

RELATIONSHIP OF JOB SATISFACTION TO STRESS
INDICATORS AND BURNOUT AMONG CERTIFIED
REGISTERED NURSE ANESTHETISTS

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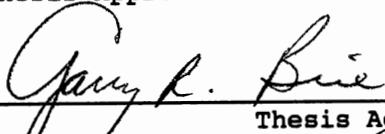
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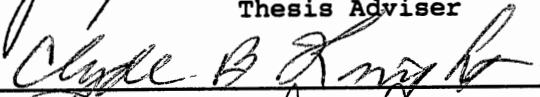
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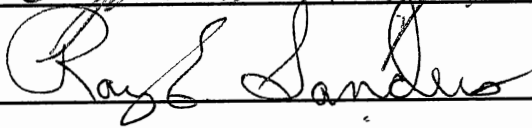
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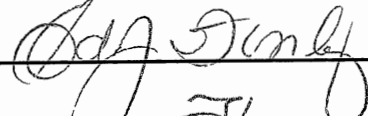
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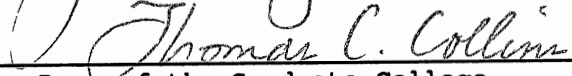


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C O P Y R I G H T

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CHAPTER I

RESEARCH PROBLEM

Introduction

Stress is an inherent aspect of living. As human beings, we all experience different levels of stress along with having different perceptions of what causes stress. Studies indicate that if nurses and other health care professionals have high levels of stress there will be a greater opportunity for them to experience burnout and job dissatisfaction (Perlman & Hartman, 1982; Rawlins, 1987; Robinson et al., 1991). Certified Registered Nurse Anesthetist (CRNA) burnout is a relatively new concept that began to emerge since the 1980's. Cavagnaro (1983), suggested CRNAs should be surveyed at a national level to identify characteristics of stress prone individuals and determine the level of stress that they experience (Cavagnaro, 1983).

Job satisfaction, the degree of positive effective orientation toward employment (Price & Mueller, 1986), is one of the most often mentioned constructs in the theoretical and descriptive literature on nurses' burnout, commitment, and turnover (Mueller & McCloskey, 1990). Mueller and McCloskey (1990) further state that though occupation-specific scales have the disadvantage of limiting comparisons across occupations, they have the important advantage of better delineating the components most relevant to the satisfaction of a particular group.

There is a growing body of research about stress in nursing and there are some specific indications of the stressful nature of the job. The Disciplinary and Investigating Committees of the General Nursing Council for England and Wales, then the main statutory body for nursing for those countries, in 1980 expressed increasing concern at the unacceptable pressures put upon nurses, some of whom were "trying to bridge the gap between the desirable and what is physically possible" (Nursing Standard, 1980). This is in accord with the description of people most at risk of the "burnout" syndrome as, "over-committed and over-dedicated, taking on too much for too long a time, working too intensely" (Freudenberger, 1975).

Jick (1987) reported significantly increased job pressure for healthcare providers with the addition of AIDS to the combined burden of depleted healthcare resources, external governmental regulation and control, threats of malpractice, and declining prestige. The effect on professionals of such increased stress is more than simply additive (Jick, 1987), it can be overwhelming.

What is burnout? A burned-out person is an individual in a state of fatigue and frustration when a job, a cause, a way of life, or a relationship fails to produce the expected reward (Freudenberger & Richelson, 1980). Several other writers, including (Kahn, 1978; Maslach, 1978; Truch, 1978; Edelwich & Brodsky, 1980) tend to agree in principle with the stated definition that emotional exhaustion is burn-out, and stress resulting from interpersonal contact is central to its cause (Ansell, 1981).

The majority of research on job satisfaction, burnout and stress indicators in health care professionals targets nurses in general as well as other intermediate level personnel. The limited research on job satisfaction, burnout and stress indicators in critical care nursing areas, trauma nurses, and nurse anesthetists indicates that the problem is widespread.

Jordan (1990) stated relationships exist between job satisfaction and stress indicators and burnout and nursing shortages. Jordan further indicated nursing shortages have been cyclic within the United States over the past several decades. She also suggested that the nursing shortage that was identified in the latter part of the 1980's was more acute and more problematic than previous shortages. That shortage of nurses hit about the same time that the nurse anesthetist shortage was identified and became acute (Jordan, 1990).

Need for the Study

Due to the projected shortage of CRNAs in the workforce there is a need to determine job satisfaction factors which cause CRNAs to drop out of nurse anesthesia. If it can be determined why CRNAs are leaving nurse anesthesia then remedial intervention strategies can be developed to insure a constant supply of CRNAs.

Statement of the Problem

The nursing shortage in the United States is threatening to reach epidemic proportions. In addition to a decrease in the number

of individuals entering the nursing profession, there has been a steady increase in the numbers leaving (Robinson, 1991). According to Fenner (1988) there is a 13.6 percent vacancy rate in total nurse positions, a 30-70 percent annual turnover rate in nursing staff positions, and a projected shortage of 600,000 nurses by the year 2000.

The development of the nurse anesthesia specialty preceded that of medical anesthesiology in the United States. Because of high mortality rates from anesthesia being reported in the latter third of the 19th century, many surgeons turned to nurses as the providers best suited and available to "specialize" in the field and devote their entire practice to the specialty. Nurse anesthetists have been highly successful in providing anesthesia services in the United States for over 100 years (National Commission on Nurse Anesthesia, 1990).

Studies of nurses (Marshall, 1980) and health care professionals (Maslach, 1979) suggest that excessive job stress leads to a loss of concern for patients, to physical exhaustion, and to illness, emotional exhaustion, and eventually, to leaving the health care field (Rawlins, 1987). During the past 10 years, significant changes in the demand for health care professionals and calls for improvements in the health care delivery system have focused attention on problems in educational programs, manpower, access, costs, and quality of care. The problems associated with any of those factors may produce a chain reaction that affects all of them. Such a situation exists today in relation to a serious shortage of

nurse anesthetists (National Commission on Nurse Anesthesia, 1990).

Several factors loom as potential risks as they relate to quality concerns for anesthesia care in the face of the growing Certified Registered Nurse Anesthetist shortage. One such factor is that CRNAs are working longer hours and often work their scheduled days off to handle the anesthesia workload (National Commission on Nurse Anesthesia, 1990). Lack of adequate vigilance has been found to be the most frequently cited cause of anesthesia mishaps (Cooper, 1984). Cooper (1984) cited fatigue and the scheduling or work/rest cycles as important issues in anesthesia mishaps and quality of care.

One aspect of job satisfaction receiving attention is professional burnout. Consequences of burnout in Registered Nurses include absenteeism, tardiness, vague somatic complaints, conflicts within the working environment, and eventual job turnover or career separation (Pines & Kanner, 1982). Chiriboga and Bailey (1986) found that work environment and work stress variables contributed most to the prediction of burnout in RNs and other health care professionals, and Constable and Russell (1986) found that job enhancement (i.e. increased responsibilities and promotion), work pressure, and supervisor support (lack of) were the major predictors of nurse burnout. Components of the work environment, social support systems, and unique individual characteristics have also been implicated in nurse burnout (Robinson et al., 1991).

In recent years numerous studies have been implemented to determine the causes of stress as experienced by registered nurses working in critical care units (Cavagnaro, 1983). Those studies

focused on identifying stressors, job satisfactions, and methods of coping with stress (Medical World News, 1981).

The overall goal of recognizing and dealing with stress is to prevent professional "burnout". When the CRNA continually encounters stress-producing situations without some type of release, burnout becomes a real danger, causing the CRNA to opt out of the profession in order to reduce the stress to a tolerable level (Cavagnaro, 1983).

The magnitude of the nurse anesthetist shortage was recently documented by a Congressionally mandated study (U. S. Department of Health and Human Services, 1990). Through the support of Health and Human Services, a study was conducted in 1989-1990 to develop projections of the supply of and need for CRNAs and to assess the educational objectives for nurse anesthesia educational programs (U. S. Department of Health and Human Services, 1990).

The Human Health Services study reported a shortage of 6,000 CRNAs for 1990, or a 13.6 percent shortfall. It further reported the need for 30,000 CRNAs by the year 2000 and over 35,000 by the year 2010.

The problem is an increasing shortage of Certified Nurse Anesthetists and the discovery of factors which may be causing this shortage.

Purpose of the Study

The purpose of this study is the discovery of factors causing stress and burnout in CRNAs; and the relationship of those factors with selected demographic factors that might contribute to CRNAs leaving the profession.

Research Questions

The major questions asked were:

1. Are hours of call time per week, in hospital hours, type and difficulty of case and O. R. personality type moderators of stress and turnover intent?
2. Do time stress, role ambiguity, goal stress and financial stress contribute most to turnover intent?
3. Do CRNAs with high turnover intent tend to be urban, work in an anesthesia specialty, work long hospital hours, report high call hours, and have lower income? Will they show high "people" stress, (i.e. resenting demands or loss of control); and are they dissatisfied with pay and the work itself?
4. How do hours of work (call and hospital hours) and years on the job, income and working in an anesthesia specialty moderate stress, job dissatisfaction, and turnover intent?
5. What stressors and dissatisfactions are associated with length of time on the job (independent of other factors) or with hospital hours (in dependent of other factors)?
6. What stressors and dissatisfiers predict wanting to leave anesthesia but being unable to afford to?
7. Based on Stress Index and Job Dimension Survey Scores, can researchers predict whether or not a CRNA will have high turnover intent?

Variables

In this study, the dependent variables were job burnout and

stress as measured by the 15 stress indicators of the S-Index (Sweney and Sweney, 1980). The independent variables were the 17 selected demographic factors. The indices of job context, job content, people (co-workers), supervision, pay and opportunities for promotion were defined by the Job Dimension Survey (Swenson, Belt, & Sweney, 1975), which measures job satisfaction were also dependent variables.

The 17 selected demographic factors were based on the review of the literature and/or recommendations for further study. The factors selected were: age, gender, marital status, practice setting, type of employment, income, number of years as CRNA, number of years in current position, full-time versus part-time, percent of time spent in an anesthesia specialty, hours of call time per week, average hospital hours per week, level of nurse anesthesia education, additional training or education, relationship with co-workers and attitude towards leaving/staying in anesthesia.

With canonical correlation analysis the Criterion set (dependent variables) from the S-Index were: self-depreciation, attention seeking, seeking approval, resenting demands, goal stress, pessimism, time stress, responsibility seeking, performance stress, financial stress, reactive, loss of control, impatience, regret, and role stress. Dependent variables from the Job Dimension Survey were: hours of work, size of unit (number of people), regional aspects, work unit (physical conditions), work itself, people, supervision, pay, and opportunities. The Predictor set (independent variables) were: years as a CRNA, years in current position, hours on call, hospital hours, work in anesthesia specialty, metropolitan, work full

time, married, income, want to leave but can't afford to, seeking additional training, and plan to stay in anesthesia.

Limitations

The limitations of the study are as follows:

The study includes only members of the American Association of Nurse Anesthetists which constitute 70.24 percent of all nurse anesthetists (Drazen, 1992).

Delimitations

The following delimitations were placed upon the study:

The population for the study was all active, practicing, CRNAs with membership in the American Association of Nurse Anesthetists on October 31, 1991.

The research instruments--the S-Index (Sweney & Sweney, 1980) and the Job Dimension Survey [JDS] (Swenson, Belt, & Sweney, 1975)--were selected from instruments that had high reliability and validity for this kind of research.

Assumptions

The following assumptions guided the conduct of the study:

It was assumed that the respondents had no difficulty understanding the directions or statements presented on the S-Index or Job Dimension Survey.

It was assumed that the respondents completed the S-Index and the Job Dimension Survey without knowing how other respondents were answering.

Definitions

The following definitions are given to provide an understanding to concepts basic to the study.

Burnout*: A cumulative stress response of an individual whose job requires extensive contact with people. Burnout is a syndrome characterized by emotional exhaustion, depersonalization, and feelings of decreased personal accomplishment and effectiveness. Burnout is viewed as a continuous variable, not as a dichotomous variable (Maslach & Jackson, 1986, p. 2).

Distress: negative stress (Seyle, 1985).

For the purposes of this study the definition of goal stress is:

Goal stress: an intentionally induced negative response by individuals who set unrealistic goals for themselves.

Job Satisfaction: Smith, Kendall, and Hulin (1969) define job satisfaction in terms of the feelings a worker has toward his job.

For the purposes of this study the definition of performance comfort is:

Performance comfort: confidence in performing familiar tasks.

For the purposes of this study the definition of proactivity is:

Proactivity: deriving a sense of control from finding one's own decision opportunities.

For the purposes of this study the definition of role stress is:

Role stress: emotional conflict caused by the dilemma of choosing between mutually conflicting but equally prescribed roles, especially when behaviors are in conflict with the self concept.

For the purposes of this study the definition of self-appreciation is:

Self-appreciation: appreciating one's own worth and abilities.

For the purposes of this study the definition of stress is:

Stress*: An adaptive response that is a consequence of any action, situation, or event that is seen as disruptive and places demands upon an individual (Matteson & Ivancevich, 1987, p. 10).

*For the purposes of this study burnout and stress are considered inherent within each other.

CHAPTER II

REVIEW OF RELATED LITERATURE

In relation to job satisfaction, Smith et al. (1969) stated job satisfactions are:

. . . a function of the perceived characteristics of the job in relation to an individual's frame of reference. Alternatives available in given situations, expectations, and experience play important roles in providing the relevant frame of reference (p. 6).

Therefore, any job aspect, for example, opportunities for promotion, has the potential to be a satisfier, dissatisfier or irrelevant in relation to the individual's frame of reference. Any aspect of the work experience that produces conflict between what is expected and what actually occurs can lead to job dissatisfaction. In that context, job stress can be seen as a form of job dissatisfaction (Rawlins, 1987).

