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THE RELATIONSHIP BETWEEN AIR FORCE ANESTHESIA PROVIDER'S JOB SATISFACTION AND ANTICIPATED TURNOVER

David J. Stamps

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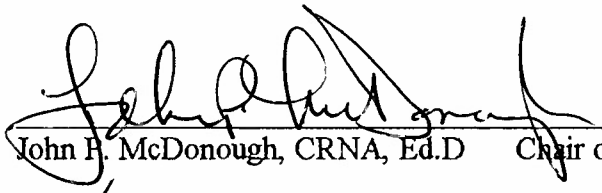

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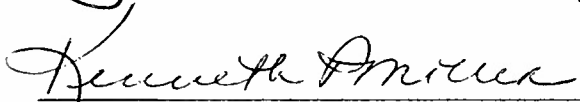

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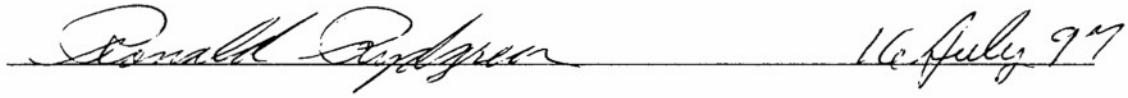

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ABSTRACT

The purpose of this study was to investigate the relationship between Air Force (AF) anesthesia providers' job satisfaction and anticipated turnover. The study replicates for the AF the 1995 study by Cowan entitled The relationship Between Navy Anesthesia Providers' Job Satisfaction and Anticipated Turnover. Comparisons between AF and Navy study results were made. Five-year projections for AF anesthesia providers show high attrition rates combined with expected manpower shortages. Job satisfaction of anesthesia providers has been shown to impact turnover rates (Cowan, 1995). The research instrument was a 57 item questionnaire utilized by Cowan and was sent to all AF anesthesia providers on active duty, N = 322. Response rate obtained was 49.3% N = 159, with 76.1% (121/159) of respondents being CRNAs and 23.9% (38/159) being anesthesiologists. The descriptive, exploratory design utilized a combination of demographic and questionnaire results to report significant data on how job satisfaction impacts anticipated turnover of AF anesthesia providers. Initial expectation of service was found to be positively correlated with anticipated turnover, ($r = .171$, $p < .05$). Professional/occupational job satisfaction was also positively correlated, ($r = .203$, $p < .05$). In contrast, Cowan found only professional/occupational job satisfaction to be statistically significant, ($r = .47$, $p < .0001$). 12.9% of the variance in anticipated turnover was accounted for by interpersonal relationships and the combination of interpersonal relationships and professional/occupational job satisfaction. Cowan found that mobility factors and professional/occupational job satisfaction accounted for 27% of the variance in anticipated turnover of Navy anesthesia providers.

THE RELATIONSHIP BETWEEN AIR FORCE ANESTHESIA PROVIDERS' JOB SATISFACTION AND ANTICIPATED TURNOVER

By

DAVID JAMES STAMPS

THESIS

Presented to the Graduate School of Nursing Faculty of

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of the Requirements for

the Degree of

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DEDICATION

For my wife, Karen and my children Joshua, Jennifer, and Boomer, I dedicate this thesis. My eternal thanks for their love and support, their sacrifice of time and work, and without whose support this project could not have been completed.

My thankfulness goes also to everyone who's constant support and prayers helped to make this possible. May God bless and keep you all in his care.

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CHAPTER ONE: INTRODUCTION

Background

"Anesthesia, or anesthesiology, is the art and science of rendering a patient insensible to pain by the administration of anesthetic agents and related drugs and therapeutic procedures" (Foster & Jordan, 1994, p. 4). Anesthesia providers in the United States Air Force (USAF) currently render this service to some 440,000 active duty members. Active duty dependents and retirees contribute an additional 720,000 persons (Gordan & Smith, 1995). Services include traditional surgical anesthesia, emergency response, obstetric anesthesia, chronic pain management, and other services allowed within the anesthetists' scope of practice. Providers must also function within constraints imposed by both the USAF and individual states. Air Force (AF) anesthesia providers are composed of Anesthesiologists and Certified Registered Nurse Anesthetists (CRNAs).

An Anesthesiologist is defined as a Doctor of Medicine (MD) or Doctor of Osteopathy (DO) with four years of supervised postgraduate experience (residency) in an approved program of anesthesia training (Stoelting & Miller, 1994). The American Board of Anesthesiology currently defines their practice. Stoelting and Miller also note that anesthesiologists can opt for board certification after successful completion of the required postgraduate training, whereas training of military anesthesiologists is varied.

The USAF acquires physician anesthesia providers mainly through the Health Professional Scholarship Program (HPSP) and the Uniformed Services University of the Health Sciences (USUHS). In the HPSP, students attend a civilian medical school which

is funded by the USAF. Active duty service is then deferred while they attain their residency training at a civilian institution. Other options for HPSP students include coming on active duty as a general medical officer followed by residency training or beginning residency training immediately as an active duty member. As trained anesthesiologists, the doctors are commissioned officers who come on active duty and complete their Active Duty Service Commitment (ADSC). For HPSP students, the payback is one year of active duty for every one year of school, or four years in most cases. At the completion of the ADSC anesthesiologist would be free to separate from the Air Force.

Students who attend the USUHS are initially commissioned as second lieutenants and hold this rank until graduation. At this time they are promoted to captain and usually receive their anesthesia residency training at a major military medical center, such as Wilford Hall Medical Center in San Antonio, Texas. After completion of their residency the anesthesiologists are committed to the USAF for seven years, theoretically increasing their chances of remaining on active duty until retirement. In addition to physician providers, the AF also utilizes nurse anesthetists. The defining characteristics and training requirements differ from their physician counterparts.

"A CRNA is a registered nurse who is educationally prepared and competent to engage in the practice of nurse anesthesiology" (Foster & Jordan, 1994, p. 4). It is considered a recognized specialty within the profession of nursing and their practice is not a medically delegated act. The American Association of Nurse Anesthetists (AANA) defines their scope of practice.

Foster and Jordan lists the following requirements one must meet to be considered a CRNA:

1. Graduate from an approved school of nursing and hold current state licensure as a registered nurse.

2. Graduate from a nurse anesthesia educational program accredited by the American Association of Nurse Anesthetists (AANA) Council on accreditation of Nurse Anesthesia Educational Programs or its predecessor.

3. Successfully complete the certification examination administered by the AANA Council on Certification of Nurse Anesthetists or its predecessor.

4. Comply with criteria for biennial recertification (p. 4).

The USAF is currently obtaining the majority of CRNAs from two anesthesia training programs, the USUHS and Texas Wesleyan University (TWU). TWU is the civilian university that currently contracts with the USAF to educate nurse anesthesia students. After completing didactic training at TWU (approximately one year), the students receive clinical training at a major AF medical center. The USAF is now considering the exclusive use of the USUHS to educate their nurse anesthesia students (J. P. McDonough, personal communication, March, 1997). Clinical training of anesthesiologists and CRNAs is often concomitant at these sites.

Scope of practice and delineation of roles is an ongoing and varied process for USAF anesthesia providers. National organization standards and scope of practice initially guide each profession. The American Association of Nurse Anesthetists sets practice guidelines for CRNAs while the American Society of Anesthesiologists does so for

anesthesiologists. Upon entering the USAF, anesthesia providers must also function according to the guidelines set forth by the Surgeon General in AF Instruction 44-102 (1994).

Working relations, collaboration, and teamwork are subject to local Medical Treatment Facility policy and guidance. Although specific guidelines have been established regarding when and what type of patients CRNAs may treat independently, other aspects of autonomy and teamwork decisions are left to the providers. Call schedules, amount of direct supervision for CRNAs, and designation of patient care responsibilities are all important issues that impact job satisfaction of anesthesia providers.

Current Pay, Incentives, and Commitments for AF Anesthesia Providers

Anesthesiologists receive standard rank pay plus incentives. In addition to military benefits such as medical care, housing/subsistence allowance, and a $15,000/yr professional pay, anesthesiologists can receive a number of other monetary incentives. The bonus for being an anesthesiologist is $33,000 per year and is variable depending on civilian counterpart pay. Board certification pay varies from $2,500-6,000 per year, with the former for 0-6 years credible service and the latter 18-22 years credible service (Gordon & Smith, 1995). Colonel Nagia, Chief Anesthesiologist for the USAF, estimates that an average income for an active duty MD anesthesia provider with 6-10 years of service to be approximately $100,000 per year (A. H. Nagia, personal communication, August, 1995).

CRNAs also receive their standard rank pay plus additional incentives. Current incentives include $6,000 per year bonus for CRNAs who still have an ADSC to the AF. For those CRNAs who have completed their ADSC and voluntarily remain on active duty, the bonus is $15,000 per year (Gordon & Smith, 1995). A Department of Defense authorized Board Certification allowance is also available to qualified CRNAs based on their length of credible service with amounts varying from $2,000 – 5,000 per year. If the USAF paid for the anesthetist's education, the CRNA owes the AF two years of active duty service for every one year of training. After completing this payback CRNAs are free to separate from the Air Force.

Anesthesia Provider Shortages and Attrition Rates

The USAF as well as the civilian community have experienced a chronic shortage of anesthesia providers, particularly CRNAs. The AANA (1992) sites a 1990 Health Economics research study which reported a total shortage of 6,000 CRNAs for 1990 in the United States, a 13.6 percent shortfall. The study further reported a need for 30,000 CRNAs by the year 2000, and over 35,000 CRNAs by 2010.

The report also commented on the shortage of military CRNAs. In 1992 the authorized levels of the three services for both active duty and reserve CRNA forces totaled 1,600: the actual current levels were about 1,000.

Shortages of anesthesia providers must be viewed in conjunction with attrition rates of Military anesthesia providers. The June 1989 AANA study of military CRNAs reported a projected loss potential of 60% of CRNAs on active duty in the following two years. Chaney's (1991) study of job satisfaction, organizational commitment, and intent to stay among AF CRNAs, predicted that the total attrition rate in the next two years would be at 33% (52/154).

The projected attrition rates for 1996-1999 for active duty AF CRNAs also predict shortages when compared with the projected accessions. Eighty one CRNAs are projected to separate from the AF by 1999 (C. Gray, personal communication, Janurary, 1996). 144 additional CRNAs will have completed their ADSC by 1999 and be eligible for separation. Head quarters Air Force Personnel Center (HQ AFPC) reports that the current AF nurse anesthesia education program projects that a minimum of 26 new graduates will be functioning as AF CRNAs per year, with a maximum of 46 per year. By one estimate of minimum separations versus maximum new graduates, a deficit of 41 CRNAs would exist. Current AF CRNA manpower is 220 persons (100%) (C. Gray, personal communication, Janurary, 1996).

Why are so many military CRNAs voluntarily separating from the AF? Components of job dissatisfaction were published in the 1989 AANA Report of Survey of Military CRNAs. The survey was conducted for all branches of service and was sent out to all chief CRNAs in the military at that time in the United States. The survey addressed planned or considered attrition, pay, promotion, and practice issues.

The following findings were reported from a 79% response rate in no particular ranked order: (a) CRNA shortages on active duty in the military services are significantly greater than anesthesiologist shortages; (b) There is a potential loss of 358 CRNAs within the next two years, representing a 60% loss of the current force; (c) The practice environment has deteriorated in the last several years; (d) CRNAs perform a significant greater proportion of anesthetics than their number would suggest both during and after normal duty hours; (e) CRNAs are the sole anesthesia providers in 22 of the hospitals surveyed; (f) The current promotion potential, or lack thereof, is a major disincentive to remain in the military; (g) Significant disparities between civilian and military pay are also a major disincentive to remaining on active duty. The survey conducted by the AANA points out the varied and complex components of job satisfaction, including such areas as pay, promotional opportunities, and practice issues for active duty anesthesia providers.

