

A DESCRIPTIVE STUDY OF HEALTH PROMOTION ACTIVITIES RELATED  
TO TOBACCO CESSATION UTILIZED BY AIR FORCE NURSE PRACTITIONERS

1997

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A DESCRIPTIVE STUDY OF HEALTH PROMOTION ACTIVITIES RELATED TO TOBACCO CESSATION UTILIZED BY AIR FORCE NURSE PRACTITIONERS

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## ABSTRACT

The purpose of this study was to describe the health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners (NP). The military environment places strong emphasis on the importance of optimal physical fitness in order to meet the demands of deployed readiness for missions of national and international peace and freedom. Tobacco use in the active duty population remains above the targeted goal of 20% set by the Healthy People 2000 Objectives. The Department of Defense has issued directives which direct health care providers to address and provide intervention regarding tobacco topics. A questionnaire was developed to elicit information about health promotion activities Air Force NPs use in order to meet Healthy People 2000 Objectives with regards to tobacco cessation. It consisted of four parts: demographic data, clinical practice setting, nurse practitioner education, and nurse practitioner activities relating to tobacco cessation. The questionnaire was evaluated by a two (2) NP panel of experts for face and content validity. A pilot study consisted of four (4) NPs was conducted to evaluate test-retest reliability. The major study consisted of forty-seven (47) Air Force NPs serving at conus locations, functioning within their specialty area (pediatrics, adult, family, women's health, primary care). The sample was obtained through stratified random sampling techniques. Descriptive statistics were used for data analysis. Study findings suggest that NPs are involved in multiple tobacco cessation activities in their clinical practice in varying degrees and frequencies. Knowledge and skill levels differ among NPs. Inconsistencies may exist between performance of tobacco cessation activities, knowledge and skill levels, resources that may hinder or support those activities in the clinical setting, and attitudes toward tobacco users. Further research is recommended to determine correlations between variables and to provide more complete information



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by

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THESIS

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## FOREWARD

It is with great anticipation that I step into a new role as Family Nurse Practitioner. I have always wanted to serve my fellow human beings in the paths leading towards health and well-being. Expanding my role as a registered nurse to that of a nurse practitioner allows me to continue this goal.

Health promotion is shared by all levels of providers. Nurses have provided health education for centuries. Having a strong basis in the nursing profession with the acquisition of advanced education and training, the nurse practitioner is capable of providing a wide range of health promotion activities to complement the wide range of services.

I believe that nurse practitioners can make a difference in the health affairs of every person he/she touches. It is with this thought that I go forward to assist others to make healthful choices in life.



## DEDICATION

I could not have completed this undertaking if it were not for my strong belief and faith in God, who guides me in all of life's undertakings. I am ever grateful to my wonderful husband who provided love and support during the hard times, and always brought me back to reality. I give recognition and love to my parents and family who taught me to value life, to work hard and to maintain integrity above all else.

To all of the nurse practitioners who took the time to complete the questionnaire, to complete validity and reliability testing of this study's tool, I give all of you recognition and thanks.

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## CHAPTER ONE: THE RESEARCH PROBLEM

### Introduction

The purpose of this thesis research was to describe the health promotion activities utilized by Air Force nurse practitioners to assess, counsel, intervene, and evaluate tobacco cessation for the military active duty population. The military environment places utmost importance on the ability of the military active duty population to be optimally physically fit for the missions of deployment readiness. Tobacco use is viewed as an unhealthy lifestyle which is devastating to the health and well-being of the individual, detrimental to military combat readiness and to the accomplishment of peacetime missions. This is because tobacco use places the individual at risk for reduced performance and probable chronic illness.

### Background

The smoking cessation topic has the utmost relevance because tobacco use is the greatest single self-imposed risk to health. Every segment of our society suffers the consequences of these addictive products, especially children, women, and minorities (USDHHS, PHS, CDC & NCHS, 1995). Many related disease and illness states can be correlated to tobacco use. Numerous reports indicate the use of tobacco products as the leading preventable cause of death in the United States, accounting for more than four-hundred thousand deaths and approximately thirty percent of all cancer deaths each year (American Cancer Society, 1995; Bartecchi, MacKenzie & Schrier, 1994; USDHHS, et al., 1995). Research correlates tobacco use with increased risk of cardiovascular disease, as the leading cause of chronic lung disease, and contributor to low birthweight newborns (USDHHS, PHS, 1994; USDHHS, et al., 1995). There is overwhelming evidence that nicotine has an addictive component. This necessitates a continued commitment to preventing tobacco use among young people (Benowitz, 1986).

Both human and economic costs of tobacco use to our society are overwhelming.

