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Patterns of Stress in Employees of a General Medical Hospital

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PATTERNS OF STRESS IN EMPLOYEES OF A GENERAL MEDICAL HOSPITAL

by

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VITA

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INTRODUCTION

The importance of work has been discussed by many authors. Abraham Maslow (1965) declared that the only happy people he knew were those working well at something they considered important. Argyle's (1972) view was that work is one of the central activities of life, and can be a cause of mental health or mental illness. Hans Selye (1974), one of the foremost authorities on stress, described work as a basic need of man, pointing out that stress is associated with every kind of work.

The environment in general appears to play an important part in causing stress. Stressful environments with accompanying emotional factors have been implicated in hypertension, migraine headaches, obesity, asthma, rheumatoid arthritis, peptic ulcer, dermatitis, and heart disease (Insel & Moos, 1974). The work environment, in particular, has been linked with stress. Considerable research indicates that workers in high-stress jobs seem to have more psychosomatic illness than those in low-stress jobs. There seem to be different degrees of stress for different occupations, even within the same organization (Ferguson, 1973; Kasl & French, 1962). Daley (1979) suggested that job-related stress is functional in its early stage, when it increases motivation and producivity, but that performance

level decreases as tension increases or becomes chronic.

A recent study conducted by the National Institute for Occupational Safety and Health concluded that health care professionals, such as nurses, have jobs that produce excessive stress (Ivancevich & Matteson, 1980). Similarly, Kasl and French (1962) reported that the highest rates of "psychoneurotic symptoms" were found in a "personal service" group. Regarding such findings, Aiken and Hage (1966) theorized that the potential for alienation should be greater among professionals because they have advanced training and normally have codes of professional behavior that encourage norms of autonomy and high expectations.

An apparently similar phenomenon, termed "burnout", has received considerable attention in recent years in the health care journals and those of other "helping" professions. It has been theorized that these professions are highly demanding both physically and psychologically, and that this results in frustration, anxiety, exhaustion, and negative attitudes toward patients (Maslach, 1979). "Burnout" has been defined as the emotional exhaustion from the stress of interpersonal contact (Maslach, 1978a). Maslach, a psychologist at Berkley and an often-quoted investigator of "burn-out", stated that there are virtually no studies that give an exact and entire picture of "burnout". Another investigator of the "burnout" syndrome (Daley, 1979)

has suggested that "burnout" may be conceptualized as a dynamic process with definite stages of development.

The actual existence of the dynamic of "burnout" has not been proven. The present investigator was unable to find even one study which attempted to compare in a consistent way health-care or "helping" professionals with other groups of workers. Therefore this study was designed, in the hope that by testing employees all working at the same hospital and by sampling a wide range of workers at various educational and economic levels, the level and pattern of stress can be examined in a group of workers whose primary responsibility is patient care, and compared to the level and pattern of stress in a group who does not participate in patient care.

REVIEW OF RELATED LITERATURE

Work and the Individual

The relationship of an individual's work to his/her identity has been considered by some to be a measure of personality and adjustment. For instance, Argyle (1972) discussed work as a basis of identity and as a main object of motivation, theorizing that work can be a source of satisfaction or dissatisfaction and the cause of mental health or mental illness, with a definite relationship between job satisfaction and mental health. Similarly, Maslow (1965) proposed the theory that self-actualized people assimilate their work into their identities. He added that self-actualization via a commitment to an important job and worthwhile work could be a path to human happiness -- asserting, in fact, that a positive work experience is likely to positively affect more people than individual psychotherapy or education. Another example of the relationship of work to identity comes from Neff (1965), who claimed that there is increasing evidence that work is a means by which people assess their personal worth, with some people having only this means to evaluate themselves. He also stated that work seems to gratify a need for respect by others. Neff pointed out that the literature of clinical psychology and psychiatry includes very little concerning the problem of work.

A complex psychoanalytic view of the individual as related to work was taken by Levinson (1973), who viewed an individual's relation to work and to the organization as part of a generalized effort to meet the demands of one's ego-ideal. Like the previous theorists, he suggested that the relation to work is significantly related to emotional health, and can enhance or impair motivation and health. Also regarding psychoanalytic theories, Neff (1965) reviewed the psychoanalytic meaning of work. He interpreted Freud's remarks, scattered sparsely through the basic psychoanalytic writings, as expressing ambivalence about work. Freud seemed to suggest that work is one of the two most important spheres of human activity (along with love), yet also seemed to express the view that work is a painful burden instead of a pleasurable activity to be sought. In the following sections, the different ways that stress is manifested in the individual are explored.

Physiological Components of Stress

Stress has been defined as the body's nonspecific response to any demand made upon it, whether the situation is pleasant or unpleasant (Selye, 1974). Selye, an authority on physiological stress, discussed the effects of the stressor as depending on the intensity of the demand made on the body. Appley and Trumbull (1977) defined stress similarly, as a state of the total organism rather than as as event in the environment.

The totality of the body's changes or mechanisms of defense against stress has been described as the general adaptation syndrome (G.A.S.) by Selye (1956). Through these changes it is theorized that internal organs, especially the endocrine glands and the nervous system, attempt to adjust to stress. According to Selye, the G.A.S. develops in three stages: (1) the alarm reaction; (2) the stage of resistance; and (3) the stage of exhaustion. During the alarm reaction, the experience is difficult for the body (Selye, 1974). Further describing the alarm reaction, Costello and Zalkind (1963) discussed how the mobilization of body defense mechanisms may result in increased striving or inner conflict which leads to frustration. During the resistance stage, the body becomes somewhat accustomed to the stress (Selye, 1974). Costello and Zalkind added that during this stage, body energies are constantly used to manage stress. In the third or exhaustion stage, there is a breakdown of functioning and an inability to manage stress, and severe anxiety occurs (Costello & Zalkind, 1963). It is important to keep in mind that stress is not to be totally avoided, and that even positive events are stressful. Freedom from all stress is death.

Current research indicates that many common diseases are largely due to errors in adaptive responses to stress. The same stressor can cause different "diseases of adaptation" affecting various parts of the body, depending on

internal and/or external conditioning factors (Selye, 1974). Selye (1979) further discussed "diseases of adaptation" resulting from problems in the secretion of adaptive hormones during periods of chronic stress that seem to encourage or result in such diseases. According to Selye, faulty adaptive responses of the body seem to encourage or initiate such diseases as: emotional disturbance, headaches, insomnia, sinus attacks, high blood pressure, gastric ulcers, duodenal ulcers, some rheumatic and allergic reactions, kidney disease, and cardiovascular disease. Dubos (1965), adding to this theory, hypothesized that even infectious disease does not occur only from exposure to a new disease agent, but that microbial diseases are in the environment and in the body without doing harm, then exert pathological effects when the infected person is under psychological stress.

Psychological, Cognitive, and Behavioral Components of Stress

Individual Differences in Stress Reactions. Many different environmental conditions have been implicated in producing stress states, but effects seem to differ, depending on the individual. Appley and Trumbull (1977), for instance, suggested that different people respond to the same conditions in different ways, while the same person may respond differently to stress in different situations. Along the same lines, Lazarus, Deese, and Osler (1952) stated that it is impossible to define stress because different things are stressful to different people in dif-

ferent situations. They theorized, therefore, that stress is a secondary concept occurring when a particular situation threatens the attainment of a particular goal, with the actual response of an individual depending on previously established stress mechanisms in that person. The main finding in studies on stress seems to be the wide range of individual differences.

Personality differences seem extremely important in the individual's reaction to a stressful situation. In discussing systematic equilibrium, adjustment mechanisms, and personality as related to stress, Trumbull (1975) saw reactions to stress needing to be recognized as developing within social contexts like family, peer group, and work, which are parts of larger concepts of mores, customs, or cultures that determine what conditions are stressful as well as the response to this perceived stress. He declared that there are stressors to which whole cultures respond.

The Importance of the Perception of Stress. In discussing whether stress must be recognized to be experienced, Lazarus (1977) suggested that the G.A.S. may be psychological, with the necessity for the animal or person reacting to recognise his/her plight somehow to experience stress. Lazarus added that each person has specific motives, belief systems, and competencies to cope with problems, with cognitive processes determining the intensity and quality of

emotional reaction. McGrath (1967) seemed to agree with Lazarus' theory. In reviewing 200 studies on stress he concluded that emotional, physiological, and performance reactions are partly a function of perceptions or expectations a person experiences in a stressful situation -- in other words, the appraisal of threat. Lumsden (1975), however, had a somewhat different view of the perception of stress. He stated that coping with stress is affected by how quickly the stressor is detected and whether it is identified or not. In his view, if stress is identified, coping responses can be specific and realistic as opposed to nonspecific and diffuse. Differing from Lazarus' theory that stress must be identified to be experienced, Lumsden theorized that if stress is unidentified, this may increase the level of stress.

A study by Hinkle, Christenson, Kane, Ostfeld, Thetford, and Wolff (1958) may be described to illustrate the importance of the perception of stress. Sixty Chinese male immigrants to the United States were studied by examining life histories, a series of psychological tests, and the results of 4-hour interviews with a psychiatrist and an internist. Examiners concentrated on the preceeding 20 years and found that the group that had experienced more physical illness did not differ from the group with less illness in physical hardships, geographic dislocation, social change, or interpersonal difficulties. However, those in

the group with more illness did differ in their perception of life, seeing life as more demanding, difficult, and unsatisfactory. The investigators concluded by questioning whether perhaps the evaluation of life and the perception of threatening, demanding, and unsatisfactory situations make individuals more susceptible to illness because of physiological changes in reaction to perceived threat. It should be pointed out, however, that the physical illness experienced by this group may have caused or at least influenced to some extent the perception of life as demanding, difficult, and unsatisfactory.

Affective Reactions to Stress. The relationship of frustration to stress may be one of cause-and-effect. Selye (1974) for instance, declared that the stress of frustration is much more likely to produce disease than is excessive muscular work. In the same vein, Lazarus (1969) stated that conflict is often related to stress by the presence of two incompatible goals. He theorized that one important component of stress is frustration, as in a situation where a course of action cannot be brought to its conclusion -- when people cannot achieve or are delayed in achieving their goals. Another possible cause of stress, according to Lazarus (1963), is threat, or anticipation of harm. Accordingly, the amount of stress experienced depends on the feelings of helplessness of the person, with the threat experienced as greater when the feelings of ability to

master that threat are less. For both frustration and threat, Lazarus (1969) saw four basic ways to adjust: (1) take active steps to prepare; (2) become angry or attack; (3) avoid; and (4) become apathetic, become inactive, or use defensive adjustments.

Regarding affective states related to stress, Lazarus (1963) reported that stress produces psychological discomfort such as anxiety and/or depression, and is experienced as painful. Anxiety has a key role in theories of stress, both as an unpleasant affective state and as a warning of a threat to welfare -- a "signal" to the organism. Coping processes are believed to become more primitive as the perception of threat increases (Lazarus, 1969).

Cognitive Aspects of Stress. As well as being experienced as unpleasant, affective aspects of stress seem to interfere with thinking and problem-solving (cognitive inefficiency). Anxiety has been shown to interfere with attention span and problem-solving. Stress can also narrow the perceptual field (Lazarus, 1969). Anxiety is one result of stress according to previously cited authors, and in summarizing his review of the literature on anxiety, Coleman (1960) concluded that slight anxiety produces increased sensitivity and production, while severe anxiety produces unadaptive patterns of behavior, irritability, and impaired thinking. Matarazzo's (1972) results confirmed these find-

ings. His evidence indicated that performance on Wechsler subtests is related to state anxiety which is defined as acute, transitory, situationally-induced anxiety.

Summarizing the literature on the effects of stress on performance, Torrance (1961) theorized in his review of the research on environmental stress that the initial impact of stress is to increase the variability in behavior and reduce behavioral consistency. Moderate external stress tends to produce performance improvement, while severe stress tends to produce disorganized performance. Following this theory, the initial response to stress is shock or resistance, followed by recovery and perhaps overcompensation. However, if stress is continued or extreme, performance will be lowered and collapse may occur. This description of the behavioral reaction to stress closely parallels Selye's (1956) theory of the general adaptation syndrome experienced physiologically in reaction to stress.

Lumsden (1975) listed certain critical characteristics of a stressor that affect coping: the source of the stress; its nature, duration, timing, intensity, frequency, ambiguity, and novelty; its meaning to the system (whether achievment or security related); whether acting alone or with other stressors; whether avoidable or controllable; whether predictable; and whether the system has experienced this particular stressor before. If the system has experienced

the particular stressor before, how well the system coped before -- past experiences -- are very important. Knowing of the stressor ahead of time, or "anticipatory coping", also affects the degree to which the system can cope.

Summary: Research Findings on Stress. Some general observations may be made on what studies on stress have revealed. For example, stress is probably better conceived as a state of the total organism in reaction to circumstances than as an event in the environment. A great many environmental conditions can cause stress. However, different people respond to the same conditions differently -- some quickly become stressed, some improve performance, and some do not seem to react. Also, the same person may be stressed by one stressor but not by another. Consistent intra-individual response patterns occur, but there is some intra-individual variability. There are different inter-individual response patterns. Therefore, the idea of common stress reactions should be reassessed. Behavior depends on the context of the stress, and underlying motivation and context should be understood when assessing stress. Also, temporal factors may determine the significance of a stressor (Appley & Trumbull, 1967).

It appears that more research is needed regarding specific psychological, cognitive, and behavioral components of stress. Lumsden (1975) suggested that further knowledge

of specific variables of systems under stress is needed, and then, hopefully, preventive intervention programs can be developed for groups or individuals at risk.

It seems inescapable that a number of determinants act together to cause the individual to experience stress. Evaluation of the experience of stress, as well as the possibility of evaluating changes in the stress experience, necessitates a specification of areas commonly felt to be problems.

The Measurement of Stress. Instruments are needed to use as guidelines for the effective measurement of stress-related conditions which are independent, valid, reliable, and objective, and which also measure changes in such conditions.

Anxiety and depression (Lazarus, 1963), as well as somatic complaints (Selye, 1979), are three areas that have been commonly reported as experienced by individuals in stress. To attempt to measure these three areas the Hopkins Symptom Checklist (HSCL) (Appendix A) will be used in the present study. The HSCL is a symptom checklist developed at Johns Hopkins University and used in a 25-year study on the effectiveness of psychotherapy (Frank, Hoehn-Saric, Imber, Liberman, & Stone, 1978). The instrument has significantly differentiated between groups of highly depressed and/or anxious individuals and controls in many studies

(Bienemann, 1979; Kravetz, 1978; Lieberman & Bond, 1976; Rickels, Garcia & Fisher, 1971). It has also appeared to measure change in level of symptom distress (Parloff, Kelman, & Frank, 1954). Factor analysis has resulted in factors including anxiety, depression, and somatic complaints.

A group reporting having experienced considerable stress in the preceding year did not differ significantly from a group reporting no such stress (Bienemann, 1979). This may indicate that the HSCL is not measuring stress over a long period of time, but currently experienced stress.

Stress and the Social Environment

The social environment has been found by many researchers to have a relationship to health. Stressful environments with accompanying emotional factors have been implicated in hypertension, migraine headaches, obesity, asthma, rheumatoid arthritis, peptic ulcer, dermatitis, and heart disease (Insel & Moos, 1974). In discussing the social environment, Costello and Zalkind (1963) described a model of the behavior of humans while under stress in which environmental stressors interact with personality to produce tension, which can vary in intensity and duration.

To illustrate the effects of the social environment, Rennie and Srole (1956) interviewed 1660 randomly selected New Yorkers living under a wide range of socioeconomic

conditions. Psychosomatic health was asked about, as were tension and anxiety. Results showed that two groups were found to have considerably higher rates of psychosomatic complaints -- those at the highest and lowest extremes of the social scale. In addition, tension and anxiety were reported to be correlated with nine out of eleven somatic disorders, especially in the lowest and highest social groups. Unfortunately, no further details or statistical findings were given.

The relationship of life stress or emotional stress to the onset of physical illness has been observed by many investigators. For instance, Rahe, Meyer, Smith, Kjaer, and Holmes (1964) examined the proposition that many diseases begin in a setting of increased social stress. They used the Schedule of Recent Experience, made up of multiple choice questions and sentence-completions in a self-administered form, that inquired about occupation, marital status, personal and economic status, and health status. Their findings showed that cardiac patients had significantly more social alterations in the two years preceding symptom onset than a control group. Similar results were found in a group of people who had developed tuberculosis. After conducting their study and reviewing the literature, Rahe et al. concluded that life situations which threaten the security of an individual evoke attempts at adaptive behavior and cause significant alterations in most bodily systems

that, when sustained, lower the body's resistance to disease.

In another study, which investigated emotional as well as social accompaniments of physical illness, Weiss, Dlin, Rollin, Fischer, and Bepler (1957) examined the possibility that emotional stress is a contributing or aggravating factor in coronary artery disease. They attempted to study the life situations and personality structures of 43 patients admitted to Temple University Hospital with myocardial infarctions (M.I.) using an interview format. A control group matched for age, sex and race without coronary or obvious mental or psychosomatic disease was also interviewed. Many differences were found between the coronary group and the control group. For instance, "psychopathology" in the family history (defined as obvious mental or nervous illness) was found in 46% of the coronary group and only 16% of the control group. Reports of gradually mounting tension for months or years prior to the onset of the occlusion was found in 49% of the coronary patients and in none of the controls. Of the coronary patients, 37% reported acute occasional stress before the onset of the M.I. while only 9% of controls reported such stress. Weiss et al. concluded that stress may be accompanied by changes in pulse rate, blood pressure, clotting time, and other alterations in circulatory physiology. These findings are similar to but more specific than the

previous findings of Rahe et al. (1964).

In yet another study along the same lines, Holmes and Wolfe (1952) studied 65 subjects with backaches and reported finding a relationship, in most, between exacerbation of backache pain and feelings of conflict, anxiety, and other strong emotions related to social situations. All three of these studies, as well as many others, indicate that environmental stressors and psychological symptoms of stress in individuals are correlated with high rates of physical symptoms and disorders.

Occupational Stress

Occupational stress is one particular type of environmental stress in which more research is needed to indentify and measure such stress as well as to begin to establish means of prevention (Ferguson, 1973). Reporting on occupational stress, Kasl and French (1962) discussed several studies demonstrating that men under age 45 subjected to the occupational stressors of deadlines, intense competition, long hours, or second jobs tend to have higher cholesterol levels and a greater incidence of coronary artery disease than other men. In another review, Argyle (1972) stated that studies of high blood pressure, ulcers, heart disease, and other psychosomatic illnesses show that these diseases occur most commonly in men aged 40-60, in supervisory or management positions, under pressure of

deadlines and intense competition, or working additional jobs. There is also evidence that these illnesses occur in low-status but ambitious, hard-working men. Argyle reported, furthermore, that a number of studies have found doctors, managers, and foremen to have high rates of heart disease, ulcers, and high cholesterol levels.