Anesthesiologists in the military have fared better in manpower issues than CRNAs. In the last three to four years, the USAF has been approximately 100% manned (A.H. Nagia, personal communication, August, 1995). In 1993 the number of anesthesiologists authorized AF wide increased from 87 to 124. This resulted as a mandate by the Surgeon General that all pregnant beneficiaries have a provider who can administer an epidural anesthetic to them. This mandate required a significant increase in manpower to provide these services in-house, as opposed to having the women deliver at a civilian facility with costs borne by the USAF (Sloan , 1993).

Current authorized anesthesiologist slots AF wide are 124. Current manning is 127, with four of these in command (non-clinical) positions (A. H. Nagia, personal communication, August, 1995). As the military Tri-Care program (basically a military Health Maintenance Organization, HMO) is implemented, the AF is expecting, and already seeing, an increase in the need for more anesthesiologists. This derives from the economical structure of the HMO. The more treatments a facility can provide in house, the more cost effective the service. Many AF military hospitals function with only CRNAs providing anesthesia services. As more complicated anesthetics will now be done at these facilities, an anesthesiologist would compliment the existing anesthesia team. Again, attrition rates must also be viewed in accordance with manpower needs.

The USAF reported an attritional loss of 27 anesthesiologists in the fiscal year 1995 (A. H. Nagia, personal communication, August, 1996).The reported average attrition rate is 22 per year. Predicted overages/shortages for 1996-1999 are reported in Table 1.

The AF reports an average accession rate of approximately 25-30 anesthesiologists per year. These projected shortages can be expected to worsen with implementation of Tri-Care. Although anesthesia manpower needs have not been a recent problem, the projected attrition rates may change this in the near future.

Table 1.

Air Force Anesthesiologist Manning Projections 1996-1999

Year	Actual Providers	Overage	Shortage
1996	129	*5	-
1997	133	*5	-
1998	124	-	*4
1999	115	-	*14

*Numbers reflect four providers removed for administrative jobs (A. H. Nagia, personal communication, August, 1995)

Cost of Turnover to USAF

The cost of turnover in anesthesia providers to the USAF should not be underestimated. Besides monetary costs, the AF suffers in areas of provider experience, wartime tasking, and quality of care.

Nurses are paid their full salary for time- in- grade while in anesthesia school. They also continue to receive full benefits for themselves and their dependents. As mentioned previously, the USAF sends anesthesia students to one of two schools, TWU in Ft. Worth Texas, or USUHS in Bethesda, MD.

The contract with TWU states that full tuition and fees will be $8,000/student/year starting in 1995 and will increase by $200/year for each year of the five-year contract (C. Gray, personal communication, Janurary, 1996). TWU supports a minimum of 20, and a maximum of 40 students per year.

The Uniformed Services University takes approximately six students per year. As the monies for this university comes from a separate budget than that of TWU, and does not have to be contracted through the USAF, actual dollar amounts for student attendance were not available.

Provider experience is another area where the military suffers due to turnover. With an average ADSC of four years, retaining experienced providers becomes a problem. The highly technical nature of the anesthetist's profession requires years of practice to excel in the field. As CRNAs leave the AF after their four year commitment their experience leaves with them.

To educate a provider through the HPSP route, costs are estimated at $120,000 per student. This cost includes tuition, an $800 per month stipend, books, and 45 days of active duty time per year. The military also has to defer their active duty service post graduation while students complete their four-year anesthesia training. For practitioners trained through the USUHS, costs are thought to be greater than the HPSP route. With their extended seven year commitment post- residency training, coupled with an eight year acclimation to military lifestyle, their intent to stay until retirement is hoped to offset the increased cost over the HPSC (A. H. Nagia, personal communication, August, 1996). Training costs are extensive by either the USUHS or the HPSP route, reflecting the great concern of the USAF in turnover rates.

The capability to provide adequate numbers of anesthesia providers in wartime is another concern related to turnover. The shortage of nurse anesthetists during the Gulf war exemplifies this situation. The California Nurses Association (1991) reported that "The southern California area was short 150 nurse anesthetists before the war even began" (p.1). As scores of CRNAs were called to active duty the shortage at civilian hospitals worsened. During Desert Shield, David Fletcher, CRNA, president of the AANA, stated that "if casualties mount as anticipated in the Persian Gulf, we can expect to see the biggest slowdown of the civilian health care system ever"(p.1). Finally, even though the complement of military CRNAs can be augmented with civilian anesthetists, their lack of military experience may have a significant impact on readiness, rapid deployment, and caring for wartime casualties.

Comparison of Civilian Versus Military Financial Compensation

How does financial compensation in the civilian sector compare with that in the USAF? Corner (1994) reported the 1992 salaries for anesthesiologists. The report showed a national direct median compensation for anesthesiologist of $235,000, which was down 4.3% from the 1991 survey. However, this decrease was less than the 5%-20% decline in other specialty areas. Furthermore, anesthesiology ranked 13th out of 54 in income of physician specialties and at $250,000 more than doubled the median income of $112,000 for family practitioners.

The salary report for anesthesiologist notes the primary reasons for the recent decline in income. A nationwide shortage of primary care physicians, combined with an increasing demand by the Health Maintenance Organizations, has decreased the money available for specialists. Also noted was the Medicare payment reform of 1992. Despite the recent decline in income, the disparity between the median civilian income and the average Air Force Anesthesiologist ($110,000) is a large and crucial component for turnover of AF anesthesiologists (A. H. Nagia, personal communication, August, 1995). Finally, the study reported that although CRNAs are in great demand in the civilian sector, they saw only a moderate rise of 8% in pay from 71,891 in 1991 to 77,462 in 1992.

The AANA (1995) reported a three year salary/income report for 1990, 1991, and 1992. The nationwide survey results revealed the following median incomes for CRNAs

for the three years: 71,000 in 1990, 77,472 in 1991, and 82,000 in 1992.

The AANA (1992) also reported statistics regarding civilian CRNA pay before the Senate Armed Services Committee Manpower and Personnel Subcommittee. The AANA reported that in 1986 a military CRNA could expect salary and fringe benefits to match civilian counterparts after reaching the grade of major with 12-14 years practice. With the significant increases in civilian CRNA compensation after 1986, military CRNA pay and benefits can no longer compare with civilian. "The starting salary difference between a military and civilian CRNA is between $10,000 and $45,000 per year, depending on time in service and grade/rank" (p. 1). With pay ranking high as a component of job satisfaction in many nurse anesthesia studies Chaney (1991), Weedlun-Darian and Cuddeford (1994), and Szigeti, Largent, and Eberhardt (1990), compensation becomes a major concern related to turnover of military CRNAs.

Statement of the Problem

Military anesthesia providers have experienced a history of shortages, especially during wartime. It is crucial to identify what factors are impacting their decisions to separate from the military prior to retirement. Future five-year projections for both providers show high attrition rates combined with expected manpower shortages.

As debates over balancing the national budget continue, cost containment is at the forefront of Department of Defense issues. Turnover of AF anesthesia providers has been

shown to be costly not only in training new providers, but in aspects such as provider experience (both war and peacetime), military indoctrination costs, and the logistics involved in moving providers and their families.

Although a number of studies have looked at nurse anesthetists and job satisfaction, only one research study investigated interrelationships among the characteristics, values, and the practice of military anesthesia providers and how these factors affect anticipated turnover (Cowan, 1995). Cowan used an adapted data collection instrument and was the first to report on this area of study. A replication is needed to verify and augment her findings.

Statement of Purpose

The purpose of this study was : (a) to replicate for the Air Force the 1995 study by Cowan; (b) to explore the relationship of initial expectation of service to anticipated turnover; (c) to investigate the relationship of the interrelated variables of professional job satisfaction and organizational work satisfaction and turnover expectation in AF anesthesia; (d) to identify the factors which would have an effect on turnover of AF Anesthesia providers; and (e) to compare research results between Air Force and Navy anesthesia providers.

Definition of Terms

Anticipated Turnover: The degree to which the anesthesia provider perceives that he/she would resign his/her commission from active duty.

Autonomy: Characteristics of a position that allows or encourages individuals to have a major say in the work schedule, the equipment used and selection of procedure to be used.

Collaboration: Nurses and physicians cooperatively working together; sharing responsibility for problem solving and decision making in patient care.

Initial Expectation of Service: The anticipated length of military commitment of a commissioned officer when he or she initially entered the military service.

Interpersonal Relationships: The cooperation, group cohesion and team support of health professionals functioning as a team encountered in the performance of duties.

Job-Related Factors: The aspects of employment which influence a worker's perception of his/her ability to accomplish daily assignments and enjoy the work itself.

Mobility Factors: Characteristics of AF Anesthesia Providers that are predicted to influence turnover which includes age, kinship responsibilities, military experience and years of military service.

Organizational Work Satisfaction: The positive opinion of the job in terms of pay/reward, administrative style, professional status accorded and interaction with colleagues.

Physical Environment: The general work environment which includes equipment, supplies, noise level and safety considerations.

Professional/Occupational Job Satisfaction: The specific aspects of work that health providers find positive and pleasurable in regard to enjoyment of position, quality of care delivered, and time to conduct anesthesia activities.

Professional Status: The ranking of a health care provider in the eyes of his/her peers through compensation of rewards, pay, team respect, and competence.

Research Activity: The degree to which staff engage in research activities.

Reward: That which is of value when returned for something good that was done.

Social Status: The chance to "be somebody" in the community.

Status Accorded: The combination of Professional Status and Social Status.

Team Respect: The estimation of worth of personal value given as an anesthesia team member.

Team Support: To assist and promote anesthesia team members to administer high quality anesthesia care.

Work Itself: Tasks involved with administrative duties, work schedule, and time to do one's job.

Research Questions

1. What is the relationship of initial expectation of service and anticipated turnover of AF anesthesia providers?

2. What is the relationship between professional/occupational job satisfaction and anticipated turnover of AF anesthesia providers?

3. What is the relationship between organizational work satisfaction and anticipated turnover of AF anesthesia providers?

4. What is the relationship between status accorded and anticipated turnover in AF anesthesia providers?

5. What variables account for turnover of AF anesthesia providers?

6. What similarities/differences exist between AF and Navy anesthesia providers in terms of job satisfaction and anticipated turnover?

Rationale of Study

During a significant proportion of their military career, Air Force anesthesia providers will be working in an environment consisting of CRNAs and anesthesiologists. It is vital that studies include determinants of job satisfaction for both sets of providers as well as how this level of satisfaction effects turnover. As numerous studies revealed practice issues, interaction with co-workers, and autonomy as key determinants of job satisfaction

for CRNAs, it is likely that these issues are important determinants of turnover for both types of anesthesia providers.

Lester and Thompson (1989), analyzed 28 statements concerning current and future roles of CRNAs. Anesthesiologists supported all current CRNA roles except independent practice. Regarding future roles, anesthesiologists agreed with 20 of the statements while disagreeing with 8 of them, mainly in areas of expanded practice, independent practice, and non-traditional roles. Clearly, anesthesiologist and CRNAs are not in complete agreement about each others self defined roles. This may be a detriment to job satisfaction and reflect on their desire to remain in their current positions.