A sizeable portion of behavioral science research in organizations has focused on possible connections between job attitudes, particular job satisfaction, and various job behaviors. Industrial psychologists and labor economists, for example, have explored the relationship between job satisfaction and job tenure (Myers & Shultz, 1951; Parnes, 1954; Rottenberg, 1956; Vroom, 1964; Hulin, 1966 & 1968; and Mikes & Hulin, 1968). Other scholars from various disciplines have examined the association between job satisfaction and such behavioral variables as absences, accidents,

grievances, illnesses (Brayfield & Crockett, 1955; Herzberg, Mausner, Peterson, & Capwell, 1957; and Vroom, 1964), and even life expectancy (Madigan, 1962). Research in which additional sources of data are utilized is essential to illuminate more clearly relations among the job environment, people's perception of that environment, and their reaction to that environment (Aldag, Barr, & Brief, 1981).

The recent recognition of the debilitating effects of stress on workers has forced managers to study the sources of job satisfaction for benefits other than increased productivity (Sibler, 1975). Unfortunately, it has taken problems such as high employee turnover, absenteeism, alcoholism, and stress-related diseases to turn the emphasis in job satisfaction studies from the quest for greater productivity to a concern for the welfare of employees (Selye, 1978).

Lack of job satisfaction has been linked not only to turnover, absenteeism, tardiness, waste, grievances, and accidents but also to employee receptivity to change, loyalty, commitment to organizational objectives, and degree of participation and contribution (Stamps, 1978).

A review of the literature was completed to see if there is an established relationship of job satisfaction to stress indicators and burnout among certified registered nurse anesthetists and projected shortages. The review which follows cover four areas relevant to the theoretical construct of the study: (1) job satisfaction, (2) stress, (3) burnout, and (4) nursing shortages.

Job Satisfaction

According to Thompson (1981) the two most relevant studies on job satisfaction as they relate to nurse anesthetists are an interdisciplinary study by Stamps and colleagues (1978) on the measurement of work satisfaction of health professionals and research into the job satisfaction of physician assistants by Perry (1978).

Stamps et al. (1978) investigated six job factors: pay, autonomy, task requirements, organizational requirements, interaction, and job status. The purpose of their study was to determine both the relative importance of those six factors and current levels of satisfaction. In their suggestions for further investigations, the Stamps noted that they had omitted the area of physical working conditions, and the areas of shifts, hours, and amount of work were only indirectly suggested. Stamps further suggested that investigation into the doctor-nurse relationship, a special type of interaction that is unique to the health care setting was warranted.

James and Tetrick (1986) found support for a causal model suggesting that relations between job characteristics and job satisfaction are reciprocal. The importance of those factors varied with work setting and health profession (Thompson, 1981).

Thompson (1981) in a study of 284 nurse anesthetists determined that anesthetists were generally satisfied with their jobs. In that particular study group, anesthetists employed by anesthesia groups were less satisfied than those otherwise employed. Dissatisfaction with any one factor did not have a high correlation with

dissatisfaction with the job. For example, although pay was ranked as the most important factor and had a high level of dissatisfaction (62.3%), the correlation with job dissatisfaction was $-.05$. One-third of the anesthetists dissatisfied with their jobs were not dissatisfied with pay. Also, job satisfaction was not a result of satisfaction with all factors. Of the 158 anesthetists satisfied with their jobs, 83 were dissatisfied with one factor, 15 with two factors, and seven with three factors. It was therefore concluded that department managers should be encouraged to assess departmental dissatisfaction and attempt changes where they have the greatest chance for success. All departments cannot provide satisfaction on all factors but job satisfaction can exist even with a limited amount of dissatisfaction (Thompson, 1981).

When the intangible benefits such as impartial treatment, job stimulation, quality supervision, recognition, feedback and fairness associated with hospital employment are perceived as inadequate, the tangible benefits associated with agencies cause the RNs to leave hospital employment and work for agencies (Braddy, Washburn, & Carroll, 1991). Recent literature reports that inflexible scheduling is also an important factor in nurses' dissatisfaction with hospital employment (Aiken, & Mullinix, 1987; Braddy, 1988; Friss, 1988; Huey, & Hartley, 1988). There is no job satisfaction when nurses have different assignments everyday, when assignments are task-based, or when a chaotic environment exists (Manthey, 1989).

Current research supports a positive relationship between job satisfaction and retention (Taylor, & Covalski, 1985; Huey, &

Hartley, 1988; Dalton, & Todor, 1989). March and Simon's (1958) Motivational Theory of Organizational Equilibrium proposed key ideas: (a) the greater the perceived job satisfaction, the less the perceived desirability to leave; (b) the greater the perceived extraorganizational alternatives, the greater the perceived ease of movement, and (c) individuals will remain with an organization as long as the inducements are equal to or greater than the contribution the individual is asked to make.

There is little doubt that the practice and work environments of CRNAs may contribute to feelings of professional and personal loneliness and dissatisfaction. Often people-dependent, conscientious and competent anesthetists respond to under utilization of their skills and concomitant overtraining with disillusionment. CRNAs often work long hours in work settings that disallow patient education and counseling. They may perceive their employment as "dead end" and receive limited professional respect (Long & Pfifferling, 1986, Part II).

Job satisfaction as defined by this discussion of current literature supports the theory that nurse anesthetists are generally satisfied with their jobs. The dissatisfaction with jobs in health care professionals is also well documented in other areas. Interest for this researcher lies in the area of the relationship of job satisfaction and stress among nurse anesthetists. This issue was not addressed, therefore, additional research is indicated.

Stress

CRNAs are nurses, and nursing according to others is a high stress occupation.

Nursing is, by its very nature, an occupation subject to a high degree of stress. Every day the nurse confronts stark suffering, grief, and death as few other people do. Many nursing tasks are mundane and unrewarding. Many are, by normal standards, distasteful, even disgusting, others are often degrading; some are simply frightening (Hingley, 1984, pp. 19-22).

Because stress is a personal emotion and stressors are perceived differently by each person, it is important to recognize what the individual caregiver considers to be stressful (Harris, 1989). Harris (1984) also stated that stress can be any physical, chemical or emotional factor that causes bodily or mental tension. Most professionals list time management problems as their greatest stresses. They usually describe balancing personal and professional time as a subsidiary problem (Long & Pfifferling, 1986, Part II). There is seldom sufficient time to implement the complicated care plans nurses write, which causes complete and utter frustration and results in the staff nurse finishing the shift feeling exhausted and unfulfilled both professionally and emotionally (Kallet, 1989).

Mitchell (1984) and Mitchell and Bray (1990) have begun to study the stressors faced by professional caregivers in emergency service areas. They outlined techniques to assist caregivers to recognize the manifestations of stress in themselves and in their colleagues. They have also developed a protocol to assist the professional emergency services caregiver to cope effectively with stressors before they become disabling. Situations that Mitchell and Bray

(1990) classified as critical incidents include, among others, death in the line of duty, serious injury to emergency personnel, traumatic death of children, and serious injuries to children.

In addition to the stressful nature of the work of the health care professional in the emergency service area, rotational shift work, which often results in the worker being isolated from family, friends, and social activities, is another stressor inherent in the job (Shannon, 1991). Shannon further indicated the nurses' identification and emotional involvement with the patient and family as well as uncertainty over ethical issues, such as prolongation of life and guilt over being unable to prevent the death of a patient, also contributed to the nurses' work related stresses.

Selye's (1974) work on adaptation to stress can be applied to professional health care providers. In additional work in 1976, Selye identified that providing conscientious nursing care for difficult patients is highly distressful (identified as negative stress by Seyle, 1985), particularly for intensive care unit (ICU) nurses. Consolvo, Brownewell, and Distefano (1989) identified hardiness (a term related to the area of stress) as a personality characteristic that was frequently seen in neonatal intensive care unit (NICU) nurses who stayed at the stressful job longer than the average nurse.

There is a growing body of research about stress in nursing and there are some general implications of the stressful nature of the job. The literature suggests that avoidance is the primary coping mechanism at an organizational as well as an individual level and

that this causes repression of emotions and leads to secondary stress effects. So, the nurse's primary task has a high anxiety-invoking potential. Their role is made more difficult both by secondary stress effects from failing to cope with this anxiety and by the failure of the primary task organization to work smoothly (Marshall, 1980). This sums up to be a job of unusually high potential stressors. For example, Occupational Mortality 1979-1983 (HMSO) figures indicated that the suicide rate for female nurses was significantly higher than the national average of female suicides for other occupations. In addition, a nurse's life expectancy at age 45 is 26.9 years, only one year more than for a miner 25.9 years (another commonly recognized stressful job) working below ground (Morton-Cooper, 1984).

Physical signs and symptoms of stress include increased heart rate and blood pressure, tightness of the chest, breathing difficulty, headaches, fatigue, exhaustion, and insomnia (Lachman, 1983). In addition Lachman states more complex manifestations include gastrointestinal distress ranging from indigestion to ulcers, insomnia, backache, frequent colds or illnesses, urinary frequency or change in weight.

Emotional indicators also are evident in the stressed person, who may display irritability, hostility, and angry outbursts and overreact to relatively minor situations. Self-depreciating behavior may become apparent, along with depression, a negative, cynical attitude, and job dissatisfaction (Lachman, 1983).

Intellectually, the stressed caregiver may become forgetful, preoccupied, and demonstrate decreased concentration as well as a decrease in creative thinking. The person may think more slowly than usual and spend more time in daydreaming or fantasy thinking. The caregiver's apathy is likely to lead to increased errors and decreased sensitivity to the needs of patients, families, and colleagues (Lachman, 1983). Yet another major source of stress among nurses is decreasing ability (particularly in view of the shortage) to meet the increasing demands of the consumer (Kallet, 1989).

Examples of psychosocial stressors in the workplace include responsibility, role ambiguity, role boundary or role conflict stressors, role insufficiency, role overload, and concern for quality (Beehr & Drexler, 1986). To be busy is not to be under stress, as long as business does not threaten your equilibrium (Gunzburg, 1988). Other individual strains can be classified as vocational strain (trouble with quality or quantity of performance), psychological strain (moods and psychological malfunctioning), interpersonal strain (disruption in interpersonal relationships), and physical illness and complaints (Osipow & Spokane, 1984).

The following are characteristics of the stress-prone individual: (1) a tendency to overplan each day, (2) polyphasic thinking (attempting to process more than one idea at a time), (3) a need to win, (4) a persistent desire for advancement or recognition, (5) an inability to relax without feeling guilty, (6) impatience with delays and interruptions, (7) involvement with multiple projects with many deadlines, (8) a chronic sense of time urgency, (9) an

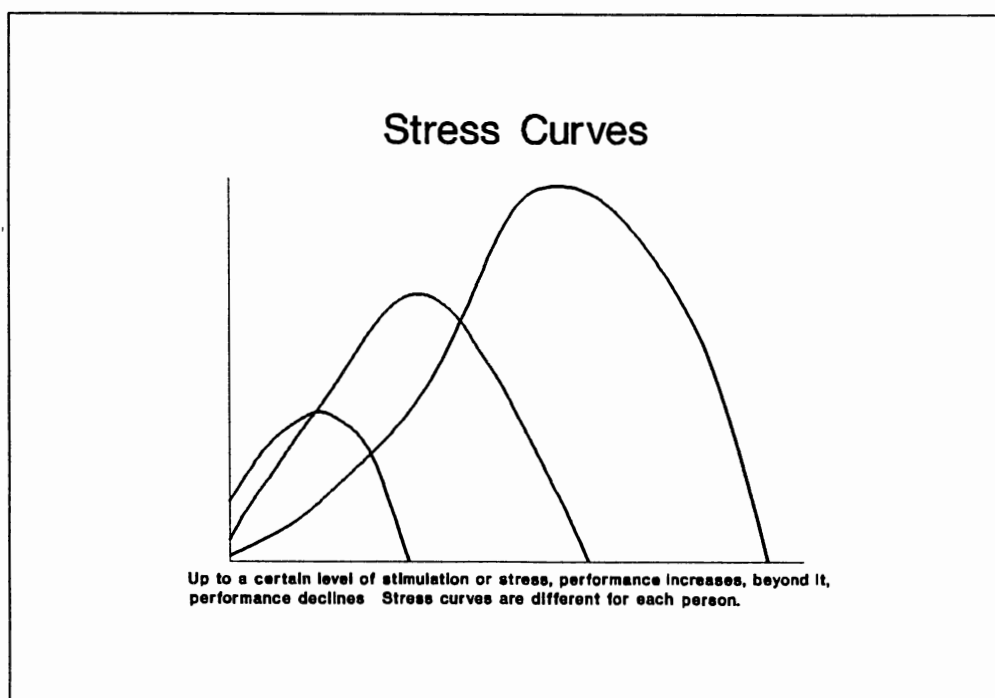
excessive competitive drive, and (10) a compulsion for work (Forbes, 1979). Other types of researchers have identified specific stressors in CRNAs:

Many stressors in the nurse anesthetists environment can be changed only by concerted group effort and are not in the individual nurse anesthetist's control. Constant feelings of being out of control are triggers for distress. One way of regularly reducing these stressors is by participating in efforts to clarify goals, philosophy, and specific needs for practicing professionals (Long & Pfifferling, 1986, Part I, p. 357).

When precision, perfectionism, territorial ambiguity and isolation occur, greater anxiety and frustration can result. Up to a certain level of stimulation or stress, performance improves; beyond it, performance declines (Al-Assaf, 1989). According to Al-Assaf (1989, p. 15):

Drs. Robert M. Yerkes and John D. Dodson of the Harvard Physiologic Laboratory studied the relationship of stress to the ability to succeed. Up to a certain point it was found that work efficiency and performance improve in direct relation to the amount of stress. However, as stress increases beyond a certain limit, work performance and efficiency start dropping.

Stress curves are different for each person (See Figure 1, McGorry & Singh, 1985). CRNA's must deal with rapidly changing information and inappropriate use of their skills by other health care professionals. Many of those issues create not only anxiety but aggravate negative feelings like guilt or depression. The ability to respond to those negative feelings and to neutralize them as distressors is a key item in managing stress. Anesthesia education rarely offers adequate training in stress management techniques such as disassociation, guided imagery, and deep relaxation (Long & Pfifferling, 1986, Part II).