According to the 1992 report by the Surgeon General, the estimated average life-time medical costs for a smoker exceeded those for a nonsmoker by more than six thousand dollars per year (USDHHS, CDC, 1992). Figures reported for 1985 have placed the annual costs of smoking for the United States as a whole at a staggering sixty-five billion dollars in terms of health care expenditures, lost productivity and disability (Mackenzie, Bartecchi & Schrier, 1994). The costs have undoubtedly continued to climb since that data was compiled. An estimated annual incremental cost imposed on the Department of Defense (DoD) by the "excess" use of outpatient military physicians by active duty heavy smokers was two million eight hundred thousand dollars (\$2.8 million), which in turn increases the health costs for medical care borne by taxpayers (DoD World Wide Survey, 1992).

The health effects of tobacco have been the subject of intensive investigation in the United States since the 1950's. It has only been since the 1980's that the health consequences of tobacco have been extensively reviewed. While these reviews have led to increased public awareness and beginning acceptance of the ill health effects of tobacco, it has also initiated health, economic, and ethical battles between the health care industry, the political arena, and the tobacco industry. While tobacco manufacturers stand strong to support tobacco sales, ongoing research has concluded that tobacco use is, in fact, detrimental to health, and that the nation must take affirmative action towards the initiation and success of tobacco cessation and health promotion programs (MacKenzie, et al., 1994).

Multiple organizations and researchers have conducted surveys using various methodology and time frames of study when evaluating smoking prevalence. Data is voluminous and interpretation of tobacco usage statistics may be difficult at best. The most current data from 1993, reported by Health People 2000 Objectives (1995), reports that adult cigarette smoking prevalence has dropped to twenty-five percent, with an overall decline in cigarette use. Little improvement is noted in the same report for the adolescent population, minority groups (particularly blacks, Alaskan, and American Indian natives),



and lower socioeconomic populations (American Cancer Society, 1995; USDHHS, PHS, CDC, NCCDPHP, 1994; USDHHS, et al., 1995). Surveys conducted between the years 1989 to 1992 demonstrated that by the age of eighteen, about two-thirds of adolescents in the United States have tried smoking (American Cancer Society, 1995; USDHHS, PHS, CDC, NCCDPHP, 1994). More than twice as many adults between the ages of twenty-five and forty-four (31.0%) use tobacco than those sixty-five and older (14.0%) (American Cancer Society, 1995).

It is with these facts that perhaps a more specific focus is warranted towards smoking cessation in the adolescence and young adult population. It is the goal that early intervention methods by health care providers may be more effective in achieving smoking cessation and the prevention of tobacco health effects in these young individuals. While people of all ages should be targeted for smoking cessation programs, significant financial, medical and work-related problems may be averted if attention is focused on the younger age group (Merrill, 1995).

The problems that tobacco use imposes on health is not just of national concern, but also of military concern. Since 1986, the Department of Defense (DoD) has set directives into place addressing health promotion. The goals of these directives are aimed towards the improvement of military readiness, promotion of healthy lifestyles, maximization of military efficiency and enhancement of quality of life. At three year intervals from 1986 to 1995, the DoD has conducted worldwide health surveys of active duty military personnel from all four branches of service (Marines, Army, Navy, and Air Force). Their findings identified risky behaviors, including tobacco use, that were detrimental to readiness and military efficiency. The study concluded that military personnel are greater tobacco users than the general civilian population, that the rate of smokeless tobacco and cigar use is rising, and that many stressors, to which the civilian population is not subjected, add to increased tobacco use (DoD WWS 1992, 1995).

Military nurse practitioners, functioning in the role of health care provider, may be critical to the role of identifying and providing intervention for those active duty personnel



at risk. Nurse practitioners have become active participants in the context of health promotion and disease prevention, incorporating both within their scope of practice and professional practice standards (Burns, 1994; Smith, 1992). A 1992 meta-analysis study of process of care, clinical outcomes, and cost-effectiveness of nurse practitioners in primary care roles concluded that nurse practitioners provided more health promotion activities and scored higher on quality of care measures, patient satisfaction, patient compliance, resolution of patient problems when compared to physicians (Clawson & Osterweis, 1993). As an effective change agent, the military nurse practitioner could enhance health promotion at the worksite level by integrating line staff officers as team participants along with the medical teams to encourage and maintain tobacco cessation (Pokorski, 1992).

#### Statement of the Problem

Research indicates that tobacco use shortens the lifespan of an individual, contributes to illness, and reduces performance (Bartecchi, et al, 1994). The military strives for optimal physical fitness to accomplish its missions for worldwide peace and freedom. Through the recognition of the health risks and financial burdens of continued tobacco use, the Defense Department has promoted activities which stress smoking cessation for all military facilities (DoD Directive 1010.10, 1986). The Department of Defense has adopted the six main Healthy People 2000 Objectives for tobacco control. These objectives are preventing tobacco use, treating nicotine addiction, protecting nonsmokers from environmental tobacco smoke exposure, limiting the effect of tobacco advertising and promotion on young people, increasing the price of tobacco products, and regulating tobacco products (USDHHS, et al., 1995).