Significance of Study

Findings of this study will be relevant to the USAF and nursing in general. Results will add to the current body of knowledge of employee turnover related to job satisfaction. Identifying factors which impact on anesthesia providers decisions to separate from the AF before retirement will help the AF to devise strategies to increase retention, which projections show to be a major problem in the near future. Equally important implications include reducing overall cost of provider turnover for the USAF by identifying the most important satisfiers and dissatisfiers.

By addressing the interactions of anesthesiologists and CRNAs, and how these relate to turnover, the study will add to the body of knowledge recognizing the importance

of studying these two providers concurrently. Finally, replication and comparison to Cowan's 1995 study may add reliability to her results while providing important comparison data between AF and Navy anesthesia providers.

Summary

CRNAs and anesthesiologists will continue to be the mainstay of Air Force anesthesia care. Although current manning is virtually 100% for both providers, the history of manpower shortages cannot be forgotten nor can the predicted shortages be overlooked. Determinants of job satisfaction must be identified and proven to have an impact on anticipated turnover of anesthesia personnel. With the current national focus on cost containment and deficit reduction, the overall cost of provider turnover is increasingly important for the uniformed services. The following chapter will discuss the relevant literature related to job satisfaction and turnover.

CHAPTER TWO: REVIEW OF LITERATURE

Literature Review

Job satisfaction is not a simple, single variable concept that can be easily defined. It's relationship to anticipated turnover in the workplace is also complex. The following chapter will give a historical review of job satisfaction and also describe it's many components. Historical and current research of job satisfaction among nurses, CRNAs, and anesthesiologists will be discussed.

Historical Review of Job Satisfaction

Vroom (1964) was one of the earliest researchers to redefine the concept of job satisfaction. He reported that the focus of previous research has been based on job satisfaction resulting exclusively from differences in work roles. Vroom noted that personality characteristics such as motives, values, and abilities must be looked at in combination with work roles.

Vroom based his theories on personal research and evaluation of over 500 previous investigations. His research found that job satisfaction was directly related to the perceived reward outcomes of pay, variety in stimulation, consideration from their supervisor, high probability of promotion, close interaction with co-workers, an opportunity to influence decisions which effect them, and control over their pace of work. These work role variables were accompanied by a direct relationship between individual motives and job

satisfaction. "The more a person reports valuing these outcomes, the greater the positive effect on his job satisfaction" (p. 174). Thus, Vroom found support for his theory that research in job satisfaction must include work role variables as well as personality components (motivators).

Finally, Vroom's review of available research revealed a number of findings relating job satisfaction to outcomes. He found a negative relationship between job satisfaction and turnover. A weak negative relationship was found between job satisfaction absenteeism, and also accidents. No simple relationship was found between job satisfaction and work performance. "The lack of any marked association between the two variables suggests the desirability of requiring them as both conceptually and empirically separable outcomes of the person-work role relationship" (p. 187). By providing a comprehensive review of the relevant literature, Vroom provided a basis for future researchers examining the relationships between such variables.

Herzberg (1966), focused on job satisfaction from a behavioral scientists point of view. These scientists "broadened the concept of the needs and nature of man from a solely economic organism to one that encompasses some of the more human aspects- the emotional and social needs" (p. 43). In this viewpoint he was in agreement with the developing theories of Vroom.

Herzberg's theory of job satisfaction was based on determinants of work satisfiers versus dissatisfiers. He labeled this the motivation-hygiene theory. Motivators were thought to be effective in "motivating the individual to superior performance and effort"

(p. 74). Determinants of motivators included achievement, recognition, work itself, responsibility, and advancement. Dissatisfiers were labeled hygiene factors as they "were believed to be describing the environment and serve primarily to prevent job dissatisfaction" (p.74). Included as dissatisfiers were company policy, administration, supervision, salary, interpersonal relationships, and working conditions.

Herzberg's research was based on studies of over 200 Pittsburgh accountants and engineers. The research focused on asking these workers what satisfied and dissatisfied them the most in their work environment. Although limited to this certain subset population, Herzberg's theory has withstood the test of time and has been incorporated into modern health professional research.

Leveling (1988) can be considered one of the modern day theorists on work satisfaction. Although not presented in classic scientific method, Leveling's early 1980's interviewing of employees at 125 companies in 30 states shed light on what employees feel makes for a good or bad workplace.

From his discussions with employees, Leveling devised a checklist for a great place to work. Employees report factors such as fair pay and benefits, commitment to job security, and commitment to a safe and attractive working environment. Also important was individual responsibility, flexible work hours, opportunity for growth, rights to due process and free speech, and a share in the rewards and profits. Many of these variables coincide with the ones noted by Herzberg (1966) and Vroom (1964).

Related to Herzberg's dissatisfiers, Leveling also identified what workers felt made for a bad workplace. These focused on poor employee/worker relationships such as paternalistic, entrepreneurial, mechanical, and exploitative. These poor relationships resulted in varying negative outcomes in defined variables such as rights, consistency, accessibility, and fairness. Early research by Vroom, Herzberg, and Leveling enabled nurses to develop their own evaluation of job satisfaction.

Development of Nursing Job Satisfaction

Numerous studies have been conducted on the job satisfaction of nurses and how this concept affects outcomes such as turnover, quality of care and other outcome variables. In addition, studies have also been conducted to determine the components of nursing job satisfaction and how they are measured.

Stamps and Eugene (1986), sought to develop an adequate measuring instrument of job satisfaction in nursing. The authors sought to identify the components of work satisfaction through a comprehensive analysis of past studies. Staffing and scheduling have consistently been sources of dissatisfaction for nurses. Age relates to job satisfaction in that "older nurses seem to be a more stable work group and show greater work satisfaction than younger nurses "(p. 12). The authors also found that education was inversely related to job satisfaction. Other factors that were viewed as important aspects of satisfaction included pay, autonomy, task requirements, organizational requirements, job status, and interaction with co-workers. In order to accurately measure these identified components of job

satisfaction, the authors stress that the devised instrument must have the following objectives: "1) The measure must be statistically valid and reliable. 2) The measure must be practical and 3) The information that comes from the use of the scale must be relevant for application to the organization" (p. 15).

The research on job satisfaction in the health care field was founded partly on the work of Stamps, Piedmont, Slavitt, and Hoase (1978). This team conducted a three-year project investigating the concept of occupational satisfaction of health professionals. They also sought to develop an adequate measuring tool for occupational satisfaction. As most previous research had focused on nurses, Stamps et al. attempted to identify components of occupational satisfaction common to a wide variety of health professionals. The team identified the six most common components of job satisfaction, "pay, autonomy, task requirements, organizational requirements, interaction, job prestige/status" (p. 339).

After identification of the components of job satisfaction, Stamps et al. tested their instrument on both inpatient and outpatient settings on over 600 providers. The researchers tested the instrument for validity, internal reliability and a comparison of the technique of a weighted Index of Work Satisfaction to an unweighted total score. After continued research and many revisions, the six components of job satisfaction identified by Stamps et al. can still be used today to adequately measure job satisfaction in health care professionals.

Hinshaw and Atwood (1983), initially investigated theoretical models of job satisfaction and their applicability. These authors shared the belief of Stamps et al., (1978) that measurement of job satisfaction must be based in a theoretical framework. In their extensive review of existing models, Hinshaw and Atwood could not find a single, most predictive model relating nursing turnover, job stress, and satisfaction. They note that "Historically, clear identification has been hampered by marginal validity and reliability of measures"(p.146). Other problems identified by the authors include lack of generalizability of prior studies related to small sample sizes, lack of randomization, and inadequate replication of previous studies. This early study by Hinshaw and Atwood led to their development of the theoretical model of anticipated turnover of nursing staff, which is the basis of this study.

Hinshaw, Smeltzer, and Atwood (1987), introduced a five stage theoretical model specifying the organizational and individual factors predicted to influence job satisfaction and anticipated, as well as actual, turnover of nursing staff. The five stages were causually ordered; e.g., the factors in stage I were expected to influence those in stage II. The details of the five stages and the reliability, validity of the model will be explained in detail at the end of this chapter.

Hinshaw et al. found that job stress is buffered by satisfaction which results in reduced turnover. Lack of team respect and feelings of incompetence were the main stressors while professional status and general enjoyment in one's position were the primary satisfiers. The authors suggest that satisfiers can be converted into organizational strategies for retaining nursing staff. Strategies suggested included orientation and cross-training

programs, enhancing group cohesiveness, professional growth, autonomy, and control over practice.

Hinshaw et al.'s, research was conducted in seven urban and eight rural hospitals with 1579 nurses. Questionnaires with known psychometric properties were utilized to gather the data on job satisfaction. The analyzed results supported the theoretical model that job satisfaction can be used to predict anticipated, as well as actual, turnover.

Nursing and Job Satisfaction

Review of nurse job satisfaction studies reveals a variety of outcomes. Blegen and Mueller (1987) investigated at a longitudinal analysis of nurse's job satisfaction. This longitudinal study showed that satisfaction levels remained stable over time and that nurses were generally more satisfied than dissatisfied. Routines of hospital nursing was the most important variable identified by the nurses. Little variance from routines led to job dissatisfaction. Perceived opportunities for promotion was the second most important variable. Third most important area in job satisfaction was distributive justice, "the perception that one is fairly rewarded for the work done" (p.234). However, autonomy, social integration and pay had little effect on job satisfaction. The most significant finding in this study was the identification of stable satisfaction levels over time.

Froebe, Deets, and Knox's (1983) not only looked at what factors are important in job satisfaction but also addressed management's versus nurse's perceptions of these

factors. Froebe et al. found that there was in fact great agreement between staff nurse's and supervisor's perceptions regarding what was important to the nursing staff. "There were very few instances when there was disagreement of 10% or greater between the two groups as to importance of a factor" (p. 30). The areas of greatest disagreement included chance for advancement, clinical ladder opportunities, and management. The factors identified as important to nursing staff included salary fringe benefits, parking lot security, parking space, and chances for advancement. Again, the most significant aspect of this study addressed the perceptions of management versus nursing regarding what is important to nursing staff.

Wolf (1981) analyzed previous studies to determine what were the causes of nursing turnover. Job dissatisfaction was noted as the primary reason for nurses leaving their jobs. Lack of job satisfaction, according to Wolf, stems from four primary areas: (a) the employee; (b) the work division and responsibility; (c) supervision and coordination; and (d) the administrative system. Unrealistic job expectations constitute the majority of employee related problems. Many nurses felt work division to be unrealistic resulting in feelings of inadequacy regarding needed patient care. Issues involving interpersonal relationships dominated the supervision and coordination concerns. Finally, pay, autonomy, and professional practice were major concerns regarding the administrative system. Again, Wolf's findings support those of others who have studied job satisfaction and nursing.

Nurse Anesthetists and Job Satisfaction

A number of research studies have been conducted regarding job satisfaction and nurse anesthetists. These civilian studies include those done by Loeffler (1993) and Eibeck (1987) (which look at CRNAs nationwide) and state studies by Szigete et al. (1990), Weedlun-Dairian (1994) , and Weimer(1988).

A masters thesis, out of the University of Pittsburgh, PA, by Loeffler (1993) looked at Job Satisfaction and turnover of nurse anesthetists. The main research problem was "How do certain aspects of the work and the work environment of nurse anesthetists relate to job satisfaction and turnover in departments of anesthesia?" (p. 5).