Source: McGorry, and Singh (1985).

Figure 1. Stress Curves

According to Beehr (1985) employees and their potentially supportive others (in this case, supervisors) can talk about their work situation in at least two ways, corresponding to positive and negative content of these communications. Even in stressful situations, they can talk about how bad things are (e.g., how stressful the job is) or they can talk about how good things are (e.g., "we do very useful work"). One certainly would expect what is said in the workplace to affect some of the employees' stress related reactions, by defining the situation (Beehr, King, & King, 1990).

The special stress-related needs of emergency services caregivers can best be met by persons who have a unique understanding of the needs of this special group. Known as a critical incident stress debriefing (CISD) team (professional support personnel who possess a minimum of a masters degree in a mental health subspecialty) this group is composed of mental health professionals and peer support personnel (Mitchell, 1984; Mitchell & Bray, 1990).

Certain specific high stress yielding surgical interventions such as child abuse and rape or loss of a patient on the operating room table put CRNAs at risk for increased stress. CRNAs put through CISD respond in a positive manner as do other health care professionals as indicated in this quote:

Mitchell's model for critical stress debriefing (CISD) is a pro-active and positive method for stress recognition, prevention, and reduction. In this model, professionals are trained to recognize and respond to the stress related needs of their colleagues. This results in a reduction of stress and stress related disorders and enables the emergency services professional to continue to function effectively and competently (Shannon, 1991, p. 359).

A person who does not cope effectively with job-related stress develops burnout (Harris, 1989). Stress is a symptom of burnout (Ansell, 1981).

A fixed schedule allows employees to make a doctor's appointment, take a class, or make plans for the future---for more than one month in advance. While the amount of paid time off in nursing is comparable to other professions, the ability to use it is not. Often an expectation that the worker will make provisions for replacement coverage is an unspoken understanding (Kallet, 1989).

Undue stress is placed upon the individual whenever a leave request, be it for one day or for a vacation, is made. The nurse can never be sure it will be granted. Therefore, the nurse must always have a contingency plan--whether to trade, forego the plans, or "call in"; the latter is used all too frequently when reasonable requests for time off are not met. In fact, absenteeism is higher in nursing than in any other profession, probably because of inflexible, rigid schedules (Kallet, 1989) factors related to stress.

The review of literature identified stress and stress factors, and discussed the types of stress and factors that affect it. There is an absence of literature pertaining to studies relevant to CRNAs and associated stress. It has been previously cited by Cavagnaro (1983) that while the need for such a study exists, there is a lack of information pertaining to stress in CRNAs in the literature. Research is needed among CRNAs to identify possible stress and stress factors.

Burnout

While working conditions certainly account for much of the job dissatisfaction that drives nurses away from hospital nursing, the many conflicts of being both a professional and a worker also contribute heavily. The word "professional" conjures up certain adjectives: responsible, accountable, educated, dedicated, caring, concerned, and organized are frequently used by nurses. However, the omission of one word connotes one of the major problems of the profession, and that is "powerful." As a professional without power in the workplace, nurses cannot control the size of their workload, cannot use their own judgement without going through channels, and in many cases cannot go through channels without permission (Kallet, 1989).

It has been documented that nurses allow themselves to be manipulated by the very word "professional": they work overtime without compensation, forgo meals and breaks when they are busy, and sneer at attempts to unionize the workplace because to do otherwise would be unprofessional (Kallet, 1989). The following quote adds strength to the previous statement:

Burnout is generally defined as a state of physical, emotional, and mental exhaustion that occurs as a result of intense involvement with people over long periods of time in situations that are emotionally demanding. It is characterized in its extreme form by physical depletion and chronic fatigue, feelings of helplessness and hopelessness, and the development of negative attitudes toward self, work life and other people (Pines, 1982, p. 455).

Burnout is a progressive condition whereby there is a loss of idealism, energy and purpose (Ansell, 1981). Burnout has been

described by Maslach (1976) as the condition when the professionals "lose all concern, all emotional feeling for the people they work with, and come to treat them in a detached or even dehumanized way."

Causes of burnout are plentiful and multifactorial.

Contributing factors can range from family obligation to personal finance, personal objectives and personality. Daily living does contribute to stress, however, burnout is usually job-related (Al-Assaf, 1989). It is suggested that there is a strong correlation between the extent and intensity of stress, and, ultimately burnout. Another relationship also exists between stress and certain times and events in the career life cycle (Rice, 1986; Al-Assaf, 1989).

Others suggest the person most likely to experience burnout is positively correlated to the type of individual one happens to be. Literature suggests these individual types are high-achieving, idealistic, charismatic, energetic and impatient. Moderation does not describe this personality; burnout candidates thrive on intensity, they typically put in more than 60 hours a week of hard work that often extends to weekends (Ansell, 1981; Al-Assaf, 1989). Three pathogenic character types are susceptible to burnout: those for whom stress is predominantly work related, idealistic and self-motivating achievers, and constant goal seekers (Al-Assaf, 1989).

Ansell (1981) describes symptoms of burnout as: exhaustion, detachment, boredom and cynicism, impatience and heightened irritability, a sense of omnipotence, a suspicion of being unappreciated, paranoia, disorientation, psychosomatic complaints, and situationally oriented depression.

Burnout may not be diagnosed with only one specific sign or symptom. Burnout shows several stages of evolution: (a) threat to a person's stability or equilibrium (response acute but usually only temporary), (b) persistence of threat which leads to a chronic stressful condition, and (c) the last stage which occurs when the individual starts asking questions about job effectiveness and security, and showing frustration and loss of self-confidence (Al-Assaf, 1989). The burnout syndrome is comprised of physical and emotional exhaustion in which the person develops a negative self-concept, negative job attitude, and loss of concern and feeling for clients (Pines & Maslach, 1978). The health care professional who experiences burnout is unable to function effectively in the clinical setting because of disillusionment and resignation to the realities of the job (Storlie, 1979).

Ray (1984) elaborated on the many factors that contribute to nursing faculty burnout. Burnout was defined as "a state of physical, emotional, and attitudinal exhaustion." Ray (1984) presents a scenario where nurse educators afflicted with burnout continue in the same job, yet display dehumanizing and ineffective behaviors reflective of their loss of ideals and vision. Another possible consequence of burnout could be a more deliberate trajectory of nursing faculty members to graduate-level teaching or to different careers (Symanski, 1991). Symanski (1991) further states repeated emotionally draining experiences with unsatisfactory clinical students may result in unfortunate outcomes such as burnout, loss of high-caliber faculty members, and erosion of teaching standards.

Vulnerability to burnout among physicians is influenced to some degree by certain longstanding, maladaptive personality traits and coping styles already evident in young adulthood, even before the physicians encounter the stresses of medical training (Murphy, Nadelson, & Norman, 1984). Physicians with such personality tendencies as basic insecurity, low self-esteem, dependency, social anxiety, and proneness to depression often exhibit "a highly ambivalent attitude toward Medicine--loving it yet clearly resenting its continuing demands because medicine as a profession is failing to meet his or her own needs" (Roeske, 1981). It is concluded by Roeske (1981) that the result is the physician feels fatigued and depleted by the demands of the profession, thus becoming vulnerable to burnout. Because CRNAs perform many of the same duties as their M. D. Anesthesiologist colleagues it is logical extension that nurse anesthetists also become vulnerable to burnout.

The greater risk of burnout among physicians is associated with personality traits of low self-esteem, low self-confidence, proneness to dysphoria and obsessive worry, social anxiety, passivity, and withdrawal from others. Among physicians, symptoms of burnout are thought to be potential precursors of more severe manifestations of impairment, including alcoholism, drug abuse, and suicide (McCawley, 1983; Mawardi, 1983).

Long and Pfifferling (1986, Part I,) further note that nurse anesthetists

who are at high risk for burnout are usually intensely self-critical, compulsive, and perfectionistic. If they are put into an environment where there is no feedback on their performance, or if it is primarily negative, they will devour themselves with self-criticism and

hostility. A combination of self-criticism, perfectionism, and an environment with inadequate or negative feedback can easily produce a distressed nurse anesthetist (p. 359).

Reduced self-esteem guarantees hindrance and self-defeat in psychological life (Branden, 1969). How well one functions in anesthesia will depend, to a great extent, on how one feels about one's self and whether one values one's self as a good and worthwhile person (Virshup, & Dwayne, In Press). Reduced self-esteem hinders the actualization of ones' fullest potential and predisposes one to feelings of burnout and depression (Tubesing, 1983).

A recent study of health care professionals found burnout scores to exhibit significant negative correlations with perceived control over various job characteristics, but to be unrelated to objective job characteristics [hours worked, being on call] (McDermott, 1984). Higher burnout scores were significantly related to greater perceived job stress (McCranie & Brandsma, 1989). The significant association between burnout and greater career, marital, and life dissatisfaction is also consistent with other evidence indicating that burned out human service professionals report being dissatisfied with many aspects of their work and nonwork lives (Pines, 1982).

Organizational signs and symptoms to which administrators may be alerted include: increased absenteeism, low level of enthusiasm, quality of service delivered, lacking focus, and lack of communication (Spaniol & Caputo 1979).

Burnout among nurses is nothing new. "There are tests to measure it, classes to alert us (nurses) to it, and techniques to attempt to alleviate it" (Kallet, 1989). Unending research has been

conducted, numerous studies launched, and the causes are clearly defined. High at the top of the list is conditions under which nurses work (Kallet, 1989). Managing burnout is best done through prevention.

As described in the literature there are many signs and symptoms of burnout, as well as several different ways to manage it. I have discussed other areas of the health care profession that have shown burnout to be readily prevalent, however, there is no literature specific to CRNAs.

Nursing Shortages

Overwork, secondary to understaffing, is a major factor contributing to the exodus of nurses. Among critical care staff chronic understaffing is the number-one reason for leaving a particular work place (Kallet, 1989). Working in a profit oriented system of health care delivery requires squeezing the most labor from the fewest possible number of workers (Kallet, 1989).

Daily (1990) studied role perceptions and job tensions as predictors of nursing turnover. That study indicated that the nurses' ability to dissipate job tension is an important predictor of their experienced stress. The study also concluded that the experienced stress symptoms and the nurses' ability to dissipate tension were strong predictors of the nurses' intentions to quit their jobs.

The retention of registered nurses (RNs) is a critical concern for hospital administrators (Braddy, Washburn, & Carroll). In a

recent study, about two thirds of the nursing directors stated their hospitals were having difficulty hiring and retaining nurses (Wagner, 1988). One in seven hospitals has a nursing shortage so severe that beds have been closed or admissions curtailed (Mallison, 1988). Vacancy rates for RN positions are running as high as 20 percent in the acute care setting; attrition rate is at an all time high (Kallet, 1989). In critical care, as in other nursing areas, the loss of experienced nurses adversely affects both the hospital budget and the provision of consistent high-quality patient care (Coleman, 1990). There is a projected shortage of 600,000 nurses by the year 2000 (Fenner, 1988).

Holtzclaw (1983) noted that the academically strong, leadership-oriented young women who opted for nursing school in the past, because of sex-typed social expectations, are drawn to many other careers today. Where are all the women college grads headed?--to business, law, or medical schools, or into any number of more appealing and prestigious careers where they will be rewarded economically and honored emotionally for their knowledge and dedication (Kallet, 1989).

The American Association of Nurse Anesthetists warns, that unless more educational programs are established, the shortage of certified registered nurse anesthetists will worsen (Lutz, 1990). Rural hospitals likely will suffer most from the nurse anesthetist shortage. About two-thirds of the rural facilities depend on nurse anesthetists exclusively for their anesthesia needs. Nurse anesthetists perform about half the anesthesia services in this country (Lutz, 1990).

The animosity between the professions, like many issues, comes down to money. Although nurse anesthetists' salaries have increased because of the recent shortage, their annual net incomes remain substantially less than those of physicians (Lutz, 1990).

While the professional nursing organizations continue to debate the entry-level issue, nurses abandon the profession and unanimously reply that they would not encourage their sons or daughters to be nurses (Kallet, 1989). Like other professionals, the professional nurses of today have invested years of their lives and thousands of dollars to prepare themselves for their careers. When these careers fail to provide professional fulfillment and financial security, they leave (Kallet, 1989).

Summary

The literature has revealed relationships exists between job satisfaction, stress, and burnout in nurses in neonatal intensive care, trauma units, critical care units, and other areas. The literature does not address the relationship of any of these factors as related to CRNAs as little documented research has been done to provide data for interpretation. Other health care professionals such as physicians and emergency medical technicians have also exhibited relationships that exist between these factors. The literature also discusses stress, burnout, and job satisfaction in miners, lawyers, and upper management positions. There has been established that a further relationship exists between those factors and turnover intent or shortages in nursing.

Due to the current as well as the projected shortages in CRNAs, the review of literature suggests that if we knew a relationship exists, and if we knew what relationship exists between the factors of stress, burnout, job satisfaction and turnover intent, cause for the shortages might be revealed. CRNAs would stand to benefit in several ways: once stressors have been identified, stress reduction activities can be developed; causes of burnout can be addressed with possible remedies for cure; and it would be possible that an increase in job satisfaction could take place. These and other factors could help curb the shortage by making nurse anesthesia more attractive to nurses looking for advanced practitioner status and well as retain CRNAs in the profession who might otherwise be looking for an out.

CHAPTER III

RESEARCH DESIGN AND PROCEDURES

Existing studies have identified sources of stress in health care personnel, investigated the phenomenon of burnout in selected groups, and constructed valid instruments for measuring stress. Several studies have focused on the dimensions of job satisfaction in the environment of health care as associated with perceived level of burnout. Research of the stress and burnout of Certified Registered Nurse Anesthetists is limited.

This correlational study used the one shot case study design to investigate the relationship of job satisfaction, stress and burnout indicators to selected demographics among CRNAs. Campbell and Stanley (1963) diagram that study design as follows:

X O

This chapter is divided into five main sections: Instruments used in the Study, Population and Sample, Collection of Data, Measurement of Variables, and Analysis of Data. Each section has descriptive information. The procedures and methodology are presented where appropriate.

