--it is the same old thing over and over.
- ___ 68. I am not certain how much authority I have.
- ___ 69. I can't seem to do my job because I am asked to do too many conflicting things.
- ___ 70. Another individual or individuals make sexual advances toward me when we are alone on the job.
- ___ 71. I have too much work to do to be able to complete it all in a timely fashion.
- ___ 72. I can't do a good job with my present skills and abilities.
- ___ 73. I am not learning new skills in my job.
- ___ 74. I am too responsible for keeping my work group one big happy family.
- ___ 75. I am constantly working against the pressure of time.
- ___ 76. I am not given enough freedom to do my job as I see fit.
- ___ 77. Another individual or other individuals hint at sexual encounters between us when we are alone on the job.
- ___ 78. Provisions for child day-care are not made by this organization.

PART III

NOTE: Listed in items 79 through 127 are a number of events which sometimes bring about change in the lives of those who experience them and which necessitate social readjustment.

Please go through the list of events presented in items 79 through 127 and place a check mark to the left of those events which you have experienced in the past year up until the present. Then, for each item you checked, please indicate the amount of stress (feelings of pressure, strain, or emotional upset) that event provoked in your life by placing the appropriate number (1, 2, 3, 4, 5, 6, or 7) in the space provided to the right of each item.

KEY FOR ITEMS 79 THROUGH 127

Write 1 if the event caused you a LOW amount of stress.

Write 2 if the event caused you MORE THAN A LOW amount of stress, but LESS THAN A MODERATE amount.

Write 3 if the event caused you MORE stress THAN that indicated by "2", but still LESS THAN A MODERATE amount.

Write 4 if the event caused you a MODERATE amount of stress.

Write 5 if the event caused you MORE THAN A MODERATE amount of stress, but LESS THAN AN EXTREME amount.

Write 6 if the event caused you MORE stress THAN that indicated by "5", but still LESS THAN AN EXTREME amount.

Write 7 if the event caused you an EXTREME amount of stress.

NOTE that numbers 2 and 3 indicate a level of stress somewhere in between low to moderate, with 3 indicative of a higher level of stress than 2. Also NOTE that numbers 5 and 6 denote levels of stress somewhere in between moderate to extreme, with 6 indicative of a higher level of stress than 5.

Check MarkDON'T FORGET TO RATE THE ITEM IN THE
SPACE TO THE RIGHT OF THE ITEM!

- ___ 79. Marriage _____
- ___ 80. Detention in jail or comparable institution _____
- ___ 81. Death of spouse/boyfriend/girlfriend _____
- ___ 82. Major change in sleeping habits (much more or much less sleep) _____
- ___ 83. Death of close family member (or members) _____
- ___ 84. Major change in eating habits (much more or much less food intake) _____
- ___ 85. Foreclosure on mortgage or loan _____
- ___ 86. Death of close friend _____
- ___ 87. Outstanding personal achievement _____
- ___ 88. Minor law violations (traffic tickets, disturbing the peace, etc.) _____
- ___ 89. Male: Wife/girlfriend's pregnancy _____
- ___ 90. Female: Pregnancy _____
- ___ 91. Serious illness or injury of close family member (or members) _____
- ___ 92. Sexual difficulties _____
- ___ 93. Trouble with in-laws _____
- ___ 94. Major change in financial status (a lot better off or a lot worse off) _____
- ___ 95. Major change in closeness of family members (increased or decreased closeness) _____
- ___ 96. Gaining a new family member (through birth, adoption, family member moving in, etc.) _____
- ___ 97. Change of residence _____
- ___ 98. Marital separation from mate (due to conflict) _____
- ___ 99. Marital reconciliation with mate _____
- ___ 100. Major change in number of arguments with spouse/boyfriend/girlfriend (a lot more or a lot less arguments) _____
- ___ 101. Married male: Change in wife's work outside the home (beginning work, ceasing work, changing to a new job, etc.) _____
- ___ 102. Married female: Change in husband's work (loss of job, beginning new job, retirement, etc.) _____
- ___ 103. Major change in usual type and/or amount of recreation _____
- ___ 104. Borrowing more than \$10,000 (buying home, business, etc.) _____
- ___ 105. New job _____
- ___ 106. Being fired from job _____
- ___ 107. Male: Wife/girlfriend having abortion _____
- ___ 108. Female: Having abortion _____
- ___ 109. Major personal illness or injury _____
- ___ 110. Major change in social activities (e.g., parties, movies, visiting--increased or decreased participation) _____
- ___ 111. Major change in living conditions of family (building new home, remodeling, deterioration of home, neighborhood, etc.) _____
- ___ 112. Divorce _____
- ___ 113. Serious injury or illness of close friend _____