Findings from the study included a number of significant factors. "Unlike other studies of nurse anesthetist's job satisfaction, this study found that nurse anesthetists are generally dissatisfied with their jobs" (p.79). The most prominent dissatisfiers were the way supervisors treat employees, company policies and procedures, and co-worker interactions. Most satisfying were respect, recognition, autonomy, and independence. There was no difference found between anesthetists who had changed jobs since 1987 and those who had remained five or more years. Results did show that turnover was more related to intrinsic factors (authority, supervision, autonomy, and policies) than to extrinsic factors (compensation, co-workers, and recognition).

Eibeck (1987) surveyed 500 randomly selected civilian CRNAs from the then 20,000 active AANA members to compare job satisfaction of anesthetists from 1980

versus 1986. The general level of job satisfaction had increased from 56% in 1980 to 64% in 1986. Autonomy, pay and working conditions were stated to be the most important factors in job satisfaction in both 1980 and 1986. Important conclusions drawn from this study include that pay ranked as the number one dissatisfier and that demographic factors (e.g. age, gender, years of experience, etc.) had no significant impact on job satisfaction.

Szigete et al. (1990) conducted an exploratory study of the possible causes of intent to quit among CRNAs in North Dakota. Satisfaction with pay exhibited a strong negative correlation with intent to quit, ($r = -.63$, $p \leq 0.001$). Factors involved with pay included high cost of malpractice and significant amounts of on-call status. Satisfaction with promotion also showed a negative correlation with turnover intention, ($r = -.64$, $p \leq 0.001$). Supervision and constraints on performance were important variables related to work satisfaction. The authors concluded that "many turnover-related variables are controllable by hospital management" (p. 324).

Weedlun-Dairian and Cuddford (1994) considered job satisfaction of Nebraska CRNAs and it's relation to choice of residence. No significant differences were found among the four regional groups with regards to job satisfaction. The most important components of job satisfaction (similar among groups) were rank ordered as follows: 1) having resources to administer safe anesthesia, 2) having positive CRNA/Surgeon relationships, 3) working with competent anesthesia providers, 4) being treated with respect, 5) satisfaction with earnings, 6) positive CRNA/hospital relationships, and 7) CRNA/anesthesiologist relationships (p. 555). The study underscores the importance

of working relationships in regards to job satisfaction of anesthesia providers.

Weimer's (1988) correlational study investigated the relationship between job stress and perceived job satisfaction. The author expected a strong negative correlation to exist between the two variables as other authors such as Hinshaw et al. (1987) had found. However, this questionnaire of 250 Pennsylvania CRNAs found that although the nurses were found to have high stress levels, they also had high levels of job satisfaction. Only a very low inverse relationship was noted between the nurse anesthetists stress levels and their job satisfaction.

Possible explanations for Weimer's findings include that those CRNAs have developed successful coping mechanisms in dealing with job stressors. Factors such as positive group cohesion, control over nursing practice, and autonomy may have buffered the perceived job stressors. These buffers, as noted by Hinshaw & Atwood (1987) in their theoretical model, also have an impact on eventual anticipated and actual turnover.

Military CRNAs and Job Satisfaction

Cowan's (1995) study of Navy anesthesia providers as well as Chaney's (1991) study of nurse anesthetists give an insight into the job satisfaction of military anesthesia providers.

The purpose of Chaney's study was to determine the relationships between satisfaction, organizational commitment, and intent to stay. Chaney hypothesized

a positive correlation between job satisfaction and organizational commitment, a positive correlation between job satisfaction and intent to stay, and a positive correlation between organizational commitment and intent to stay among USAF CRNAs. Study design was non-experimental, cross sectional and data was gathered using a questionnaire.

Pearson Product Moment Correlational analysis was used to describe the relationships between the stated variables. Moderate positive correlation between job satisfaction and organizational commitment was shown, ($r = .4884$, $p \leq .05$). The correlation between job satisfaction and intent to stay was weakly positive, ($r = .2141$, $p = < .05$). This final hypothesis also had a low correlational coefficient although it was significant.

Further analysis using Chi square revealed that significant ($p < .05$) relationships between career intentions and departure behaviors existed. Using paired comparisons CRNAs ranked the following job satisfaction components from most important to least: 1. autonomy, 2. promotional opportunities, 3. pay, 4. professional status, 5. interactions, 6. task requirements, and 7. organizational policies. Dismal promotional opportunities was the most frequently mentioned dissatisfier.

Cowan (1995) addressed the relationship between navy anesthesia providers' job satisfaction and anticipated turnover. Although both anesthesiologists and nurse anesthetists were studied, the group's responses were analyzed as a whole rather than separately.

The population for the study included all Navy anesthesia providers ($n = 288$). A return rate of 65.3% ($n = 188$) was obtained. The questionnaire utilized by Cowan

included 57 questions and will be detailed in chapter three. The significant findings of the study can best be described by looking at the answers to the research questions.

Cowan found no significant correlation ($r = .08$, $p \leq 029$) in the relationship between initial expectation of service and anticipated turnover of navy anesthesia providers. When analyzing the relationship between professional/occupational job satisfaction and anticipated turnover of navy anesthesia providers, Cowan found a statistically significant correlation at ($r = .47$. p , .0001). At the .05 level, there was no significant relationship noted between organizational work satisfaction and anticipated turnover of navy anesthesia providers. No significant relationship was noted between pay and rewards and anticipated turnover of navy anesthesia providers, ($r = .00$, $p= .99$). Multiple regression analysis of eight components revealed that 27 % of the variance in anticipated turnover was accounted for by job satisfaction and mobility, ($r^2 = .27$, $f= 34.18$, $p< .0001$). The relationship between job satisfaction and anticipated turnover was positive (beta = .47) and between mobility and anticipated turnover was negative (beta = -.23).

Cowan's results indicate that mobility factors such as age , kinship responsibilities, and military experience have an inverse relationship with the desire of navy anesthesia providers to remain on active duty. " Job satisfaction showed a strong positive relationship of navy anesthesia providers with the desire to stay in the navy" (p. 61).

Anesthesiologists and Job Satisfaction

A thorough review of the literature revealed no studies related to the job satisfaction of civilian or military anesthesiologists. However, the professional satisfaction of family practice physicians and radiologists has been studied.

Skolnik, Smith, and Diamond (1993) looked at professional job satisfaction and dissatisfaction of family practice physicians in Pennsylvania (n = 1066). The questionnaire revealed that 65% (692/1066) of doctors were satisfied with their profession. The most satisfying factors identified included their relationships with patients, having a sense of clinical competence, and relationships with partners. Income level, lack of leisure time, and trouble with third party payment systems proved to be the major dissatisfiers.

Blount et al. (1995) studied army family practice physician's satisfaction in terms of medical role and officership. A cross-sectional survey was mailed (N= 334) with a response rate of 82%, N= 274. 92% (252/274) were satisfied with being a family practice physician and 74% (224/274) were satisfied with being a military officer. Not surprisingly, higher rank correlated with higher levels of satisfaction. However, time spent in patient care was negatively correlated with job satisfaction. A possible explanation for the negative correlation was that higher ranking officers spend more time in administrative duties. This contrasts with Skolnik et. al. (1993) study which showed relationship with patients to be responsible for high levels of job satisfaction. A greater focus on management capabilities in the military may account for this apparent discrepancy.

In contrast to family practice physicians, radiologists are a subspecialty, as are anesthesiologists. Chan, Sunshine, Owen, and Shaffer (1995), looked at the job satisfaction of 2,804 U.S. radiologists. 65% of these physicians were satisfied with their profession. Radiologists most likely to be satisfied were those with a diagnostic radiology subspecialty, board certification, over age 45 years, have an academic practice, salaried position, and full-time position. The study also revealed that those doctors with poor job satisfaction were more likely to plan a career change and switch to part-time work. Research is needed to investigate the relationship between job satisfaction of anesthesiologists and anticipated turnover.

Conceptual Framework

The research model (Figure 1) is organized by a four-staged model of anticipated turnover utilized by Cowan (1995). Cowan adapted this model from a five-stage theoretical model of anticipated turnover among nursing staff constructed by Hinshaw et al. (1987). Permission was obtained to use this model from Lippincott-Raven publishers (Appendix A). The model includes demographics, initial expectation of service, factors that influence job and work satisfaction, and anticipated turnover. Anticipating turnover allows for the assessment and possible prevention of anesthesia provider's early separation from the military.

The model is arranged in four stages. Stages one through four signify the causal ordering and theoretical predictions of the factors; for example, the factors in Stage I are expected to influence the factors in Stage II. Stages I through IV will be discussed in order.

Stage I.

The two major component groups of this stage are initial expectation of service and certain mobility factors collected from the demographics (category of provider, age, sex, rank, marital status, and dependents,). Initial expectation of service is defined as the expected or anticipated length of military commitment of an enlisted service member or commissioned officer when he or she initially entered the military service. This component was predicted to be negatively related to anticipated turnover by Hinshaw et al. (1987) and Vroom (1964).

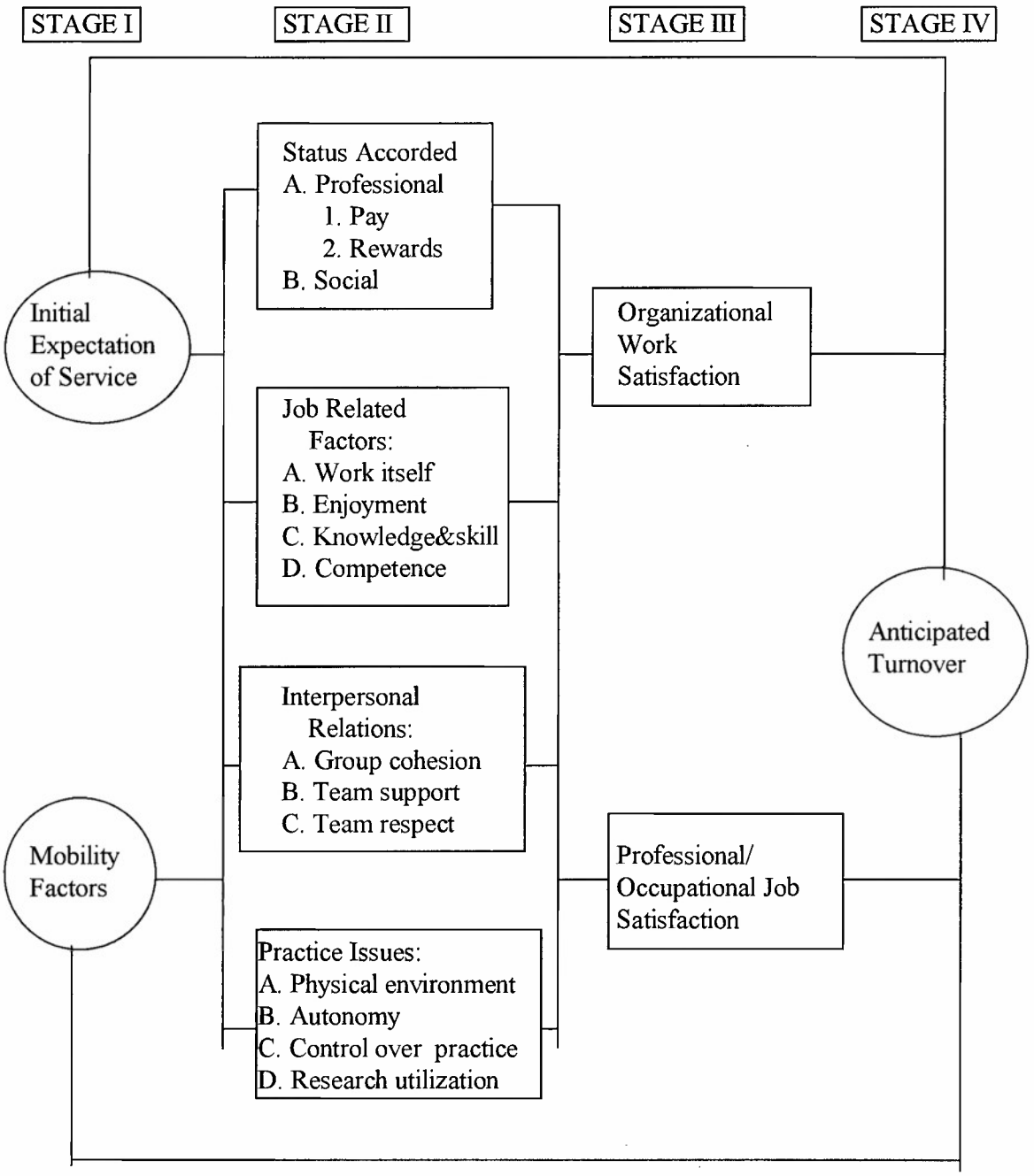

Figure 1.