In further studies of managers and supervisors, Pell and D'Alonzo (1961) found executives to have higher cholesterol levels than nonexecutives, while Kasl and French (1962) reported that the rate of ulcers in employees of a large company in Holland was seven times as high for foremen as for workers under them. Kasl et al. reported that skilled workers had the lowest incidence of ulcers, with semi-skilled workers higher, but not as high as foremen. In addition, this study found that supervisors reported sick more often than workers under them, with 63% more visits to the dispensary by supervisors at one factory, and 9% more at another. These results may be confounded by age differences between supervisors and supervisees. In the same study, executives, foremen, and craftsmen were sampled for various indices of peptic ulcer, with foremen found to have significantly more symptoms. Reflecting congruent findings in another setting, Rennie and Srole (1956) found that 28% of their sample of 1660 New Yorkers reported two or more "psychosomatic" ailments. Forty-two percent of executives and 25% of professionals reported two or more

symptoms, with different psychosomatic disorders seemingly related to social class. For instance, the highest social class reported more hay fever, while the lowest social class reported more arthritis. "Heart conditions" were reported more by the middle class. These studies all indicate differences in psychosomatic symptoms or complaints between social or work groups, with supervisors, managers, and executives generally reporting more such symptoms. This suggests the possibility that persons in these positions experience greater stress, also experiencing more stress-related diseases. There are also apparently but less clearly definable differences in patterns of stress related to disorders according to social class.

Employees in highly stressful occupations appear to experience more stress-related disorders. Ferguson (1973), for instance, examined patterns of occupational stress in Australian males and found that telegraphists, in a reportedly high-stress job, had more absences due to illness over a two to five year period than clerks, mail sorters, or mechanics. In another study, Cobb and Rose (1974) examined air traffic controllers, in another reportedly high-stress job, as well as second class airmen for the presence of peptic ulcers, hypertension, and diabetes mellitus. Significantly more hypertension and ulcers were found in air traffic controllers. More diabetes mellitus was also found in the air traffic controllers, but in numbers too small

to examine for statistical significance.

In a study that combined an examination of possible stress outside of work with illness related to occupation, Rahe et al. (1964) used seven patient samples with five distinct medical diagnoses, and two control groups, to find that employees of a tuberculosis sanitorium who developed tuberculosis had experienced more change in social status in the two years preceding development of the disease than had employees who did not develop tuberculosis.

Role ambiguity on the job has been discussed as a stressor. Argyle (1972) saw role ambiguity as occurring when no clear definition is given of a person's role, and suggested that this results in a state of conflict and stress. Warr and Wall (1975) also discussed role ambiguity or lack of clarity resulting in role conflict as a source of psychological stress and job-related tension. Other investigators (French & Caplan, 1977) found that role ambiguity was significantly related to low job satisfaction and to poor physical and mental well-being, and evaluated role ambiguity as stressful. They reported that the more ambiguous the role definition, the lower was the utilization of both intellectual skills and leadership skills. Several studies were summarized as stating that various workload factors produce many different physiological and psychological strains on a person. One conclusion reached was that the

employee's participation reduces stress by reducing role ambiguity.

Role conflict on the job is another issue that has been related to stress. Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) used a complex method to measure role conflict in 53 persons, finding that individuals identified by independent measures as higher in role conflict reported more job-related tension, lower job satisfaction, less confidence in management, and less trust and liking for colleagues than other workers did. House and Rizzo (1972) had similar findings examining 200 research development and engineering personnel, having them describe the degree to which they experienced role conflicts. The index of perceived role conflict was negatively correlated with job satisfaction, and persons with high role conflict reported higher levels of job-induced anxiety, tension and general fatigue and uneasiness.

Alienating work situations may also contribute to stress. Garfield (1979) hypothesized that alienating work situations which undermine self-defined needs of workers in ways not under the workers' control tend to result in states of chronic stress which occur when workers discover that the consequences of their actions are irrelevant or contrary to their needs, intentions, or expectations.

Another important factor contributing to job-related

stress may be perception of work overload (Beehr & Newman, 1978). To illustrate this, Buck (1972) asked 36 managers and 139 nonmanagement employees a set of "work overload" questions, finding high overload responses for both managers and subordinates to be related to indices of lowered individual well-being -- lower statisfaction, more felt likelihood of a "nervous breakdown", and more job-related worries. On the same subject, Sales (1970) had 73 volunteers solve anagrams. Of these, 36 were allocated "overload" conditions -- more anagrams than they could possibly decode in the time allotted, while 37 subjects were allocated "underload" conditions, in which they could decode the anagrams in 70% of the time allotted. Results showed that productivity of subjects in the overload condition was higher, but so was average heart-rate, number of errors, and feelings of tension and anger. "Over-load" subjects also reported lower task enjoyment and lower self-esteem.

Studies examining the importance of occupational stress to health include Russek and Zohman's (1958) paper stating that 91 out of 100 coronary patients reported having experienced prolonged emotional stress associated with occupational demands before the onset of the coronary disease. Only 20% of a control group reported such stress. Occupational stress was reported to be more significant than diet, lack of exercise, or family medical history in this study. In another study, Palmore (1969), looking at longevity over

15 years, found that the six strongest independent factors predicting longevity were work satisfaction, happiness rating, physical functioning, tobacco use, performance I.Q., and leisure activity. Work satisfaction was found to be the best overall predictor of how long a person is likely to live, and explained half the cumulative variance found. Eyer (1975) reviewed the evidence on work-related stress and concluded that time-pressured, externally controlled work is related to hypertension, coronary disease, and other stress-related disorders in a causal relationship.

Warr and Wall (1975) surveyed studies of work-related stress and suggested that properties of work situations that are stressors include highly repetitive tasks needing concentration under adverse conditions, high levels of responsibility for other people, and strongly conflicting demands. This would seem to include the higher levels of stress found in managers and supervisors, in people on "high stress" jobs, and in people with role conflicts or in over-load conditions.

There are many instrinsic methodological problems in attempting to evaluate job-related stress. Home life is not controlled, nor are other intervening variables which may be stressors for workers. Margolis and Kroes (1974) suggested five dimensions of job-related stress which should be used to appreciate the effects of job stress:

(1) short-term subjective states (anxiety, tension, and anger), (2) chronic psychological responses (chronic depression, feelings of fatigue and alienation; (3) transient physiological changes (changes in level of catecholamines or blood pressure); (4) physical health status (coronary disease, gastro-intestinal disorders, or asthmatic attacks); and (5) work performance decrement (increased errors and/or decreased productivity). Daley (1979) suggested that job-related stress is functional in its early stage, when it increases motivation and productivity, but then as tension increases or becomes chronic, performance decreases.

Professional Workers and "Burnout"

Differing Values Among Employee Groups.

There appear to be differing values between people who are employed in businesses and people who enter the "helping professions". Rosenberg (1957), exploring these issues, stated that those who enter business are seeking financial rewards while social workers generally value working with people. Another researcher (Lawler, 1971) reported that his study reflected the fact that people working in industrial organizations place most importance on pay, people working in government agencies place less importance on pay, and those working in hospitals and social service organizations place least importance on pay. In a later article, he theorized that

different job-seekers want different rewards and look for employment on the basis of their perceptions of how the job will meet their needs (Lawler, 1973).

It has been theorized that employees in human service professions are especially susceptible to disillusioned idealism (Edelwich & Brodsky, 1980). In addition, it has been suggested that the potential for alienation should be greater in organizations with a professional staff because professionals have advanced training and normally have codes of professional behavior that encourage norms of autonomy and the expectations of involvement in decision-making. In looking at work alienation in staff members of social work agencies, Aiken and Hage (1966) gave a questionnaire to 314 professional staff members and concluded that work alienation depended on the degree to which staff members participated in work-related decisions, with low participation correlating with high alienation. Alienation from other workers depended more on amount of autonomy allowed in task fulfillment, with close supervision and strict enforcement of rules correlating with high alienation.

Further discussing professional workers, Kasl and French (1962) reported that highest rates of psychoneurosis have been found in "personal service" groups. More recently, Ivancevich and Matteson (1980) reported on a study conducted in Tennessee by the National Institute for Oc-

cupational Safety and Health. Records of mental health centers were examined to ascertain major occupational categories of people seeking admission, and out of the 30 occupations most often named by people seeking admission, seven were health-related occupations. Ivancevich and Matteson concluded that health care professionals have jobs that produce excessive stress.

"Burnout" in the Helping Professions. The word "burnout" has been used to describe stress in the helping professional. It appears that the word "burnout" came into the professional literature in 1974 when H. J. Freudenberger began to publish articles on "burnout" of the staff in free clinics, and the term has since been used to describe psychiatrists, nurses, teachers, police officers, lawyers, mental health workers, and day care staffers (Edelwich & Brodsky, 1980). The word has been defined variously as: a wearing out, exhaustion, or failure resulting from excessive demands on strength, energy, or resources (Freudenberger, 1977); or as emotional exhaustion from the stress of interpersonal contact (Maslach, 1978a).

Edelwich and Brodsky (1980) suggested that burnout is not limited to workers in human services but is also found in business, although not with the same regularity or intensity. They warned that the word "burn-out" may be the latest "fad disease", focusing on human service per-

sonnel. Thompson (1980) seemed to agree, stating that the term "burnout" is seldom used but that the concept of stress-related symptoms is found in the literature of other fields of employment. The term "burnout" itself seems to be limited to describing people in the human services.

The actual extent of burnout in human service personnel is unknown. Freudenberger (1977) speculated that the amount of burnout in the helping professions is increasing. It has been suggested that no research has been done until recently on the important social problem of burnout (Maslach, 1979), and that virtually no studies have been done to give an exact and entire picture of burnout (Maslach, 1978a). Thompson (1980) discussed the need for a description and measurement of burnout, stating that the development of an instrument that measures burnout could lead to early detection. These authors would seem to agree with Maslach and Jackson's (1979) statement that the burnout syndrome needs to be acknowledged as a commonality between people whose jobs require them to give to others in need.

Effects of Burnout. Many different symptoms have been attributed to burnout. A majority seem to be the same as the symptoms generally attributed to any stress. Physical symptoms said to be connected with burnout are: minor illness; fatigue; headaches; insomnia and other sleeping difficulties; proneness to colds, aches, and pains; and other

psychosomatic symptoms (Freudenberger, 1975; Maslach, 1978b; Maslach & Jackson, 1979; Shubin, 1978). Emotions that seem to be connected with burnout include anxiety, anger, depression, helplessness, fear, irritation, feelings of emotional exhaustion, overconfidence, boredom, resentment, discouragement, feelings of isolation, low morale, negative self-image, suspiciousness, cynicism, supersensitivity to others, and rigidity (Freudenberger, 1975, 1977; Maslach, 1978b; Maslach & Jackson, 1979; Scully, 1980; Shubin, 1978).

Health professionals and social service professionals work intensely with others, and there is continous emotional stress in this contact. Loss of concern for the client or patient and possibly even treating the client or patient in dehumanizing ways are other symptoms of burnout that can be destructive to clients (Maslach, 1976; Freudenberger, 1977). In this process, staff may limit interactions with clients and spend less time with them. Staff may lose positive feelings, such as sympathy and respect for clients or treat them in cynical or even derogatory ways (Maslach, 1976, 1979). To illustrate this process using questionnaires, interviews, and field observations, Maslach and Pines (1977) reported having conducted field studies on social workers, psychiatric nurses, clinical psychologists, psychiatrists, poverty lawyers, prison personnel, and physicians. The investigators reported finding a similar process in all groups of dehumanizing responses toward clients, but unfor-

tunately the questionnaire was not reproduced nor were specific research design or results given.

Other behavioral symptoms reported by professionals feeling "burn-out" include increased alcohol and drug use (Maslach, 1976, 1979; Maslach & Jackson, 1979). Also, increased marital conflict and problems in other family relationships have been reported as well as a high correlation of burnout with alcoholism, mental illness, and suicide (Maslach, 1976, 1978b, 1979).

Results of burnout on health care and social service delivery systems have been described as: low worker morale; impaired performance; absenteeism; high turnover; lowered staff efficiency and effectiveness; rigidity and resistance to change by the staff; and resulting stress on clients or patients in contact with such professionals (Daley, 1979; Freudenberger, 1977; Maslach, 1979; Maslach & Collins, 1977; Maslach & Jackson, 1979).

Job Variables Related to Burnout. Variables within the job may contribute to professional burnout. Daley (1979) described burnout as varying in nature with the intensity and duration of the job-related stress. Different work environments may have different pressures, with particular stress from the occurrence of frequent crises or from long-term care of chronic clients (Freudenberger, 1977). Client variables may have an impact on staff burnout. Maslach

(1978b) described type of client as having a role in burnout, with possible problems including: severity of clients' problems; prognosis of change; probable degree of relevance of clients' problems to staff members; rules of staff-client interactions; and clients' reactions to staff. High identification with clients was believed to cause more stress, as were differing expectations of staff and clients. However, it is important to keep in mind that different individuals react differently to the same stressors (Daley, 1979). In examining some specific job-related variables, Pines and Kafry (1978) gave a questionnaire to 129 workers in the field of social services, and found that high scores on feeling depressed, run down, burned out, and tired were correlated negatively and significantly with job satisfaction on the Kunins' Faces Scale, and correlated positively with a desire to leave the job (r = .48). In addition, they found that a high caseload correlated positively with high burnout scores, and that high satisfaction with supervisor correlated negatively with high burnout scores. Variety, autonomy, and success on the job were not significantly correlated with burnout scores. Social support system variables such as feedback from others, work relations, and work sharing were all negatively correlated with high burnout scores. Overall, social support systems appeared to be more important in preventing burnout than other internal factors on the job.

It has been theorized that workers in the human services might misattribute their emotional stress to personal inadequacies, being unaware that their work peers are experiencing the same reactions (Maslach, 1979). Social support systems within health care and social service institutions are not yet widely recognized as necessary, but Maslach suggested that burnout rates are less for workers with access to such systems, especially if they are well-developed and supported by the institution. This opportunity can allow professional workers to share their reactions and get a perspective on changing the situation.

If stress indicators in one staff member are not dealt with, a dysfunctional system can result. A change in the functioning of one nurse, for example, effects changes in the whole nursing unit. Functioning as a group member takes skill, and every group differs. Also, turnover causes change in the group, with both losses and additions resulting in anger and sadness. For a group to run smoothly, individual goals need to be coordinated with the group goals. Some group indicators of stress include arguing, blaming others, sullenness and silence, defensiveness, intolerance, absenteeism, errors, and rapid turnover of staff (Scully, 1980).

A discrepancy between expectations and reality has been blamed for much of what is called burnout (Edelwich &

Brodsky, 1980). Scully (1980) made a similar statement, indicating that idealism is necessary, but should not take the place of healthy realism. He also suggested that health care workers feel guilt over their lack of ability to meet all their patients' needs. Freudenberger (1975), along the same lines, indicated that dedicated and committed people feel internal pressures to accomplish and succeed, and external pressure from those they are trying to help. He theorized later (1977) that burned-out staff may be those whose original dedication and commitment were too strong, with goals that were too high. He suggested that these may be people who are insecure in their private lives, needing to prove themselves through work.

The Burnout Cycle. Burnout has been conceptualized as a dynamic process with definite stages of development. Daley (1979) related the stages of burnout in social workers to Costello and Zalkind's (1963) stages of stress, with new workers first putting in overtime, then becoming exhausted and frustrated, and eventually leaving the field -- or, if they remain, becoming rigid and treating clients inhumanely. To replenish energy and decrease burnout, Daley suggested that rewards and rest periods must occur. Along with this, sources of stress must be identified so they can be eliminated or lessened. Freudenberger (1977) also described different stages of burnout, with different things helping to relieve burnout at the different stages. He suggested that

burnout develops gradually, with the employee unaware of the process, while perhaps refusing to believe there is a problem or seeing the problem as outside him/herself. As time goes on, the employee gradually has less to contribute and develops more physical symptoms. Maslach (1979), as well, suggested that burnout shows a remarkably similar pattern of responses to work-related emotional stress in a wide range of health and social service professionals. Other authors who suggested that the burnout syndrome is cyclic are Edelwich and Brodsky (1980). They theorized that the same person might go through the cycle many times on the same job or on different jobs, and suggested that perhaps burnout cannot be prevented, yet it may be managed and used as a source of creative energy.

Allied Health Professionals, Stress, and "Burnout"

Professional organizations have been described as characterized by the goals they pursue and the high proportion of professionals on the staff, and include universities, colleges, research organizations, and large general hospitals (Etzioni, 1964). Purtilo (1973) defined "allied health professional" as a term used to designate any person providing health care. This may vary from technicians with six weeks of on-the-job training to persons with a doctoral degree or beyond. Total health care depends on many disciplines. According to these definitions, the present study took place within a professional organization (a large

general hospital), with allied health professionals and nonpatient care employees as the two groups of subjects.

Health care has been described as highly demanding both physically and psychologically, resulting in frustration, anxiety, and exhaustion of the professionals providing such care. This may result in negative attitudes toward patients as the "cause" of such stress, with burnout setting in. Another result of burnout might be attempts by the health care staff to reduce contacts with patients (Maslach, 1979). Scully (1980) listed four areas of stress in health-care professions: (1) patient care, (2) tensions within the staff, (3) unrealistic performance expectations, and (4) outside stresses. Patient care seems to be especially stressful during times of crisis. One reason for this might be that the staff identifies with the patient, or as the patient's parent or child. Another reason for stress is that health care professionals often feel that their role is to keep patients alive. Specifically on intensive care units, which might be considered crisis units, Hay and Oken (1977) saw stresses on nurses such as: the environment (machines and patients); heavy workloads and demands on nurses; complex technical tasks; emergency situations; relationships with patients, staff, doctors, and administration; the possibility of making life-endangering errors; and deaths.

Caring for dying patients does seem to add to stress

in the health-care professional. Feelings such as guilt and anger may contribute to such stress (Maslach, 1979). To explore stress in nurses on various units, Vachon, Lyall, and Freeman (1978) used scores on the Goldberg General Health Questionnaire to measure stress in nurses working with patients with advanced cancer and nurses on two other units in the same hospital. The number of subjects was small, but nurses working with the cancer patients had stress scores twice as high as stress scores of nurses on the other units. In addition, the stress scores of nurses on the cancer unit were compared to those of newly widowed women and women beginning radiation treatment for breast cancer, and the nurses had only slightly lowered stress scores. Vachon et al. reported stress scores of nurses on the cancer unit as considerably higher than those of people in other occupations, but did not specify the other occupations or statistical differences between the groups.