Instruments Used in the Study

Three instruments were used to generate the data required for this study: (1) The Stress Index Scale [S-Index] (copyrighted by

Sweney & Sweney, 1980), (2) the Job Dimension Survey [JDS] (Swenson, Belt, & Sweney, 1975), and (3) a questionnaire containing additional criterion and demographic measures developed by the author.

Stress

The Stress Index Scale, (copyrighted by Sweney & Sweney, 1980) a self-scoring, 105-item instrument developed for the Center for Human appraisal at Wichita State University (Test Systems International Ltd.), and validated by intra-institutional studies (Goss & Blight, 1983; Herrick, 1983) was used to obtain data concerning stress experienced by the subjects of the study. Permission to use the Stress Index Scale was obtained from Sweney and Sweney; however, because it is a copyrighted instrument, it is not included in the Appendixes. The instrument takes 30 to 45 minutes to complete. The S-Index tests the response to 15 potential sources of stress by providing a 5-point likert type scale on which the participant matches their reaction (from "strongly agree" to "strongly disagree") to questions such as "I'm so busy playing roles, I get confused". The results are then converted into sten scores and marked on the SI B norms sheet (Appendix A). The sten scores are then marked on the SI Profile Sheet (Appendix A) for final interpretation.

The Stress Index is one of several instruments developed by Sweney and Sweney to measure constructs posited to exist at the various phases of the stress cycle. This self-descriptive test focuses on the Perception phase. It captures the subjective assessments and definitions of sources of stress to the individual.

Since some stress is inherent to life itself the sources are reflective of the individual's value systems and which stressors are most prevalent in his/her subjective environment.

There are numerous taxonomies of stressors. Sweney and Sweney started with items related to four broad areas of potential stress: Time Stress, Goal Stress, Situational Stress, and Anticipatory Stress. Although these were not perceived to be articulated scales, they were representative of the items universe to be sampled.

The original items were administered to several samples of college students and the general population, and the resulting data were factor analyzed, resulting in 15 identifiable factors. These factored scales were purified through augmentation with new items and elimination of cooperative or non-specific items. This process was repeated several times until stable homogeneous scales were obtained. The resulting scales were highly reliable (See Table I).

Job Satisfaction

The Job Dimension Survey (JDS) (Swenson, Belt, & Sweney, 1975), an 82-item instrument was used to determine satisfaction with the intrinsic/extrinsic rewards of the job. For example, the participant equates their satisfaction with an item such as "pay you get now" by circling a number on the continuous semantic differential scale:

Good 1--2--3--4--5--6--7 Bad

Three satisfaction criteria, Work Itself, People on the Job, and Supervision represent intrinsic job rewards, and six satisfaction criteria represent the extrinsic job rewards: Hours of Work, Size of

TABLE I
STRESS INDEX TEST RELIABILITY (KR FORMULA 20
AND CRONBACH'S ALPHA)

Subscale	Rxx	Alpha
Self Depreciation	.81	.66
Attention Seeking	.84	.71
Seeking Approval	.78	.61
Resenting Demands	.72	.52
Goal Stress	.86	.74
Pessimism	.77	.59
Time Stress	.83	.69
Responsibility Seeking	.64	.41
Performance Stress	.71	.51
Financial Stress	.75	.78
Reactive Stress	.70	.49
Loss of Control	.88	.77
Impatience	.84	.71
Regret	.82	.67
Role Stress	.74	.55

Work Unit (number of people), Regional Aspects (geographical location), Work Unit (physical conditions), Opportunities for Promotion, and Present Pay.

The reliability of the JDS (Appendix B) was based on the method of rational equivalence (using KR Formula 20) to estimate the correlation of a dimension of the Job Dimension Survey with its hypothetical equivalent. It can be seen from Table II of the results that the dimensions of the job as measured by the Job Dimension Survey exhibit high reliability.

Criterion-related validity of the Job Dimension Survey was used to test whether the instrument actually measures what it is supposed to measure (See Table III). The total JDS with its correlation of .694 with a direct criterion measure of job satisfaction identified the JDS as an instrument which measures Job Satisfaction, at least as operationally defined by Swenson, Belt, and Sweney.

The construct validity of the instrument was also enhanced through orthogonal factor analysis. That added support to the instrument validity was found in the 70.6 percent contribution of the factors to the variance in the direct criterion measure of job satisfaction.

Demographic Factors

A Demographic Questionnaire (Appendix C) was used to obtain information pertaining to personal variables from the respondents in this study. The instrument was designed to provide personal demographic information relating to the following variables: age,

TABLE II
 JOB DIMENSION SURVEY TEST RELIABILITY
 (DUBOIS, 1965) (KR FORMULA 20)

Subscale	Rxx
Job Context	.834
Work Performed	.883
People	.771
Supervision	.943
Pay	.940
Promotion	.869

TABLE III
 JOB DIMENSION SURVEY TEST VALIDITY
 (DUBOIS, 1965) (KR FORMULA 20)

Subscale	r*
Job Context	.447
Work Performed	.717
People	.450
Supervision	.562
Pay	.209
Promotion	.350
Total	.698

*r = correlation with criterion measure of overall satisfaction

gender, marital status, practice setting, type of employment, income, number of years as CRNA, number of years in current position, full-time versus part time, percent of time spent in an anesthesia specialty, hours of call time per week, average hospital hours per week, level of nurse anesthesia education, additional training or education in another area, relationship with co-workers and attitude towards leaving/staying in nurse anesthesia.

The demographic questionnaire was field tested on ten cohorts not included in the sample. The cohorts were asked to complete the questionnaire and critique its appropriateness, face validity, length, and ease of response.

Their suggestions were incorporated into the final instrument. Their suggestions focused on clarification of the question on financial compensation and informing respondents to fill out both sides of the page.

Population and Sample

The Certified Registered Nurse Anesthetists used in this study were from the active practicing membership of the American Association of Nurse Anesthetists.

Population

The population for this study was the body of CRNAs within the American Association of Nurse Anesthetists membership listed as Active and Practicing. That population numbered approximately 21,000 as of October 31, 1991. The number was reported to the researcher by

phone direct from the offices of the American Association of Nurse Anesthetists.

Sample

The American Association of Nurse Anesthetists in North Ridge, Illinois has the capacity to prepare any type of sample a researcher may request via computer.

According to a chart developed by Krejcie and Morgan, to be within +/- five percent accuracy on a finite population of 20,000, a randomly drawn sample of 377 is required. Expecting a 35 to 45 percent return a randomized sample nationwide by zip code of 1000 active, practicing CRNAs was requested which would be within the limits required. The sample was selected on October 31, 1991, at the corporate offices of the AANA and listed as run number 2934.

The subjects for this study were active, practicing CRNAs (working in the field of anesthesia and re-certified with the 40 continuing education units required to maintain this status).

Collection of Data

The data were collected using three instruments. The first instrument, the copyrighted Stress Index Scale was used to measure 15 potential sources of stress. The second instrument was the Job Dimension Survey that measured satisfaction with the intrinsic/extrinsic rewards of the job. The third was an instrument designed to elicit demographic information which was developed by the researcher.

The American Association of Nurse Anesthetists was called and a randomized list of 1000 CRNAs nationwide was requested by the researcher. The researcher requested two complete sets of labels as well as one master copy. The labels were numbered from 1 to 1000 and checked for accuracy of match to the master list. The research instruments were each numbered. The researcher prepared packets of materials for each of the subjects for the study. Each packet consisted of the Job Dimension Survey, the Stress Index, the Stress Index answer sheet, the Demographic questionnaire, and a cover letter (Appendix D) explaining the study and providing instructions for mailing the materials to the researcher in the enclosed postage paid, addressed envelope.

The initial mailing of the packets to subjects was November, 18, 1991. As the research instruments were returned, the researcher checked off the numbers of the respondents on the master list of subjects. A follow-up letter (Appendix E) was mailed to all subjects two weeks later on December 2, 1991, as the researcher had received only 38 (3.8%) completed packets at that time. After the holiday season, a second follow-up letter was mailed (Appendix F) on January 5, 1992 in the event that the survey instruments had been set aside and forgotten. The return of instruments to that date was 79 (7.9%). Packets were returned steadily to the researcher throughout the next two weeks with an increase to 287 respondents (28.7%). Telephone contact was made with 12 randomly selected nonrespondents on January 20, 1992. The subjects were reminded of the original packet of instruments and asked for verbal agreement to complete the

instruments and return them to the researcher. Twelve packets of instruments along with a cover letter (Appendix G) reminding the subjects of the phone conversation of January 20, 1992 were mailed on January 22, 1992. Those sets were easily identified upon return to the researcher by the orange postage paid envelope as well as the additional mark added to their original respondent number.

Questionnaires were returned by 303 (30.2%) of the 1000 subjects sampled. Return rate against the required 377 for + /- five percent accuracy was 303 (80.5%).

Student t-tests were computed on selected items of those instruments returned before January 20, 1992, and the 12 nonrespondents contacted by phone. No significant differences were identified between the groups, therefore, there was no reason to believe that nonrespondents differed from respondents.

Measurement of Variables

Stress Index scores for all subjects were standardized using the sten (standardized ten) scores provided by Sweney and Sweney (1980). Norms for the SI were developed with the general population, so CRNA stress scores, if normal, should reflect the same level of stress in the general population. Job Dimension Survey raw scores for each subscale were tabulated. Items that were purposely reversed in the original instrument to reduce response sets were reversed again, making sure that the semantic differential scale for all items were from positive (a score of 1) to negative (score of 7). Thus, all scales measured the subjects' levels of dissatisfaction. The scales

were then normalized for the sample, converting raw scores to *z*-scores (comparison of JDS scores to other populations or settings is not possible due to the lack of norms for the general population).

Demographic variables were tabulated, creating new categories for open-ended questions where appropriate. New dummy coded variables were created for later analysis for gender, marital status, practice setting, full-time status, seeking additional training, and leaving anesthesia as a career. For example, marital status was recoded as follows: married = 1, single = 0, divorced = 0, and separated = 0. Thus, a new dummy variable of "marriedness" was created. Through dummy coding, categorical variables were converted to scalar quantities of unit length, and were then appropriate for inclusion in regression analyses with continuous variables obtained in the study (SI and JDS scores). All data were analyzed with SYSTAT and SPSS/PC+ on a personal computer. The reader needs to use caution in interpretation of these statistics because of low numbers of "leavers" in the sample.

Analysis of Data

Canonical correlation analysis (CCA) is a method designed to study the relationship between two sets of variables, *p* and *q*, where *p* could be 2 or more independent variables and *q* could be two or more dependent variables. Alternately, *p* could be a set of predictors (i.e., dependent variables) and *q* could be a set of criteria (independent variables). The purpose of CCA is the forming of two linear combinations, one of the *p* variables and one of the *q*

variables, by differentially weighting them so that the maximum possible correlation between them is obtained. The correlation between the two linear combinations, also referred to as canonical variates, is the canonical correlation, R_C . The square of the canonical correlation, R_C^2 , is an estimate of the variance shared between the linear combination of variables in each canonical variate. [In correlational studies, the use of the terms "criteria" and "predictors" is often arbitrary; for the purposes of this study, predictors refers to variables in the first canonical variate, and criteria refers to variables in the second canonical variate].

The analogy between CCA and multiple regression (MR) should be apparent: when p or q consists of one variable, one is performing MR. As in CCA, the purpose of MR is to find a linear combination of independent variables that maximizes their correlation with a dependent measure. Unlike MR, in CCA both independent and dependent variables are weighted. CCA is an "eigenvector" approach to finding combinations of variables that maximize the R_C . In other words, CCA starts by finding the eigenvector (also known as the characteristic root) that maximizes the R_C (and also extracts the greatest amount of variance) between both variable sets. After the initial root is extracted, another root is extracted from the variance that is left over. The second root is based upon the linear combinations of predictors and criteria that are uncorrelated with the first pair of variates and that yield the second highest R_C possible in the given data. This process continues until all variance is extracted. The maximum number of roots that can be extracted is equal to the number

of variables in the smaller set of variables when p is not equal to q .

A serious problem in CCA is the interpretation of canonical weights, which are analogous to standardized regression coefficients (Beta weights) in MR. Some researchers use them as indices of the relative importance or contribution of the variables with which they are associated. Cohen and Cohen (1983) and Pedhazur (1982) suggest that interpretation of canonical variates is best undertaken by reference to the structure coefficients rather than canonical weights. Canonical weights are partial regression coefficients, thus subject to redundancy and suppression effects, and interpretation can be seriously misleading. Structure coefficients, on the other hand, are much more useful for interpretation. Structure coefficients are the correlations between each variable and the canonical variate for that variable set. The square of a structure coefficient indicates the proportion of variance shared by the variable with which it is associated and the canonical variate. Structure coefficients are often referred to as structure "loadings" due to their similarity to factor pattern loadings, and they are interpreted as such.

One approach to improving the interpretability of CCA is rotation of canonical variates. CCA is essentially principal components analysis of between set covariances, or "double-barreled principal components analysis" (Tatsuoka, in Cattell, 1978). Consequently, canonical correlation analysis suffers from the primary problem encountered in factor analysis, that is, the difficulty of interpreting principal components as functional entities. Although

simple structure rotation of principal components is a routine procedure in factor analysis, its use in canonical correlation is unwarranted. According to Cohen and Cohen (1983), simple structure rotation is predicated on the selection of variables that give broad coverage of a domain; i.e., one expects in simple structure rotation that the correlations between many of the variables and the factors will be zero or negligible. Variables in canonical correlation analysis are not so selected, and the rationale for simple structure rotation is weak. As Cattell (1978) adds, no criteria for a unique rotational solution exist for canonical correlation analysis. Without rotation, however, canonical variates are essentially orthogonal (uncorrelated) principal components and, as such, have limited theoretical appeal but are very useful in explanation and prediction.

Multiple Regression and Discriminant Analysis techniques were used where appropriate.