The Department of Defense has also incorporated the "Put Prevention Into Practice" (PPIP) campaign initiated by the United States Department of Health and Human Services (USDHHS), along with the Public Health Service and the Office of Disease Prevention and Health Promotion, to establish clinician guidelines upon which to direct

preventive care within the health system (USDHHS, PHS, CDC, & NCCDPHP, 1994).

Despite the overall decline in tobacco use from 1980 to 1995 (51.0% to 31.9% respectively), the DoD reported rates of any smoking for military personnel in the year 1995 were still well above the 20% target set by the Healthy People 2000 Objectives 1995 (DoD WWS 1995).

The importance of preventive health care can not be overemphasized. Preventive health care involves the interactive complexities of intervention, the education of health care providers, and the establishment of protocols. It is within the scope of the Healthy People 2000 Objectives and the PPIP that nurse practitioners intervene to promote healthy behaviors.

The military nurse practitioner as a health care provider may play an important role in assessing, evaluating, and providing interventions for care to military personnel for tobacco cessation. Through active and personal intervention, the nurse practitioner's activities may be very cost effective for the military. Literature supports that nurse practitioners focused on client education can be most effective in intervening and facilitating health promotion activities and can positively influence people to make appropriate health decisions (Ventura, Crosby & Feldman, 1991).

### Research Questions

It was the purpose of this research to examine the following:

- 1) What health promotion activities in the clinical setting do Air Force nurse practitioners provide related to tobacco cessation?
- 2) How often do Air Force nurse practitioners provide health promotion activities in the clinical setting related to tobacco cessation?
- 3) What resources are present regarding tobacco cessation?
- 4) What were Air Force nurse practitioners taught about tobacco cessation?
- 5) What are Air Force nurse practitioner's attitudes towards providing tobacco cessation counseling?



## Conceptual Research Principles

In the context of this study, conceptual research principles were utilized to describe the nurse practitioner's role as educator in the area of health promotion (with special attention directed towards tobacco cessation) and the use of teacher-learner principles in the education process.

When implementing health promotion, the nurse practitioner functions as a role model, advocate, problem solver, and facilitator (Kaplun, 1992; King, 1994; Spellbring, 1991). The teaching-learning principles addressed in this research integrated the four main concepts for teaching (Buchanan, 1994; Falvo, 1994; Krause, 1995; Sparks, 1995; Spellbring, 1991).

Assessment is the first teaching-learning principle. This principle assesses potential health risks, priorities and readiness for learning, and potential barriers for learning. Goals are prioritized in terms of desired specific behavior. The second principle involves the identification of factors that may facilitate, hinder, or modify learning, thus affecting goal attainment. The environment must be conducive to learning. The third principle is developing and implementing a plan of care, based on the patient's desires and needs. Individuals must envision that behavior change will have significant meaning for them and therefore actively share the responsibility. The fourth principle incorporates evaluating end results. Evaluating outcomes involves monitoring for effectiveness of the education process, and modifying the plan as required.

The relationship between teaching and learning is an interdependent one and part of an interactive process. The goal of education is to enable patients to incorporate the information into health behavior to improve their potential for positive health outcomes. The instrument developed for this study directed questions to the nurse practitioner related to what tobacco cessation activities are actually performed in the clinical setting, to include all of the above concepts of teaching.



## Theoretical Definitions

For the purpose of this study, the following theoretical definitions were used to define the variables being evaluated:

**Tobacco Cessation:** a temporary or complete cessation or discontinuance of a tobacco product.

**Health Promotion:** a) is the science and art of helping people change their lifestyle or beliefs towards a state of optimal health, and emphasized behavior changes which reduce risk and foster optimal health (O'Donnell, 1986); b) is the process of enabling people to increase control over and to improve their health, going beyond health lifestyles to well-being (Kaplun, 1992, pg 3).

**Military Nurse Practitioner:** an Army, Navy or Air Force Nurse Corps Officer and registered nurse who has completed a formal nurse practitioner program, acquiring additional knowledge and skills and has assumed a legitimate role as a primary health care provider within the military beneficiary population. The role of the nurse practitioner as health care provider includes health status assessment, implementing care, instruction and/or counseling, assessing outcomes and, finally, collaborating with other health care professionals (Brown & Waybrant, 1987; Burns, 1994; Smith, 1992). An additional role of military NPs may also include the provision of care in combat or deployed situations.

**Patient Education (patient teaching):** the process of influencing patient behavior, producing changes in knowledge, attitudes and skills required to increasing the patient's ability to make decisions regarding their health and health care, to cope with specific illness, and to maintain and maximize their potential for positive health outcomes (Simonds, 1979). The education process requires assessment of the total patient needs, including an understanding of social, psychological, educational, socio-economic, vocational, and cultural characteristics of the individual (Verstraete & Meier, 1973).

**Resources:** The term resources in this study is used to describe clinical practice settings, duties the nurse practitioners may perform, the number of patients (clients) seen in a day, frequency and length of appointments, adequate time for client education,

availability of tobacco information to clients, and types of tobacco cessation programs available to tobacco users.