In surveying the health care journals, it appeared that more attention has been paid to level of stress in nurses than to other health professionals. Still, Ivancevich and Matteson (1980) reported a noticeable lack of attention, in their opinion, paid to nurses in the literature on stress. They designed a Stress Diagnostic Survey to assess job factors that create stress for nurses, and reported finding significant levels of stress in nurses. Unfortunately, they did not reproduce their statistics.

Attempts have been made to find out why nurses drop out of the nursing profession. Hallas (1980) polled 3700 working and nonworking nurses in Florida, sampling both rural and urban nurses with a wide range of socioeconomic backgrounds. Nurses were asked their opinions as to why people drop out of nursing. This was an attempt to indentify the most serious nursing problems now present and compare different health care facilities in the problem areas found. Questionnaires and interviews were used. Of those polled, Hallas reported 67% working as nurses. Of those who had dropped out of nursing, 92% held active nursing licenses. Those who had quit nursing reported that the worst problem in nursing is steadily diminishing patient contact due to other demands on the job. In combining the group of present nurses with those who had dropped out of nursing, the most common problems reported were increased paperwork, less staff, lowered patient contact, lack of unity, insecurity, and poor leadership. Of all nurses, 25% reported poor communication between nurses, doctors, and administration. Hallas concluded that many studies find that one out of every three R.N.'s drops out of nursing at some point, and that countless other thousands of nurses show signs of advanced burnout.

LaViolette (1980) also discussed nursing turnover, as reported during the Third National Conference of the

Journal of Nursing Administration. She reported that only 31% of those who have received R.N. licenses are active full-time as nurses, and that retention of nurses is the main problem in nursing with an increasing nursing shortage expected in the 1980's. High nursing turnover was attributed to nurses feeling alienated and powerless, by McClure at the Conference, who suggested that these feelings may reflect the powerlessness of the managers of nurses. LaViolette added that McClure noted the fact that 98% of nurses are female, and that this affects every aspect of managing nurses.

Employee Satisfaction

Job dissatisfaction appears to be a widespread phenomenon. Gurin, Veroff, and Field (1960), surveyed 2460 Americans of whom 31% reported having problems on their jobs, with 26% reporting feeling inadequate at their jobs. They found a trend for people with higher status jobs to report greater feelings of adequacy, although unskilled workers reported fewer work problems.

It has been reported that between 2000 and 4000 studies connected with job satisfaction were published in the 30 years preceding 1971, but that knowledge of job satisfaction did not substantially increase during that time. The research has been typically correlational and atheoretical, with little learned about causal relationships (Law-

ler, 1971).

On surveying the literature, it appears that there is no consistent relationship between job satisfaction and productivity. However, low worker morale does appear to correlate positively with high employee absenteeism and turnover. In general, with few exceptions in the literature persons at the higher levels of employment reported more satisfaction and interest in their jobs than people at lower levels. Also, people at higher levels felt more involved, identified more with their work, and their attitudes toward the organization tended to be more favorable. There tends to be a positive relationship between job satisfaction and the amount of control employees fee that they have in the work situation (Tannenbaum, 1966).

It has been suggested that the same psychological mechanisms that help a person feel satisfied or dissatisfied in general are also true about work situations. Dissatisfaction or tension occurs when certain needs are not satisfied. The amount of tension in a given situation is determined by the strength of a need or drive and the potential the situation offers to satisfy those needs, with overall job satisfaction varying directly with extent of need satisfaction (Schaffer, 1953). On the same topic, Kuhlen (1963) theorized that a high level of specific needs bears on one's satisfaction with career -- that satisfac-

tion of these needs would be important for occupational satisfaction.

Vroom (1962) introduced the idea of ego-satisfaction related to job satisfaction. He suggested that persons with a high degree of personal involvement in their work role, seeking some expression and actualization of self in work, tend to be on the extremes of job satisfaction scales and also tend to experience more work-related problems. According to this idea, people are ego-involved in their job, to the extent that their levels of self-esteem are affected by performance level on the job.

On the subject of self-esteem, Kasl and French (1962) suggested that low-status jobs lead to low self-esteem, which leads to poorer "mental health". To assess mental health of workers, Kornhauser (1965) inverviewed 407 workers in automobile factories. He reported high mental health scores for 65% of white-collar workers, 57% of skilled workers, 37% of semi-skilled workers, and 18% of semi-skilled workers working on highly repetitive jobs. The conclusion was that low-grade work lowers self-esteem and causes discouragement and feelings of inferiority due to lack of opportunity to develop ideas and skills. However, it is important when evaluating these studies to be wary of assuming that correlations are necessarily related to cause-and-effect. Also, methods of assessing

self-esteem and mental health may have been somewhat biased toward "middle class" values.

To look at needs related to work, Ross and Zander (1959) reported that the Research Center for Group Dynamics of the University of Michigan used as subjects 2680 skilled female workers in various large cities, employed in 48 sections of a large company. Five needs were measured -- affiliation, achievement, autonomy, recognition, and fair evaluation. The women were asked on a questionnaire how much these needs were being satisfied on their jobs. Later, 169 of those tested had resigned, and two matched controls were selected for each and compared on questionnaire results. Results showed that need for recognition and autonomy, and less, but present, for achievement and fair evaluation were perceived as not being met by those who resigned.

To look at employees needs in another way, Wickert (1951) used a variety of measures with over 600 young women employees of Michigan Bell Telephone Company. "Turnover-prone" employees could not be predicted from biographical data, employment test scores, or a score of "neurotic tendency" from 50 test items. It was found that women more likely to stay on the job felt they had a chance to make decisions on the job, and felt they were making an important contribution to the company's success. Based on this,

the investigators speculated that ego-involvement of the employee was the most important variable for low turnover. Another need may be for the employee to feel accepted by a group. Argyle (1972) found that job satisfaction seemed to be high among workers who belonged to and were accepted by a cohesive group, and speculated that such groups provide emotional support as well as reducing anxiety about pressure from those outside the group.

There may be differences between men and women on variables of job satisfaction. For example, Hurlin and Smith (1964) sampled 295 male workers and 163 female workers and indicated that female workers were less satisfied on their jobs than male workers. Therefore, sexual makeup of all samples should be given in all research on job satisfaction.

After reviewing the literature on the importance of job satisfaction, especially in relation to employee turnover and absenteeism, Porter and Steers (1973) concluded that much more needs to be done in this area. They did state that employees who remained on the job had more realistic expectations for their jobs, and that those with the least investment in their jobs had the highest turnover rates.

Dimensions of Supervision Related to Employee Satisfaction

Effective supervision seems to be an important ingredient of employee stress and satisfaction. Regarding stress,

Fiedler, Potter, Zais, and Knowlton (1979) reveiwed four studies of men and their supervisors and found consistently that employees used more of their potential intelligence if their relationship with their immediate supervisor was non-stressful, and used less potential intelligence when stress with their supervisor was high. Torrance (1961) also stated that effective leadership lessens stress. In discussing supervision and stress, Daley (1979) suggested that supervisors can lessen employee stress in many ways, such as rotation of stressful job assignments, developing peer group support systems, opening up communication with employees, implementing training programs, and recommending sanctioned time away from the job.

Two main dimensions of leadership are described frequently in the literature on supervision. Tannenbaum (1966), reporting on an Ohio State University study of supervision, called one dimension "initiating structure", which is somewhat like the traditional leader role -- high in organizing and defining the relationship between supervisor and supervisees. He called the second dimension "consideration", and this behavior reflects friendship, mutual trust, respect, and warmth. Argyle (1972) also concluded that the two main dimensions of leadership are those of initiating structure (concerned with the group task) and consideration (concerned with the group members). Argyle, in discussing qualities of

supervision, stated that sociologists suggest two main ways supervisors can influence supervisees: (1) to make use of power based on sanctions (reward and punishment); or (2) to have legitimated authority, based on the supervisees' respect for the leader's authority or expertise.

In addition, effective supervisors have been found to use a set of social skills with three components. One skill used is motivating people by explanation and persuasion. The second is allowing supervisees to participate in decisions that affect them, which seems to increase job satisfaction in the employees. Third, the effective supervisor uses group discussion and group decision making. Both group cohesion and group pressure to carry out decisions as well as internalized motivation seem to operate in employees supervised in these ways. It also appears that supervisors need to be fair and impartial, and must not abdicate the formal role of supervision (Tannenbaum, 1966). In a statement that appears to support the previous views, Likert (1961) said that the behavior of effective supervisors is based on the principle of supportive relationships, so each member of an organization will view the interactions within the organization as supportive, and this will help build and maintain the employee's feelings of personal worth.

The research literature shows mixed results regarding leadership qualities. Riger and Galligan (1980) reported

that studies indicate that perceived effectiveness of supervisory style varies with sex of supervisor and sex of supervisee. They suggested that psychological studies about women and management need to be undertaken, considering the interaction of personal and situational variables in women managers. This may be difficult, as Baron (1977) reported that few women actually seem to be in managerial positions. According to his figures, 5% of all working women are managers while 15% of all working men are managers. It was also reported that 82% of all managers are male.

Many studies have been done relating sex of supervisor and sex of supervisee. Field and Caldwell (1979) used the Job Description Index to look at job satisfaction, and found female employees supervised by males to be significantly less satisfied than those supervised by women. They concluded that sex and role stereotypes of women and men leaders need to be examined. Petty and Lee (1975) also looked at sex of supervisor in relation to satisfaction of subordinate. They had 165 nonacademic employees of the University of Alabama fill out the Supervisory Behavior Description Inventory and the Job Description Index, and analyzed male-female subordinate-supervisor relationships. Results showed that male subordinates with female supervisors saw their supervisors as lower on "consideration" and higher on "initiating structure". All correlations between "consideration" in the supervisor and employee satisfaction were

statistically significant, but significantly higher if the managers were female. Conclusions were that consideration displayed by female managers correlates higher with employees' job satisfaction than consideration by male managers. Petty and Lee speculated that perhaps females are expected to be more considerate, causing the higher correlation.

In another study, Bartol and Butterfield (1976) had male and female business students rate stories that were identical except that sex of leaders was different, depicting various leadership styles for both sexes. Results showed that sex of manager had an effect on the evaluation of management behavior. On the two dimensions of leadership discussed previously, female managers were valued more for the dimension of "consideration", while "initiating structure" was valued more highly in male managers. In light of these mixed findings, leadership style and sex of supervisor and supervisee will be examined in the present study.

Need Satisfaction Theories and the Porter Need Satisfaction Questionnaire

Need Heirarchy. It seems apparent that humans have certain needs. Abraham Maslow (1954, 1968) stated that these needs are hierarchical, and that higher-level needs can be reached only when lower level needs are satisfied. He categorized human needs into five broad groups: (1) physiological needs, such as hunger and thirst; (2) safety needs, for

security and absence of threat; (3) belongingness needs, for affiliation, friendship, and love; (4) esteem needs, for respect, approval, and self-respect; and (5) self-actualization needs, or the freedom to develop fully all one's talents and capacities. Part of the theory is that certain needs are more salient at a given point in time. As a need becomes satisfied, the next higher level of needs becomes stronger and the need which has been satisfied decreases as a motivator. Accordingly, higher needs are rarely satisfied, as humans seek for higher level needs only as they become important, after physiological, safety, and social needs are satisfied. Cofer and Appley (1964), agreeing with Maslow's hierarchical theory, suggested that unless lower-level needs are satisfied they may be the sole concern of the individual.

In expanding on this theory, Maslow concluded, after 20 years of psychotherapeutic work, personality study, and research, that "neurosis" is a deficiency need stemming from being deprived of certain basic needs. Under this definition, a need is basic if its absence breeds illness, its presence prevents illness, and its restoration cures illness. These basic needs are probably common to all humans, and are shared values, but higher level needs generate ideosyncratic values. The theory goes on to say that the impulse toward safety (regressing backward toward more basic needs) generally wins out over the impulse toward growth (toward higher needs). Yet, the movement toward self-

actualization goes on through life, and is not a static concept. Self-actualization is a term that seems abstract and vague, but in Maslow's opinion it is neither possible nor desirable to exactly define self-actualization or the crudely synonymous concepts of other theoreticians.

Need Fulfillment in Work. Several investigators have explored need fulfillment related to work. For instance, Morse (1953) examined job satisfaction in white-collar workers and found that need-fulfillment as well as strength of desires or level of aspiration -- in other words, worker's expectations -- must be included to understand level of job satisfaction. In this study, difference between the strength of the aspiration (need) and the amount of need-fulfillment perceived was the key to satisfaction. In developing a theoretical explanation of job satisfaction, Lawler (1973) also chose to use a "difference" approach, with the difference between perception and needs or wants determining satisfaction. This approach included lower-level and higher level needs, based on Maslow's (1954) hierarchy.

A slightly different model of satisfaction was described by Katzell (1964), as the difference between what actually is and the desired amount of a constant, divided by the amount desired. Therefore, the more people want, the less dissatisfied they will be, with a constant discrep-

ancy. In this model, the individual's frame of reference must be taken into account. For instance, if two people receive the same salary, but one expects more, the one who expects more will be more dissatisfied. Locke (1969) differed from Katzell by saying that the perceived discrepancy is what is important, not the actual discrepancy. In this model, the discrepancy between the perception of what one gets and the perception of the expected is experienced as a surprise -- unpleasant, if the discrepancy is greater than expected. Locke called this model "discrepancy theory", and estimated that it is a more precise measurement than most psychological measurements.

Spector (1956) added to the models of the relative deprivation principles, which have two aspects -- the bases of expectations and the satisfaction following fulfillment of these expectations -- the "frustration hypothesis". This hypothesis states that among those who fail to achieve an attractive goal, satisfaction will be higher if the probability of achieving the goal is perceived as low compared to those who believe the probability of achieving the goal is high. The converse, the "gratification hypothesis", states that on the achievement of a goal, satisfaction is higher if the possibility of achieving the goal was perceived to have been low.

The opportunity to satisfy needs may be different at

different levels in an orgaination. The typical organization may offer few opportunities to people at the lower levels in the organization to satisfy higher level needs (Clark, 1960-1961). Porter (1962) found that the expectations of lower-level management were more divergent than their perceptions of reality on their jobs, and suggested that perhaps there is a need to change expectations or offer opportunities to satisfy more high level needs. However, Hall and Nougaim (1968) speculated that people at different levels in an organization may be different to begin with, and that this may contribute to differing perceptions of need satisfaction at different levels.

In reviewing the literature on need satisfaction, Porter (1961) concluded that organizations tend to "pay" the worker in the lower-level needs, based on Maslow's (1954) hierarchy of needs. For instance, physical and security needs are more likely to be met than higher-order needs such as esteem or self-actualization. Porter (1961), therefore, designed the Porter Need Satisfaction Questionnaire (NSQ) (Appendix A) to investigate deficiencies in need fulfillment and importance of psychological needs related to employment.

The NSQ was first used (Porter, 1961) in sampling 139 low-level and middle-management personnel from three companies. Results showed perceived need fulfillment de-

ficiencies at both levels of management for higher order needs -- esteem, autonomy, and self-actualization. Self-actualization was considered to be of prime importance at both levels, and also where the greatest deficiency was perceived. The next greatest feeling of deficiency for lower-level management was security. Esteem and social needs were least important to lower-level management. Lower-level management perceived more deficiencies on autonomy, the opportunity to participate in setting goals, the opportunity for self-actualization, and the perceived deficiency for pay. The item on pay was added to the NSQ by Porter in the 1961 study, and will also be used in the present study. Porter concluded that results differed significantly with the level of management for security, esteem, and autonomy needs. He contended that within an organization there exists a differential opportunity to satisfy different types of needs and that location within the organization seems to be an important variable when determining fulfillment of psychological needs.

In another study on need deficiency by Porter (1962), nearly 2000 managers from various management levels in a variety of companies were given the NSQ. The analysis revealed that average perceived deficiency scores were positive at all management levels, and distinctly decreased for esteem, autonomy and self-actualization categories as level of management increased. Eight out of ten specific items in

these categories showed significant trends using the sign test. However, for security and social needs, there were no significant differences between levels of management. Also, taking age into account, these results were found consistently for four different age groups. It thus appears that even allowing for age differences, managers at higher levels of management in an organization perceive more of their needs as being met (less perceived need deficiency).

In exploring need deficiency in another way, by comparing "line" versus "staff" employees, Porter (1963b) took a nation-wide survey of 1802 managers from a wide variety of companies. "Line" managers were defined as those concerned with main operations and in the direct chain of command, while "staff" managers were defined as those concerned with auxilliary services that advise and assist line employees, out of the direct chain of command. A trend was found for line managers to perceive less need deficiency than staff managers, especially in self-esteem and self-actualization, although both groups assigned equal importance to the two categories. Both groups had similar need deficiencies in autonomy, but line managers attached more importance to this category.

To examine yet another variable possibly related to need deficiency, Porter (1963c) looked at the relationship between size of the organization and perception of need

satisfaction, as well as perception of need importance on the NSQ. At lower levels of management, there was a trend for managers in small companies to be more satisfied (show less need deficiency). At higher levels of management, however, managers of larger companies were more satisfied. The size of the company had little relationship to the perception of importance of various needs.

The NSQ was used in a later study (Rhinehart, Barrell, DeWolfe, Griffin, & Spaner, 1969) to compare perceived need deficiency (lower differences being defined as higher satisfaction) of the managers tested by Porter (1962) with the need deficiency of supervisors in the Department of Medicine and Surgery (DM&S) in Veteran's Administration hospitals, domiciliaries, and outpatient clinics. DM&S supervisors were divided into four management levels, and need satisfaction was found to decrease significantly as management level decreased. DM&S managers were also found to be consistently more dissatisfied than Porter's sample of business and industry managers, with the top two management levels differing significantly and the third highest management level differing significantly. However, no differences were found at lower management levels between the DM&S sample and Porter's sample. As in Porter's sample from business and industry, the DM&S sample decreased in satisfaction with decrease in management level. The government employees at all levels were much more dissatisfied than the

managers in business and industry.