- ___ 114. Son or daughter leaving home (due to marriage, college, etc.) ___
 ___ 115. Ending of formal schooling ___
 ___ 116. Separation from spouse/boyfriend/girlfriend (due to work, travel, etc.) ___
 ___ 117. Engagement ___
 ___ 118. Breaking up with boyfriend/girlfriend ___
 ___ 119. Leaving home for the first time ___
 ___ 120. Reconciliation with boyfriend/girlfriend ___
 ___ 121. Beginning a new school experience ___
 ___ 122. Failing an important exam ___
 ___ 123. Failing a course ___
 ___ 124. Financial problems concerning school (in danger of not having enough money to continue) ___

Other experiences which have had an impact on your life in the past year. List and rate.

125. _____
 126. _____
 127. _____

Now, using the following KEY, please answer items 128 through 137 by placing the appropriate number (1, 2, 3, 4, 5, 6, or 7) to the left of each item.

KEY FOR ITEMS 128 THROUGH 137

Write 1 if the condition described is NEVER a source of stress

Write 2 if it is RARELY a source of stress

Write 3 if it is OCCASIONALLY a source of stress

Write 4 if it is SOMETIMES a source of stress

Write 5 if it is OFTEN a source of stress

Write 6 if it is USUALLY a source of stress

Write 7 if it is ALWAYS a source of stress

- ___ 128. I have responsibility to take care of things when I am home from work.
 ___ 129. I have too much to do when I am home from work.
 ___ 130. I am often asked by others to do things that I really do not to do when home from work.
 ___ 131. I am unclear as to exactly what I am expected or required to do when home from work.
 ___ 132. I have to take care of things at home, and I do not have enough time for pleasure.
 ___ 133. I have responsibility for others when I am not at work.
 ___ 134. I am unclear as to what my home life will be like 5 years from now.

- ___ 135. I have to take care of others' needs at the expense of fulfilling my own needs when not at work.
- ___ 136. I must do things that conflict with other things I want to do when not at work.
- ___ 137. I never have enough time to do what I want to do, or must do, when home from work.

PART IV

There are five sections to Part IV: "Work on Present Job," "Present Pay," "Opportunities for Promotion," "Supervision," and "People." Just follow instructions for each section as given.

WORK ON PRESENT JOB

Think of your present work. What is it like most of the time? In the blank beside each word given below, write:

___ for "Yes" if it describes your work

___ for "No" if it does NOT describe it

___ if you cannot decide

___ Fascinating

___ Routine

___ Satisfying

___ Boring

___ Good

___ Creative

___ Respected

___ Hot

___ Pleasant

___ Useful

___ Tiresome

___ Healthful

___ Challenging

___ On your feet

___ Frustrating

___ Simple

___ Endless

___ Gives sense of accomplishment

PRESENT PAY

Think of the pay you get now.
How well does each of the
following words describe your
present pay? In the blank
beside each word, put

___ if it describes your pay

___ if it does NOT describe it

___ if you cannot decide

___ Income adequate for normal expenses

___ Satisfactory profit sharing

___ Barely live on income

___ Bad

___ Income provides luxuries

___ Insecure

___ Less than I deserve

___ Highly paid

___ Underpaid

OPPORTUNITIES FOR PROMOTION

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put

___ for "Yes" if it describes your
opportunities for promotion

___ for "No" if it does NOT describe them

___ if you cannot decide

___ Good opportunities for promotion

___ Opportunity somewhat limited

___ Promotion on ability

___ Dead-end job

___ Good chance for promotion

___ Unfair promotion policy

___ Infrequent promotions

___ Regular promotions

___ Fairly good chance for promotion

SUPERVISION ON PRESENT JOB

Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put

_____ if it describes the supervision you get on your job

_____ if it does NOT describe it

_____ if you cannot decide

_____ Asks my advice

_____ Hard to please

_____ Impolite

_____ Praises good work

_____ Tactful

_____ Influential

_____ Up-to-date

_____ Doesn't supervise enough

_____ Quick tempered

_____ Tells me where I stand

_____ Annoying

_____ Stubborn

_____ Knows job well

_____ Bad

_____ Intelligent

_____ Leaves me on my own

_____ Around when needed

_____ Lazy

PEOPLE ON YOUR PRESENT JOB

Think of the majority of people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put