### Limitations and Assumptions

Limitations of the study included time constraints for completion and costs. The research was conducted within a twenty-one month time frame during a family nurse practitioner masters degree program. Costs for copying of materials and postage for mailed questionnaires were absorbed by the researcher.

The sample size was limited to only Air Force nurse practitioners due to delays in obtaining tri-service survey approval. Participants were randomly selected from those assigned to stations within the United States and not from overseas due to the possibility of delayed mailing time. A further delay occurred in acquiring the most current nurse practitioner mailing list. Because of time constraints, the questionnaires were mailed according to the previous year's mailing list. This resulted in a smaller return. Anonymity of response also made followup impossible.

Selection of participants was based upon their identification as pediatric, family, adult, primary care, or women's health nurse practitioners. Unequal distribution among specialties was a limitation to the study. The majority of nurse practitioners in the Air Force are credentialed and function in the areas of pediatrics and women's health. There were very few family, adult, or primary care nurse practitioners.

Levels of educational preparation may vary between nurse practitioners. Education programs differ in length, required clinical hours, and masters degree versus certificate awarded upon completion. Learning about tobacco cessation strategies may have occurred in settings other than in formal nurse practitioner programs. A limitation to obtaining accurate responses may reflect the level of confidence that nurse practitioners have regarding their skills, training, or knowledge level (Thibodeau & Hawkins, 1989). All levels of health care providers may exhibit an inadequate knowledge base as well, which may limit their ability to provide appropriate tobacco cessation care. No attempt was made



to distinguish the differing levels of preparation prior to mailing although it is a response item on the questionnaire. For this study, it was assumed that all nurse practitioners practice within their legal restrictions.

In using a mailed questionnaire, assumptions were postulated regarding the honesty of answers. Validation of responses could not be ascertained. Time required for information recall on a one-time mailed questionnaire was brief. Recall may also be incongruent with chart documentation (Brown et al, 1987).

Response differences may be noted between demographic locations and clinical practice settings. Bias could occur based upon the significant clinical evidence supporting adverse health effects of tobacco, inconsistencies noted within the military health promotion programs, or attitudes of advocating health care providers against tobacco use.

### Summary

The purpose of this study is to describe the health promotion activities of military nurse practitioners regarding tobacco cessation. Through survey data collection, the military has identified the importance of health promotion activities in reducing the risky health behavior of tobacco use and has targeted national guidelines to be implemented by health care providers for tobacco cessation. The military nurse practitioner, as educator, plays an important role in reducing tobacco use for military active duty members, their dependents, and the retiree population. This study combined the descriptive research design, conceptual teacher-learner principles, and the use of a questionnaire to measure tobacco cessation health promotion activities utilized by military nurse practitioners. Generalizations from this study are limited to Air Force nurse practitioners.

Chapter Two provides an overview of the literature as it applies to tobacco health effects, military versus civilian tobacco use, current military tobacco cessation programs, tobacco cessation strategies, and the role of the military nurse practitioner.



## CHAPTER TWO: REVIEW OF LITERATURE

The purpose of this study is to describe the health promotion activities of Air Force nurse practitioners regarding tobacco cessation. This chapter reviews the health effects of tobacco, published studies evaluating military tobacco use and military versus civilian tobacco use, military tobacco cessation programs, current tobacco cessation strategies, and the role of the nurse practitioner.

The data obtained regarding military tobacco use and comparisons between military and civilian tobacco use statistics is compiled from research directed Department of Defense World Wide Surveys (1992, 1995). Over sixteen thousand military personnel in all four uniformed services were surveyed every three to four years since 1980. Data was collected through mailed surveys. Eligible populations consisted of all active duty military personnel excluding recruits, service academy students, persons absent with leave (AWOL), and persons with permanent change of station (PCS) at the time of data collection. The studies explored the prevalence of alcohol, drug and tobacco use, and the effects of health behaviors other than substance use on the quality of life of military personnel

In reviewing the literature on the topic of tobacco use in the United States, studies conducted by various health agencies repeatedly demonstrated that tobacco use continues to be the single largest cause of preventable illness and death. In order to promote health, the task at hand for all citizens, health professionals, government agencies, private and public service organizations is to reduce tobacco production and tobacco use. Health professionals have an additional task of providing education and counseling to facilitate reduced use, and promote health.

In this research, it is important to address tobacco cessation and not just cigarette cessation. Other methods of tobacco use may be utilized independently or during attempts

to quit. These methods may be viewed as not being as detrimental to health and may not have the same negative connotations applied.

### Health Effects of Tobacco

Multiple journal articles, books and other references convey information concerning the detrimental effects tobacco, and its constituents, on all body systems (Bartecchi et al, 1994; USDHHS, PHS, 1994). Tobacco use contributes to one out of five deaths in the United States (USDHHS, PHS, 1994). Thirty percent of all cancer deaths can be attributed to tobacco use (ACS, 1995). An estimated 419,000 Americans die of smoking-related diseases every year (American Lung Association, 1995).