Using the NSQ in another way, to look at the importance of needs measured by the instrument, Porter (1963a) tested 1916 managers. Results showed that for importance of need, self-actualization ranked first for all of the five levels of management he considered, autonomy ranked second for four of the groups, and security and social needs tied for third rank in importance. No significant differences were found between management levels for ranking importance of needs. However, security needs ranked relatively higher in importance for older respondents, and esteem needs ranked relatively higher in importance for younger respondents. Porter considered that since self-actualization and autonomy needs appear to be the most important yet least fulfilled needs in organizations, it is critical for organizations to begin to consider these needs in dealing with employees.

A Hypothetical Model of Work-Related Stress Experienced By Human Service Professionals

If a person's relation to work is an effort to meet one's ego-ideal (Levinson, 1973) as well as a means to assess personal worth (Neff, 1977), it appears that the importance of work must be different for various people depending on personality, background, and other factors. This is illustrated by Gurin, Veroff, and Field's (1960) previously described findings that employees with higher-status jobs sought and received more ego-satisfaction from

their work, and also experienced greater frustration when needs were not met in their work, than people in lower-status jobs. Also, values related to work have been found to differ between people employed in business and those in the social work profession (Rosenberg, 1957).

One way of explaining the differences in the importance of work to different individuals is Lawler's (1973) theory that people seeking different jobs are also seeking different rewards, based on their perceptions of how the particular job will neet their needs. Based on these ideas, one could theorize that persons seeking training in the human service professions, including the allied health professions, have higher expectations and needs to feel that they are helping others -- in other words, high idealism.

Following training and employment in a human service profession, susceptibility to disillusioned idealism may be especially high, based on the previously mentioned high expectations and needs (Edelwich & Brodsky, 1980). Illustrating this, as mentioned earlier, Aiken and Hage (1966) hypothesized and found great potential for alienation in professional staff of social work agencies.

Several researchers have examined differences between strength of need and amount of need fulfillment actually perceived, using this difference as a measure of frustration as well as a measure of job satisfaction (Katzell,

1964; Lawler, 1973; Morse, 1953). To attempt to measure the discrepancy between expectations and perceived need fulfillment on the job, Porter (1961) designed the Porter Need Satisfaction Questionnaire (NSQ) (Appendix A). This is the questionnaire used in the present study, in an attempt to measure job-related frustration and satisfaction. Levels of satisfaction as measured by the NSQ will be compared for the two main groups in the sample, one made up of allied health professionals, and the other made up of hospital employees who do not perform patient care. Importance of needs on the NSQ will also be compared for the two groups.

If, in fact, there is a discrepancy between expectations and perceived need fulfillment, one could hypothesize that the resulting frustration might contribute to level of stress. Lazarus (1969), one of the foremost experts on psychological stress, theorized that frustration is an important component of stress. Hans Selye (1974), generally considered to be an expert on physiological stress, also stated that frustration is one of the greatest stressors.

The relatively low levels of pay might be adding to the possible dissatisfactions on the job and resulting frustration and stress for many human service professionals as compared to others with comparable training and education. It has been reported previously that people with higher

status jobs have greater feelings of adequacy than those with lower status jobs (Gurin, Veroff, & Field, 1960). In addition, people at higher levels of employment report, with few exceptions, higher satisfaction and interest in their jobs than those at lower levels (Tannenbaum, 1966). Using the NSQ, it has been consistently found that managers at higher managerial levels report less dissatisfaction on the NSQ than those at lower managerial levels (Porter, 1961, 1962; Rhinehart, Barrel, DeWolfe, Griffin, & Spaner, 1969).

An important point to remember regarding all of these studies is the fact that they consistently found that employees at lower income levels report fewer feelings of adequacy, lower satisfaction, less interest in their jobs, and more dissatisfaction on the NSQ. Porter (1961) found a significant difference in need-satisfaction for pay, with those at lower managerial (and pay) levels more dissatisfied.

Given these findings, all hospital employees will be divided according to pay, with the group with higher salaries hypothesized to be more satisfied on the NSQ than the group with lower salaries.

Another possible source of frustration that might result in increased stress is the fact that human service professionals are generally trained in direct service, and not in supervising. However, supervisors are generally

promoted from direct service personnel. This may result in demands on the supervisors for skills they have not learned, and may increase stress on the supervisee, to whom ineffective supervision may be a source of stress and dissatisfaction (Torrance, 1961). Stress with the supervisor, based on managerial style of the supervisor as explained by Tannenbaum (1966) as well as sex of supervisor and supervisee will be explored in this study, to examine possible differences in these areas between human service professionals and other employees.

At this point, the form and extent of possible stress experienced by the employee, resulting from perceived need deficiencies related to work, low pay, and/or ineffective supervision, would be influenced by an interaction between: the individual worker's own biochemistry, including age; personality characteristics, such as self-esteem and typical ways of dealing with conflict; previous experiences; and social support on the job as well as outside of work. There are basically three possible ways in which stress is manifested by an individual -- physiological, psychological, and behavioral (Beehr & Newman, 1978). These manifestations of stress are not mutually exclusive, but most likely interact (Lumsden, 1975).

In an attempt to measure some of this potential job-related stress, the Hopkins Symptom Checklist (HSCL) is

used in the present study. Factors found by factor analysis of the HSCL include those of anxiety, depression, and somatization. Thus, some of the psychological and physiological manifestations of stress may be measured by this instrument. The two previously described groups, of allied health professionals and employees who do not care directly for patients, will be compared on total HSCL scores in an attempt to discover differences in levels of stress between the groups. It is hypothesized that the group involved in direct patient care will report high levels of stress as reflected in higher HSCL scores. More precise measures of physiological functioning, such as health history and actual physical examination will not be used in this study. Nor will the third possible class of manifestations of stress be measured, that of behavior, such as increased smoking, or drinking, absenteeism or turnover on the job, or work performance deficits.

It is possible that the stress experienced by human service personnel is cyclic, changing over time (Daley, 1979; Fruedenberger, 1977). A full inquiry into the ramifications of a cyclic mode of stress will not be undertaken in this study but the factors of age, length of time working at the hospital, and length of time on the present job will be related to level of stress on the instruments used. Some other factors that will be explored for differences between groups are: sex of employee, income, and level of education.

In sum, this study is an attempt to measure both the perceived need satisfaction discrepancies which theoretically lead to dissatisfaction and frustration, and also to measure some of the psychological and physiological manifestations of stress which might result from such frustration.

METHOD

Subjects

Subjects for this study were 172 employees of Mercy Hospital, a 525-bed general medical hospital situated on the south side of Chicago, Illinois. The hospital has a total of approximately 2300 employees. The two major groups of subjects were those directly engaged in patient care and those not participating directly in patient care. Patient care (PC) employees included speech therapists, occupational therapists, physical therapists, respiratory therapists, social workers, nurses, and nurses aides. Nurses and aides were from the general medical floors, the rehabilitation unit, the cardiac intensive care unit, the pediatric unit, the oncology unit, and the surgical intensive care unit. Non-patient care (NPC) subjects were from the departments of engineering, radiology, pathology, pharmacy, physical medicine, research, and security. Some NPC staff from patient care units also volunteered. A broad range of volunteers, from aides to department heads, volunteered to be subjects. Of approximately 350 employees asked if they wished to volunteer as subjects, 181 filled out the questionnaire. Nine questionnaires could not be scored as they were incomplete.

Table 1 compares the PC and NPC employee groups. Of

TABLE 1

SUBJECTS

	Patient Care	Non-Patient Care
Number	104	68
Males	12%	43%
Females	88%	57%
Mean age	29 years	34.5 years
Married	42%	54%
Have Children	22%	57%
Race		
White	81%	75%
Other	19%	25%
Education (highest diploma granted)		
High School	5%	32%
Some College or technical school	30%	38%
College Graduate	51%	18%
M.A. or higher	13%	12%
Work fulltime at Mercy	93%	95%
Have another job	5%	15%
Job provides major income for family	65%	65%
Time worked at Mercy		
Less than 1 year	24%	21%
1-2¼ years	28%	21%
2½-5 years	25%	18%
More than 5 years	22%	40%
Annual Income from job at Mercy		
less than $9,999	8%	13%
$10,000-$14,999	16%	40%
$15,000-$19,999	53%	26%
$20,000-$24,999	16%	8%
More than $25,000	7%	13%
Supervise others	28%	29%
Sex of supervisor		
Male	19%	64%
Female	81%	36%

the 104 PC employees, 13 were male and 91 were female. The breakdown by sex was quite different in the NPC group, with 29 males and 39 females out of 68 employees. Educational levels also differed between the groups, with 32% of the NPC group, but only 5% of the PC group, having high school as the highest degree earned. Also, 51% of the PC group, but only 18% of the NPC group, had a Bachelor's Degree as the highest degree earned.

The NPC employees tended to have worked longer at Mercy, with 40% of this group having worked more than five years at Mercy, while only 22% of the PC group had worked at the hospital at least that long. Percentages of employees at high and low income levels differed for the two groups, with 24% of PC employees earning less than $15,000 a year and 53% of NPC employees earning that little. Of the PC employees, 76% earned $15,000 or more a year, while the incomes of only 47% of the NPC employees were that high. Sex of supervisor differed for the two groups, with 81% of PC supervisors being female and only 36% of NPC supervisors being female. These appear to be population differences as well as sample differences.

Materials

A six-page questionnaire was used in the present study. The first page was a face sheet of biographical information (Appendix A). Questions asked included: sex; age; race;

marital status; number of children; education; whether working at Mercy fulltime; whether also employed elsewhere; job title (in general, not specifically, for confidentiality); number of people supervised; length of time working at Mercy; length of time working on present job; sex of direct supervisor; whether their job at Mercy provides the major family income; and annual income range.

Hopkins Symptom Checklist. A two-page 58-item Hopkins Symptom Checklist (HSCL) followed the face sheet (Appendix A). Written instructions were for subjects to rate themselves as to how they had been feeling during the past few days, including the present day. Subjects were to rate each item from 1 (not at all) to 4 (nearly always). Responses to items were summed to arrive at a total HSCL symptom score for each subject (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974).

The HSCL is a symptom checklist developed in an earlier form and called the Discomfort Scale by Parloff, Kelman, and Frank (1954). It was developed by taking a set of symptoms from the Cornell Medical Index, supplemented by 12 items from a scale developed by Lorr (1952). Various forms of the HSCL have been used by numerous researchers, primarily with psychiatric outpatients having affective disorders such as anxiety states and depressive neuroses. Several minor variations of the scale have been developed, but the basic

scale consists of 58 items (Derogatis et al., 1974). The HSCL, having been used primarily with psychiatric outpatients having affective disorders (Derogatis et al., 1974), might be considered to measure level of neurotic symptoms or what might be called "personal maladjustment," with low scores indicating better personal adjustment.

The reliability and validity of the HSCL was investigated by Derogatis et al. (1974) on a sample of 2537 subjects. A control group had much lower symptom scores than anxious or depressed subjects. Test-retest reliability on 425 anxious outpatients had a stability of .75 to .84 on test administrations separated by one week. Interrater reliability was examined by 15 consecutive outpatients being rated in structured interviews with highly trained clinicians. Consistency was measured by consolidating intraclass correlation coefficients for HSCL symptom dimensions. For these, correlations ranged from .64 for depression to .80 for interpersonal sensitivity. Internal consistency on 1435 subjects had a coefficient alpha range from .84 to .87. Item-total correlations were all over .50, with most about .70, indicating substantial shared common variance among items.

Construct validity of the HSCL was investigated by using factor analysis in an attempt to delineate the fundamental dimensions underlying various clinical entities.

Twenty clinicians were asked to classify 64 HSCL items into four a priori clusters: anxiety, depression, anger-hostility, and obsessive-compulsive-phobia. This was done twice, with a two week interval between ratings. Items assigned to a particular cluster by 70% of raters at both rating sessions were retained (31 items). Separately, 34 psychiatrists rated 837 anxious outpatients applying for treatment. Ratings were based on information volunteered by the patient during 30-minute interviews. In this group, females out-numbered males 2:1, and the mean age was 34.2. The results showed that the four transformed items isolated in factor analysis were highly congruent with four factors from clinical experts. Given these results, Derogatis et al. speculated that these factors might represent core dimensions of psychopathology. These results indicated validity for symptom constructs.

Factor analysis was also used to examine psychiatrists' ratings of subjects, with results showing five stable and clinically meaningful factors underlying HSCL ratings: somatization, obsessive-compulsivity, interpersonal sensitivity, depression, and anxiety (Lipman, Rickels, Covi, Derogatis, & Uhlenhuth, 1969). Derogatis et al. (1974) found high internal consistency, test-retest reliability, and interrater reliability for all five factors.

In investigating the structure of the HSCL further, Derogatis, Lipman, Covi, and Rickels (1971) used the test

with anxious outpatients, obtaining self-ratings and independent ratings by psychiatrists. Patients were assigned to one of three social class groups in terms of the Hollingshead Two-Factor Index of Social Position. Substantial factorial invariance was found between social classes, and a high level of concurrence was obtained between psychiatrists' ratings and patients' self-ratings. Also, little difference in factor structure was found whether analyzing female-only data or pooled male-female data in various social classes.

In a study that used non-anxious gynecological patients as controls, 39 of the controls took the HSCL and then six months later took it again, with little difference in scores. The test-retest correlation was .72 (Rickels, Garcia, & Fisher, 1971).

Porter Need Satisfaction Questionnaire. The Porter Need Satisfaction Questionnaire (NSQ) was revised for hospital employees (Appendix A) by changing the wording of questions to apply to hospital employees, while attempting to retain the original concept. The questionnaire has 13 three-part questions in the areas of security needs, social needs, esteem needs, autonomy needs, and self-actualization needs based on Maslow's (1954) hierarchy. Porter (1961) left out physiological needs when designing the NSQ, assuming they would be adequately fulfilled in subjects. He separated autonomy needs from esteem needs, as these seemed

to be separate categories, according to him.

The NSQ was scored by obtaining a discrepancy score for each item, found by obtaining the difference between "how much is there?" (part A) and "how much should there be?" (part B) for each item (Porter, 1961). Absolute discrepancies between parts A and B were used in scoring, as it appeared that an individual who, for instance, stated that he/she has more authority on the job than there should be is indicating some type of job dissatisfaction. The discrepancy for each item was multiplied by the weighted "importance" rating for that item. Items rated as 1 or 2 in importance were weighted "1"; items rated as 3, 4, or 5 in importance were weighted "2"; and items rated as 6 or 7 in importance were weighted "3". The weighted "difference" scores were summed to obtain a total "difference", or "job satisfaction" score for each subject, with low scores indicating high satisfaction. Scores were weighted by the "importance" rating to increase the personalization of the need satisfaction score, and to increase the likelihood that the total "difference" score reflected some measure of job satisfaction. Calling this score "job satisfaction" follows the lead set by Paine, Carroll, and Leete (1966), who used this score on the NSQ to indicate the amount of satisfaction in work, and compared their results to studies in job satisfaction. Rhinehart et al. (1969) also followed this example,

calling the NSQ score "average satisfaction," with high numbers indicating less satisfaction. Both Paine et al. and Rhinehart et al. called the simple difference "satisfaction", while the present study used "satisfaction" to mean the difference weighted by importance of the specific need for the individual.

Importance of various needs on the NSQ was found by totalling the "importance" or "C" parts of questions that corresponded to Maslow's various needs, as interpreted by Porter (1961). Question 5C was considered a security need; 11C and 13C were considered social needs; 1C, 6C, and 9C were considered autonomy needs; and 2C, 8C, and 10C were considered self-actualization needs. Scores were found for each subject in each "need" area.

Items 15 through 18 and question 33 (Appendix A) were questions regarding supervisors' perception of their staff's regard for them and the amount of stress related to supervision. Scores on items 15-18 were totalled, and the score on item 33 was reversed (by subtracting from 8) and added to the total, for a total "stress of supervision" score. A low score indicates high stress. The assumption was made based on face validity that these particular questions might reflect the stress a supervisor experiences in relation to supervisees. What these questions actually measure needs to be further evaluated.

Items 19-25 (Appendix A) were questions concerning the subject's supervisor. Item 21 was not scored for this study, as it could not be related directly to stress with supervisor, but the remaining items were summed for a total "stress with supervisor" score. A low score indicates high stress with supervisor. Effective and nonstressful supervisors, in this study, were considered to be those who were high in "consideration", used legitimated authority (Argyle, 1972), and had high social skills related to leadership (Tannenbaum, 1966). The assumption that some type of employee stress was being measured by these items was based on Fiedler's et al (1979) conclusion that effective supervision seems to be a consistently important ingredient of employee stress, as well as the statement by Torrance (1961) that effective leadership lessens stress. Calling these items "stress with supervisor" is based only on the previously mentioned theories, and what is actually being measured here needs to be further explored.

Items 26-28 (Appendix A) were considered alienation items, based on Garfield's (1979) work regarding alienation. These were summed to obtain a total "alienation" score, with a high score representing low alienation. Garfield contended that certain formulations of the concept of "stress" have a sociological counterpart in the concept "alienation", and that this is a basis for relating social and psycho-

physiological processes. He used the terms "alienating" and "stressful" to describe conditions in the work environment that can induce chronic stress. Aiken and Hage (1966) also examined the concept of alienation from work, and conceived of dissatisfaction with the work situation as an index of work alienation. The present questions will be called a measure of work alienation, since they were so called by their originators. However, the question must remain open as to whether they are simply a particular measure of job satisfaction.

Items 29-32 and 35 (Appendix A) were summed to obtain a "job-related stress" score for each subject. Item 29 was considered an "overload" question (Beehr and Newman, 1978). The parts of item 34 were summed for a total "patient-care stress" score, which was found only for those subjects who participate in direct patient care. The content of items 30-35 was based on the literature on "burnout" as well as discussions with various employees of Mercy Hospital prior to the designing of the instrument.

Procedure

All employees were told that the participation in the research project was totally voluntary, and that they could discontinue participation at any time. It was explained that participation was not connected with employment, and that names would not be on questionnaires. Subjects were

approached at staff meetings, after prior arrangements with supervisors, and asked to read release forms (Appendix A) and decide if they wished to participate. Questionnaires were turned in to the researcher or to an assigned person in the department. Release forms were kept in separate envelopes from the questionnaires, so results were anonymous.

Subjects were told that if they had any questions in completing the form, they could ask the experimenter for an explanation. Occasional questions were asked about confidentiality or about specific directions, but more often questions were asked about the implications of the study with interest often expressed in the results. Subjects were told that a short report of the results would be made available to all hospital employees on the completion of the study. Most subjects filled out the questionnaire in 15-20 minutes.