___ if it describes the people you work with

___ if it does NOT describe them

___ if you cannot decide

___ Stimulating

___ Boring

___ Slow

___ Ambitious

___ Stupid

___ Responsible

___ Fast

___ Intelligent

___ Easy to make enemies

___ Talk too much

___ Smart

___ Lazy

___ Unpleasant

___ No privacy

___ Active

___ Narrow interests

___ Loyal

___ Hard to meet

PART V

INSTRUCTIONS: The following 75 items concern various aspects of your life. Please fill in the appropriate number (1, 2, 3, 4, 5, 6, or 7) that best describes how you feel about that particular item using the following scale. Mark the number in the space to the left of each item.

KEY FOR ITEMS 1 THROUGH 75 (PART V)

Write 1 if you feel TERRIBLE

Write 2 if you feel UNHAPPY

Write 3 if you feel MOSTLY DISSATISFIED

Write 4 if you feel MIXED

Write 5 if you feel MOSTLY SATISFIED

Write 6 if you feel PLEASED

Write 7 if you feel DELIGHTED

How do you feel about . . .

- ___ 1. Your children (if you don't have any children, write 4)
- ___ 2. Your wife/husband/girlfriend/boyfriend (if you do not have a "partner," how do you feel about it?)
- ___ 3. Your marriage (if not married, how do you feel about being single?)
- ___ 4. Close adult relatives--I mean people like parents, in-laws, brothers, sisters
- ___ 5. The things you and you family do together
- ___ 6. Your own health and physical condition
- ___ 7. The responsibilities you have for members of your family
- ___ 8. How dependable and responsible you can be
- ___ 9. Your opportunity to change things around you that you don't like.
- ___ 10. The way you handle the problems that come up in your life
- ___ 11. The extent to which you can accept life as it comes and adapt to it
- ___ 12. The extent to which you can adjust to changes in your life
- ___ 13. The extent to which you get what you are entitled to--what is rightfully yours
- ___ 14. The extent to which you are achieving success and getting ahead
- ___ 15. The extent to which you compete and win at things
- ___ 16. What you are accomplishing in your life
- ___ 17. Yourself
- ___ 18. How interesting your day-to-day life is
- ___ 19. The chance you have to enjoy pleasant or beautiful things
- ___ 20. Your sex life

- ___ 21. The amount of fun and enjoyment you have
- ___ 22. The way you spend your spare time, your nonworking activities
- ___ 23. The usefulness, for you personally, of your education
- ___ 24. The extent to which you are developing yourself and broadening your life
- ___ 25. The variety and diversity in your life
- ___ 30. Your chances for relaxation--even for a short time
- ___ 31. The privacy you have--being alone when you want to be
- ___ 32. The amount of friendship and love in your life
- ___ 33. How much you are accepted and included by others
- ___ 34. The way other people treat you
- ___ 35. The amount of respect you get from others
- ___ 36. How fairly you get treated
- ___ 37. The respect other people have for your rights
- ___ 38. The people who live in the houses/apartments near yours
- ___ 39. People who live in your community
- ___ 40. The people you see socially
- ___ 41. Your friends
- ___ 42. The things you do and the times you have with your friends
- ___ 43. The chance you have to know people with whom you can feel really comfortable
- ___ 44. How you get on with other people
- ___ 45. How dependable and responsible people around you are
- ___ 46. The extent to which your world seems consistent and understandable
- ___ 47. How much you are really contributing to other people's lives
- ___ 48. The organizations you belong to
- ___ 49. Your housework--the work you need to do around your home
- ___ 50. How secure you are financially
- ___ 51. How well your family agrees on how family income should be spent
- ___ 52. The income you (and your family) have
- ___ 53. How comfortable and well-off you are
- ___ 54. Your standard of living--the things you have like housing, car, furniture, recreation and the like
- ___ 55. Your car
- ___ 56. Your house/apartment
- ___ 57. The services you get in your neighborhood--like garbage collection, fire and police protection, street maintenance
- ___ 58. How safe you feel in your neighborhood
- ___ 59. Your safety
- ___ 60. The schools in your area
- ___ 61. The doctors, clinics, and hospitals you would use in this area
- ___ 62. What you have to pay for basic necessities such as food, housing, and clothing
- ___ 63. The way our national government is operating
- ___ 64. What our government is doing about the economy--jobs, prices, profits
- ___ 65. Our national military activities
- ___ 66. The way our political leaders think and act
- ___ 67. The condition of the natural environment--the air, land, and water in your area
- ___ 68. The way your local government is operating