The risks to health have been discovered to originate from the thousands of irritants, oxidants, free radicals, toxins and carcinogens present in tobacco products, in addition to the known nicotine effects (Burns, 1991). Sidestream smoke poses the same health risks to nonsmokers as to smokers (American Lung Association, 1995; Burns, 1991). Health risks may be somewhat dependent on the concentrations in the smoke and the smoking pattern of the individual (Jasinski & Henningfield, 1988). Cigarette smoking has been associated with lung, mouth, larynx, esophagus, stomach, pancreas, kidney, bladder and uterine-cervical cancers. Smoking during pregnancy increases the risk for fetal demise and birth defects (Bartecchi et al., 1994; USDHHS, PHS, CDC, & NCCDPHP, 1994; ACS, 1995).

While research has substantiated that physical fitness endurance and performance levels are indeed compromised by the use of tobacco (USDHHS, PHS, 1994), a review of military literature demonstrated inconclusive research in the area of tobacco health effects on military members. One study evaluated the effects of alcohol and tobacco use on 510 enlisted Army troops between the ages 17-28 years. Variables included physical training testing, increased sick call, and time off duty (Zaddo, Fengler & Catterson, 1993). The authors postulated that increased levels of smoking would lower performance and increase clinic visits for respiratory complaints. The results were limited in that the correlation



between the degree of smoking with the incidence of sick call, injury, or level of athletic endurance was not determined. Perhaps their finding that there was no increase in smoker's sick call may be related to minimal adverse effects of tobacco use in the young age group sample.

A study conducted by Ferrante, Muzzolon, Fuso, Pistelli, Corbo & Ciappi (1993) investigated the relationship between sporting activity and smoking habits in young Italian men. One thousand, one hundred fifty-three Italian men twenty years of age were surveyed. The findings were reported as generalizations concerning complex relationships between sporting activities and smoking habits in determining whether being active in fitness is an incentive to smoke or to quit.

A Navy study compared health appraisal risk factors with physical readiness testing. One hundred Navy personnel were surveyed. The researchers discovered a correlation that may exist between health risk appraisal perceptions and readiness testing, which could provide a global picture of those health risks requiring intervention (Behmer & Freeman, 1993).

The DoD Worldwide Survey of Health Related Behaviors Among Military Personnel (1995) presented unconfirmed evidence suggesting that cigarette smoking might be related to productivity loss. Variables leading to productivity loss, identified for current smokers and nonsmokers, were: a) being late for work by thirty minutes or more, 2) left work early, 3) hurt in an on-the-job accident, 4) worked below normal performance level, and 5) did not come into work because of illness or injury (Table 1). Conclusions indicated that further analysis is needed to better understand these relationships more completely. Other unidentified variables could influence future data analysis for the following variables.



Table 1

Cigarette Use and Productivity Loss, Past 12 Months, Total DoD, 1995

Variable	<u>Number of Occurrences, Past 12 Months</u>	
	<u>Current Smokers</u>	<u>Nonsmokers</u>
Late for work by 30 minutes or more	35.1	25.3
Left for work early	34.0	29.7
Hurt on the job	12.3	8.4
Worked below normal performance level	35.1	28.4
Did not work due to illness or injury	20.2	21.9

Note. Adapted from the DoD Worldwide Survey of Health Related Behaviors Among Military Personnel, 1995.

#### Military Tobacco Use Statistics

The Department of Defense Worldwide Survey of Health Related Behaviors Among Military Personnel in 1992 and 1995 established baseline measures for meeting the Healthy People 2000 Objectives. The surveys were found to be the most complete data available in documenting tobacco use in the military population, and correlating military versus civilian tobacco use. Discussion in this section focuses first on the prevalence of military tobacco use, followed by a comparison between military and civilian tobacco use prevalence.

Studies conducted by the DoD between 1980 to 1995 demonstrated that any cigarette use in the military declined significantly from 51.0% to 31.9%, and that heavy smoking declined significantly from 34.2% to 15.0% (statistical significance at the 95% confidence level) (DoD WWS 1995). The Air Force showed the lowest prevalence of any smoking for all ages 18-55 (25.1%) when compared to the Army (34.1%), Navy (34.9%), and the Marine Corps (35.0%). Prevalence for smokeless tobacco use among DoD personnel overall was 13.2%. The Air Force once again represented the lowest percent of

smokeless tobacco users (8.3%) when compared to the Army (15.6%), Navy (12.3%) and the Marine Corps (19.7%). See Table 2. The differences in smoking rates could be explained in part by differences in mission statements or personnel characteristics between all four services (DoD WWS, 1995).

Table 2

Trends in Tobacco Use, Past 30 Days, by Service, 1995

	Army	Navy	Marine Corps	Air Force
Any smoking	34.1(1.6)	34.9(1.6)	35.0(1.8)	25.1(1.3)
Any smokeless tobacco use	15.6(0.8)	12.3(1.1)	19.7(1.0)	8.3(0.8)

Note. Estimates are expressed as percentages (with standard errors in parenthesis). Adjusted for sociodemographic differences. Adapted from the DoD WWS, 1995.