RESULTS

Patient Care Employees and Non-Patient Care Employees: Differences In Stress, Job Satisfaction, and Work-Related Needs

Two comparisons were made to test the hypothesis that the patient care group (PC) would report more stress than the non-patient care group (NPC): differences between the groups on HSCL symptom scores, and differences on job-related stress scores. Table 2 compares PC and NPC groups on stress measures, job satisfaction, and importance of various needs related to work. Significant differences were not found between the groups on HSCL scores, but the PC group did report significantly more job-related stress.

Another comparison made between the two employee groups was job satisfaction as measured on the Porter NSQ. On this questionnaire, the PC group reported significantly more satisfaction with their jobs than the NPC group (Table 2). An unpredicted finding was that the PC group attached significantly more importance to social needs related to work (Table 2)

In an attempt to compare the results of job satisfaction in the present population, as measured by the NSQ need deficiencies scores, to the results of researchers who have used the instrument in the past, the questionnaires were rescored, using the exact method reported by Porter

TABLE 2

PATIENT CARE AND NON-PATIENT CARE EXPLOYEES: DIFFERENCES IN STRESS, JOB SATISFACTION, AND IMPORTANCE OF WORK-RELATED NEEDS

Variable	Patient Care			Non-Patient Care			t Value	Probability
	No. of Subjects	Mean	SD	No. of Subjects	Mean	SD		
HSCL	104	82.49	15.63	68	84.44	19.00	-.75	.48
Job-Related Stress	104	15.87	5.33	67	14.16	5.67	1.99	<.05
Stress with Supervisor	103	33.57	6.96	67	31.94	7.69	1.43	.15
Alienation	104	16.61	3.23	67	16.04	3.41	1.08	.28
Stress of Supervision	29	27.72	3.95	20	28.60	3.33	-.81	.42
Job Satisfaction	104	31.94*	20.34	68	40.63*	28.38	-2.34	<.05
Importance of Security Needs	104	6.23	1.05	68	6.15	1.11	.50	.62
Importance of Social Needs	104	11.49	2.04	68	10.37	2.51	3.22	<.01
Importance of Esteem Needs	104	15.48	3.05	68	14.72	3.91	1.43	.16
Importance of Autonomy Needs	104	23.19	3.24	68	22.79	3.84	.73	.47
Importance of Self-Actualization Needs	104	18.69	2.10	68	18.46	2.51	.67	.51

*Low scores indicate high satisfaction.

(1961) and Rhinehart et al. (1969). Means were avialable of the results of previous researchers, but standard deviations were not given (Paine et al., 1966; Porter, 1961, 1962, 1963b; Rhinehart et al., 1969). Therefore, the standard deviations obtained in the present were used for comparative purposes, on the assumption that this was the nearest estimate possible to be of any practical use. Results are reported in Table 3. Comparing the scores obtained on the NSQ in the present study to the results reported by Porter (1962) and Rhinehart et al. (1969), using the scoring method reported by them, in all causes the most deviant mean was less than one standard deviation from the means of the present study. This indicates that the population of the present study did not appear to be grossly deviant in average need deficiency from those of the previous studies.

Rank ordering was also done on these means, to obtain the relative need deficiency (factors of job satisfaction in the present study) of the various needs defined by Porter (1961), as he reported them based on Maslow's (1954) need hierarchy. Results of the rank ordering are shown in Table 4. Porter's (1962) Business and Industry Group (B&I) and the group of Rhinehart et al. (1969) from the Department of Medicine and Surgery of the Veterans Administration (DM&S) had similar rank orderings, with the least satisfied (most deficient) need that of self-actualization, and autonomy

TABLE 3

COMPARISON OF RELATIVE JOB SATISFACTION AS MEASURED BY THE NSQ: RESULTS OF THE PRESENT STUDY AND PREVIOUS STUDIES

	Nonpatient Care Group, Present Study		Patient Care Group, Present Study		All Employees, Present Study	Porter (1962) Business and Industry Group	Rhinehart et al. (1969), Department of Medicine and Surgery, V.A.
	n=68		n=104		n=172	n=1916	n=2026
Need Category	Mean	SD	Mean	SD	Mean	Mean	Mean
Security	1.39	1.67	.78	1.16	1.09	.50	.77
Social	.64	1.02	.39	.81	.52	.39	.56
Esteem	.99	1.23	.96	1.10	.98	.75	.82
Autonomy	.93	1.29	.74	1.08	.84	.95	1.10
Self-Actualization	1.60	1.65	1.00	1.20	1.30	1.22	1.31

Note -- The larger the number, the less the satisfaction in that area.

TABLE 4

RANK ORDERING OF NEED CATEGORIES ON THE NSQ:
RESULTS OF THE PRESENT STUDY AND PREVIOUS STUDIES .

Nonpatient Care Group, Present Study	Patient Care Group, Present Study	All Employees, Present Study	Porter (1962), B&I Group	Rhinehart et al. (1969), DM&S Group
Social	Social	Social	Social	Security
Autonomy	Autonomy	Autonomy	Security	Social
Esteem	Security	Esteem	Esteem	Esteem
Security	Esteem	Security	Autonomy	Autonomy
Self-Actualization	Self-Actualization	Self-Actualization	Self-Actualization	Self-Actualization

Note -- Needs are ranked from those most satisfied (top) to those least satisfied (bottom).

and esteem next least satisfied. Security and social needs were the most satisfied for these groups, with reverse ordering of these two needs for the B&I and DM&S groups. Comparing these results to those of the present study, self-actualization was consistently the least satisfied (most deficient) need, but there were differences in the patterning of autonomy, esteem, and security needs between the results of the present study and those of Porter and Rhinehart et al., as well as between the PC and NPC groups. Thus, although the mean values of the specific needs of the present group appeared to be reasonably similar to the means of the previous groups, the order of importance of needs was slightly different in the present study. Including the mean level of needs and the slightly divergent order of needs, it still appeared that the present sample was reasonably comparable to the Porter (1961) and Rhinehart et al. (1969) samples.

For all employees, correlations were calculated to compare the various kinds of stress, job satisfaction, and the importance of various needs related to work. These results are presented in Table 5. As might be expected, the intercorrelations among theoretically related measures were higher than those across types of measures. For example, the correlations among needs were higher, generally, than the correlations of needs with stress measures.

For all employees, high HSCL scores correlated significantly with high job-related stress, $\underline{r}(170)=.34$, $\underline{p} < .001$.

TABLE 5

INTERCORRELATION OF JOB-RELATED VARIABLES:
ALL EMPLOYEES

	Job-Related Stress	Stress With Supervisor	Aliena-tion	Job Satis-faction	Security Needs	Social Needs	Esteem Needs	Autonomy Needs	Self-Actuali-zation Needs
HSCL	.34***	.22***	-.17*	.08	-.01	-.02	.01	-.23**	-.14
Job Related Stress		.23***	.19*	-.13	.03	-.01	-.02	.05	.09
Stress with Supervisor			.77***	-.40***	.19	.13	.15	.28***	.27***
Alienation				-.54***	-.22**	-.16*	-.18*	-.21**	-.19***
Job Satisfaction					.13	-.06	.01	-.07	.13
Security Needs						.22	.28***	.44***	.46***
Social Needs							.45***	.33***	.41***
Esteem Needs								.50***	.47***
Autonomy Needs									.60***

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

Also for all employees, increased alienation correlated significantly with decreased job satisfaction, $r(170)=-.54$, $p < .001$.

In an attempt to determine differences between the PC and NPC groups in patterns of stress, job satisfaction, and the importance of various needs related to work, correlations were done within these groups. Table 6 presents the correlations for the PC group, while Table 7 presents the results for the NPC group. One obvious difference between the groups of employees was the larger number of significant correlations within the PC group between HSCL scores and other stress scores. Also within the PC group, job satisfaction correlated significantly and negatively with all the stress scores; while job satisfaction correlated significantly only for the stress with supervisor score (of the stress scores) in the NPC group, $r(65)=-.53$, $p < .01$. Within the NPC group, job dissatisfaction was associated with being young, $r(65)=.44$, $p < .001$, female, $r(65)=.25$, $p < .05$, of minority status, $r(65)=.28$, $p < .05$, having a female supervisor, $r=(65)=.31$, $p < .01$, and having a lower income, $r(62)=.35$, $p < .01$.

There appeared to be some differences between the PC and NPC groups in the importance of various needs as related to stress and job satisfaction. For instance, within the PC group, high HSCL scores correlated significantly with lowered importance of autonomy needs, $r(102)=-.28$, $p < .01$, and self-actualization needs, $r(102)=-.24$, $p < .05$. Also

TABLE 6

INTERCORRELATIONS OF JOB-RELATED VARIABLES: PATIENT CARE EMPLOYEES

	Job-Related Stress	Stress With Supervisor	Patient Care Stress	Alienation	Job Satisfaction	Security Needs	Social Needs	Esteem Needs	Autonomy Needs	Self-Actualization Needs
HSCL	.39***	.25*	.35***	.33***	-.21*	-.06	-.04	.02	-.28***	-.24*
Job-Related Stress		.25*	.42***	.29***	-.35***	-.06	.02	.03	-.04	-.02
Stress with Supervisor			.20*	.77***	-.45***	.17	.17	.19	.28**	.30**
Patient Care Stress				.26**	-.20*	-.09	.01	-.03	-.14	-.14
Alienation					-.55***	.21*	-.18	-.12	-.15	-.21*
Job Satisfaction						-.18	-.13	-.07	.03	-.20*
Security Needs							-.32***	.25*	.47***	.40***
Social Needs								.41***	.30**	.40***
Esteem Needs									.45***	.43***
Autonomy Needs										.55***

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

TABLE 7

INTERCORRELATIONS OF JOB-RELATED VARIABLES:
NON-PATIENT CARE EMPLOYEES

	Job-Related Stress	Stress with Supervisor	Alienation	Job Satisfaction	Security Needs	Social Needs	Esteem Needs	Autonomy Needs	Self-Actualization Needs
HSCL	.32**	.18	-.02	.05	.05	.02	.00	-.18	-.03
Job-Related Stress		.27*	-.08	.02	-.02	-.06	.00	-.11	-.20
Stress with Supervisor			.75***	-.33**	-.22	-.06	-.10	-.27	.23
Alienation				-.54***	.23	-.11	-.24*	-.30*	-.18
Job Satisfaction					-.22	.15	.01	.10	-.10
Security Needs						.09	.32**	.39**	.54***
Social Needs							.46***	.36**	.42***
Esteem Needs								.55***	.50***
Autonomy Needs									.66***

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

within this group, high stress with supervisor correlated significantly with increased importance of autonomy needs, $r(102)=.28$, $p<.01$ and self-actualization needs, $r(102)=.30$, $p<.01$. None of these correlations were significant in the NPC group. Within the PC group, high job satisfaction correlated significantly with lower importance of self-actualization needs, $r(66)=-.20$, $p<.05$. High alienation scores also correlated significantly with importance of different needs in the PC and NPC employees (Tables 6 and 7).

A patient-care stress score obtained only for PC employees was correlated with other stress scores to explore the importance of the stress of caring for patients related to general stress. Patient-care stress correlated significantly with all other stress scores, as well as with decreased job satisfaction, $r(102)=-.20$, $p<.05$ (Table 6).

Differences in Stress, Job Satisfaction, and Importance of Job-Related Needs in Relation to Income Level

It was hypothesized that people at lower income levels experience less job satisfaction. Income was split at $15,000 a year, with $15,000 and above considered higher income. The lower income group was found to be significantly less satisfied on a t-test. Table 8 presents these results. However, the lower income group also reported significantly less job-related stress than the higher-income group (Table 8). The lower income group reported signifi-

TABLE 8

HIGH INCOME AND LOW INCOME EMPLOYEES:
DIFFERENCES IN STRESS, JOB SATISFACTION, AND IMPORTANCE
OF WORK-RELATED NEEDS

Variable	High Income			Low-Income			t Value	Probability
	No. of Subjects	Mean	SD	No. of Subjects	Mean	SD		
HSCL	112	83.04	16.20	56	83.77	17.96	.26	.79
Job-Related Stress	112	15.85	5.37	56	13.86	5.70	-2.22	<.05
Stress with Supervisor	112	33.28	7.18	55	32.11	7.52	-.97	.33
Alienation	112	16.46	3.00	56	16.27	3.93	-.34	.73
Job Satisfaction	112	31.42*	21.42	56	42.91*	27.32	2.98	<.01
Importance of Security Needs	112	6.18	.99	56	6.21	1.25	.20	.84
Importance of Social Needs	112	11.14	2.20	56	10.84	2.51	-.80	.42
Importance of Esteem Needs	112	15.14	3.22	56	15.23	3.75	.16	.87
Importance of Autonomy Needs	112	23.72	3.05	56	21.71	3.80	-3.70	<.001
Importance of Self-Actualization Needs	112	18.64	2.26	56	18.50	2.30	-.38	.70

*Low scores indicate high satisfaction.

cantly less importance of the need for autonomy (Table 8).

A correlational analysis of all subjects also indicated that the lower income group was significantly less satisfied, $r(170)=-.22$, $p < .01$, less stressed on the job, $r(169)=.16$, $p < .05$, and put less importance on autonomy, $r(170)=.27$, $p < .001$. Table 9 shows correlations for income level with job satisfaction, job-related stress, and importance of autonomy needs for all employees as well as within the PC and NPC groups. Within the groups, only the NPC group reported a significant within-group correlation for high income and high job satisfaction, $r(66)=-.35$, $p < .01$. The PC group showed a zero correlation between these two variables.

A t-test was computed for income, to ascertain whether the PC and NPC groups differed significantly for income. The PC group reported significantly higher incomes than the NPC group, $t(165)=2.27$, $p < .05$. In an attempt to remove the differences related to income in the PC and NPC groups in relation to job satisfaction, a partial correlation was done which removed the variance associated with income. Results showed that the relationship of PC or NPC membership to job satisfaction was not signicant with the variance associated with income removed, $r(163)=.10$, n. s.

TABLE 9

CORRELATIONS OF WORK-RELATED VARIABLES WITH INCOME LEVEL: PATIENT CARE AND NON-PATIENT CARE EMPLOYEES

	All Employees N=172	Patient Care Employees N=104	Non-Patient Care Employees N=68
Job Satisfaction	.22**	.02	.35**
Job-Related Stress	.17*	.06	.17
Importance of Autonomy Needs	.27***	.24*	.38**

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

Differences in Stress, Job Satisfaction, and Importance of Job-Related Needs Between Supervisors and Nonsupervisors

Differences between supervisors and nonsupervisors on the main variables were explored using t-test analyses. The results are presented in Table 10. Of the employees tested, 49 were supervisors and 123 were not supervisors. Supervisors were found to be significantly more satisfied, and to put significantly more importance on job-related autonomy.

To explore possible differences between PC and NPC supervisors in job-related stress, job satisfaction, and work-related needs, correlations were done between stress of supervision and these variables for the two groups. The results are presented in Table 11. For all supervisors, high stress of supervision correlated significantly with high job-related stress. However, in looking at the two groups, significant differences were found. In the PC supervisors, high stress of supervision correlated positively with HSCL scores and alienation, and negatively with job satisfaction. These correlations were not significant in NPC supervisors (Table 11).

The correlations of stress of supervision with various work-related needs also differed between the groups, and high stress of supervision correlated significantly with lower importance of social needs, autonomy needs, and self-actualization needs only in the NPC supervisors (Table 11).

TABLE 10

SUPERVISORS AND NONSUPERVISORS:
DIFFERENCES IN STRESS, JOB SATISFATION, AND IMPORTANCE
OF WORK-RELATED NEEDS

Variable	Supervisors			Nonsupervisors			t Value	Probability
	No. of Subjects	Mean	SD	No. of Subjects	Mean	SD		
HSCL	49	83.35	16.16	123	82.23	17.05	.04	.97
Job-Related Stress	49	15.18	4.98	122	15.20	5.74	-.02	.98
Stress with Supervision	49	33.90	6.61	121	32.54	7.52	1.10	.27
Alienation	49	16.88	2.88	122	16.19	3.45	1.24	.22
Job Satis-faction	49	24.88*	17.68	123	39.56*	25.14	-3.73	<.001
Importance of Security Needs	49	6.14	1.00	123	6.22	1.11	-.42	.67
Importance of Social Needs	49	10.86	2.07	123	11.12	2.38	-.68	.50
Importance of Esteem Needs	49	15.22	3.45	123	15.16	3.43	.11	.92
Importance of Autonomy Needs	49	24.49	2.40	123	22.46	3.68	3.58	<.001
Importance of Self-Actuali-zation Needs	49	18.80	2.32	123	18.52	2.25	.72	.43

*Low scores indicate high satisfaction.

TABLE 11

CORRELATIONS OF STRESS OF SUPERVISION WITH OTHER JOB-RELATED VARIABLES: PATIENT CARE AND NON-PATIENT CARE SUPERVISORS

	Patient Care Supervisors N=29	Non-Patient Care Supervisors N=20
HSCL	.43*	.11
Job-Related Stress	.57***	.58**
Job Satisfaction	-.55**	.20
Alienation	.52**	.39
Stress with Supervisor	.22	.36
Importance of Security Needs	.19	.18
Importance of Social Needs	.30	-.55*
Importance of Esteem Needs	.21	-.40
Importance of Autonomy Needs	.17	-.46*
Importance of Self-Actualization Needs	.27	-.64**
Patient-Care Stress (Patient-Care Group Only)	.40*	Not Applicable

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

Importance of Supervision to Job-Related Stress and Job Satisfaction

A total "stress with supervisor" (SWS) score was obtained for each employee. For all employees, a low SWS score correlated with high job satisfaction, $r(170)=-.40$, $p < .001$, as well as with reported importance of security needs, $r(170)=.19$, $p < .05$, esteem needs, $r(170)=.15$, $p < .05$, autonomy needs, $r(170)=.28$, $p < .001$, and self-actualization needs, $r((170)=.27$, $p < .001$. A low SWS score correlated with a low HSCL symptom score, $r(170)=-.22$, $p < .01$, low alienation, $r(170)=.77$, $p < .001$, and low job-related stress, $r(170)=-.23$, $p < .01$.

There appeared to be differences between the PC and NPC groups on the importance of stress with their supervisors. Correlations between SWS and other job-related variables are presented in Table 12. Within the PC group, low SWS correlated significantly with low HSCL symptom scores and high importance of self-actualization needs. These correlations were not significant in the NPC group.