Anticipated Turnover among Air Force Anesthesia Providers

Stage II.

Stage II consists of four component groups; professional/social status, interpersonal relationships, job related factors, and practice issues.

Status is the position one holds in the professional or social community. In the work place, professional status is the ranking of a health care provider in the eyes of his/her peers through compensation of reward and pay. Reward is that which is of value when returned for something good that was done. Pay is monetary compensation for professional duties including fringe benefits, bonuses and future pay increases. Social status is the chance to be somebody in the community. These factors would be expected to influence organizational work satisfaction positively and have a negative relation on anticipated turnover.

The second component group in Stage II is job related factors which have the following subscales: work itself, enjoyment, knowledge and skills, and competence. Work itself involves tasks in administrative duties, work duties, and time to do one's job. The enjoyment is the agreeable emotion accompanying the expectation of what is good. Knowledge and skills is the possessing of a broad-based education with extensive anesthesia experience and technical expertise. Competence is having the required ability to perform adequately in the administration of anesthesia as revealed in actual performance. These factors would be predicted to influence job satisfaction.

The third component group in Stage II is Interpersonal Relations which include group cohesion, team support, and team respect. All would have a positive effect on Stage III. Group cohesion is to be united in principle and interest of anesthesia care provided,

while team support is the act of assisting and promoting anesthesia team members to administer high quality anesthesia care. Team respect is the estimation of worth of personal value given as an anesthesia team member.

The fourth component group in Stage II is practice issues and includes five subscales: physical environment, control over practice, autonomy, collaboration, and research utilization. Autonomy, collaboration, and research utilization should be factors influencing work satisfaction according to Hinshaw and Atwood (1983), and Weiss and Davis (1985). Control over practice is the factor that references the concept of centralization and the degree of decision making allotted to individual staff members (Hinshaw et al., 1987). Collaboration is the cooperatively working together of nurse anesthetists and physicians in sharing responsibility for problem solving and decision making in patient care (Weiss & Davis, 1985). Rigid control over practice would be expected to have an inverse relation to work satisfaction.

The remaining subscale in practice issues is Research Activity. Research utilization is the degree to which staff engage in research activities. Although research activities are generally referred to as studies of a subject by one or more investigators, one does not have to be a researcher to utilize research. Research activities can include reading research articles in order to change and improve the practice of anesthesia.

Stage III.

Stage III describes two major component groups that influence anticipated turnover: organizational/work satisfaction and professional job satisfaction.

Organizational work satisfaction is the positive opinion of the job in terms of pay/reward, administrative style, professional status accorded and interaction with colleagues (Stamps et al., 1978). Professional job satisfaction is the specific aspect of work that health providers find positive and pleasurable in regard to enjoyment of position, quality of care delivered and time to conduct one's work (Hinshaw et al., 1987). Both types of satisfaction are expected to influence anticipated turnover negatively; that is, the higher the job satisfaction, the lower the anticipated turnover.

There is no agreement in the literature on how to measure job satisfaction. Most methods cited in this study see satisfaction as a combination of factors reporting as one appraisal of job satisfaction. In this study, factors intrinsic to the work itself contribute to professional/occupational job satisfaction. Factors extrinsic to the work itself contribute to organizational work satisfaction.

Stage IV.

Anticipated turnover as defined for this model is the degree to which the anesthesia provider perceives he or she would resign his or her commission from active duty at some unspecified time in the future. In addition to work and job satisfaction scales, interpersonal relationships, job satisfaction factors, and initial expectation of service are expected to influence anticipated turnover.

Summary

Job satisfaction has proven to be a multi-variable concept with a number of important determinants. The job satisfaction of nurse anesthetists has been proven to be measurable and also proven to impact on anticipated turnover of personnel. the job satisfaction of anesthesiologists has been measured much less extensively and requires further investigation. This replication of Cowan's 1995 study on the relationship of job satisfaction to anticipated turnover of anesthesia providers will help to increase the lack of information on anesthesiologists as well as add to the identification of determinants of job satisfaction of military anesthesia providers.

CHAPTER THREE: PROCEDURES

Procedures

Research methodologies including: assumptions, research design, instrumentation, and data collection procedures will be presented in this chapter. Finally, plans for data analysis and limitations of the study will be presented.

Research Design

The research design of this study was descriptive/exploratory. The relationship between AF anesthesia providers job satisfaction and anticipated turnover was investigated. The independent variables are defined as those factors that make up job satisfaction: Initial expectations, interpersonal relationships, job related factors, mobility factors, organizational/work satisfaction, practice issues, profession/occupational job satisfaction, and status accorded (as defined on page 15, chapter one). Anticipated turnover describes the dependent variable (also defined in chapter one). The findings of this study were compared with Cowan's 1995 Navy anesthesia provider study, which this research replicates.

Sample/Population

The study sample consisted of all active duty AF CRNAs and anesthesiologists with staff privileges. The population size was 204 nurse anesthetists and 118 physician anesthesiologist.

Instrumentation/Materials

A letter of invitation to participate in the study was included in each packet (Appendix B). A Demographic Collection Tool (Appendix C) completed by the respondents included personal data, educational background, military service, and mobility factors.

The instrument, a questionnaire, was adapted by Cowan for use with anesthesia providers, both anesthesiologists (Appendix D) and nurse anesthetists (Appendix E). The 57 questions for each provider were identical except for rewording adapted for use by an anesthesiologist or a nurse anesthetist. The major elements of the questionnaire were work related factors, job-related factors, anticipated turnover, group cohesion, autonomy, and control over practice.

Cowan conducted a pretest on 18 active duty Army anesthesia providers at Walter Reed Army Medical Center (WRAMC). After conduction of the pretest, 57 questions were derived from 67 original ones secondary to multicollinearity of the variables. The pretest resulted in providing validity and reliability of the questions as well as verifying the comprehensiveness and clarity of the questions and instructions. The mean time for completing the questionnaire was 12.5 minutes. Cronbach's alpha reliability analysis was completed on each of the components. The standardized alpha coefficients are reported in Table 2.

Table 2.

Alpha Coefficients for the Subscales used in the WRAMC Anesthesia Provider Job Satisfaction Instrument

Variable	Alpha coefficient
Anticipated turnover	.70
Initial expectations	.60
Interpersonal relationships	.88
Job related factors	.76
Mobility factors	.57
Organizational/work satisfaction	.65
Practice issues	.67
Professional/occupational job satisfaction	.81
Status accorded	.55

A combination of demographics and questionnaires was used to supply data for the research study as shown in the model "Anticipated Turnover of Air force Anesthesia Providers" (see Figure 1). Nine components were used in this study. The 57-item questionnaire supplied data for eight of the nine components, while data for the ninth component (mobility) was drawn from the demographic form. Mobility includes age, sex, marital status, position (anesthesiologist or CRNA), rank, and number of dependents. The questions were answered on a 4-point Likert scale, 1 - strongly agree, 2 - agree, 3 - disagree, and 4 - strongly disagree.

The items of the components were derived by a factor analysis of the data by Cowan (1995). The components were scored so that lower scores indicated a higher level of satisfaction and a decreased desire to leave the AF before at least 20 years for service . Initial expectation should indicate a lower score if the respondent desires to commit to a military retirement when entering the service. The variables included in the mobility component were scored so that a low score indicated higher mobility and a high score indicated lower mobility. Age, marital status, dependents, position (CRNA versus anesthesiologist), and rank comprised the variables in factor nine, the mobility factor. This factor gives an indication of how " mobile " a provider is in terms of separating from the service. See (Appendix F) for coding of the mobility factors.

Fifty-seven items comprised the components of job satisfaction. The following components of the study are operationally defined.

Anticipated Turnover: The degree to which the anesthesia provider perceives that he/she would resign his/her commission from active duty as measured by a Likert scale of strongly agree to strongly disagree.

Initial Expectations of Service: The expectation of a military commitment of at least 20 years by the service member when he or she initially entered the military service as measured by a Likert scale of strongly agree to strongly disagree.

Interpersonal Relationships: The group cohesion, respect, and support of health professionals functioning as a team encountered in the performance of duties as measured by a Likert scale of strongly agree to strongly disagree.

Job - Related Factors: The aspects of employment which influence a worker's perception of his/her ability to accomplish daily assignments and enjoy the work itself as measured by a Likert scale of strongly agree to strongly disagree.

Mobility Factors: Characteristics of AF anesthesia providers that are predicted to influence turnover which include age, sex, marital status, rank, position, and number of dependents as measured by a scoring system that rates lower scores as being more mobile.

Organizational Work Satisfaction: The positive opinion of the job in terms of pay/reward, administrative style, professional status accorded, and interaction with colleagues as measured by a Likert scale of strongly agree to strongly disagree.

Practice Issues: The combination of control over practice and research utilization as measured by a Likert scale of strongly agree to strongly disagree.

Professional/Occupational Job Satisfaction: The specific aspects of work that health providers find positive and pleasurable in regard to enjoyment of position, quality of care delivered, and time to conduct anesthesia activities as measured by a Likert scale of strongly agree to strongly disagree.

Status Accorded: The ranking of an anesthesia provider in the eyes of one's peers through compensation of rewards and pay and in the feeling of respect from within the social community as measured by a Likert scale of strongly agree to strongly disagree.

Data Analysis

The same 38 questions that Cowen (1995) derived from factor analysis were used to identify eight subsets of items that were used to construct subscales representing the components of job satisfaction. Data analysis was descriptive and included the use of means, standard deviation, and percentages. Inferential statistics included Pearson Product Moment Correlation and stepwise multiple regression. The level of significance for all analyses was set at .05.

Assumptions

1. It is possible to study a population that is highly mobile and located throughout the world.

2. The degree of satisfaction does not vary significantly on a daily basis.

Limitations

1. The study was limited by the willingness and ability of the respondents to participate in a timely manner due to the mobility of the military.

2. There are only Air Force anesthesia providers in this study: therefore the results cannot be generalized to the civilian population.

CHAPTER FOUR: PRESENTATION/ANALYSIS OF DATA

Analysis

The analysis of the descriptive, exploratory study is discussed in the following section. The overall demographic data will be described in the first section. The six research questions will be answered from the data obtained.

Sample and Demographics

A total of 322 questionnaires were mailed to active duty Air Force anesthesia providers. 204 questionnaires were sent to CRNAs while 118 were sent to anesthiologists. A total of 50.6% (163/322) questionnaires were returned. Of the 163 questionnaires returned, 4 were unusable as they were returned blank indicating a desire not to participate, leaving 49.3% (159/322) usable questionnaires. 32% (38/118) usable questionnaires were returned by anesthesiologists. CRNAs had a 59% (121/204) return rate. In summary, anesthesiologists represented 24% (38/159) and CRNAs represented 76% (121/159) of the study sample. (Figure 2).