- ___ 69. The sports or recreating facilities you yourself use, or would like to use--I mean things like parks, bowling alleys, beaches
- ___ 70. The entertainment you get from TV, radio, movies, and local events and places
- ___ 71. The information you get from newspapers, magazines, TV, and radio
- ___ 72. Life in the United States today
- ___ 73. The standards and values of today's society
- ___ 74. The freedom you have from being bothered and annoyed
- ___ 75. Your independence or freedom--the chance you have to do what you want

PART VI

INSTRUCTIONS: Below is a list of words that describe feelings people have. Please read each one carefully. Then fill in the appropriate number (0, 1, 2, 3, or 4) which signifies how you have been feeling, in general, during the past few months. Mark the number in the space to the left of each item.

KEY FOR ITEMS 76 THROUGH 125

The numbers refer to these phrases:

0 = NOT AT ALL 2 = MODERATELY 4 = EXTREMELY
 1 = A LITTLE 3 = QUITE A BIT

___ 76. Tense	___ 93. Spiteful	___ 110. Desperate
___ 77. Angry	___ 94. Uneasy	___ 111. Sluggish
___ 78. Worn out	___ 95. Restless	___ 112. Rebellious
___ 79. Unhappy	___ 96. Unable to concentrate	___ 113. Helpless
___ 80. Confused	___ 97. Fatigued	___ 114. Weary
___ 81. Sorry for things done	___ 98. Annoyed	___ 115. Bewildered
___ 82. Shaky	___ 99. Discouraged	___ 116. Deceived
___ 83. Listless	___ 100. Resentful	___ 117. Furious
___ 84. Peeved	___ 101. Nervous	___ 118. Efficient
___ 85. Sad	___ 102. Lonely	___ 119. Bad-tempered
___ 86. On edge	___ 103. Miserable	___ 120. Worthless
___ 87. Grouchy	___ 104. Muddled	___ 121. Forgetful
___ 88. Blue	___ 105. Bitter	___ 122. Terrified
___ 89. Panicky	___ 106. Exhausted	___ 123. Guilty
___ 90. Hopeless	___ 107. Anxious	___ 124. Uncertain about things
___ 91. Relaxed	___ 108. Ready to fight	___ 125. Bushed
___ 92. Unworthy	___ 109. Gloomy	

APPENDIX B

Table 18
Demographic Characteristics--Means and Ranges

	Clerical Workers ($\bar{n}$ = 105)	Teachers ($\bar{n}$ = 30)	Nurses ($\bar{n}$ = 20)
Age	Mean Range	36.31 19-62	36.17 23-50
			36.35 27-49
Length of Service	Mean Range (months) (years) (months) (year)	86.37 7.19 2-324 .17-24	98.89 8.24 3-312 .25-26
			60.95 5.08 12-240 1-20
Income	Mean Range	\$14,500 \$6,700-\$25,000	\$21,000 \$8,000-\$30,000
			\$25,890 \$18,000-\$38,000
Hours of Work per Week	Mean Range	36.45 32-42	40.88 32-60
			39.88 32-55

Table 19

Demographic Characteristics--Frequency Distributions

	Clerical Workers (<u>n</u> = 105)		Teachers (<u>n</u> = 30)		Nurses (<u>n</u> = 20)		
	Number	Percent	Number	Percent	Number	Percent	
Dependents	0=56	53.33	0=13	43.33	0=12	60.00	
	1=27	25.71	1= 6	20.00	1= 1	5.00	
	2=15	14.29	2= 6	20.00	2= 3	15.00	
	3= 5	4.76	3= 4	13.33	3= 3	15.00	
	5= 2	1.90	5= 1	3.33	4= 1	5.00	
Marital Status	Married	65	61.90	20	66.66	10	50.00
	Single	28	26.66	7	23.33	7	35.00
	Divorced	7	6.66	2	6.66	3	15.00
	Separated	3	2.86	1	3.33	0	0.00
	Widowed	2	1.90	0	0.00	0	0.00
Education	Grades 9-11	1	.95	0	0.00	0	0.00
	High School	35	33.33	1	3.33	0	0.00
	Some College	46	43.81	1	3.33	5	25.00
	Completed College	20	19.05	5	16.66	11	55.00
	Completed College (Advanced Degree)	3	2.86	23	76.66	4	20.00

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