Sex of supervisor was compared with job-related variables in the PC and NPC groups. In the NPC group, having a male supervisor was significantly associated with being more satisfied on the job, $r(66)=-.33$, $p < .01$ (the sign of the correlation being arbitrary, based on the numbers representing male/female as put into the computer), being less stressed with the supervisor, $r(65)=-.24$, $p < .05$, and reporting less alienation, $r(65)=.41$, $p < .001$. In the PC

TABLE 12

CORRELATIONS OF STRESS WITH SUPERVISOR WITH OTHER JOB-RELATED VARIABLES: PATIENT CARE AND NON-PATIENT CARE EMPLOYEES

	Patient Care Employees	Non-Patient Care Employees
HSCL	.25*	.18
Job-Related Stress	.25*	.26*
Job Satisfaction	-.46***	-.33**
Alienation	.78***	.75***
Importance of Security Needs	-.17	-.22
Importance of Social Needs	-.17	-.06
Importance of Esteem Needs	-.19	-.10
Importance of Autonomy Needs	-.28***	-.27*
Importance of Self-Actualization Needs	-.30**	-.23
Patient-Care Stress (Patient-Care Group Only)	.21*	Not Applicable

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

group, however, having a male supervisor was associated with more stress with supervisor, $r(101)=.28$, $p<.01$, and more alienation, $r(102)=.26$, $p<.01$.

Racial Differences in Job-Related Variables

Employees were divided into two groups -- those who reported their race as white (129 subjects) and those who reported any other race (35 subjects). These groups were found to differ in two ways on a t-test: (1) employees reporting their race as white were significantly more satisfied on their jobs; and (2) the same group reported a significantly higher importance of social needs. Results of the t-test are shown in Table 13. Within the NPC group, only white employees reported significantly more job satisfaction, $r(61)=.28$, $p<.05$, and a higher importance of social needs, $r(61)=-.38$, $p<.01$, when correlations within the PC and NPC groups were done. The PC employees did not differ according to race on these variables.

Male and Female Employees: Differences in Job-Related Variables

Males (42 subjects) and females (130 subjects) were compared to examine differences between the two groups. On t-tests, reported in Table 14, females were found to have significantly lower incomes and to report significantly less importance of autonomy needs. The only differences other than demographic differences between PC and NPC employees

TABLE 13

WHITE AND NONWHITE EMPLOYEES:
DIFFERENCES IN STRESS, JOB SATISFACTION, AND IMPORTANCE
OF WORK-RELATED NEEDS

Variable	White Employees			Nonwhite Employees			t Value	Probability
	No. of Subjects	Mean	SD	No. of Subjects	Mean	SD		
HSCL	129	83.66	16.65	35	81.37	16.80	.72	.47
Job-Related Stress	129	15.12	5.17	34	16.09	6.57	-.91	.36
Stress with Supervisor	129	33.16	6.60	33	32.24	9.51	.65	.52
Alienation	129	16.48	3.00	34	16.35	4.27	.20	.84
Stress of Supervision	39	28.03	3.50	8	27.25	4.20	.55	.58
Job Satisfaction	129	33.14*	22.00	35	42.74*	30.98	-2.09	<.05
Importance of Security Needs	129	6.22	1.00	35	6.23	1.29	-.06	.96
Importance of Social Needs	129	11.44	2.14	35	9.91	2.45	3.63	<.001
Importance of Esteem Needs	129	15.34	3.40	35	14.51	3.53	1.27	.21
Importance of Autonomy Needs	129	23.26	3.36	35	22.74	3.67	.80	.43
Importance of Self-Actualization Needs	129	18.62	2.30	35	18.60	2.21	.05	.96

*Low scores indicate high satisfaction.

TABLE 14

MALE AND FEMALE EMPLOYEES
DIFFERENCES IN STRESS, JOB SATISFACTION, AND IMPORTANCE
OF WORK-RELATED NEEDS

Variable	Males			Females			t	Probability
	No. of Subjects	Mean	SD	No. of Subjects	Mean	SD	Value	
HSCL	42	83.52	16.01	130	83.18	17.05	.12	.91
Job-Related Stress	42	15.55	5.65	129	15.09	5.49	.47	.64
Stress with Supervisor	42	32.60	7.49	128	33.04	7.23	-.34	.73
Alienation	42	16.17	3.26	129	16.46	3.33	-.49	.62
Stress of Supervision	22	27.36	4.03	27	28.67	3.37	-1.23	.22
Job Satisfaction	42	33.88*	26.63	130	35.86*	23.37	-.46	.65
Importance of Security Needs	42	6.10	.93	130	6.23	1.12	-.71	.48
Importance of Social Needs	42	10.67	2.14	130	11.17	2.34	-1.24	.22
Importance of Esteem Needs	42	15.93	3.45	130	14.94	3.40	1.64	.10
Importance of Autonomy Needs	42	24.12	2.61	130	22.68	3.66	2.35	<.05
Importance of Self-Actualization	42	18.69	2.44	130	18.57	2.22	.30	.76
Income	40	3.35	1.21	127	2.76	.92	3.28	<.001

*Low scores indicate high satisfaction.

related to sex was that NPC females reported significantly less job satisfaction than males, $r(66)=.25$, $p<.05$, as well as significantly more alienation than NPC males, $r(65)=.32$, $p<.01$. On the other hand, females in the PC group were significantly less alienated, $r(102)=-.35$, $p<.001$, and reported significantly less stress with their supervisors, $r(101)=.27$, $p<.01$, than PC males.

Time On The Job

Employee groups were divided into four possible divisions of time worked at Mercy, and differences were explored. No significant correlations were found for time on the job except for demographic variables -- for instance, being male was significantly related to working longer at Mercy, $r(171)=-.25$, $p<.001$, as was having a higher income, $r(166)=.37$, $p<.001$. The only possibly significant finding in this area was that being in the PC group showed a trend toward being associated with having worked less time at Mercy, $r(171)=.14$, $p<.058$, indicating that the question of higher turnover rate in the PC group is worth exploring.

It was possible to obtain a measure more directly related to turnover rate, based on data from the 23 personnel units from which employees volunteered for the present study. Seven of these units were made up of NPC employees, and 16 units were made up of PC employees. Statistics for the year

1980 were obtained for each unit, with information on percentage of turnover, including resignations and transfers out of the unit.[1] A median split was done based on the percentages of turnover, and a chi-square computed on the results. The PC units showed a significantly higher percentage of turnover for the year 1980, $\chi^2(1)=5.79$, $p < .05$.

Married and Unmarried Employees: Differences

All employees were divided into subjects married at the time of taking the questionnaire (81 subjects) and those not married at the time (91 subjects). No significant differences were found between the groups on stress or satisfaction variables. In all employees, being married was found to be significantly associated with being male, $r(172)=.35$, $p < .001$, being older, $r(169)=-.19$, $p < .01$, supervising, $r(172)=.17$, $p < .05$, having a male supervisor, $r(170)=.27$, $p < .001$, and being less likely to earn the major income for the family, $r(170)=.20$, $p < .01$.

Additional Analyses

On the informal scales used in the present study (items 15-35), internal consistency was examined by obtaining Cronbach's coefficient alpha for each scale. For the

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stress of supervision scale (items 15-18 and 33), alpha was .48, with standardized item alpha .61. With item 33 deleted, alpha reached .80, which indicates acceptable internal consistency. With other items deleted, alpha remained low. Therefore, it appears that this scale satisfies the criterion of internal consistency only with item 33 removed. For the stress with supervisor scale (items 19-20 and 22-25), alpha was .89, as was standardized alpha. This indicates adequate internal consistency for this scale. Examining internal consistency for the alienation scale (items 26-28), alpha was found to be .68, and standardized item alpha was .72. With item 26 deleted, alpha reached .82. This indicates internal consistency only for items 27 and 28. On the job stress scale (items 29-32 and 35), alpha was .65 and standardized item alpha was .70. With any one item deleted, alpha did not become .80 or higher, indicating that this scale is not internally consistent. Alpha was obtained for the patient-care stress scale (all parts of item 34), and was found to be .90, as was standardized item alpha. Internal consistency appears to be adequate for this scale.

As intercorrelational matrix was obtained, relating various job-related variables to each other. This matrix is shown in Table 5. These correlations may be examined to assess the relationships of constructs reflected in the various scales. The most highly related scales were the

stress with supervisor scale and the alienation scale, $r(170)=.77$, $p<.001$, and the alienation scale and job satisfaction scale, $r(171)=-.54$, $p<.001$.

DISCUSSION

This study investigated several aspects of job-related stress and job satisfaction in employees of a general medical hospital. Two specific hypotheses were proposed, as was a hypothetical model of work-related stress experienced by human service professionals. Many aspects of the study were exploratory. Strongest support was found for differences between patient care (PC) and non-patient care (NPC) employees in patterns of stress, job satisfaction, and values.

Stress, Satisfaction, and Values of Patient Care and Non-Patient Care Employees

It was hypothesized that PC employees would experience more job-related stress than NPC employees. This hypothesis was supported by the finding that PC employees did report significantly more job-related stress as measured by items 29-32 and 35 (Appendix A). However, on the HSCL symptom scores, which included general questions regarding feelings of anxiety and depression as well as somatic complaints, there were no significant differences between the groups. This may indicate that questions asked directly about stress in the work situation, regarding stress in various relationships on the job and work overload, may be more useful than general symptom scores in assessing occupational stress. If the HSCL can be considered a measure of level of neurotic

symptoms (Derogatis et al., 1974), which might be interpreted as a level of maladjustment, and given the fact that PC employees did report significantly more work-related stress than NPC employees, yet HSCL scores did not differ significantly between the work groups, perhaps "personal adjustment" is not as strongly related to work-related stress as has sometimes been believed (Freudenberger, 1975, 1977; Scully, 1980), which is different from the conclusion that might have been suggested by the literature. However, the HSCL symptom scores did correlate significantly with job-related stress in all employees, so it may be of use measuring occupational stress in some situations.

The HSCL correlated significantly with various other stress measures within the PC group, which may indicate that the instrument is not useful in differentiating a group of employees reporting higher job-related stress (the PC group, in this case) from a group reporting lower job-related stress (the NPC group in the present study), but it may be useful within a group of employees reporting more job-related stress. Within the PC group, high HSCL scores correlated significantly with low job satisfaction, high alienation, high stress with supervisor, high patient care stress, and for PC supervisors, high stress of supervision. A different pattern of stress was indicated within the NPC group by the fact that there were no significant correlations

between the HSCL scores and any of these variables in this group. It is possible that the HSCL may measure general life stress, but not job-related stress in the NPC group, or the significant correlation for the PC group could conceivably have been due to Type I error. The meaning of this finding cannot be established in the present study.

Differing values of employees in the PC and NPC groups have been reported by various researchers (Lawler, 1973; Rosenberg, 1957), and this study attempted to explore such differences. Scores for each employee were obtained in various need categories based on Maslow's (1954) hierarchy of needs. Significant differences were found between the groups for importance of social needs, with the PC group reporting these needs as more important. Perhaps one reason PC employees enter an occupation of patient care is due to their valuing close contacts with people. Again within the PC group, high HSCL scores correlated significantly with lowered importance of autonomy and self-actualization needs. This may reflect Maslow's (1954, 1968) observations that higher-level needs can be neither sought nor satisfied until lower-level needs are satisfied. People with high HSCL symptom levels may be in such distress that these highest-level needs are not important until the stress is lessened. This may reflect the advanced stage of job-related stress or "burnout", called the "exhaustion stage" by Costello and Zalkind (1963). "Burnout" in the helping professions

has been defined as resulting from stress related to work (Maslach, 1978a). Low job satisfaction within the PC group correlated significantly with high self-actualization needs in that group, perhaps indicating that when these highest-level needs are not met, dissatisfaction results. Based on the results of the rank ordering of the various need categories of the NSQ, it appears that the PC and NPC groups reported a somewhat different order of needs, investigating most to least satisfied, from each other as well as somewhat different from the rank ordering based on the results of Porter (1962) and Rhinehart et al. (1969). It does appear that PC and NPC groups definitely place importance on different needs related to their jobs.

It appears that the opportunity to fulfill various psychological needs may vary, depending on an employee's location within a given organization (Clark, 1960; Porter, 1961, 1963a). In the present study, the job satisfaction score obtained was based on the measurement of expectations and satisfaction related to work, and differences between the PC and NPC groups were explored. Results for the total sample of the present study compared to those of Porter (1961) and Rhinehart et al. (1969) indicated that this sample appeared to be reasonably comparable in job satisfaction to those tested by the previous researchers. It was found that the PC group reported experiencing signi-

ficantly more job satisfaction than the NPC group, in spite of the previously reported higher level of stress in the PC group. It is important to keep in mind that, although there were found statistically significant differences between job satisfaction in the PC and NPC groups, mean differences appear to be small and it is impossible to tell how relatively satisfied or dissatisfied the present groups are in comparison to employee groups other than those compared in the present study. This lessens the interpretability of all results regarding job satisfaction. Results indicate that more of the needs reflected in the NSQ were perceived as being satisfied by PC employees and also indicate that, in spite of the stress experienced, PC jobs were perceived as more fulfilling than NPC jobs. For all employees, high job satisfaction correlated significantly with low alienation from work. Limitations of the definition and interpretation of "alienation from work" as used in this context, although based on the use of the term by Aiken and Hage (1966) as well as Garfield (1979) limit the interpretability of these results, as does the low internal consistency within the scale of alienation. PC and NPC groups differed on other variables related to job satisfaction. For the PC group, job satisfaction correlated significantly and negatively with job-related stress and patient care stress. This reinforces the idea that, at least in PC employees, unmet idealism reflected in a discrepancy between expectations

and reality which is illustrated in the present study by the discrepancy between expectations and perception of reality on the NSQ, the total of which was reversed and called job satisfaction by Paine et al. (1966) and Rhinehart et al. (1969). This discrepancy may lead to frustration and stress, as stated by Edelwich and Brodsky (1980). Freudenberger (1977) predicted that employees with goals that are too high to begin with are more likely to experience work-related stress. These findings may be an important link in the often proposed cycle of work-related stress (Daley, 1979; Fruedenberger, 1977) in the helping professions.

Although the differences in job satisfaction between the PC and NPC groups were found to be significant, the groups also differed in level of income. The results of the partial correlation, removing the influence of income, showed no significant differences in job satisfaction between the PC and NPC groups and mutes the significance of the differences in job satisfaction between the two employee groups. Nonetheless, the significant differences in income may be a true population difference.

As a basic research issue, these results are of interest to investigate how much of the differences in job satisfaction between the employee groups were associated with the income difference. The results of the partial correlation should be interpreted with caution, however, as

it has been hypothesized that in computation of partial correlations, all possible variables that affect the dependent variable may not be included in the regression equation, and interactive effects may not be accounted for (Darlington, 1968). Crano and Brewer (1973) have also cautioned that multiple intercorrelations, including partial correlations, have been frequently abused in complex ways, and that the significance of a partial correlation can easily be misinterpreted since the two predictor variables in themselves may be interrelated. They warn that misinterpretation is especially likely to occur when partial correlations are obtained for the purposes of hypothesis testing. In the present study, income does appear to be a natural covariate of PC or NPC membership, and an integral part of the PC versus NPC differentiation, and constitutes a real population difference. Therefore the effects of removing the variance associated with income should be taken seriously yet interpreted guardedly since the above-mentioned limitations apply. Practically, for the present sample, the finding that the PC group reports more job satisfaction continues to be an accurate and viable conclusion.

In the NPC employees, the only significant associations with job satisfaction were demographic variables. These findings, coupled with the finding that job satisfaction correlated significantly with job-related stress, alienation,

and symptom scores in PC employees, seem to indicate that PC employees were more affected by personal, internal or intrinsic variables related to work. The NPC employees, on the other hand, seemed much less affected by symptoms and needs related to work, and more affected by external or extrinsic variables.

Stress and Satisfaction Related to Income Level

The fact that level of job satisfaction correlated significantly with level of income, with low-income employees significantly less satisfied than high-income employees, supports the hypothesis predicting such results. This was true for both all employees and the NPC group alone. However, this finding is influenced by the fact that within the PC group, there was no significant correlation between satisfaction and level of income. These results are in keeping with Lawler's (1971) prediction that NPC employees place more importance on pay, since level of job satisfaction correlated significantly with level of income in the NPC group. It is also possible that the PC group, being generally more satisfied on their jobs, put less importance on pay due to their higher satisfaction. It might be that income becomes less important as satisfaction rises.

Lower-income employees put less importance on the need for autonomy. This may be a cause, related to lower income, or an effect -- perhaps a defense needed to operate in a

lower-level position. Lower-income employees also experience significantly less job-related stress than higher-income employees. This may be due to less job responsibility, or other causes. Other differences related to income level seem to be demographic, but differences in income are generally less related to the stress and satisfaction measures in the PC group than in the NPC group of the present study.

Stress, Satisfaction, and Values of Supervisors

Supervisors have been found to show significantly more evidence of stress than nonsupervisors by various researchers (Argyle, 1972; Kasl & French, 1962; Pell & D'Alonzo, 1961). In the present study, no significant differences in any stress measure were found between supervisors and nonsupervisors. One difference is that the previously mentioned researchers were measuring physiological indices of stress, such as cholesterol level and presence of psychosomatic illness, whereas the present study measured only a small component of somatic stress, on the HSCL. The only significant finding related to stress was that a high stress of supervision score correlated significantly with high job-related stress in supervisors.

Supervisors did report more satisfaction on their jobs than nonsupervisors. This supports previous findings that those at higher levels in an organization report more job

satisfaction (Tannenbaum, 1966). Supervisors also reported significantly more need for autonomy. Perhaps the strength of this need makes them supervisors, and when this need is satisfied, they are more satisfied in their jobs. Schaffer (1953) predicted that all-over job satisfaction would vary directly with extent of need satisfaction.

PC and NPC supervisors seemed to attach importance to different needs, as did PC and NPC employees in general. In PC supervisors, high stress of supervision correlated with high HSCL scores, high alienation, and low satisfaction. NPC supervisors did not vary in stress of satisfaction scores related to stress of supervision, but supervisors with low stress did differ in importance of various needs from other supervisors. Again, it appears that PC and NPC supervisors were stressed by different things and attached importance to different values. These findings, along with the previously described differences between the PC and NPC groups as a whole, indicate that PC and NPC supervisors may need different sets of skills, as well as possibly different training to supervise their respective groups of employees.

Importance of Supervision to Job-Related Stress and Job Satisfaction

Findings related to the "stress with supervisor" (SWS) score are difficult to interpret because it is being measured indirectly based on theories of effective supervision. The

theories of Argyle (1972) and Tannenbaum (1966) describe what constitutes effective leadership, while those of Fiedler et al. (1979) and Torrance (1961) suggest that effective leadership lessens stress. These limitations should be kept in mind when interpreting the results of the SWS scale.