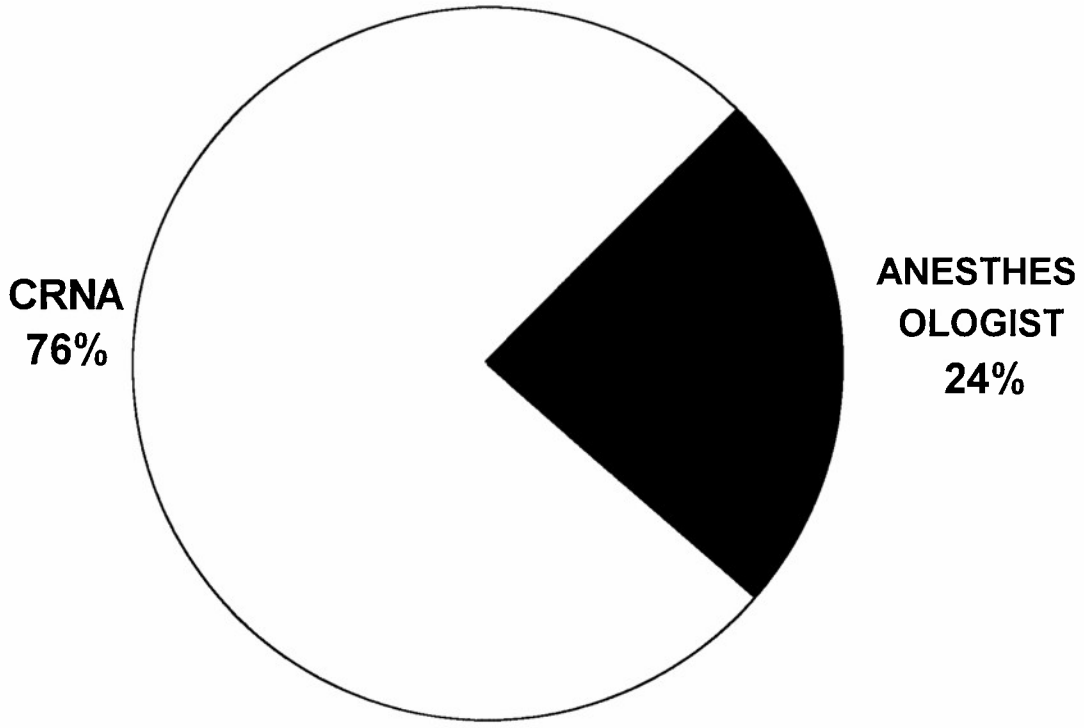

Figure 2.

AF Anesthesia Provider Respondents

The years of military experience was reported with a mean of 11.2 years and a standard deviation of 6.3. Providers reported a mean of 5.2 years of military anesthesia experience with a standard deviation of 4.6. The anesthesia providers reported from none to 18 years of prior nonmilitary anesthesia experience with a mean of 3.6 years and a standard deviation of 4.3.

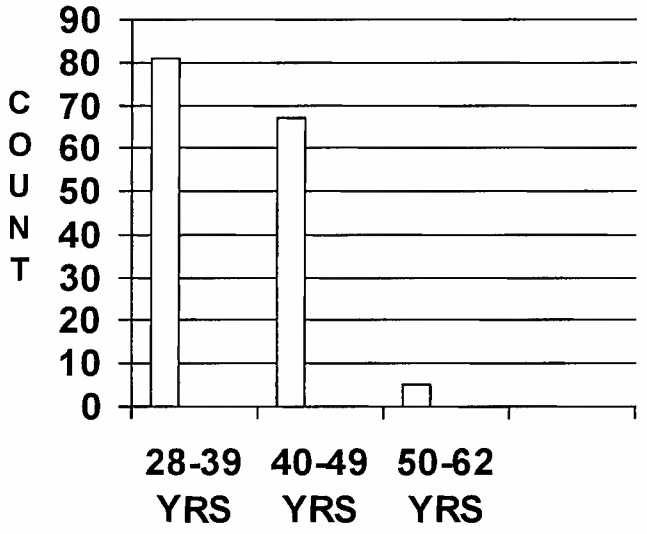

Figure 3.

Age of AF Anesthesia Providers

Ages of CRNA's ranged between 28 to 51 years with a mean of 40 years whereas the range for anesthesioligists was 30 to 62 years and a mean of 35. Of the CRNA's participating in the survey 42% (49/119) were female compared to only 11% (4/38) of the anesthesioligists.

The anesthesia providers reported their rank as follows: 42% (66/159) held the rank of Captain, 48% (76/159) held the rank of Major, and 10% (17/159) held the rank of Lt. Colonel. (Figure 4)

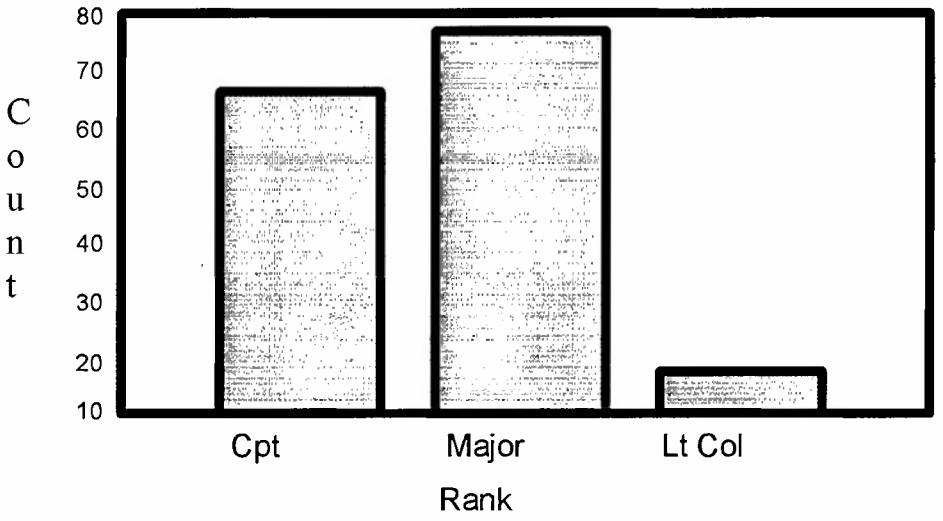

Figure 4.

Rank of AF Anesthesia Providers

CRNAs reported 42% (51/121) Captain, 48% (58/121) Major, and 10% (12/121) Lt. Colonel. Anesthesiologists reported 40% (15/38) Captain, 47% (18/38) Major, and 13% (5/38) Lt. Colonel.

The majority of Air Force anesthesia providers reported marital status with the highest percentage being married. (Figure 5). CRNAs reported 76% (93/121) as married while anesthesiologists reported 89% (34/37) as being married. One subject did not report marital status.

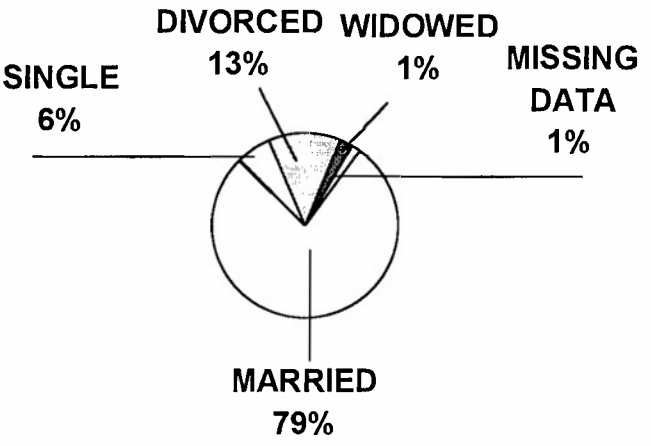

Figure 5.

Marital Status of AF Anesthesia Providers

62% (99/159) of anesthesia providers reported their number of dependents. 13% (21/159) had no dependents, 38% (60/159) had 1-3 dependents, and 12% (19/159) reported having more than three dependents. 38% (59/159) did not report number of dependents.(Figure 6)

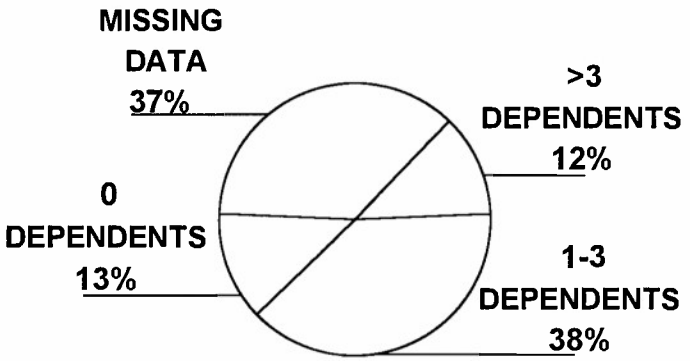

Figure 6.

Dependents of AF Anesthesia Providers

Time spent in primary patient care was reported as a mean time of 64.5%, 18% of time was spent as clinical instructor supervision, and administrative duties comprised 17.7% of time spent at work. (Table 3) reports time spent according to provider.

Table 3.

Anesthesia Providers Work Responsibilities by Percent

Responsibilities	CRNA	Anesthesiologist
Primary patient care	66	57
Clinical instructor supervision	14	28
Administrative duties	18	14
Data not reported	2	1

Educational experience of AF anesthesia providers is unique for CRNA's verses anesthesiologists. CRNA's reported attaining the following degrees at civilian institutions: BS/BA 48%; MS/MA 18%; Ph.D. 1%. The following education was attained through the military: Nurse anesthesia certificate 34%; MS/MA 32%; military residency 21%. Anesthesiologists reported attaining the following degrees at civilian institutions: BS/BA 21%; MS/MA 100%; Ph.D. 52%; Residency 47%. 29% reported having attended a military residency program. Respondents were able to report multiple degrees as obtained.

Research Questions

The study explored the relationship of anticipated turnover to eight components: initial expectation of service, interpersonal relationships, job related factors, mobility factors, organizational/work satisfaction, practice issues, professional/occupational job satisfaction, and status accorded. Eight components were measured by the questionnaire, and the ninth (mobility factors) were taken from the demographics.

Correlation coefficients were used to assess the strength and direction of the relationships among variables in research questions 1 through 4 (Table 4).

Research question 1.

What is the relationship of initial expectation of service and anticipated turnover of AF anesthesia providers?

The anticipated turnover component was constructed by summing the means of items 12, 13, 26, 41, and 45 and dividing by the number of valid responses. The score was correlated with initial expectations, the length of service the respondent expected when entering the military. Initial expectations were measured by summing the means of items 35 and 44 and dividing by the number of valid responses. The correlation between initial expectation of service and anticipated turnover of AF anesthesia providers was statistically significant at the ($p \leq .05$ level, $r = .171$).

Table 4.

Correlation Coefficients Showing Relationships Between Paired Components

	Components								
Components		1	2	3	4	5	6	7	8
1.	Anticipated turnover	1.00	-	-	-	-	-	-	-
2.	Status accorded	.055	-	-	-	-	-	-	-
3.	Organizational work satisfaction	-.09	.016	-	-	-	-	-	-
4.	Professional/occupat * job satisfaction	.203	.191	.298	-	-	-	-	-
5.	Initial expectations *	.171	-.012	-.057	.058	-	-	-	-
6.	Interpersonal relations *	-.225	.155	.237	.296	-.103	-	-	-
7.	Job related factors *	-.189	.156	.249	.124	.050	.527	-	-
8.	Practice issues *	.215	.112	.211	.435	.001	.006	-	-
9.	Mobility	.017	.025	.268	-.001	-.002	-.035	-	-

* Statistically Significant at the .05 Level

Research question 2.