Cigar and pipe use for all military personnel increased from 1992 to 1995, 18.7% and 17.1%, respectively (unadjusted data), (DoD WWS, 1995). These findings suggest that cigar and pipe smoking may be perceived by active duty personnel to be less detrimental to health and have less negative connotations than cigarettes.

Deployment of military personnel during Desert Shield/Desert Storm demonstrated an increase in tobacco use. Nearly twenty-three percent (22.7%) of all personnel increased their smoking, resumed smoking, or started smoking for the first time (DoD WWS 1992, 1995, DoD WWS Highlights, 1996). The study identified factors that may have contributed to increased tobacco use were the prohibition of alcohol, stress reactions associated with the mission, and perceived threats to personal safety (DoD WWS, 1992). It may be presumed from the data results that the prevalence of tobacco use, as well as other substance use, increases during all deployments. Many variables may account for this increase in tobacco use, to include additional physical and psychological related



stressors, the availability of tobacco products, or lack of enforced health promotion activities.

Predictors for increased tobacco use in the military population were found to be related to younger age groups, predominantly white male gender, young troops having less education, lower pay grades, non-marital status, deployment, separation from family, job stressors and responsibilities requiring life or death situations and decisions. There was no significant differences in smoking prevalence by region of duty assignment (DoD WWS, 1995).

#### Military Versus Civilian Tobacco Use Statistics

The National Household Survey on Drug Abuse (NHSDA) was revised and pilot tested in 1994 to provide more accurate information about civilian drug use. The sample size was not stated, although was reported to be of similar size compared to the military surveys (DoD WWS, 1995). The civilian data for population was standardized to reflect the demographic characteristics, with relation to gender, age, education, race/ethnicity, and marital status, of the military population in order to attain more accurate comparisons (Bray, Marsden, & Peterson, 1991; DoD WWS Highlights, 1996). The revised NHSDA instrument produced higher estimates in the prevalence of cigarette use in the past thirty days, especially in the age group 12-25. Even though the rate for tobacco use was greater in the 1994 survey when compared to previous surveys, estimates of cigarette use in the young military population were still reported to be greater than the civilian population for the same age groups. Military personnel ages 18-25 showed greater rates of smoking, within the past thirty days (39.4%) compared to civilians in the same age group (35.5%). The prevalence for smoking in the past thirty days for all ages 18-55, regardless of gender, reported little statistical significance between the total number of DoD military personnel stationed in the United States (including Hawaii and Alaska), (33.4%; N=13,765) when compared to the total number of civilians for the same age group (31.3%; N=12,280) (DoD WWS Highlights, 1996). For the age group 18-55, regardless of gender, Air Force



personnel were significantly less likely than civilians to smoke (26.0% to 31.3% respectively), whereas Army, Navy and Marine Corps personnel were significantly more likely than civilians to smoke (35.4%, 36.3%, 37.0%, respectively) (DoD WWS, 1995; DoD WWS Highlights, 1996).

In critique, the DoD World Wide Surveys provided statistical data that takes into account unadjusted rates (general observation across the sampled population) and adjusted rates for sampling. Compiled unadjusted estimates described rates without explanatory information provided about differences among services. Statistical results were strengthened through the use of adjusted data which took into account sociodemographic composition differences for age, education, pay grade, race/ethnicity, marital status, personnel characteristics, and regional location when making statistical comparisons. A multivariate framework using logistic regression analyses strengthened the independent contribution of each of the demographic characteristics. Some of the statistical data reflected various time frames, for example from 1980 to 1990, or from 1988 to 1990. Comparing statistics representing different time frames may be difficult and represent inconsistent data. Statistical data correlating military and civilian cigarette use may be ever changing, with response to social and political issues.

Studies evaluating military and civilian tobacco use have not compared usage rates for other forms of tobacco. Prior to 1995, the majority of the analytical data focused on cigarette smoking, the most widely used form of tobacco in the military setting. New data compiled in the 1995 survey identified use for other forms of tobacco use. Knowing the extent of tobacco use other than cigarette use is important when developing comprehensive policies and programs for prevention and cessation.

The study concluded that the military has made progress since 1980 in reducing the prevalence of cigarette smoking. Overall military rates were not significantly different from civilian rates, although younger military personnel were more likely to smoke than were their civilian counterparts. The study indicated that smokeless tobacco among the younger

servicemen is increasing. Rates for all tobacco use in the total DoD were still above the Healthy People 2000 Objectives.

### Military Tobacco Cessation Programs

Trends in tobacco use in the military may be declining. This may reflect in part increased emphasis on health and wellness lifestyles, smoking cessation and prevention within the military (DoD WWS, 1995). Several large studies provide detailed information about military tobacco use and cessation programs. Other researchers have found substantiating information. As the data from all studies support each other, only the high points of research in this area is presented.