CHAPTER IV

FINDINGS

This chapter presents the analysis of the data from the study investigating the relationship of job satisfaction to stress indicators and burnout among Certified Registered Nurse Anesthetists.

Subjects

Three hundred three subjects participated in the study, a return rate against the required 377 for +/- five percent accuracy (80.5%). Of those, ten were retired, 45 were freelance, 100 were in a MDA group, 119 were hospital employees, and the remainder were in a CRNA group, the military, or university. They had worked an average of 14.4 years (range = 1 to 37, SD = 8.1) and averaged 6.7 years (range = 1 to 26, SD = 6.1) in their present job. Sixty-seven percent (67%) worked in metropolitan settings, 93 percent were full-time employees, and 22 percent worked in an anesthesia specialty. They averaged 41 hours per week in their hospital job (range = 2 to 100, SD = 12.2) and averaged 30 hours per week on call (range = 0 to 168, SD = 38.6). Sixty-four percent (64%) had completed requirements for a certificate, 22 percent had completed a baccalaureate degree, ten percent had completed a Master's degree, and one percent had completed a PhD or other degree. The subjects' ages ranged from 26 to 69 (mean = 43, SD = 7.7). Nearly 17 percent reported yearly

incomes of less than \$55,000 and 46 percent reported incomes of \$75,000 or more. Seventy-eight percent (78%) were married, 11 percent were single, and 11 percent were separated or divorced. Nearly 48 percent of the subjects were female.

Ten percent (10%) indicated that they were seeking additional training or education to work in another field. Nine percent (9%) also agreed or strongly agreed with the statement "I would like to leave Anesthesia but cannot afford to". Ninety-three percent (93%) indicated that they intended to stay in anesthesia as a career. Based on the sample size, the margin of error for the percent age of CRNAs intending to leave the profession in the population is the same as in the sample ($\pm 3.4\%$) at the 95 percent confidence level.

Analysis of Dependent and Independent Variables

Several Canonical Correlation Analyses were performed in this study. In the first CCA, years as a CRNA, years in current position, hours on call, hospital hours, working in an anesthesia specialty, metropolitan location, working full time, marital status, income, wanting to leave anesthesia, seeking additional training, and planning to stay in anesthesia formed the predictor (or independent variable) set. Prior to CCA, categorical variables were dummy coded where appropriate (for example, marital status was coded as married = 1, not married = 0). The criterion set (dependent variables) was the 15 Stress Index and 9 Job Dimension Survey scales. The canonical correlation analysis yielded three significant canonical correlations.

Structural loadings are shown in Table IV. The first root ($R_C = .602$, $p < .05$) accounted for 36.3 percent of the variance associated with the predictors and criteria. The second root ($R_C = .561$, $p < .05$) and third root ($R_C = .501$, $p < .05$) accounted for 31.5 percent and 25.1 percent of the variance, respectively, in the predictor and criterion sets.

The following interpretations of the canonical variates are based on the salient (greater than $|.20|$) structure coefficients. [The experienced researcher understands that, given enough degrees of freedom, extremely small correlations can be statistically significant. In CCA, as in factor analysis, the determination of what level of correlation is meaningful (i.e., "salient") is somewhat arbitrary. When reviewing the structure loadings, keep in mind that the variates are bipolar, thus correlations can be positive or negative]. The first canonical variates (Root 1 in Table IV) indicated that CRNAs who agree that they want to leave but cannot afford to (.57) and who tend to be metropolitan (.35), lower income (-.64), work long hospital hours (.31) but have fewer hours on call (-.37) tend to be self depreciating (.57), resent demands (.46), have high goal stress (.55), are pessimistic (.47), have moderate time stress (.36), performance stress (.25), financial stress (.25), loss of control (.48), impatience (.26), and regret (.30). They tend to be most dissatisfied with pay (.75), people (.32), physical conditions (.31), and the work itself (.31). The desire to leave is associated with higher numbers of hospital hours, fewer hours of call, and metropolitan setting and produces high levels of stress and job dissatisfaction. A reflected interpretation suggests that CRNAs

TABLE IV

SUMMARY OF CANONICAL CORRELATION ANALYSIS DEMOGRAPHICS
AND TURNOVER INTENT AS PREDICTORS OF STRESS AND
JOB DISSATISFACTION (STRUCTURAL LOADINGS)

Variables	Root 1	Root 2	Root 3
<u>Predictor Set (Independent Variables)</u>			
Years as a CRNA	.07774	.27861*	.19846
Years in Current Position	.04991	.18678	.27247*
Hours on Call	-.37215*	.22808*	.50994*
Hospital Hours	.31052*	.04027	-.00176
Work in Anesthesia Specialty	-.07032-	.20649*	.17863
Metropolitan	.35115*	.39799*	-.70030*
Work Full Time	-.09390	.22764*	.09758
Married	.00152	.10969	-.21535*
Income	-.64274*	.43850*	-.30305*
Want to Leave but Can't Afford To	.57356*	.63220*	.01229
Seeking Additional Training	.13491	.09933	.11393
Plan to Stay in Anesthesia	-.21233*	.12478	-.33120*
<u>Criterion Set (Dependent Variables)</u>			
Self Depreciating	.57045*	.65110*	-.13957
Attention Seeking	.01653	.10559	-.20345*
Seeking Approval	.20193*	.11552	.00618
Resenting Demands	.45540*	.60774*	.06056
Goal Stress	.55058*	.64117*	-.08380
Pessimism	.46998*	.43814*	-.06141
Time Stress	.36261*	.38585*	-.16863
Responsibility Seeking	-.02735	.25358*	.24791*
Performance Stress	.24677*	.48176*	-.23437*
Financial Stress	.32039*	.36281*	.15605
Reactive	.13507	.29672*	.13070
Loss of Control	.47571*	.56544*	-.22139*
Impatience	.26444*	.34665*	-.12220
Regret	.30346*	.50753*	-.15070
Role Stress	.12210	.18173	-.15582
Hours of Work	-.00391	.24563*	.36788*
Size of Unit (Number of People)	.22251*	.12862	.10745
Regional Aspects	.05206-	.43347*	-.46982*
Work Unit (Physical Conditions)	.30781*	.03314	-.06317
Work Itself	.33001*	.28257*	-.01880
People	.31642*	.15502	.16872
Supervision	-.05639	.41693*	.29078*
Pay	.75313*	.22106*	.40863*
Opportunities for Promotion	.11390	.20326*	.09580
R_{C2}	.60236	.56101	.50124
R_C	.36284	.31473	.25124
p	< .05	< .05	< .05
R_d (Predictors with Criteria)	.09883	.08737	.09721

*Indicates salient loadings

with low turnover intent tend to work fewer hospital hours, have more call hours, but also lower stress and higher job satisfaction.

In summary, the CRNAs described by Root 1 tend to be predominantly lower income and want to leave but cannot afford to. Consequently, their greatest dissatisfaction is with pay and they experience moderate financial stress. They tend to be self depreciating, pessimistic, create unrealistic goals for themselves, regret some of their choices in life, and tend to be dissatisfied with the work itself. They also tend to be stressed by their contact with other people, resenting the demands of others, feeling some loss of control, impatience, and time stress. They are dissatisfied with people they encounter on the job.

This first canonical root, by virtue of a canonical correlation (R_C) of .60, demonstrated a very strong relationship between the predictor set (dependent variables) and the criterion set (independent variables). Furthermore, the corresponding squared canonical correlation (R_C^2) indicated that the canonical function accounted for 36 percent of the shared variance between the predictors and the criteria. However, the R_C^2 is not a reliable indicator of the strength of explanation (or prediction) of the canonical function. While it is true that squared canonical correlations provide an estimate of the shared variance between the canonical variates, the R_C^2 represents the variance shared by the linear composites of the sets of the predictor and criterion variables, not the variance extracted from the sets of variables. Thus, a strong canonical correlation may be obtained between two linear composites even though these linear composites may not extract

significant portions of variance from their respective sets of variables.

To overcome the inherent bias and uncertainty in using R_C^2 as a measure of shared variance, the redundancy index has been proposed (Pedhazur, 1982). The redundancy index is the equivalent of computing the squared multiple correlation coefficient between the total predictor set and each variable in the criterion set, and then averaging these squared coefficients to arrive at an average R_C^2 . It provides a summary measure of the ability of a set of predictor variables (taken as a set) to explain variation in the criterion variables (taken one at a time), in essence, the "average predictability." As such, it is perfectly analogous to the multiple regression's R^2 statistic, and its value as an index is similar.

Thus, the R_C^2 of .363 of the first root indicated that 36 percent of the variance in the canonical variates was shared. However, a redundancy index of .0356 indicated that only 3.6 percent of the variance in the predictor set (demographics and turnover intent) was explained by the canonical variate for the criterion set (Stress Indices and Job Dimension Survey scales). Simply put, the redundancy index indicated that the individual demographics and turnover intent measures were weak predictors of stress and job dissatisfaction.

The second root ($R_C = .561$, $R_C^2 = .315$) demonstrated that CRNAs who want to leave but cannot afford to (.63) who are also high income (.44), rural (-.40), and have more years as a CRNA (.28) tend to have high stress in the form of self depreciation (.65), resenting demands (.61), goal stress (.64), pessimism (.44), time stress (.39),

performance stress (.48), financial stress (.36), reactive (.30), loss of control (.57), impatience (.35), and regret (.51). They tend to be satisfied with regional aspects (-.43), but are dissatisfied with the hours of work (.25), supervision (.42), and the work itself (.28).

The CRNAs described by the second root are rural, higher income, and have worked longer as CRNAs, but in most other respects, are very similar in terms of which stressors effect them. In fact, they tend to have higher stress scores than the metropolitan, lower income CRNAs described in Root 1, especially resenting demands, performance stress, goal stress, reactive stress, and regret. They share the same level of dissatisfaction with the work itself, but are more satisfied with people on the job. They are moderately dissatisfied with supervision. They are different from CRNAs in Root 1 in another important way: they want to leave but cannot afford to, and are less likely to be seeking additional training, and are less likely to indicate an intent to leave the profession. The redundancy index of .0275 indicated that three percent of the variance in the predictor set (demographics and turnover intent) was explained by the canonical variate for the criterion set.

The third root ($R_C = .501$, $R_C^2 = .251$) indicated that rural (-.70) CRNAs with more hours of call (.51), lower income (-.30), who are planning the leave the profession (-.33) tend to be responsibility seeking (.25), have low performance stress (-.23), and are dissatisfied with the hours of work (.37), supervision (.29), and pay (.40), and are satisfied by regional aspects (-.47). Unlike the rural CRNAs described in Root 2, these CRNAs have very little stress

associated with their reaction to others on the job: they plan to leave the profession due to the long hours and low pay. The redundancy index of .0244 indicates that two percent of the variance in the predictor set (demographics and turnover intent) was explained by the canonical variate for the criterion set.

A second canonical correlation analysis was performed to determine the relationship of stress, job dissatisfaction, and working conditions to turnover intent. The predictor set (independent set) was SI and JDS scores, years as a CRNA, years in current position, hours on call, hospital hours, income, and working in an anesthesia specialty. Turnover intent variables (wanting to leave but not being able to afford to, seeking additional training, and planning to leave the profession) formed the criterion set (dependent variables). The canonical correlation analysis yielded one significant canonical correlation ($R_c = .548, p < .05$). Structural loadings are shown in Table V. Root 1 indicated that CRNAs who want to leave the profession but cannot afford to and who may also be receiving additional training tend to have high stress in the form of self depreciation (.87), resenting demands (.71), goal stress (.85), pessimism (.65), time stress (.56), performance stress (.57), financial stress (.52), loss of control (.76), impatience (.49), and regret (.61). They tend to be most dissatisfied with the work itself (.47), people (.33), and to a lesser degree, number of people (.26), physical conditions (.28), supervision (.28), and pay (.25). Although years as a CRNA (.24) is associated with turnover intent, neither hospital hours, hours on call, income, nor working in a specialty enter the equation. The results graphically show that

TABLE V
 SUMMARY OF CANONICAL CORRELATION ANALYSIS STRESS, JOB
 DISSATISFACTION, AND WORKING CONDITIONS AS
 PREDICTORS OF TURNOVER INTENT
 (STRUCTURAL LOADINGS)

Variables	Root 1
<u>Predictor Set (Independent Variables)</u>	
Self Depreciating	.86548*
Attention Seeking	.12123
Seeking Approval	.24110*
Resenting Demands	.70727*
Goal Stress	.84768*
Pessimism	.64754*
Time Stress	.55519*
Responsibility Seeking	.09372
Performance Stress	.56885*
Financial Stress	.51849*
Reactive	.26079*
Loss of Control	.75703*
Impatience	.48745*
Regret	.60960*
Role Stress	.29224*
Hours of Work	.19474
Size of Unit (Number of People)	.26237*
Regional Aspects	-.28118*
Work Unit (Physical Conditions)	.28219*
Work Itself	.47324*
People	.33115*
Supervision	.27914*
Pay	.25386*
Opportunities for Promotion	.23065*
Years as a CRNA	.24310*
Years in Current Position	.09348
Hours on Call	.02642
Hospital Hours	.06209
Income	-.06209
Work in Anesthesia Specialty	.09220
<u>Criterion Set (Dependent Variables)</u>	
Want to Leave but Can't Afford To	.94087*
Seeking Additional Training	.22489
Plan to Stay in Anesthesia	.05306
R_{C2}	.54819
R_C	.30052
p	< .05
R_d (Predictors with Criteria)	.09402

*Indicates salient loadings

turnover intent is influenced most by stress (especially stress from working with other people), and job dissatisfaction. The working conditions have virtually no influence on turnover intent. The redundancy index of .094 indicates that nine percent of the variance in the predictor set (demographics and turnover intent) was explained by the canonical variate for the criterion set.