What is the relationship between professional/occupational job satisfaction and anticipated turnover of AF anesthesia providers?

The correlation between professional/occupational job satisfaction and anticipated turnover of AF anesthesia providers was statistically significant at the ($p \leq .05$ level, $r = .203$). The questions comprising this component were 3, 16, 22, 30, and 55 in the questionnaire.

Research question 3.

What is the relationship between organizational work satisfaction and anticipated turnover of AF anesthesia providers?

No statistically significant correlation was found at the $p \geq .05$ level between organizational work satisfaction and anticipated turnover, ($r = -.090$). Questions 14, 23, 24, and 50 comprised the items to construct the organizational work satisfaction component.

Research question 4.

What is the relationship between status accorded (including pay and rewards) and anticipated turnover of AF anesthesia providers?

There was no statistically significant correlation found between the component of status accorded and anticipated turnover, ($r = .055$, $p \leq .05$). The component was constructed from questions 4, 19, 28, and 57.

Research question 5.

What variables account for turnover of AF anesthesia providers?

Eight components were entered into a stepwise multiple regression analysis with anticipated

turnover as the dependent variable. 5.9% of the variance in anticipated turnover was accounted for by interpersonal relationships, (r^2 = .059, F = 4.1, p = .05 level). 7% of the variance was accounted for by interpersonal relationships combined with professional/occupational job satisfaction,(r^2 = .07, F = 5.1, p≤ .05 level). No statistically significant relationship was found between mobility and anticipated turnover, (r = .017, p≤ .05 level). The relationship between interpersonal relationships and anticipated turnover was negative, (beta = -.32). The relationship between professional/occupational job satisfaction and anticipated turnover was positive, (beta .27).

Research question 6.

What similarities/differences exist between AF and Navy anesthesia providers in terms of job satisfaction? In addressing research questions 1-4, the following comparisons can be made for correlation of the independent variables with the dependent variable of anticipated turnover (Table 5).

Table 5.

Correlation Coefficients for Research Questions 1-4, AF and Navy

Research Question	AF R-score	Navy R-score
1. Initial expectation of service	*.171	.08
2. Professional/occupational job satisfaction *	.203	**.47
3. Organizational work satisfaction	-.09	.06
4. Status accorded	.05	.00

*Statistically significant at the .05 level; ** .0001 level

Comparisons for research question 5 are as follows: 11.9% of the variance in anticipated turnover was accounted for by interpersonal relationships and professional/occupational job satisfaction. This contrasts with Cowan (1995) who found that job satisfaction and mobility accounted for 27% of the variance in anticipated turnover.

Summary

Analysis of the correlation coefficients showed statistically positive relationships between initial expectation of service and professional/occupational job satisfaction with the dependent variable of anticipated turnover. After the stepwise multiple regression analysis interpersonal relationships were shown to have a negative relationship with anticipated turnover. Professional/occupational job satisfaction was shown to have a positive relationship with anticipated turnover. These findings are consistent with Cowan's findings only in relation to professional/occupational job satisfaction.

CHAPTER FIVE: DISCUSSION OF RESULTS

Discussion

The overall purpose of this study was to explore the various components that make up AF anesthesia providers' job satisfaction and how they relate to anticipated turnover. Replication of the 1995 study by Cowan for the United States Navy was also an important aspect of this study. The following chapter will discuss the 6 research questions and findings, compare and contrast the AF and Navy studies, state limitations of the research, suggest future research, and discuss implications of the study.

Demographic Data

The discussion of results and comparisons with Cowan's 1995 Navy study of job satisfaction and anticipated turnover should be premised with a comparison of the demographics and sample size. This study reports an N of 159, with a response rate of 49.3% (159/322). Cowan's study had an N of 188, with a response rate of 65.3% (188/288). This may be due in part to the fact that Cowan had a favorable response rate to a follow up postcard which this study did not utilize. The provider status of the respondents in this study was 76.1% being CRNAs and 23.9% being anesthesiologists. Cowan's study consisted of 48.9% CRNAs and 51.1% anesthesiologists. These variances are due in some part to the differences in the number of mailed questionnaires, this study initially mailed to 204 CRNAs and 118 anesthesiologists while Cowen initially mailed to 131 CRNAs and 157 anesthesiologists. Furthermore the response rates of CRNA 70% (92/131) and anesthesiologists 61% (96/157) in Cowan's study differed from this study, CRNAs 59% (121/204) and anesthesiologists 32% (38/118).

Discussion of Research Questions 1-6

Research question 1.

The study revealed that the anticipated length of military commitment of an AF anesthesia provider when he/she initially entered the service did have a statistically significant impact on anticipated turnover at the $p \leq .05$ level. This indicates that if a provider anticipated staying in the military until retirement when he/she was first commissioned, than they were more likely to have decreased turnover. If a provider anticipated at commissioning that he/she would separate from the service before retirement, then anticipated turnover was higher. This positive correlation was consistent with Hinshaw and Atwood's(1987) findings that turnover was influenced directly by intent to stay at the time of initial employment. Cowan found only a weak positive correlation ($r = .08$, $p \leq .29$) between initial expectation of service and anticipated turnover. AF anesthesia providers have demonstrated that initial expectation of service does correlate with anticipated turnover($r = .171$, $p \leq .05$).

Research question 2.

Professional/occupation job satisfaction (specific aspects of work such as enjoyment of position, quality of care delivered, and time to conduct anesthesia activities) had a positive correlation with anticipated turnover at the .05 level. These findings are consistent with Cowan's 1995 findings. Cowan(1995), Hinshaw and Atwood(1987), and Weisman, Alexander, and Chase(1981) found that job/work satisfaction is a factor related to anticipated turnover. Ensuring a work environment that allows anesthesia providers to feel positive about

their position, ensures quality of care, and allows time to conduct their job properly may help to decrease anticipated turnover of AF anesthesia providers.

Research question 3.

Organizational work satisfaction (the positive opinion of the job in terms of pay/reward, administrative style, professional status accorded and interaction with colleagues) was not found to have a statistically significant correlation with anticipated turnover. This finding was consistent with Cowan's 1995 study. In studies by Thompson (1981) and Eibeck (1987) concerning nurse anesthetists, pay was found to be the first and second most important factor, respectively. However, these studies did not include the variables of administrative style, professional status accorded, and interactions with colleagues, as this study did. New factors concerning CRNA board certification pay, which were not included in the questionnaire, could have also had an impact on the relationship of this variable with anticipated turnover.

Research question 4.

Status accorded (The combination of professional status and social status) showed no statistically significant relationship with anticipated turnover at the .05 level. Results were consistent with Cowan's findings and reflect aspects of pay/rewards, team respect, and competence. Although all are considered to be aspects that make up job satisfaction, in and of themselves they do not appear to be aspects that impact the anticipated turnover of AF and Navy anesthesia providers.

Research question 5&6.

The multiple regression analysis was completed to determine what variables accounted for turnover of AF anesthesia providers. Interpersonal relationships and professional/occupational job satisfaction accounted for 12.9% of the variance on the dependent variable of anticipated turnover. AF anesthesia providers reported that having good interpersonal relationships were important in decreasing anticipated turnover. This finding is consistent Wolf's(1981) and Weedlum-Dairian and Cuddford(1994) studies that indicated nurses and CRNAs feel that interpersonal relationships are important aspects of job satisfaction. The regression analysis also revealed that a combination of interpersonal relationships and professional/occupational job satisfaction had a significant impact on anticipated turnover. This finding reveals the complexity of determining the variables that make up job satisfaction and the problems of determining the specific impacts of each variable.

In contrast to this study, Cowan (1995) found mobility to be inversely related to anticipated turnover at a statistically significant level. She noted that mobility factors would lessen the desire to retire in the military. This study found no such indications from AF anesthesia providers which could be the result of many factors such as decreased/different mobility requirements or different tolerance for mobility requirements. The findings of this study are consistent with Eibeck's(1987) study which showed that demographic factors had no significant impact on job satisfaction.

The aspect of professional/occupational job satisfaction was shown to account for variance in the dependent variable of anticipated turnover of both studies. Cowan did not

specify what percentage of the variance was accounted for by the individual variables of professional/occupational job satisfaction and mobility.

Limitations

Sample size is exclusive to AF anesthesia providers and therefore cannot be generalized to other military branches or the civilian work place. As the majority of respondents were CRNAs , separation and comparison of CRNAs and anesthesiologists in terms of job satisfaction and how it relates to anticipated turnover was not possible. The data gathering instrument has only been used once before in Cowan's 1995 study of navy anesthesia providers. A post card follow up to remind respondents to return questionnaire may have increased the response rate.

Suggestions for Further Research

Comparing CRNAs and anesthesiologist in terms of job satisfaction continues to be a need in future research. There are a few independent studies of anesthesiologists job satisfaction noted in the literature. The components that make up job satisfaction of anesthesiologists are yet evolving. Further studies need to address actual turnover of AF anesthesia providers. A retrospective analysis of AF anesthesia manpower would help to shed light on trends in AF anesthesia provider shortages and help to identify possible causes and solutions to the problem. Finally, current data is needed to determine if the retention focus of AF anesthesia administrators is congruent with the components that AF anesthesia providers say make up job satisfaction.

Implications of Study

This study is the first to replicate the use of Cowan's adapted job satisfaction questionnaire for military anesthesia providers. Replication of her 1995 Navy study has provided valuable insight into the components that make up job satisfaction. Both studies have noted professional/occupational job satisfaction to be an important determinant of anticipated turnover. Data may be used to focus on the specific aspects of work that health providers find positive and pleasurable in regard to enjoyment of position, quality of care delivered, and time to conduct anesthesia activities. Results of this study may also help to focus on the importance of interpersonal relationships and how they impact on anticipated turnover. By applying measures that address the identified components that 65 affect anticipated turnover, the AF can help increase retention of it's anesthesia providers thus decreasing cost, while increasing the number of experienced military anesthesia providers, which makes it better prepared for it's wartime mission.

APPENDIX A

Letter of Permission - Theoretical Framework

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

David Stamps
4015-1 Beech Lane
Andrews AFB, MD 20335

February 25, 1996

Marie Wayne
Permission Department
Lippincott-Raven Publishers
227 E. Washington Square
Philadelphia, PA 19106

Dear Ms Wayne,

I am requesting permission to use a research model found in the Journal of nursing administration Volume 17, (6) June 1987. The theoretical model titled Anticipated Turnover among Nursing Staff was found on page 9 in the article, Innovative retention Strategies for Nursing Staff on pages 8-16.

My research study will use the adapted model devised by Lt Commander Judy Cowan, USN, who also received permission from you in September, 1994. I have received permission from Lt Commander Cowan to use her adapted model in my replication of her study.

Enclosed is the copy of the original model as you requested. For any question or concerns please contact myself at 301-599-1725 (home) or my committee member Dr. Ken Miller at the Uniformed services University of the Health sciences, Bethesda, Maryland 301-295-6565 (work).

Sincerely,

David T Stamps

Capt David Stamps, USAF, SRNA

PERMISSION is granted subject to your research confirming that the material in question is original to our text. Permission is granted on a non-exclusive, one-time only or life of an edition basis, with distribution rights in the English language throughout the world. The permission is subject to author approval and use of a standard credit line on the same page where our text or illustration will appear.