Health promotion programs developed by the DoD, as stated in the 1986 directives, were aimed towards readiness, promotion of healthy lifestyles, maximization of military efficiency, and enhancement in the quality of life for DoD personnel and retirees, their families, and civilian employees. Current directives and policies have continued to place emphasis on topics concerning tobacco use, physical fitness, nutrition, stress management, alcohol and drug abuse, and early identification of hypertension (Air Force Policy Directive 40-1, 1994; DoD Directive 1010.10, 1986; Pokorski, 1992; White, 1991).

The Assistant Secretary of Defense for Health Affairs for the Department of Defense has the responsibility for developing, coordinating, and supervising smoking prevention programs. Each military service then initiates and implements directives with regards to smoking prevention and tobacco cessation programs (DoD WWS, 1992). Directives have established procedures for control of tobacco use in any DoD workplace, limited smoking in recreational buildings, policies on the sale of tobacco products, and outlined guidelines for establishing authorized external smoking areas. The programs are designed to minimize exposure of personnel to second-hand smoke, to promote nonsmoking as the military "norm", and to discourage the use of all tobacco products. The directives delineate responsibilities to installation and unit commanders and health promotion managers for the establishment and enforcement of policies for tobacco use.



Health care providers are encouraged to provide information on the health consequences of smoking, and to offer assistance for tobacco cessation without coercion or pressure, at all routine physical and dental exams (Air Force Instruction 40-102, 1994, 1996; DoD Directive 1010.10, 1010.15, 1986).

The success of health promotion programs regarding tobacco use depends greatly upon the active duty member's perceptions of health risk and acceptance of tobacco use. Survey results indicated a general climate in the military encouraging controlled drug and tobacco use. Total DoD respondents perceived harmful smoking effects on health or physical fitness was 94.3% (DoD WWS, 1992). This may connote that health promotion efforts are being effective overall. The same survey demonstrated contradictory beliefs in that fourteen percent (14.0%) of the respondents perceived smoking as a part of being in the military (DoD WWS, 1992). The availability of cigarettes making smoking easier was reported by 61.1% of surveyed participants (DoD WWS 1992, 1995).

Personal health goals and needs of 1,299 U.S Army soldiers were examined during periodic health exams at Fort Belvoir in 1990. Smoking cessation (17.0%) and avoiding problems with alcohol (4.3%) were listed in 14th and 19th priority of importance for improving self-esteem. These goals were desired by only 56.0% and 61.0% respectively (Jonas, 1994). The study identified that soldiers' health goals and health needs may not be congruent with the health care providers' goals. The researchers pointed out that these differences, along with behavioral components of self-esteem and social support, should be addressed if health promotion programs are to be successful.

Tobacco cessation attempts were reported to have only 9.3% success rates out of 53.6% of those smokers who attempted to quit smoking in the past year (DoD WWS, 1995). Information about attempts to quit smoking provides useful insights regarding the need to emphasize cessation programs. Statistical information regarding entrance into cessation programs will likely be incomplete as not all identified tobacco users use structured activities in attempts to quit smoking (Lichtenstein & Hollis, 1992).



Tobacco policy effectiveness was perceived by military personnel to be weaker than for drug and alcohol policies. Of those active duty personnel surveyed, only 25.3% believed that military tobacco policies were effective (DoD WWS, 1995) and that disciplinary actions would be taken against those who violated them (DoD WWS, 1992, pg 9-18). Surveyed participants also stated that policies were not consistently enforced, guidelines were non-specific, and health promotion activities were not viewed as a separate program by itself (Collins & Custis, 1993).

Some literature suggested there were many obstacles that may exist within the DoD directives and instructions. Directives may not be standardized or easily integrated from base to base (Collins et al., 1993; DoD WWS, 1995). Tobacco cessation programs may not be consistently enforced and guidelines may be lax and non-specific. Health promotion statistical tracking systems may be insufficient for monitoring and following compliance or relapse once a program is completed. Tobacco cessation programs may be decentralized and fragmented (being provided by a variety of organizations, with varying comprehensiveness between military installations and between branches of service). Sufficient funding may not be allocated (Collins et al., 1993). Tobacco cessation programs may place emphasis on fitness for performance standards for maintaining personnel readiness requiring behavioral conformity, which in turn may be perceived by military members as being punitive (Collins, et al., 1993).

Conway, Hurtado, & Woodruff (1993) conducted a study representing a wide range of Navy commands (406 commands divided into 131 large commands, 275 smaller commands; of these 281 were shore and 125 were sea commands) comparing their tobacco prevention or cessation activities. The response rate was 86.0% for sea commands to 95.0% for MTF's (Medical Treatment Facilities). The study concluded that there were consistent differences among command subgroups. Small, sea, and non-MTF commands do not provide tobacco cessation activities to the same extent as large, shore, and MTF commands. Ninety percent of MTF's, compared with only 58% of non-MTF's, reported that they had a written policy regarding tobacco use on base. MTF's also were more likely

than non-MTF's to rate their smoking restrictions as highly adequate to provide a smoke-free environment for nonsmokers (Conway, et al, 1993).