Results showed that high SWS correlated significantly with high HSCL scores, high alienation, high job-related stress, and low job satisfaction. However, looking within groups, only in the PC group did high SWS correlate with high HSCL scores. This may indicate that NPC employees are less affected by relationships with their supervisors than PC employees.

In exploring the relationships between sex of supervisor and other variables, it appears that there are more differences between the PC and NPC groups than are related to sex of supervisor or supervisee. Field and Caldwell (1979) found female employees supervised by males significantly less satisfied. This was true for the PC group in this study, but in the NPC group, females supervised by males were more satisfied. The fact that many patient care professions are traditionally more "female" professions may be a factor, with female supervisors perhaps being more accepted and having more female role models than female NPC supervisors. In further support of this possibility,

NPC staff with female supervisors were significantly more alienated than those with male supervisors, while PC staff with female supervisors were significantly less alienated than those with male supervisors.

Other Differences Among Employees

Looking at racial differences, white employees reported significantly more job satisfaction as well as higher social needs than nonwhite employees. However, separating PC and NPC groups, it appears again that there are within-group differences. In the PC group, the only racial difference is that white employees reported higher incomes. Within the NPC group, white employees reported more job satisfaction and more social needs. It appears that the PC group is more homogeneous, with less differences in values between PC white and nonwhite employees.

Differences between the sexes on stress and satisfaction measures seemed to depend more on PC or NPC membership than on sex. Sex and income seemed less related to job satisfaction within the PC group than in NPC employees. PC females showed less alienation and less stress with supervisor -- again, this may be related to patient care as a traditionally female field. The larger number of differences between females and males in the NPC group are compared to the PC group may be due to a generally wider variety of values in the NPC group than is true for the PC group, who

seem to be more homogeneous in values and ideals as well as attaching similar importance to autonomy needs.

There were no significant differences in stress and satisfaction measures as related to marital status. All presently unmarried employees were classified together, and more meaningful results may have been obtained if, with a larger sample, divorced, widowed, and never married employees had been separated.

The results of the questionnaire indicated only demographic differences for the length of time on the job related to other variables. However, a trend was found for PC employees to have less time on the job, perhaps indicating a higher turnover rate in PC employees than in NPC employees. The results of the direct turnover rates for personnel units from which subjects were obtained for the present study reinforced this finding, with significantly greater turnover found in the PC departments for the year 1980. This may relate to the higher stress in PC employees, and may indicate that stress affects turnover more than does job satisfaction. However, it may also simply reflect more availability of competitive PC positions.

Reliability and Validity of Scales

Results of the internal consistency data obtained on the informal scales used in the present study indicate that the stress with supervisor scale and the patient-care stress

scale reach adequate internal consistency levels, and might be considered in further research. Within the stress of supervision scale, adequate internal consistency was reached only by deleting the question "How stressful are your contacts with employees you supervise or whose work you are responsible for?". Therefore, it appears that this question does not measure the same attribute as the other items in the scale. In examining the internal consistency of the alienation scale, it appears that satisfaction with the job (item 28) and with fellow workers (27) share the same attribute, while satisfaction with supervisor (item 26) seems to measure a different attribute, and it would seem important to redesign this scale before further use of it. It appears that the questions called job stress in the present study do not share a common attribute, and items on this scale should be reexamined, with perhaps a redesigning of the scale before further use.

Intercorrelations of scales generally seemed to be quite low. No correlations between variables appear to be high enough for the variables to be considered interchangeable. The most highly correlated pairs of scales, satisfaction with supervisor with alienation and job satisfaction with alienation, seem to be measuring different but somewhat related constructs.

Integration of Present Findings With the Hypothetical Model of Stress Among Human Service Professionals

It appears that the importance of work does differ for PC and NPC employees. The two groups appear to differ strongly in the importance they place on various needs related to their jobs. This is true even though all subjects in the present study were employees of the same hospital.

Results indicated that for PC employees, job related stress is more closely related to satisfaction on the job than is the case for NPC employees. Vroom (1962) stated that people with a higher degree of personal involvement in their work role tend to be on the extremes of job satisfaction and tend to experience more work-related problems (job-related stress, in this study). PC employees may internalize problems related to work more than NPC employees, as illustrated by correlating stress scores. Relationships with other people, including supervisors, seem to be more important to PC employees. This is true for PC supervisors too.

Within the group of PC employees, amount of need satisfaction on the job was related to various forms of stress, supporting the idea that frustration of needs can result in added stress. In the PC group, level of pay was not related to job satisfaction. This indicates that pay may be less important to this group while intrinsic values related to the

job are more important.

Effective, low-stress supervision was directly related to various lowered stress scores and higher job satisfaction, especially in the PC group. This reflects the importance of training in supervisory skills for professionals.

Scores on the HSCL were meaningfully related to other stress scores within the PC population. However, direct questions regarding occupational stress might be more useful, according to the results of the present study.

Results of the present study somewhat support the hypothetical model for stress in the human service professionals, with unmet work-related needs resulting in frustration that leads to occupational stress. It also suggests some connection between job-related stress and anxiety, depression, and somatic symptoms as reflected on the HSCL, in helping professionals, as well as somewhat supporting the concept of "burnout" as indicated by high job-related stress in the human service professions, with different values and needs in these professionals as compared to those in other occupations. Burnout does not appear to be only the latest "fad disease" as suggested as a possibility by Edelwich and Brodsky (1980), but possibly a realistic threat to the helping professional.

Limitations of the Present Study

There are many limitations to the present study. All subjects were volunteers, which may bias results greatly. The sample was not random, and a cross-section of employees was not obtained. This is especially true for the NPC group, in which many departments were not sampled at all. In general, the PC group appeared to be more homogeneous than the NPC group.

All subjects were hospital employees. Even NPC employees in a hospital may be somewhat idealistic, and consider themselves to be helping others. Also, Mercy Hospital appears to be a very well-run hospital with relatively high wages and good employee benefits, as well as having very attractive physical surroundings.

The PC group was considerably younger and included a higher percentage of females, which somewhat confounded these variables. However, it seems very likely that these are true population differences between PC and NPC employees rather than being due to sampling error. Thus, applied research-oriented comparisons should maintain these differences. Another limitation of the present study was that experiences outside of work, such as home life, were not controlled. Stress not related to work may have differed for the PC and NPC groups.

Several measures were roughly designed and not vali-

dated, and may have been measuring factors other than those stated. This is especially true for the Stress of Supervision, Stress With Supervisor, and Alienation measures, and is in spite of the fact that they were based on findings or hypotheses of other researchers. The rough design probably resulted in somewhat low reliability for some scales. However, the findings of the current study, with these measures entering into some significant correlation with other variables in the direction that would be anticipated from theory and past results, indicate a reasonably high construct validity. The size of the correlations and the magnitude of effects are probably not high enough to be of much value in making personnel decisions, but they might be helpful in reaching a better understanding of personnel reactions in a medical treatment setting.

Future Research

In future research, occupational groups might be divided more specifically, both in the NPC and PC groups, with job descriptions more exact. Employees of another hospital should be evaluated for stress and job satisfaction, with results compared to the results of the present study. Other occupational groups, including other human service professionals, might also be measured and compared to the groups in the present study.

Within the PC groups, those on different units within

the hospital might be compared to each other -- intensive care personnel compared to emergency room personnel, for instance, and both compared to personnel on the general medical floors. Other variables of supervision and peer relationships might be added, to begin to explore organizational climate. Absentee rates and turnover rates could also be added, for further information. Unfortunately, as this information was added, confidentiality would be lessened and the possible threat experienced by employees regarding the results of the study would be increased.

Aspects of burnout not explored in the present study could be added, such as the issue of role conflict, considered important by House and Rizzo (1972), and the problem of loss of concern and distancing from clients pointed out by Maslach (1976).

To attempt to obtain a more precise measure of job-related stress, an attempt to correlate stress with other events in the environment could be made. For instance, individuals could fill out a questionnaire measuring stress, events on the job, and events outside of work. This could be done every Friday for several weeks, and could help in obtaining useful stress measures as well as identifying stressful events in the work environment.

High-stressed and low-stressed individuals who per-

form the same jobs might be identified, and difference in how they handle stressful events at work might be investigated.

Attempts to intervene in employee stress level -- with lectures, groups, exercises, change of supervisor style, etc. -- might be undertaken, with pre- and post-intervention stress levels measured to evaluate the specific intervention.

Although the assumption seems to be made in the literature that PC and NPC duties are related to stress and burnout, additional knowledge and more powerful effects might be found using other means of categorizing employees.

In short, this study is a beginning, and additional studies must be done to more clearly define and attempt to measure the amount and process of employee stress. However, the present study indicates that there are differences in job-related stress, job satisfaction, and work-related values between patient care and non-patient care employees, and these differences should be taken into consideration in designing future studies.

REFERENCES

Aiken, M., & Hage, J. Organizational alienation: A comparative study. American Sociological Review, 1966, 31, 497-507.

Appley, M. H., & Trumbull, R. On the concept of psychological stress. In M. H. Appley & R. Trumbull (Eds.), Psychological stress. New York: Appleton-Century-Crofts, 1967, Pp. 1-13.

Appley, M. H., & Trumbull, R. On the concept of psychological stress. In A. Monat & R. S. Lazarus (Eds.), Stress and coping: An anthology. New York: Columbia University Press, 1977, Pp. 58-66.

Argyle, M. The social psychology of work, New York: Toplinger Publishing Company, 1972.

Baron, A. S. Selection, development, and socialization of women into management. Business Quarterly, 1977, 28, 61-67.

Bartol, K. M., & Butterfield, D. A. Sex effects in evaluating leaders. Journal of Applied Psychology, 1976, 61, 446-454.

Beehr, T. A., & Newman, J. E. Job stress, employee health, and organizational effectiveness: A facet analysis, model, and literature review. Personnel Psychology, 1978, 31, 665-699.

Bienemann, K. Personality characteristics and reported symptoms of women seeking psychotherapy, feminists, and other females (Master's Thesis). Unpublished manuscript, Loyola University of Chicago, 1979.

Buck, V. E. Working under pressure, London: Staples Press, 1972.

Clark, J. V. Motivation in work groups: A tentative view. Human Organizations, 1960-1961, 19, 199-208.

Cobb, S., & Rose, R. M. Hypertension, peptic ulcer, and diabetes in air traffic controllers. In P. M. Insel & R. H. Moos (Eds), Health and the social environment. Lexington, Massachusetts: Lexington Books, 1974, Pp. 73-80.

Cofer, C. N., & Appley, M. H. Motivation: Theory and research, New York: John Wiley, 1964.

Coleman, J. C. Personality dynamics and effective behavior, Chicago: Scott, Foresman & Co., 1960.

Costello, T. W., & Zalkind, S. S. Introduction to part 3. In T. W. Costello & S. S. Zalkind (Eds.), Psychology in administration: A research orientation. Englewood Cliffs, N. J.: Prentice-Hall, 1963, Pp. 125-129.

Crano, W. D., & Brewer, M. B. Principles of research in social psychology, St. Louis: McGraw Hill, 1973.

Daley, M. R. Burnout: Smoldering problem in protective services. Social Work, 1979, 24, 375-379.

Darlington, R. B. Multiple regression in psychological research and practice. Psychological Bulletin, 1968, 69, 161-182.

Derogatis, L. R., Lipman, R. S., Covi, L., & Rickels, K. Neurotic symptom dimensions as perceived by psychiatrists and patients of various social classes. Archives of General Psychiatry, 1971, 24, 454-464.

Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. Behavioral Science, 1974, 19, 1-15.

Dubos, R. Man adapting, New Haven, Connecticut: Yale University Press, 1965.

Edelwich, J., & Brodsky, A. Burnout: Stages of disillusionment in the helping professions, New York: Human Sciences Press, 1980.

Etzioni, A. Modern organizations, Englewood Cliffs, New Jersey: Prentice-Hall, 1964.

Eyer, J. Hypertension as a disease of modern society. International Journal of Health Services, 1975, 5, 539-558.

Ferguson, D. A study of occupational stress and health. Ergonomics, 1973, 16, 649-664.

Fiedler, F. D., Potter, E. H., III, Zais, M. M., & Knowlton, W. A., Jr. Organizational stress and the use and misuse of managerial intelligence and experience. Journal of Applied Psychology. 1979, 64, 635-647.

Field, H. S., & Caldwell, B. D. Sex of supervisor, sex of subordinate, and subordinate job satisfaction. Psychology of Women Quarterly, 1979, 3, 391-399.

Frank, J. D., Hoehn-Saric, R., Imber, S. D., Liberman, B. L., & Stone, A.R. Effective ingredients of successful psychotherapy, New York: Brunner/Mazel, 1978.

French, J. R., & Caplan, R.D. Organizational stress and individual strain, Ann Arbor, Michigan: University of Michigan, Institute for Social Research, 1977.

Freudenberger, H. J. Staff burn-out. Journal of Social Issues, 1974, 30, 159-165.

Freudenberger, H. J. The staff burn-out syndrome in alternative institutions. Psychotherapy: Theory, Research, and Practice, 1975, 12, 73-82.

Garfield, J. Social stress and medical ideology. In C. A. Garfield (Ed.), Stress and survival. St. Louis: C. V. Mosby Company, 1979, Pp. 33-44.

Gurin, G., Veroff, J., & Field, S. Americans view their mental health, New York: Basic Books, 1960.

Hall, D. T., & Nougaim, K. E. An examination of Maslow's need hierarchy in an organizational setting. Organizational Behavior and Human Performance, 1968, 3, 12-35.

Hallas, G. G. Why nurses are giving it up. RN, 1980, 43, 17-21.

Hay, D., & Oken, D. The psychological stresses of intensive care unit nursing. In A. Monat & R. S. Lazarus (Eds.), Stress and coping: An anthology. New York: Columbus U. Press, 1977, Pp. 118-131.

Hinkle, L. E., Jr., Christenson, W. N., Kane, F. D., Ostfeld, A., Thetford, W. N., & Wolff, H. G. An investigation of the relation between life experience, personality characteristics, and general susceptibility to illness. Psychosomatic Medicine, 1958, 20, 278-295.

Holmes, T. H., & Wolff, H. G. Life situations, emotions, and backache. Psychosomatic Medicine, 1952, 14, 18-33.

House, R. J., & Rizzo, J. R. Role conflict and ambiguity as critical variables in a model of organizational behavior. Organizational Behavior and Human Performance, 1972, 1, 467-505.

Hurlin, C. L., & Smith, P. C. Sex differences in job satisfaction. Journal of Applied Psychology, 1964, 48, 88-92.

Insel, P. M., & Moos R. H. The social environment. In P. M. Insel & R. H. Moos (Eds.), Health and the social environment. Lexington, Massachusetts: Lexington Books, 1974, Pp. 3-12.

Ivancevich, J. M., & Matteson, M. T. Nurses and stress: Time to examine the potential problem. Supervisor Nurse, 1980, 6, 17-22.

Kahn, R. L., Wolfe, D., Quinn, R., Snoek, J., & Rosenthal, R. Organizational stress: Studies in role conflict and ambiguity, New York: John Wiley, 1964.

Kasl, S. V., & French, J. R. P. The effects of occupational status on physical and mental health. Journal of Social Issues, 1962, 18, 67-89.

Katzell, R. A. Personal values, job satisfaction, and job behavior. In H. Borow (Ed.), Man in a world at work. Boston: Houghton Mifflin, 1964, Pp. 341-363.

Kornhauser, A. Mental health of the industrial worker, New York: John Wiley, 1965.

Kravetz, D. Consciousness-raising groups in the 1970's. Psychology of Women Quarterly, 1978, 3, 168-186.

Kuhlen, R. G. Needs, perceived need satisfaction opportunities, and satisfaction with occupation. Journal of Applied Psychology, 1963, 47, 56-64.

LaViolette, S. What does it take to stem turnover flight from field? Modern Healthcare, 1980, 10, 5.

Lawler, E. E. Pay and organizational effectiveness: A psychological view, St. Louis: McGraw-Hill, 1971.

Lawler, E. E. Motivation in work organizations, Monterey, California: Brooks/Cole Publishing Company, 1973.

Lazarus, R. S. Personality and adjustment, Englewood Cliffs, New Jersey: Prentice-Hall, 1963.

Lazarus, R. S. Patterns of adjustment and human effectiveness, St. Louis: McGraw-Hill, 1969.

Lazarus, R. S. Cognitive and coping processes in emotion. In A. Monat & R. S. Lazarus (Eds.), Stress and coping: An anthology. New York: Columbia University Press, 1977, Pp. 145-158.

Lazarus, R. S., Deese, J., & Osler, S. F. The effects of psychological stress upon performance. Psychological Bulletin, 1952, 49, 293-317.

Levinson, H. The great jackass fallacy, Boston: Harvard University, 1973.

Lieberman, M. A., & Bond, G. R. The problem of being a woman: A survey of 1700 women in consciousness-raising groups. Journal of Applied Behavioral Science, 1976, 12, 363-380.

Likert, R. New patterns of management, New York: McGraw-Hill 1961.

Lipman, R. S., Rickels, K., Covi, L., Derogatis, L.R., & Uhlenhuth, E. H. Factors of symptom distress: Doctor ratings of anxious neurotic outpatients. Archives of General Psychiatry, 1969, 21, 328-338.

Locke, E. A. What is job satisfaction? Organizational Behavior and Human Performance, 1969, 4, 309-336.

Lorr, M. The multidimensional scale for rating psychiatric patients, Washington, D. C.: U.S. Veterans Administration, 1952.

Lumsden, D. Toward a systems model of stress. In I. G. Sarason & C. D. Spielberger (Eds.), Stress and anxiety, volume II. New York: Wiley & Sons, 1975, Pp. 191-228.

Margolis, B. K., & Kroes, W. H. Occupational stress and strain. In A. McLean (Ed.), Occupational stress. Springfield, Illinois: Charles C. Thomas, 1974.

Maslach, C. "Burned out". Human Behavior, 1976, 5, 16-22.

Maslach, C. Job burnout: How people cope. Public Welfare, 1978a, 36, 56-58.

Maslach, C. The client role in staff burnout. Journal of Social Issues, 1978b, 34, 111-124.

Maslach, C. The burn-out syndrome and patient care. In C. A. Garfield (Ed.), Stress and survival. St. Louis: C. V. Mosby, 1979, Pp. 111-120.

Maslach, C., & Collins, G. G. Burnout: The hazard of professional helpers. Christianity Today, 1977, 21, 12-14.