In a stepwise multiple regression using age as the criterion measure, no SI or JDS scales entered the regression equation. Stepwise multiple regression using years as a CRNA as the criterion measure independent of income, metropolitan setting, and wanting to leave (in Root 2 above) yielded a significant regression equation ($R = .240$, $p = .0007$). As indicated in Table VI, more years as a CRNA was most highly associated with stress in the forms of responsibility seeking and goal stress, and satisfaction with the work itself. However, the regression equation accounted for only six percent of the variance in the criterion and predictors, as indicated by a R_2 of .0575.

Stepwise multiple regression with years in current position as the criterion measure failed to yield a significant regression equation. Stepwise multiple regression with hours of call was then performed as above and failed to yield a significant regression equation. However, the number of hours CRNAs worked weekly at a hospital (independent of hours of call, income, and not being able to afford to in Root 1 of the first CCA above) were associated with stress in the form of resenting demands (See Table VII). Although the equation was statistically significant ($R = .154$, $p = .0083$), it

TABLE VI

SUMMARY OF STEPWISE MULTIPLE REGRESSION STRESS AND JOB
DISSATISFACTION AS PREDICTORS OF YEARS AS A CRNA

Multiple R	0.23975
R ²	0.05748
Adjusted R ²	0.04770
Standard Error	7.90317

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	1100.84187	366.94729
Residual	289	18050.96701	62.46009
	$F = 5.87491$	$p = 0.0007$	

Variables in the Equation

	B	SE B	Beta	t	p
Responsibility Seeking	.70179	.29755	.13607	2.359	.0190
Goal Stress	.73691	.26261	.17658	2.806	.0054
Work Itself	-1.22527	.51763	-.14878	-2.367	.0186
Constant	6.64177	2.08709		3.182	.0016

accounted for only two percent of the variance in predictor and criteria.

Stepwise multiple regression with wanting to leave but not being able to afford to as the criterion measure yielded a significant regression equation. As indicated in Table VIII, CRNAs who want to leave the profession but cannot afford to are self depreciating, experience loss of control, and are dissatisfied with the work itself. Wanting to leave (independent of income, hours on call or at the hospital, metropolitan setting, years as a CRNA, or intending to leave the profession) accounted for 24 percent of the variance in the predictor and criteria ($R = .488, p < .00001$).

Stepwise discriminant analysis (DA) with receiving additional training to work in another field as the criterion measure and SI and JDS scales as the predictor set yielded a significant discriminant function (Wilks' Lambda = .9242, $p = .0009$). As indicated in Table IX, univariate F ratios indicated that CRNAs receiving additional training were significantly more dissatisfied with size of work unit (number of people), the work itself, people, and supervision than those not receiving additional training. The discriminant analysis indicated that the best predictors of whether a CRNA was receiving additional training were, in order of importance, people, work itself, size of work unit (number of people), and responsibility seeking. Those who were not receiving additional training tended to have high reactive stress (due the demands of others) and average dissatisfaction with the work unit (physical conditions). The Wilks' Lambda of .9242 indicate that the discriminant function accounted for eight percent of the variance explaining group differences, and the

TABLE VII

SUMMARY OF STEPWISE MULTIPLE REGRESSION STRESS AND JOB
DISSATISFACTION ASSOCIATED WITH HOSPITAL HOURS

Multiple R	0.15404
R ²	0.02373
Adjusted R ²	0.02037
Standard Error	24.00278

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	4075.00102	4075.00102
Residual	291	167654.78055	576.13327

$F = 7.07302$ $p = 0.0083$

Variables in the Equation

	B	SE B	Beta	t	p
Resenting Demands	1.85053	.69582	.15404	2.660	.0083
Constant	31.93161	4.20428		7.595	.0000

TABLE VIII

SUMMARY OF STEPWISE MULTIPLE REGRESSION STRESS AND JOB
DISSATISFACTION AS PREDICTORS OF WANTING TO LEAVE
BUT BEING UNABLE TO AFFORD TO

Multiple R	0.48832
R ² ₈₄₅	0.23845
Adjusted R ²	0.23055
Standard Error	1.05164

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	3	100.07723	33.35908
Residual	289	319.61561	1.10594

$F = 30.16365$ $p = 0.0000$

Variables in the Equation

	B	SE B	Beta	t	p
Self Depreciating	.20215	.04192	.31484	4.822	.0000
Loss of Control	.11864	.04900	.15664	2.421	.0161
Work Itself	.15403	.06743	.12635	2.284	.0231
Constant	-5.56266	.23649		-23.522	.0000

TABLE IX

SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS STRESS AND JOB
DISSATISFACTION AS PREDICTORS OF RECEIVING ADDITIONAL
TRAINING TO WORK IN ANOTHER PROFESSION

Predictors	Mean		F	p
	Seeking Training (n=29)	No Training (n=293)		
Self Depreciating	5.278	5.031	0.447	.5043
Attention Seeking	5.414	5.345	0.057	.8111
Seeking Approval	5.345	5.064	0.614	.4341
Resenting Demands	6.379	5.621	3.719	.0548
Goal Stress	5.345	4.864	1.610	.2055
Pessimism	6.172	5.867	0.884	.3480
Time Stress	6.103	5.420	2.629	.1060
Responsibility Seeking	6.172	5.822	1.303	.2546
Performance Stress	5.621	5.564	0.038	.8458
Financial Stress	5.103	4.731	0.813	.3679
Reactive	5.655	6.011	1.228	.2687
Loss of Control	5.586	5.269	1.050	.3064
Impatience	5.966	5.455	2.432	.1200
Regret	5.345	5.250	0.081	.7767
Role Stress	5.379	5.629	0.078	.7804
Hours of Work	0.193	-0.197	1.205	.2732
Size of Unit (People)	0.386	-0.031	4.670	.0315
Regional Aspects	-0.069	0.014	0.179	.6723
Work Unit (Conditions)	0.148	-0.027	0.819	.3663
Work Itself	0.500	-0.051	8.415	.0040
People	0.579	-0.063	11.250	.0009
Supervision	0.365	-0.045	4.702	.0309
Pay	0.238	-0.023	1.806	.1801
Promotion	0.159	-0.018	0.856	.3557

Standardized Discriminant Function Coefficients	
Responsibility Seeking	0.259
Reactive	-0.554
Size of Work Unit (People)	0.319
Work Unit (Conditions)	-0.293
Work Itself	0.545
People	0.586

discriminant function "correctly" classified 90 percent of the subjects.

Stepwise discriminant analysis with leaving anesthesia as the criterion measure and SI and JDS scales as predictors yielded a significant discriminant function (Wilks' Lambda = .8814, $p < .00001$). Univariate results indicated that CRNAs intending to leave the field had higher financial stress and were more dissatisfied with the work itself, people, and pay than CRNAs intending to stay (See Table X). Stepwise results, however, indicated that turnover intent was best predicted by, in order of importance, people, work unit (physical conditions), and supervision. Predictors of intention to stay in the profession were goal stress, the work itself, and size of work unit (number of people) and reactive stress. The discriminant function accounted for 12 percent of the variance attributed to group differences, and "correctly" classified 94 percent of the subjects.

Summary

CCA was used to group CRNAs by demographics, working hours, turnover intent, and the types of stress and job dissatisfaction associated with them (Table IV). The first group of CRNAs identified were lower income, metropolitan CRNAs who want to leave but cannot afford to who have high "people" stress, tend to suffer from "subjective" stress such as self depreciation and pessimism, and are dissatisfied with pay, people on the job, and the work itself. The second group of CRNAs were very similar in terms of their "people

TABLE X
 SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS STRESS AND JOB
 DISSATISFACTION AS PREDICTORS OF LEAVING
 ANESTHESIA AS A CAREER

Predictors	Mean		F	p
	Staying Group (n=273)	Leaving Group (n=20)		
Self Depreciating	5.034	5.350	0.533	.4661
Attention Seeking	5.366	5.150	0.400	.5275
Seeking Approval	5.099	5.000	0.054	.8159
Resenting Demands	5.663	6.150	1.085	.2985
Goal Stress	4.916	4.850	0.021	.8840
Pessimism	5.894	5.950	0.021	.8839
Time Stress	5.454	5.950	0.983	.3224
Responsibility Seeking	5.875	5.600	0.573	.4498
Performance Stress	5.590	5.300	0.718	.3976
Financial Stress	4.685	5.900	6.290	.0127
Reactive	5.971	6.050	0.432	.8354
Loss of Control	5.297	5.350	0.021	.8847
Impatience	5.480	5.850	0.905	.3422
Regret	5.275	5.050	0.323	.5701
Role Stress	5.641	5.100	0.261	.6096
Hours of Work	-0.139	0.210	0.951	.3303
Size of Unit (People)	-0.012	0.315	2.029	.1554
Regional Aspects	0.021	-0.200	0.914	.3400
Work Unit (Conditions)	-0.027	0.220	1.155	.2834
Work Itself	-0.029	0.440	4.278	.0395
People	-0.064	0.875	17.470	.0000
Supervision	-0.030	0.350	2.860	.0919
Pay	-0.048	0.695	10.730	.0012
Promotion	-0.012	0.165	0.617	.4329

Standardized Discriminant Function Coefficients

Goal Stress	-0.303
Reactive	-0.239
Size of Work Unit (People)	-0.271
Work Unit (Conditions)	0.586
Work Itself	-0.281
People	0.733
Supervision	0.338

stress", "subjective stress ", and their desire to leave the profession if they could afford to do so. However, they were rural, had more years of experience as CRNAs, higher stress from responsibility seeking, and were dissatisfied by hours of work and supervision. The third group of CRNAs was rural, had more call hours, and were planning to leave the profession. Their decision to leave was most strongly associated with hours of work, supervision, and pay. They had very little stress.

A second CCA (Table V) was performed to determine the moderating effect of working hours, years of experience, and income on stress and job dissatisfaction's influence on turnover intent. CRNAs who wanted to leave but who could not afford to and who were receiving additional training had high "people stress", "subjective stress", and dissatisfaction with people, pay, supervision, and the work itself. However, working hours, years as a CRNA, and income had no influence on the level of stress, job dissatisfaction, or turnover intent. Findings confirm that working hours, years of experience, and income do not influence turnover. In fact, MR (Table VI) indicated that CRNAs with more years of experience had goal stress and stress from seeking responsibility, but were satisfied by the challenges of their work. Another MR (Table VII) indicated that the only stressor associated with longer hospital hours is resenting the demands of people.

The CCA gave a "broad brush" treatment to defining the relationships between numerous independent and dependent variables. The purpose of MR and DA were to focus more narrowly on the question

of turnover intent. However, as indicated by the CCA, the three criterion measures of turnover intent gave distinctly different answers to the question "why do CRNAs want to leave?" Stepwise MR (Table VIII) indicated that CRNAs who want to leave but who cannot afford to have "subjective" stress in the form of self depreciation and loss of control, and are dissatisfied by the work itself.

CRNAs who intend to leave the profession (Table X) were dissatisfied by people, working conditions, and supervision. CRNAs who are actually receiving training for another job (Table IX) have stress from responsibility seeking, but are proactive. They enjoy the working conditions, but are dissatisfied by the number of people in their work group, by people in general, and they are not challenged by the work itself. Findings suggest that CRNAs who are actually receiving training in another profession, have lower people stress than the CRNAs who intend to leave but have not taken any action in that direction. They appear to have become emotionally detached, transferring their people stress to generalized dissatisfaction with people on the job.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The primary purpose of this study was to determine what contributes to job stress and burnout in CRNAs. The study was designed to develop recommendations and strategies for preventing highly trained, highly skilled persons from leaving the profession.

The research was guided by several research questions. The first question was "are hours of call time per week, in hospital hours, type and difficulty of case and O. R. personality type moderators of stress and turnover intent?" Based on the results in Table IV (Root 1), CRNAs who work long hospital hours with fewer call hours want to leave the profession but cannot afford to. Working in a specialty is not associated with turnover intent, although low income and living in a metropolitan area are. This is born out more strongly in Table V when hours on call and working in a specialty are combined with SI and JDS scores as predictors of turnover intent. CRNAs who wanted to leave but cannot afford to have high stress scores, but working hours and working in a specialty show very low structural loadings. Results indicate that working hours and working in a specialty have very little influence on job stress.

The second research question was "do time stress, role ambiguity, goal stress, and financial stress contribute most to turnover intent?" As indicated in Table IV (Roots 1 and 2), CRNAs with high time stress, goal stress, and financial stress want to leave but cannot afford to, and have high turnover intent and lower income, can be either metropolitan, with fewer hospital hours and more hours of call; or rural, with more years as a CRNA, and more hours of call. Neither of those groups of CRNAs experienced role stress. Table V shows that CRNAs with high turnover intent have high time stress, goal stress, financial stress, and moderately high role stress, independent of their working hours and demographics. CRNAs who plan to leave the profession (Table X) have higher time stress, goal stress, and financial stress than CRNAs planning to stay (see univariate results). Role stress in CRNAs planning to leave was actually less than for CRNAs planning to stay. Stepwise discriminant analysis indicated that turnover intent is best predicted, in fact, by goal stress and reactive stress.

The third research question was "do CRNAs with high turn over intent tend to be urban, work in an anesthesia specialty, work long hospital hours, report high call hours, and have lower income? Will they show high "people" stress? Table IV (Root 1) indicates that metropolitan CRNAs with high turnover intent, lower income, and more hospital hours show high "people" stress in the form of resenting demands. Their stress is largely "situational" and resulting from the demands of others. Demands of other people are usually more stressful than the demands one places on ones self in that they are

more difficult to schedule, harder to fulfill, and lead to more uncertain outcomes. CRNAs in this group also experience stresses that are more "subjective". Stresses in the form of self depreciation, pessimism, loss of control, impatience, and regret probably predispose CRNAs to turnover intent.

The fourth research question was "how do hours of work, years on the job, income, and working in an anesthesia specialty?" As discussed above, Table V indicates that stress and job dissatisfaction are not moderated by working conditions.