T Wehle for MW Date: Mar. 1, 1996

Marie Wayne, Permissions Editor, Lippincott-Raven Publishers.
227 E. Washington Square, Philadelphia, PA.

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THANK YOU.

APPENDIX B

Letter of Invitation to Participate

APPENDIX C

Demographics

Demographics

Confidentiality statement: Your answers to the questions listed below and all other information given will be held in the strictest confidence.

Date_____ 19_____

1. Circle one: Male Female

2 Age: _____ years

3. Rank: _____

4. Position_____

5. Marital status (check one)
   Single Separated Divorced
   Married Widowed
   Number of dependents_____

6. Education completed to date: (check all that apply)

	Cert/ Nur	AD BS/ BA	Cert/ Anes	MS/ MA	Doctorate/	Anes/ Res
Deferred AFHPSP:	_____	_____	_____	____	_____	_____
Civilian:	_____	_____	_____	____	_____	_____
Military:						
Air Education and training command			_____	____		
Uniformed Services		_____		____	_____	
University of the Health Sciences (USUHS)						
AF anesthesia program			_____	_____		
Residency						_____

7. The total proportion of my daily duties consist of the following activities (please fill out in percentages that equal 100 %):
   a. Primary patient care_____
   b. Clinical instructor/Supervision_____
   c. Administrative duties_____

8. Please complete:
   a. Years of military service:_____
   b. Years of military experience in anesthesia:_____
   c. Years of prior non-military professional experience:_____
   d. Years of prior non-military anesthesia experience:_____
   e. Number of years on duty CONUS_____ OVERSEAS_____
   f. Designated conflicts / war:_____months _____years
   g. Humanitarian acts: _____months _____years

APPENDIX D

Questionnaire Anesthesiologists

Questionnaire- Anesthesiologists SCN 96-68

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
1. I don't have any specific idea how much longer I'll stay in the military.				
2. I always have enough supplies and/or anesthesia equipment to administer anesthesia without making changes to the anesthetic plan or methods.				
3. If I had my career to do all over again I would not have selected to do anesthesia in the military.				
4. An upgrading of the Incentive Special Pay is seriously needed.				
5. When I work in an Anesthesia care team with CRNA's, I discuss my expectations regarding guidelines and choices for that anesthetic and the degree of my involvement.				
6. It is basically my responsibility to decide how my assignment gets done.				
7. I do receive recognition by other team members for work when it is well done.				
8. When I first entered the military I planned to get at least part of my education and then retire from active duty.				
9. My knowledge of anesthesia is respected by my co-workers.				
10. I find I'm often unable to finish my assignment or be relieved by the end of the shift.				
11. While under pressure, I am capable of giving my patient anesthesia care which conforms to departmental quality indicators.				
12. When I entered the military, I had full intentions of staying until retirement, but now I've changed my mind.				
13. I won't stay active duty much longer, but I plan to retire from the active reserves.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
14. There is adequate staff coverage to allow me to attend continuing education events.				
15. I find real enjoyment in my work as an anesthesia provider.				
16. If I had my career to do all over again I would still choose to go military.				
17. I am able to perform general anesthetics for all surgical operations, regional blocks, and/or central line placements without the help of my peers.				
18. I do not contribute much to the decision making process in my department.				
19. I definitely would consider staying until retirement in the military if the special pays were significantly increased from present levels.				
20. I do not openly acknowledge to CRNA's aspects of their anesthesia practice which they have more expertise than I do.				
21. I do not feel my anesthesia practice is as current as it should be.				
22. It makes me proud to talk to other people about being an anesthesiologist in the military.				
23. I have adequate breaks and lunch time on a regular basis.				
24. My work environment is generally noisy.				
25. I feel CRNA's within the military should be prepared and proven capable of functioning independently of an Anesthesiologist.				
26. There is no doubt in my mind that I will consider another tour of duty.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
27. I have the opportunity for independent thought and action.				
28. Even if the special pays were significantly increased, it would not be a critical issue in whether or not I would stay active duty until retirement.				
29. Promotions of anesthesiologists is a big problem within the military.				
30. Though I could make more money in civilian practice, I am more satisfied in the military because of the quality of care given to patients.				
31. My clinical judgments are questioned by my peers.				
32. A feeling of team spirit usually exists during my duty hours.				
33. Nurse Anesthetists value my clinical judgment during emergencies.				
34. I would prefer to administer anesthesia individually rather than be head of an anesthesia care team.				
35. When I first entered the military, I planned on staying until retirement.				
36. I am able to keep up with new anesthesia technological advances.				
37. As an anesthesia provider, I often feel as if I am used to fill an empty slot.				
38. I feel satisfied with the anesthesia care that I have provided.				
39. In general the Anesthesiologists and the CRNA's work well with each other in my department.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
40. I often have doubts about the clinical judgment of the CRNA with whom I am working.				
41. With the present civilian job offers that I am getting, it is worth it financially for me to resign my commission early.				
42. I am always willing to help Nurse Anesthetists improve their clinical skills in my department.				
43. I have a strong feeling of "belonging" to my anesthesia department.				
44. Initially, a few years is about all I expected to stay on active duty before completing time for retirement in the reserves.				
45. When I entered the military, I was unsure of the intent to stay more than a few years, but now I have decided to stay until retirement.				
46. At my present duty station I do anesthetics on the watch as the sole anesthesia provider.				
47. Anesthesia personnel at my hospital do a lot of bickering and backbiting.				
48. I usually take the time and/or opportunity to discuss patient anesthesia care with my peers.				
49. I feel I'm at the end of a chain in the health care system. I have little impact in decision making at the hospital.				
50. Most of the time I can balance patient care and administrative duties in my weekly schedule.				
51. I am satisfied with my job at the present time.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
52. In terms of personal feelings about the department, "I like it very much".				
53. I frequently read research articles and transfer the knowledge, if warranted, to my daily practice.				
54. If I had the time, I would like to be an investigator in an anesthesia research study.				
55. I feel the military offers more chances to participate in research studies than most comparable civilian jobs.				
56. I attend at least one professional meeting a year.				
57. I feel I have been awarded adequate medals/ribbons for my achievements in the military.				

APPENDIX E

Questionnaire- Nurse anesthetists

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

SCN 96-68

	S/A	A	D	S/D
1. I don't have any specific idea how much longer I'll stay in the military.				
2. I always have enough supplies and/or anesthesia equipment to administer anesthesia without making changes to the anesthetic plan or methods.				
3. If I had my career to do all over again I would not have selected to do anesthesia in the military.				
4. An upgrading of the Incentive Special Pay is seriously needed.				
5. When I work in an Anesthesia care team with Anesthesiologist's, we discuss expectations regarding guidelines and choices for that anesthetic and the degree of Anesthesiologist's involvement.				
6. It is basically my responsibility to decide how my assignment gets done.				
7. I do receive recognition by other team members for work when it is well done.				
8. When I first entered the military I planned to get at least part of my education and then retire from active duty.				
9. My knowledge of anesthesia is respected by my co-workers.				
10. I find I'm often unable to finish my assignment or be relieved by the end of the shift.				
11. While under pressure, I am capable of giving my patient anesthesia care which conforms to departmental quality indicators.				
12. When I entered the military, I had full intentions of staying until retirement, but now I've changed my mind.				
13. I won't stay active duty much longer, but I plan to retire from the active reserves.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
14. There is adequate staff coverage to allow me to attend continuing education events.				
15. I find real enjoyment in my work as an anesthesia provider.				
16. If I had my career to do all over again I would still choose to go military.				
17. I am able to perform general anesthetics for all surgical operations, regional blocks, and/or central line placements without the help of my peers.				
18. I do not contribute much to the decision making process in my department.				
19. I definitely would consider staying until retirement in the military if the special pays increased from the original amount issued a few years ago.				
20. I am willing to clarify the level of my expertise when it is greater than the Anesthesiologist thinks it is.				
21. I do not feel my anesthesia practice is as current as it should be.				
22. It makes me proud to talk to other people about being an anesthetist in the military.				
23. I have adequate breaks and lunch time on a regular basis.				
24. My work environment is generally noisy.				
25. I feel CRNA's within the military should be prepared and proven capable of functioning independently of an Anesthesiologist.				
26. There is no doubt in my mind that I will consider another tour of duty.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
27. I have the opportunity for independent thought and action.				
28. Even if the incentive special pay would be significantly increased from the original amounts issued, it would not be a critical issue in whether or not to stay active duty until retirement.				
29. Promotions of nurse anesthetists is a big problem within the military.				
30. Though I could make more money in civilian practice, I am more satisfied in the military because of the quality of care given to patients.				
31. My clinical judgments are questioned by my peers.				
32. A feeling of team spirit usually exists during my duty hours.				
33. Anesthesiologist value my clinical judgment during emergencies.				
34. I would prefer to administer anesthesia individually rather than be head of an anesthesia care team.				
35. When I first entered the military, I planned on staying until retirement.				
36. I am able to keep up with new anesthesia technological advances.				
37. As an anesthesia provider, I often feel as if I am used to fill an empty slot.				
38. I feel satisfied with the anesthesia care that I have provided.				
39. In general the Anesthesiologists and the CRNA's work well with each other in my department.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
40. I often have doubts about the clinical judgment of the Anesthesiologists with whom I am working.				
41. With the present civilian job offers that I am getting, it is worth it financially for me to resign my commission early.				
42. The anesthesiologists are willing to help me improve my clinical skills in my department.				
43. I have a strong feeling of "belonging" to my anesthesia department.				
44. Initially, a few years is about all I expected to stay on active duty before completing time for retirement in the reserves.				
45. When I entered the military, I was unsure of the intent to stay more than a few years, but now I have decided to stay until retirement.				
46. At my present duty station I do anesthetics on the watch as the sole anesthesia provider.				
47. Anesthesia personnel at my hospital do a lot of bickering and backbiting.				
48. I usually take the time and/or opportunity to discuss patient anesthesia care with my peers.				
49. I feel I'm at the end of a chain in the health care system. I have little impact in decision making at the hospital.				
50. Most of the time I can balance patient care and administrative duties in my weekly schedule.				
51. I am satisfied with my job at the present time.				

Strongly Agree = S/A
Agree = A
Disagree = D
Strongly Disagree = S/D

	S/A	A	D	S/D
52. In terms of personal feelings about the department, "I like it very much".				
53. I frequently read research articles and transfer the knowledge, if warranted, to my daily practice.				
54. If I had the time, I would like to be an investigator in an anesthesia research study.				
55. I feel the military offers more chances to participate in research studies than most comparable civilian jobs.				
56. I attend at least one professional meeting a year.				
57. I feel I have been awarded adequate medals/ribbons for my achievements in the military.				

APPENDIX F

Coding of Demographic Data

Coding of Demographic Data

Age was divided into three groups: 28-38 years old given an ordinal variable of (1), considered the most highly mobile, 39-49 years old a (2), and over 50 a (3).Marital status was coded as an ordinal variable with the lowest value, (1), given to the single group, considered the most highly mobile. Widowed persons were given a code of (2), divorced persons (3), separated persons (4), and married persons received a (5). Position was coded so that the more mobile group, CRNAs, were given a code of (1), and anesthesiologists were given a score of (2). Rank was coded so that the lower the rank, the higher the mobility. Dependents were grouped so the persons with no dependents were considered most mobile (1), those with one to three dependents given a code of (2), and those with more than three dependents (3). The variables were then summed to form Factor 9, the mobility factor.

References

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