Maslach, C., & Jackson, S. E. Burned-out cops and their families. Psychology Today, 1979, 12, 59-62.

Maslach, C., & Pines, A. The burn-out syndrome in the day care setting. Child Care Quarterly, 1977, 6, 100-113.

Maslow, A. H. Motivation and personality, New York: Harper, 1954.

Maslow, A. H., Eupsychian Management, Homewood, Illinois: The Dorsey Press, 1965.

Maslow, A. H., Toward a psychology of being, Cincinnati: Van Nostrand Reinhold Company, 1968.

Matarazzo, J. D. Wechsler's measurement and appraisal of adult intelligence, Baltimore, Maryland: Williams & Wilkins, 1972.

McGrath, J. Settings, measures, and theories: An integrative review of some research on social-psychological factors in stress. In A. Monat & R. S. Lazarus (Eds.), Stress and coping: An anthology. New York: Columbus U. Press, 1967, Pp. 67-76.

Morse, N. C. Satisfaction in the white-collar job, Ann Arbor, Michigan: University of Michigan, Institute For Social Research, Survey Research Center, 1953.

Neff, W. S. Psychoanalytic conception of the meaning of work. Psychiatry, 1965, 28, 324-333.

Paine, F. T., Carrol, S. J., Jr., & Leete, B. A. Need satisfaction of managerial level personnel in a govern-

ment agency. Journal of Applied Psychology, 1966, 3, 247-249.

Palmore, E. Predicting longevity: A follow-up controlling for age. Gerontologist, 1969, 9, 247-250.

Parloff, M. B., Kelman, H. C, & Frank, J. D. Comfort, effectiveness, and self-awareness as criteria of improvement in psychotherapy. American Journal of Psychiatry, 1954, 111, 343-351.

Pell, S., & D'Alonzo, C. A. Blood pressure, body weight, serum cholesterol, and smoking habits among executives and nonexecutives. Journal of Occupational Medicine, 1961, 3, 467-470.

Petty, M. M., & Lee, G. K. Moderating effects of sex of supervisor and subordinate on relationships between supervisory behavior and subordinate satisfaction. Journal of Applied Psychology, 1975, 60, 624-628.

Pines, A., & Kafry, D., Occupational tedium in the social services. Social Work, 1978, 23, 499-507.

Porter, L. W. A study of perceived need satisfactions in bottom and middle management jobs. Journal of Applied Psychology, 1961, 45, 1-10.

Porter, L. W. Job attitudes in management: I. Perceived deficiencies in need fulfillment as a function of job level. Journal of Applied Psychology, 1962, 46, 375-384.

Porter, L. W. Job attitudes in management: II. Perceived importance of needs as a function of job level. Journal of Applied Psychology, 1963a, 47, 141-148.

Porter, L. W. Job attitudes in management: III. Perceived deficiencies in need fulfillment as a function of line versus staff type of job. Journal of Applied Psychology, 1963b, 47, 267-275.

Porter, L. W. Job attitudes in management: IV. Perceived deficiencies in need fulfillment as a function of size of company. Journal of Applied Psychology, 1963c, 47, 386-397.

Porter, L. W., & Steers, R. M. Organizational, work, and personal factors in employee turnover and absenteeism. Psychological Bulletin, 1973, 80, 151-176.

Purtilo, R. The allied health professional and the patient, Phildelphia: W. B. Saunders Co., 1973.

Rahe, R., Meyer, M., Smith, M., Kjaer, G., & Holmes, T. H. Social stress and illness onset. Journal of Psychosomatic Research, 1964, 8, 35-44.

Rennie, T. A. C., & Srole, L. Social class prevalence and distribution of psychosomatic conditions in an urban population. Psychosomatic Medicine, 1956, 18. 449-456.

Rhinehart, J. B., Barrell, R. P., DeWolfe, A. S., Griffin, J. E., & Spaner, F. E. Comparative study of need satisfaction in governmental and business hierarchies. Journal of Applied Psychology, 1969, 53, 230-235.

Rickels, K., Garcia, R., & Fisher, E. A measure of emotional symptom distress in private gynecological practice. Obstetrics and Gynecology, 1971, 38, 139-146.

Riger, S., & Galligan, P. Women in management: An exploration of competing paradigms. American Psychologist, 1980, 35, 902-910.

Rosenberg, M. Occupations and values, Glencoe, Ill.: Free Press, 1957.

Ross, I., & Zander, A. Need satisfactions and employee turnover. Personnel Psychology, 1957, 10, 327-338.

Russek, H. I., & Zohman, B. L. Relative significance of heredity, diet, and occupational stress in coronary heart disease in young adults. American Journal of Sciences, 1958, 235, 266-275.

Sales, S. M. Some effects of role overload and role underload. Organizational Behavior and Human Performance, 1970, 5, 592-608.

Schaffer, R. H. Job satisfaction as related to need satisfaction in work. Psychological Monographs, 1953, 67, 1-29.

Scully, R. Stress in the nurse. American Journal of Nursing, 1980, 8, 911-915.

Selye, H. The stress of life, New York: McGraw Hill, 1956.

Selye, H. Stress without distress, New York: J. B. Lippincott Company, 1974.

Selye, H. Stress without distress. In C. A. Garfield (Ed.), Stress and survival. St. Louis: C. V. Mosby Company, 1979, Pp. 11-16.

Shubin, S. Burnout: The professional hazard you face in nursing. Nursing, 1978, 8, 22-27.

Spector, A. J. Expectations, fulfillment, and morale. Journal of Abnormal and Social Psychology, 1956, 52, 51-56.

Tannenbaum, A. S. Social psychology of the work organization, Belmont, California: Wadsworth Publishing Company, 1966.

Thompson, J. W. "Burnout" in group home houseparents. American Journal of Psychiatry, 1980, 137, 710-714.

Torrance, E. P. A theory of leadership and interpersonal behavior under stress. In L. Petrullo & B. Bass (Eds.), Leadership and organizational behavior. New York, Holt, Rinehart, & Winston, 1961, Pp. 100-117.

Trumbull, R. Cultural aspects of stress. In I. G. Sarason & C. D. Spielberger (Eds.), Stress and anxiety. New York: Wiley & Sons, 1975, Pp. 131-140.

Vachon, M. L. S., Lyall, W. A. L., & Freeman, S. J. J. Measurement and management of stress in health professionals working with advanced cancer patients. Death Education, 1978, 1, 365-375.

Vroom, V. H. Ego-involvement, job satisfaction, and job performance. Personnel Psychology, 1962, 15, 159-178.

Warr, P., & Wall, T. Work & well-being, Baltimore, Md.: Penguin Books, 1975.

Waskow, L. E. Selection of a core battery. In L. E. Waskow & M. B. Parloff (Eds.), Psychotherapy change measures. Washington, D.C.: U. S. Government Printing Office, D H E W Publication No. (ADM) 74-120, 1975, Pp. 245-273.

Weiss, E., Dlin, B., Rollin, H. R., Fischer, H. K., & Bepler, C.R. Emotional factors in coronary occlusion. A.M.A. Archives of Internal Medicine, 1957, 99, 628-641.

Wickert, F. R. Turnover and employees' feelings of ego-involvement in the day-to-day operations of a company. Personnel Psychology, 1951, 4, 185-197.

APPENDIX A

INFORMED CONSENT

You are being asked if you are willing to participate in research on hospital employees.

It is hoped that this research will contribute to knowledge about hospital employees, and to psychology research.

There is no obligation to participate in this study. Your employment will in no way be affected by your decision to participate or to decline to participate. No one will be informed of your decision except the researcher.

If you have any doubts about taking part in this study, you are completely free to decline. Involvement in the study is not part of your employment. If you do participate, you may discontinue at any time.

Your participation will involve filling out a questionnaire. This will take about 20 minutes.

The benefits you might receive from participating are the possible educational experience of filling out the questionnaire and reading an abstract of the results of the study when it is completed, relating the results of employees of Mercy Hospital, not your results as an individual.

Your privacy will be safe-guarded in the following ways: your name will not appear at all in the questionnaire; your name will appear only on this consent form, which will be kept in the locked files of the researcher outside of the hospital.

I have been fully informed about this research study and consent to participate.

_____
Subject's Signature

_____
Date

_____
Witness

FACE SHEET

Male _____ Female _____ Do you work at Mercy fulltime? Yes ___ No ___

Age _____ Do you have another job? Yes ___ No ___

Race _____

Marital Status: (Check One)

Married	_____
Single	_____
Widowed	_____
Separated or divorced	_____

Number of Children _____

Education: (Check One)

8th grade or less	_____
Some high school	_____
High school graduate	_____
Technical school graduate	_____
Some college	_____
Junior college graduate	_____
College graduate	_____
Master's degree	_____
Ph.D. or M.D.	_____

For confidentiality, don't be specific. Example: "Department Director" (not which department)

Job Title:_____

Number of people you supervise _____

How long have you worked at Mercy Hospital? _____ yrs. _____ mos.

How long have you worked at your present job? _____ yrs. _____ mos.

Is your direct supervisor: Male _____ Female _____

Does your job at Mercy provide the major income for your family? Yes _____ No _____

Your yearly income from your job at Mercy: (Check One)

under $9,999	_____
$10,000 - $14,999	_____
$15,000 - $19,999	_____
$20,000 - $24,999	_____
over $25,000	_____

H S C L

INSTRUCTIONS: How have you been feeling during the past several days, including today? Please answer by marking after each item a number (1-4) from the scale below:

1	2	3	4
Not at all	Sometimes	Often	Nearly always

1. Headaches	
2. Nervousness or shakiness inside	
3. Being unable to get rid of bad thoughts or ideas	
4. Faintness or dizziness	
5. Loss of sexual interest or pleasure	
6. Feeling critical of others	
7. Bad dreams	
8. Difficulty in speaking when you are excited	
9. Trouble remembering things	
10. Worried about sloppiness or carelessness	
11. Feeling easily annoyed or irritated	
12. Pains in the heart or chest	
13. Itching	
14. Feeling low in energy or slowed down	
15. Thoughts of ending your life	
16. Sweating	
17. Trembling	
18. Feeling confused	
19. Poor appetite	
20. Crying easily	
21. Feeling shy or uneasy with the opposite sex	
22. A feeling of being trapped or caught	
23. Suddenly scared for no reason	
24. Temper outbursts you could not control	
25. Constipation	
26. Blaming yourself for things	
27. Pains in the lower part of your back	
28. Feeling blocked or stymied in getting things done	
29. Feeling lonely	

H S C L

1 Not at all	2 Sometimes	3 Often	4 Nearly always

30. Feeling blue	
31. Worrying or stewing about things	
32. Feeling no interest in things	
33. Feeling fearful	
34. Your feelings being easily hurt	
35. Having to ask others what you should do	
36. Feeling others do not understand you or are unsympathetic	
37. Feeling that people are unfriendly or dislike you	
38. Having to do things very slowly in order to be sure you are doing them right	
39. Heart pounding or racing	
40. Nausea or upset stomach	
41. Feeling inferior to others	
42. Soreness of your muscles	
43. Loose bowel movements	
44. Difficulty in falling asleep or staying asleep	
45. Having to check and double check what you do	
46. Difficulty making decisions	
47. Wanting to be alone	
48. Trouble getting your breath	
49. Hot or cold spells	
50. Having to avoid certain places or activities because they frighten you	
51. Your mind going blank	
52. Numbness or tingling in parts of your body	
53. A lump in your throat	
54. Feeling hopeless about the future	
55. Trouble concentrating	
56. Weakness in parts of your body	
57. Feeling tense or keyed up	
58. Heavy feelings in your arms or legs	

If you have problems not included on this list, please write them in and rate them below:

59.	
60.	
61.	

PORTER QUESTIONNAIRE
(adapted)

INSTRUCTIONS: How do you feel about your job? After each question, please circle a number from 1 to 7, where 1 means "not at all" and 7 means "very much". If any questions do not apply to you, leave them blank.

		(CIRCLE ONE) Not At All — Very Much
1.A.	Does your job help you feel good about yourself?	1 2 3 4 5 6 7
1.B	How much <u>should</u> your job help you feel good about yourself?	1 2 3 4 5 6 7
1.C.	How important is it to you that your job helps you feel good about yourself?	1 2 3 4 5 6 7
2.A.	How much does your job offer a chance for personal growth and development?	1 2 3 4 5 6 7
2.B	How much <u>should</u> your job offer a chance for personal growth and development?	1 2 3 4 5 6 7
2.C.	How important is it to you to have a chance on your job for personal growth and development?	1 2 3 4 5 6 7
3.A.	How much does your job offer the chance to think and act independently?	1 2 3 4 5 6 7
3.B.	How much <u>should</u> your job offer the chance to think and act independently?	1 2 3 4 5 6 7
3.C.	How important is it to you to have a chance on your job to think and act independently?	1 2 3 4 5 6 7
4.A.	How much do you participate in setting goals on your job?	1 2 3 4 5 6 7
4.B.	How much <u>should</u> you participate in setting goals on your job?	1 2 3 4 5 6 7
4.C.	How important is it to you to have a chance on your job to set goals?	1 2 3 4 5 6 7
5.A.	How secure does your job help you feel?	1 2 3 4 5 6 7
5.B.	How much security <u>should</u> there be on your job?	1 2 3 4 5 6 7
5.C.	How important is it to you to feel secure on your job?	1 2 3 4 5 6 7
6.A.	How much do people outside the hospital look up to you because of your job?	1 2 3 4 5 6 7
6.B.	How much <u>should</u> people outside the hospital look up to you because of your job?	1 2 3 4 5 6 7
6.C.	How important is it to you to have people outside the hospital look up to you because of your job?	1 2 3 4 5 6 7
7.A.	How much do you help decide how things are done on your job?	1 2 3 4 5 6 7
7.B.	How much <u>should</u> you help decide how things are done on your job?	1 2 3 4 5 6 7
7.C.	How important is it to you to help decide how things are done on your job?	1 2 3 4 5 6 7
8.A.	How much does your job help you feel like you have done something worthwhile?	1 2 3 4 5 6 7

--- continued on next page ---

PORTER QUESTIONNAIRE (adapted)

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(CIRCLE ONE)

		Not At All						Very Much
8.B.	How much <u>should</u> your job help you feel like you have done something worthwhile?	1	2	3	4	5	6	7
8.C.	How important is it to you to feel like you have done something worthwhile on your job?	1	2	3	4	5	6	7
9.A.	How much do people inside the hospital look up to you because of your job?	1	2	3	4	5	6	7
9.B.	How much <u>should</u> people inside the hospital look up to you because of your job?	1	2	3	4	5	6	7
9.C.	How important is it to you that people inside the hospital look up to you because of your job?	1	2	3	4	5	6	7
10.A.	How much do you get a feeling of using all your talent and knowledge on your job?	1	2	3	4	5	6	7
10.B.	How much <u>should</u> you get a feeling of using all your talents and knowledge on your job?	1	2	3	4	5	6	7
10.C.	How important is it to you to get a feeling of using all your talent and knowledge on your job?	1	2	3	4	5	6	7
11.A.	How much do you get a chance to make close friends on your job?	1	2	3	4	5	6	7
11.B.	How much <u>should</u> you get a chance to make close friends on your job?	1	2	3	4	5	6	7
11.C.	How important is it to you to get a chance to make close friends on your job?	1	2	3	4	5	6	7
12.A.	How much authority do you have on your job?	1	2	3	4	5	6	7
12.B.	How much authority <u>should</u> you have on your job?	1	2	3	4	5	6	7
12.C.	How important is it to you to have authority on your job?	1	2	3	4	5	6	7
13.A.	How much of a chance to help people is there on your job?	1	2	3	4	5	6	7
13.B.	How much of a chance <u>should</u> there be to help people on your job?	1	2	3	4	5	6	7
13.C.	How important is it to you to have a chance to help people on your job?	1	2	3	4	5	6	7
14.A.	How well-paid are you on your job?	1	2	3	4	5	6	7
14.B.	How well-paid should you be on your job?	1	2	3	4	5	6	7
14.C.	How important is pay to you on your job?	1	2	3	4	5	6	7
15.	If you are a supervisor, does your staff respect your authority and knowledge?	1	2	3	4	5	6	7
16.	If you are a supervisor, is your staff concerned about you as a person?	1	2	3	4	5	6	7
17.	If you are a supervisor, is your staff concerned about the job to be finished?	1	2	3	4	5	6	7
18.	If you are a supervisor, how satisfied are you with your staff as a whole?	1	2	3	4	5	6	7

--- continued on next page ---

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(CIRCLE ONE)

		Not At All						Very Much
19.	Is your supervisor concerned with the job to be finished?	1	2	3	4	5	6	7
20.	Does your supervisor encourage you to participate in decisions that affect you?	1	2	3	4	5	6	7
21.	Do you feel like your supervisor controls your behavior by rewarding or punishing you?	1	2	3	4	5	6	7
22.	Does your supervisor explain to you why a job must be done a certain way?	1	2	3	4	5	6	7
23.	Is your supervisor concerned about you as a person?	1	2	3	4	5	6	7
24.	Do you respect your supervisor's authority and knowledge?	1	2	3	4	5	6	7
25.	Does your supervisor encourage group discussion about decisions to be made?	1	2	3	4	5	6	7
26.	How satisfied are you with your supervisor?	1	2	3	4	5	6	7
27.	How satisfied are you with your fellow workers?	1	2	3	4	5	6	7
28.	How satisfied are you with your present job?	1	2	3	4	5	6	7
29.	Do you feel like there is more work on your job than you can possibly finish?	1	2	3	4	5	6	7
30.	How stressful are your contacts with your supervisors?	1	2	3	4	5	6	7
31.	How stressful are your contacts with employees on your level within your department?	1	2	3	4	5	6	7
32.	How stressful are your contacts with employees in other departments within the hospital?	1	2	3	4	5	6	7
33.	How stressful are your contacts with employees you supervise or whose work you are responsible for?	1	2	3	4	5	6	7
34.	If you work with patients, how stressful are contacts with:							
	patients, in general?	1	2	3	4	5	6	7
	patients who seem angry?	1	2	3	4	5	6	7
	patients who seem very young?	1	2	3	4	5	6	7
	patients who are dying?	1	2	3	4	5	6	7
	patients who seem demanding?	1	2	3	4	5	6	7
	patients who seem very old?	1	2	3	4	5	6	7
	patients who seem depressed?	1	2	3	4	5	6	7
	patients who want tasks done for them that they are able to do?	1	2	3	4	5	6	7
35.	How stressful are your contacts with physicians?	1	2	3	4	5	6	7

APPROVAL SHEET

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

11/5/81
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