The answer to research question five "what stressors are associated with length of time on the job?" is that few stresses are associated with length of time on the job or hours (Table VI). It is important to note, however, that CRNAs with more years of experience suffer from goal stress, possibly from unrealistic professional or personal goals. They may feel to some extent that they are in a job with little chance for advancement. But they find the work itself challenging and interesting and endure stress from responsibility seeking in exchange for enrichment, especially in relationships with others. CRNAs who keep this type of stress at a manageable level have probably learned that they must keep relationships manageable by not trying to "be everything to all people."

Research question five also asks "what is the association between hours of work and stress and job dissatisfaction?" It is not surprising that CRNAs' resentment of the demands of others is best predicted by longer hours of work (Table VII). Demands from others are difficult to schedule, harder to fulfill, and lead to more

uncertain outcomes. CRNAs may feel duty-bound when requested to work long hours, but end up resenting the extra time and commitment.

The sixth research question asks "what stressors and dissatisfiers predict wanting to leave the profession but not being able to?" As discussed above, this form of turnover intent is associated with people stress, subjective stress, dissatisfaction with pay, people, hours of work, supervision, as well as practice setting. When evaluating this form of turnover intent by itself, the only stresses and dissatisfiers associated with it are self depreciation, loss of control, and the work itself (Table VIII). Self depreciation usually comes from comparing yourself with the ideal and then finding fault when you don't "measure up." Feelings of uncertainty from loss of control are very similar in that they are typically misconceptions. The source of stress is therefore internal and subjective rather than due to the job. Accordingly, dissatisfaction with the work itself may be due to the unexpected crises and discontinuities common to anesthesia. CRNAs who want to leave need to learn that most crises are of their own making (or at least their reaction to real crises). Of course, the attitude of wanting to leave the profession but not being able to afford to does nothing to reduce CRNAs' self depreciation and loss of control.

The last research question was "based on Stress Index and Job Dimension Survey Scores, can researchers predict whether or not a CRNA will have high turnover intent?" CRNAs who intend to leave the profession are most dissatisfied with the working conditions, people on the job, and supervision. DA (Table X) indicated that their

turnover intent is not associated with stress (or if stress is a factor in turnover intent, it is insignificant compared to job dissatisfaction). CRNAs who intend to leave the profession feel that the working conditions are confining, people are predictable, boring, irresponsible, or disrespectful, and supervisors are ineffective, do not provide feedback, and give confusing instructions. Stress may contribute to these attitudes, but it is the discriminable aspects of the job that contribute most to the desire to leave the profession. Wanting to leave and actually doing so are two different things.

CRNAs who are receiving training in another profession have significant people stress and are dissatisfied with people on the job (Table IX). Responsibility seeking is strongly associated with dissatisfaction with people on the job and number of people in the work unit. Responsibility seeking for CRNAs means accumulating additional stress the more you do for others. In situations where relationships are not reciprocal (as in some doctor-CRNA relationships) this type of stress can be especially acute. The only solution to this type of stress is to be taking time to plan activities. This is difficult, considering that CRNAs work at the whim of surgeons and anesthesiologists. Proactivity, unfortunately, takes the form of developing plans that include working in another profession. Ironically, CRNAs who derive their satisfaction from working with others also find this to be their biggest source of frustration, leading to leaving the profession.

Conclusions

One advantage of using the SI in this study is that it has been normed with the general population and gives a good reference point for determining how much stress CRNAs experience. As indicated by mean SI scores, CRNAs experience more stress than the general population. Why, then, do most CRNAs decide to stay in the profession? Based on this research and the work of others, CRNAs experience a variety of stresses, especially time stress (Long & Pfifferling, 1986, Part II), performance stress (Al-Assaf, 1989), role stress (Beehr & Drexler, 1986), goal stress and loss of control (Long & Pfifferling, 1986, Part I), emotional stress (Lachman, 1983), and psychosocial or people stress (Ansell, 1981; Osipaw & Spokane, 1984). One must conclude that most CRNAs learn to manage their stress, based upon findings that stress was not related to turnover, perhaps understanding that most stresses are the consequence of their own patterns for handling day-to-day frustrations. However, many of the sources of stress are external and largely beyond the control of CRNAs, and are found to be inherent in the work itself. In that instance, stress translates to job dissatisfaction, and the only effective strategy for reducing stress is removing oneself from the work environment.

Based upon the findings of the study, it can be concluded that working in a specialty has little influence on job stress. This is supported strongly where low structural loadings were found when hours on call and working in a specialty were combined with the Stress Index and Job Dimension Survey scores as predictors of turnover intent.

The literature review and suggestions of other researchers dealing with stress in the health profession had led the researcher to believe that many demographic, job dissatisfaction, and other variables were related to stress and turnover intent among CRNAs. Based upon the findings of the study it can be concluded that working conditions and demographics influence turnover intent, stress and job dissatisfaction.

Recommendations

Given the fact that many CRNAs continue to work despite high levels of stress, what can be done to relieve stress? How much stress is too much? The present research cannot address these questions, but suggests possible strategies for reducing stress, job dissatisfaction, and turnover. Since most external stresses are not within the individual CRNA's control, group effort is required to reduce them. That may mean CRNA groups banding together to clarify their mission and goals, set their own schedules and hours, and, generally, take control of the external work environment. This would require CRNAs to sit down with other professional groups (doctors, surgery nurses, and others) and determine ways to improve working conditions and restore a sense of control. Although long hospital hours and being on call might not be eliminated entirely, being able to plan one's own schedule should dramatically reduce this type of stress.

Any approach that can prevent stress is preferable to attempts to reduce it once it has occurred. Training in stress management

techniques should focus on the recognition of stress. It is the author's perception that most CRNAs take pride in "being able to handle anything" and are reluctant to admit their own stress, despite the fact that they complain to each other on the job. Complaints serve only to reinforce that they are, indeed, having trouble dealing with the stress. It's one thing for CRNAs to complain to each other, but admitting to others that you cannot handle the stress is difficult. Getting Employee Assistance Programs involved in stress reduction may be the answer, especially when it is staffed with impartial, clinically trained therapists. Critical Incident teams could be called in after emotionally difficult cases. Allowing CRNAs to receive treatment with supervisory support would be beneficial not only in relieving stress, but removing the stigma from seeking help. In a profession where helping others is their reason for being, CRNAs are reluctant to admit that unselfishly helping others takes a terrible toll.

Future Research

The present research helps to shed some light on issues of stress and job dissatisfaction for CRNAs, in general, but is limited by sample size. Future research should be directed to answering specific questions about specific stresses and their role on job performance and turnover. Future research should be directed to:

1. What role does the doctor-CRNA relationship have in job stress?
2. What level of stress must CRNAs reach before their performance suffers? What are the implications for patient care?

3. Assuming that a CRNA's work is inherently stressful, how can we prevent burnout?

4. Can training in stress management lower stress?

5. What would be the impact of routine stress screenings (much like drug screenings) on the profession?

6. Can we (should we?) develop screening methods to "weed-out" students who are more stress-prone?

7. What is the perception of applicants to anesthesia schools about the stresses of anesthesia? Are they realistic?

8. How can we better motivate nurses to become CRNAs in answer to the current CRNA shortage?

9. Are some CRNAs stress-prone, or is their stress the result of goal stress? Do they bring a stress-prone personality to the job, or is emotional stress the consequence of external stresses?

The scope and limitations of this research do not allow solid answers to the above questions, but can provide some general direction. The SI is a valid, reliable tool, and based on this research, the stress "norms" for CRNAs could be developed. The current research provides a baseline measure for future research concerned with screening, turnover, and the evaluation of programs developed to reduce stress.

Discussion

This study confirms that anesthesiology is a stressful job. CRNAs experience a variety of stresses, especially in the form of people stress and subjective, emotional stress. These stresses can contribute to eventual job dissatisfaction and leaving the

profession: although nearly all CRNAs experience job stress, only about ten percent actually decide to leave. Those that stay in the profession experience higher stress than the general population, although the implications for performance, patient safety, and quality are unknown.

One can speculate that CRNAs tend to be goal-driven, stress-prone individuals. However, efforts to reduce stress, job dissatisfaction, and turnover require a recognition that stress is an occupational hazard of anesthesia. Strategies for dealing with stress should focus on external, organizational forces that contribute to stress.

CRNAs who want to leave the profession appear to be more stress-prone than those intending to stay. They tend to have high goal stress, financial stress, time stress, performance stress, and impatience. They fit the profile of stress-prone individuals described by Forbes (1979), and, in general, are driven by the desire for success. In our achievement-oriented culture, individuals who work hard in achieving their high and relatively unattainable goals find they fail to be realized. Our motivation is expected to be high even if it is often dysfunctional. In effect our culture has instructed us to stress ourselves even though stress may stand in the way of accomplishing our goals.

The result of motivational overload is emotional burnout. CRNAs who intend to leave the profession have a high level of subjective, emotional stress: self depreciation, resenting demands, pessimism, reactivity, loss of control, and regret. These forms of stress are

probably the person's response to being unable to accomplish their goals. Goal stress may manifest itself in depression, self depreciation, or diffused anger. Time stress and loss of control may lead to passivity or anxiety and apprehension. According to Lachman (1983) motivationally stressed CRNAs may display irritability, hostility, anger, depression, and cynicism, much like the caregivers studied.

Leaving the profession may be the most adaptive response to stress available to CRNAs unable to meet the demands of the profession. At what point in their career do they decide to leave? Based on the results, it is plausible that most CRNAs learn to work with high levels of stress during their careers. However, at some point, the work becomes dissatisfying, partly due to people stress, but partly due to the desire for more growth and learning than the profession can provide. CRNAs who have learned to accommodate hectic, unpredictable schedules, long hours, and unrealistic demands from people on the job may leave out of boredom. Does stress play a role in this decision? The answer is yes, absolutely, but the work itself is the CRNA's primary focus. Boredom with the work itself is probably the worst form of stress for goal-driven professionals.

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APPENDIX A

STRESS INDEX B NORMS

SI - PROFILE SHEET

STRESS INDEX B NORMS

Low stress	Stens										High stress
	1	2	3	4	5	6	7	8	9	10	
Self appreciation	5	6-7	8-10	11-12	13-15	16-17	18-20	21-22	23-25	26	Self Depreciating
Avoid attention	9	10-11	12-14	15-16	17-19	20-21	22-24	25-26	27-29	30	Attention seeking
Independancy	15	16-17	18-19	20-21	22-24	25-26	27-29	30-31	32-34	35	Seeking approval
Desiring demands	10	11-12	13-15	16-17	18-20	21-22	23-24	25-26	27-28	29	Resenting demands
Goal Comfort	8	9-10	11-13	14-15	16-18	19-20	21-23	24-25	26-28	29	Goal stress
Optimism	6	7- 8	9-11	12-13	14-16	17-18	19-21	22-23	24-26	27	Pessimism
Time adequate	13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	30	Time stress
Avoid responsibility	14	15-16	17-18	19-20	21-22	23-24	25-26	27-28	29-30	31	Responsibility seeking
Performance comfort	8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25	Performance stress
Financial comfort	9	10-11	12-14	15-16	17-19	20-21	22-24	25-26	27-29	30	Financial stress
Proactive .	8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25	Reactive
Control over life	4	5- 7	8-10	11-13	14-16	17-19	20-22	23-25	26-28	29	Loss of control
Patience	12	13-14	15-17	18-19	20-22	23-24	25-27	28-29	30-32	33	Impatience
Satisfaction	7	8- 9	10-12	13-14	15-17	18-19	20-22	23-24	25-27	28	Regret
Role comfort	7	8- 9	10-12	13-14	15-17	18-19	20-22	23-24	25-27	28	Role stress

S-Index

Profile Sheet

LOW STRESS	1	2	3	4	5	6	7	8	9	10	HIGH STRESS
SELF APPRECIATION	A	.	.	.	.	SELF DEPRECIATING
AVOID ATTENTION	B	.	.	.	.	ATTENTION SEEKING
INDEPENDANCY	C	.	.	.	.	SEEKING APPROVAL
DESIRING DEMANDS	D	.	.	.	.	RESENTING DEMANDS
GOAL COMFORT	E	.	.	.	.	GOAL STRESS
OPTIMISM	F	.	.	.	.	PESSIMISM
TIME ADEQUATE	G	.	.	.	.	TIME STRESS
AVOID RESPONSIBILITY	H	.	.	.	.	RESPONSIBILITY SEEKING
PERFORMANCE COMFORT	I	.	.	.	.	PERFORMANCE STRESS
FINANCIAL COMFORT	J	.	.	.	.	FINANCIAL STRESS
PROACTIVE	K	.	.	.	.	REACTIVE
CONTROL OVER LIFE	L	.	.	.	.	LOSS OF CONTROL
PATIENCE	M	IMPATIENCE
SATISFACTION	N	REGRET
ROLE COMFORT	O	ROIE STRESS

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APPENDIX B

JOB DIMENSION SURVEY

JOB DIMENSION SURVEY

CENTER FOR HUMAN APPRAISAL WICHITA STATE UNIVERSITY

As a provider of health care services your attitudes and opinions about your job in Nurse Anesthesia are important. The purpose of this survey is to elicit your candid evaluation of various dimensions of your current job. Participation in this research is strictly voluntary and individual anonymity is guaranteed.

I

Think of your job context (the environment in which you work). What is it like? Then circle the number along each scale which best represents your description of the following factors.

HOURS OF WORK

Bad	1----2----3----4----5----6----7	Good
Fair	1----2----3----4----5----6----7	Unfair
Convenient	1----2----3----4----5----6----7	Inconvenient
Too long	1----2----3----4----5----6----7	Too short
Regular	1----2----3----4----5----6----7	Irregular

SIZE OF WORK UNIT (number of people)

Good	1----2----3----4----5----6----7	Bad
Too large	1----2----3----4----5----6----7	Too small
Insufficient	1----2----3----4----5----6----7	Sufficient
Efficient	1----2----3----4----5----6----7	Inefficient

REGIONAL ASPECTS (Geographical Location)

Good	1----2----3----4----5----6----7	Bad
Unpleasant	1----2----3----4----5----6----7	Pleasant
Isolated	1----2----3----4----5----6----7	Convenient

WORK UNIT (Physical Conditions)

Unconfining	1----2----3----4----5----6----7	Confining
Satisfactory	1----2----3----4----5----6----7	Unsatisfactory
Bad	1----2----3----4----5----6----7	Good
Practical	1----2----3----4----5----6----7	Impractical
Efficient	1----2----3----4----5----6----7	Inefficient

II

Think of the work that you perform. Then circle the number along each scale which best approximates your description of work on your present job.

Boring	1----2----3----4----5----6----7	Fascinating
Challenging	1----2----3----4----5----6----7	Routine
Satisfying	1----2----3----4----5----6----7	Dissatisfying
Good	1----2----3----4----5----6----7	Bad
Dignified	1----2----3----4----5----6----7	Undignified
Lacks respect	1----2----3----4----5----6----7	Respected
Useless	1----2----3----4----5----6----7	Useful
Clear	1----2----3----4----5----6----7	Confusing
Complex	1----2----3----4----5----6----7	Simple
Doesn't give sense of accomplishment	1----2----3----4----5----6----7	Gives sense of accomplishment

III

Think of the majority of the people that you work with now or the people you meet in connection with your work. Then circle the number along each scale which best approximates your description of people on your present job.

Unpredictable	1----2----3----4----5----6----7	Predictable
Boring	1----2----3----4----5----6----7	Stimulating
Slow	1----2----3----4----5----6----7	Fast
Inambitious	1----2----3----4----5----6----7	Ambitious
Irresponsible	1----2----3----4----5----6----7	Responsible
Active	1----2----3----4----5----6----7	Lazy
Disloyal	1----2----3----4----5----6----7	Loyal
Unfriendly	1----2----3----4----5----6----7	Friendly
Disrespectful	1----2----3----4----5----6----7	Respectful
Unhappy	1----2----3----4----5----6----7	Happy

IV

Think of the kind of supervision that you get on your job. Then circle the number along each scale which best approximates your description of supervision on your present job.

Dull	1----2----3----4----5----6----7	Intelligent
Lazy	1----2----3----4----5----6----7	Active
Bad	1----2----3----4----5----6----7	Good
Polite	1----2----3----4----5----6----7	Impolite
Up to date	1----2----3----4----5----6----7	Out of date
Effective	1----2----3----4----5----6----7	Ineffective
Doesn't tell me where I stand	1----2----3----4----5----6----7	Tells me where I stand
Never around when needed	1----2----3----4----5----6----7	Always around when needed
Knows job well	1----2----3----4----5----6----7	Doesn't know job
Praises good work	1----2----3----4----5----6----7	Doesn't praise good work
Clear instructions	1----2----3----4----5----6----7	Confusing instructions
Annoying	1----2----3----4----5----6----7	Helpful
Awkward	1----2----3----4----5----6----7	Tactful
Nervous	1----2----3----4----5----6----7	Relaxed
Wise	1----2----3----4----5----6----7	Foolish
Unfair	1----2----3----4----5----6----7	Fair

V

Think of the pay you get now. Then circle the number along each scale which best approximates your description of your present pay.

Adequate for normal expenses	1----2----3----4----5----6----7	Inadequate for normal expenses
Satisfactory	1----2----3----4----5----6----7	Unsatisfactory
Good	1----2----3----4----5----6----7	Bad
Underpaid	1----2----3----4----5----6----7	Overpaid
High	1----2----3----4----5----6----7	Low
Provides for luxuries	1----2----3----4----5----6----7	Doesn't provide for luxuries
Fair	1----2----3----4----5----6----7	Unfair

VI

Think of the opportunities for promotion that you have now. Then circle the number along each scale which best approximates your description of promotion opportunities.

Clear	1----2----3----4----5----6----7	Confusing
Bad	1----2----3----4----5----6----7	Good
Irregular	1----2----3----4----5----6----7	Regular
Arbitrary	1----2----3----4----5----6----7	Based on ability
Infrequent	1----2----3----4----5----6----7	Frequent
Fair	1----2----3----4----5----6----7	Unfair
Unlimited	1----2----3----4----5----6----7	Limited
Unrestricted	1----2----3----4----5----6----7	Restricted
Endless	1----2----3----4----5----6----7	Dead end

VII

Rank the following (1 thru 6) in terms of the worst and best job realistically available to you. ("1" being most important in determining the worst/best job and "6" being least important in determining worst/best job.

<u>WORST</u>	<u>BEST</u>
People _____	People _____
Pay _____	Pay _____
Promotion _____	Promotion _____
The work itself _____	The work itself _____
Supervision _____	Supervision _____
Context of work _____	Context of work _____

In terms of your present job; Rank the following: (1 thru 6) ("1" representing what you like about your job most and "6" representing what you dislike about your job.)

<u>PRESENT</u>
People _____
Pay _____
Promotion _____
The work itself _____
Supervision _____
Context of work _____

APPENDIX C

DEMOGRAPHIC QUESTIONNAIRE

QUESTIONNAIRE

1. Age _____
2. M _____ F _____
3. Married _____ Single _____ Divorced _____ Separated _____
4. Practice Setting
 Metropolitan _____
 Rural _____
5. Employment
 Free Lance _____
 MDA Group _____
 Hospital Employed _____
 CRNA Group _____
6. Yearly Income
 \$25,000-\$35,000 _____
 \$35,000-\$45,000 _____
 \$45,000-\$55,000 _____
 \$55,000-\$65,000 _____
 \$65,000-\$75,000 _____
 Over \$75,000 _____
7. No. of years as a CRNA _____
8. No. of years in current position _____
9. Full-time _____ Part-time _____
10. Do you spend more than 50% of your time in an anesthesia specialty? If so, what?

11. Hours of Call time per week _____
12. Average Hospital Hours per week _____
13. Education (Nurse Anesthesia only)
 Certificate _____
 Degree: BS _____ MS _____ Ph.D. _____ Other _____

PLEASE COMPLETE THE REVERSE SIDE ALSO

14. Are you currently seeking additional training or education in order to work in another field?

Yes _____ No _____

If yes, What ? _____

15. I get along with my co-workers in the operating room. (circle only one)

Strongly Agree Agree Neutral Disagree Strongly Disagree

16. I would like to leave Anesthesia but cannot afford to. (circle only one)

Strongly Agree Agree Neutral Disagree Strongly Disagree

17. Do you plan to stay in Nurse Anesthesia as a career?

Yes _____ No _____

If you answered yes, proceed to question #20.

18. If you answered no to question #17, do you plan to work in a medically related field?

If yes, What? _____

If no, What? _____

19. If you answered no to question #17, please indicate below, the three most important reasons for leaving Nurse Anesthesia with #1 being the most important, #2 the second most important and #3 the third most important.

_____ More Status or Recognition
 _____ Full-time Parent
 _____ Lack of opportunity for advancement
 _____ Better work schedule
 _____ Better Salary
 _____ More Job Satisfaction
 _____ Better benefits
 _____ More control over work environment

20. Comments:

APPENDIX D

COVER LETTER



Oklahoma State University

SCHOOL OF OCCUPATIONAL AND ADULT EDUCATION
COLLEGE OF EDUCATION

STILLWATER, OKLAHOMA 74078-0406
CLASSROOM BUILDING 406
(405) 744-6275

November 18, 1991

Dear Colleague:

As a Nurse Anesthetist you've experienced the joys and frustrations of working in surgery. Long work hours, irregular schedules, and other work pressures tend to make an enjoyable job less than satisfying. Your opinions about your work can be very helpful in identifying the causes of job stress and burnout in Nurse Anesthesia. These opinions will be used to identify strategies for improving working conditions for anesthetists.

As a long-time Nurse Anesthetist, I'm very interested in problems other anesthetists have experienced in their work, and have initiated research to better understand those problems. This research also satisfies some of the requirements for an Ed.D. in Adult Education at Oklahoma State University. Although the AANA has not yet officially sanctioned this research at this time, they have expressed an interest in the results and have encouraged my application for funding. The results will be submitted to the AANA Journal for publication.

It usually takes 20-25 minutes to complete the Stress Index and another 15 minutes to complete the Job Dimension Survey and Demographic Survey. When you've completed the Stress Index, you may, if you want to, open it and follow the scoring instructions to determine your own stress levels. Please then complete the other surveys on both sides of each page. When all three are completed, return the surveys and any scoring sheets in the return envelope. The return address is to a local business, Davis Moore, Inc., who is underwriting the postage costs.

If I have not received your completed surveys within two weeks, I will contact you again just as a reminder. Because you are one of the randomly selected participants in this study your response is essential to insure the validity of the results. Your responses will be completely confidential. The code number is to assist me with follow up to insure adequate reply. If you are interested in the results of the study, please include a self addressed, stamped envelope. Call or write if you have any questions.

Thank you for your participation.

LeDana R. Thompson, CRNA, Ed.S.
1841 White Oak Circle
Wichita, Kansas 67207
(316) 686-8699



Celebrating the Past . Preparing for the Future

APPENDIX E

FIRST FOLLOW UP LETTER

Dear Colleague,

Approximately two weeks ago I sent you a questionnaire relating to job satisfaction, stress, burnout, and shortages in CRNAs.

If you have already returned the materials, thank you for your time and contribution. If you have not returned the materials I would appreciate it if you would take a few minutes to complete and return them as soon as possible.

Since you are part of a scientific sample your input is critical to making the results of this study valid.

If you have misplaced the material, please call me so I may send you another set.

Again thank you for your participation in this study.

LeDana R. Thompson, CRNA, Ed.S.
1-316-686-8699
Wichita, Kansas

APPENDIX F

SECOND FOLLOW UP LETTER

January 5, 1992

Dear Colleague,

It is my sincerest hope you all had a happy holiday season. Now that the holiday rush and excitement are over perhaps you will think back to the end of November and recall the questionnaire I sent to you relating to job satisfaction, stress, burnout, and shortages in CRNA's.

To those of you who have already returned the completed packet accept my heartfelt thanks. There is a great deal of information contained within your responses and your additional comments.

Completion of a task such as the one I have undertaken is impossible without your help. If you still have the questionnaire please take time to complete it and return it to me. I would also remind you to please fill out both sides of each page. Several respondents missed filling out the backside of the demographic questionnaire. If you feel you are not interested at least put the contents into the postage free envelope included and return them to me so I may send it to someone else.

If you have misplaced the material, call me so I may send you another set.

This is a scientific sample; your input is critical to making the results of the study valid.

Won't you please take the time to help me?

Thank you,

LeDana R. Thompson, CRNA, Ed.S.
1841 White Oak Circle
Wichita, Kansas 67207
1-316-686-8699

APPENDIX G

SECOND COVER LETTER

January 22, 1992

Dear Colleague:

Enclosed please find another copy of the survey instruments I am using for my study on Job Satisfaction, Burnout, and Job Stress in CRNAs nationwide. I am very pleased that you agreed to complete the surveys and scoring sheets and return them to me. Your participation is very important not only to me but to all CRNAs. Remember your responses are confidential and you are part of a randomized sample. Your time is very valuable to you, therefore, I apologize for the length of the survey instruments.

Thank you again for your participation,

LeDana R. Thompson CRNA, Ed.S.
1841 White Oak Circle
Wichita, Kansas 67207-5144
(316) 686-8699

APPENDIX H

INSTITUTIONAL REVIEW BOARD CLEARANCE LETTER

**OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH**

Proposal Title: Relationship of Job Satisfaction to stress indicators and
Burnout Among Certified Registered Nurse Anesthetists

Principal Investigator: Garry Bice/ LeDana R. Thompson

Date: 3-31-92 IRB # ED-92-037

This application has been reviewed by the IRB and

Processed as: Exempt Expedite Full Board Review

Renewal or Continuation

Approval Status Recommended by Reviewer(s):

Approved Deferred for Revision

Approved with Provision Disapproved

Approval status subject to review by full Institutional Review Board at
next meeting, 2nd and 4th Thursday of each month.

Comments, Modifications/Conditions for Approval or Reason for Deferral or
Disapproval:

Signature: *Marcin S. Tilley* Date: 4-1-92
Chair of Institutional Review Board

VITA

LeDana Ruth Thompson

Candidate for the Degree of

Doctor of Education

Thesis: RELATIONSHIP OF JOB SATISFACTION TO STRESS INDICATORS AND
BURNOUT AMONG CERTIFIED REGISTERED NURSE ANESTHETISTS

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Hutchinson, Kansas, January 12, 1946,
the daughter of Edward H. and Frances M. Johnson.

Education: Graduated from Wellington Senior High School,
Wellington, Kansas, in May, 1964; received Associate of
Arts degree in Nursing from Butler County Community Junior
College, Eldorado, Kansas, in July 1973; received
Certificate in Nurse Anesthesia from The Wichita Physicians
School of Nurse Anesthesia, Wichita, Kansas, in September,
1977; received Bachelor of Science degree from Kansas State
University, Manhattan, Kansas, in December, 1988; received
Master of Science degree from Pittsburg State University,
Pittsburg, Kansas, in July, 1990; received Education
Specialist degree in Industrial Education from Pittsburg
State University, Pittsburg, Kansas, in July, 1991;
completed requirements for the Doctor of Education Degree
at Oklahoma State University in December, 1992.

Professional Experience: House Supervisor, St. Lukes Hospital,
Wellington, Kansas, July 1973 to September 1974; Charge
Nurse, St. Joseph Medical Center, Wichita, Kansas,
September 1974 to September 1975; Clinical and Didactic
Instructor, Wichita Physicians School of Nurse Anesthesia,
Wichita, Kansas, September 1977 to September 1984; CRNA,
provider of clinical orientation to Kansas University
Medical Center Anesthesia Residents, Physicians Surgical
Anesthesia Services, October, 1987 to present; Continuing
Education Coordinator, St. Joseph Medical Center, August
1991 to present.

Professional Organizations: American Association of Nurse Anesthetists, Kansas Association of Nurse Anesthetists, Oklahoma Association of Nurse Anesthetists, American Association of Nursing, Kansas Association of Nursing, Oklahoma Association of Nursing, and American Society for Training and Development.