Despite health promotion efforts, tobacco use continues to be a problem that may be exaggerated by influential attitudes in the military toward tobacco. The prominent display of tobacco products in military commissaries and exchange stores, the discounted sales of tobacco products, smoke break permission during work hours, and seeing supervisors in the workplace who use tobacco products would appear to encourage tobacco use. It is postulated that policies advocating the discontinuance in the sale and advertisement of tobacco products on military installations, implementing tobacco cessation techniques for new recruits in basic training, and providing incentives for those who do not use or who discontinue use of tobacco products could strengthen health promotion programs and ultimately strengthen military readiness (Blake, 1985; Pokorski, 1992; White, 1991).

Health promotion priorities in the ever shrinking military face challenges to continue providing quality programs with less financial support. Future military operations, especially in deployed environments, may not provide the luxury of time to address health issues (White, 1991). Bold managerial and administrative policy changes occurring at the DoD level are required to provide full support of health promotion and education programs, and the prohibition of tobacco sales on military installations. Senior officers and enlisted members should take the lead at the command level (White, 1991).

The military structure continues to place more emphasis on caring for the sick with less emphasis on keeping people well. The workload accounting system in military health care often does not allow health care providers to account for time spent providing health education (Blake, 1985). Perhaps the goals for military health promotion needs to be directed towards centralizing health promotion activities, integrating and allocating both military and non-military resources, offering programs closer to the workplace, and emphasizing positive lifestyle behaviors rather than negative behaviors (Collins et al., 1993; Pokorski, 1992).



In summary, research in this area suggests with shrinking funds more concerted efforts may be needed for tobacco cessation. Tobacco cessation program management, identification of behavioral components of soldiers, and emphasis on health promotion are a few areas in which improvement may be warranted.

### Nurse Practitioner Role

The nurse practitioner movement has stimulated the examination of both similarities and differences in the care given by nurse practitioners and physicians. It is the blending of medical or curative activities with the supportive and health promotion activities associated with the traditional nursing care function that distinguishes the nurse practitioner role from the physician role (Brown et al, 1987). NP's have integrated health promotion and disease prevention within both their scope of practice and professional practice standards (Burns, 1994; Mirr & Snyder, 1995; Smith, 1992)

Zahnd, Coates, Richard & Cummings (1990) conducted a study to determine whether nurse practitioners or physicians were more likely to counsel smokers to quit smoking after attending the same training seminar. The sample size consisted of 12 internal medicine NPs and 40 internal medicine physicians. All NPs were female and 30.0% of the physician groups were female. Information was obtained through patient phone questionnaires following appointments. Results indicated that NPs discussed smoking more often than did physicians (64.0% versus 50.0%), asked about interest in quitting (49.0% versus 40.0%), distributed more smoking cessation literature (37.0% versus 25.0%) and made more followup appointments (36.0% versus 19.0%). The researchers acknowledged that the results may have been influenced by unstated topics covered in the seminar, patient recall accuracy, and differences in counseling styles based upon underlying professional training and personality. NPs may intrinsically do more counseling by virtue of their educational background.

Similar conclusions were drawn in a study which surveyed Navy health care provider (HCP) practices concerning patient tobacco use (Conway, Hurtado & Woodruff,



1996). Nearly 80% reported they usually ask patients about tobacco use. Of the 11 recommended tobacco cessation practices (same items as in this thesis), HCPs routinely advised patients to stop using tobacco, informed the benefits of quitting, and explained the dangers of using tobacco. Other recommended strategies that were not performed regularly included assisting the patient to set a quit date, developing a cessation plan, making referrals to cessation programs, prescribing nicorette gum, and arranging followup visits (Conway, et al., 1996).

In the same study, Navy HCP attitudes and practices concerning patient tobacco use were evaluated. Even though the NP sample size was small compared to other HCP groups, positive attitudes and perceived success rates was higher for the NP group. Seventy-three percent (73.0%) of NPs perceived success in helping patients quit using tobacco when compared to all other HCP groups (33.9%). When asked if it is the provider's role to assist or convince patients to quit using tobacco, NPs demonstrated higher agreement statements than all other HCP groups (93.4% to 85.1%, respectively). Fifty-three percent (53.4%) of NPs in the study agreed that most people will not quit even with advise as compared to 78.9% other HCP groups (Conway, et al., 1996).

Literature showed similar data regarding documentation of tobacco use. A research study done in collaboration with the Department of Preventive Medicine and Biometrics at the Uniformed Services University of the Health Sciences evaluated chart documentation for tobacco use (Crawford & Stahl, 1995). They reported that 74.0% of the Active Duty records had documentation of questions concerning tobacco use. Limitations identified by the researchers were unavailability of records; 25.0% of records initially sought for Active Duty personnel and women over age 50 years were located, and 40.0% of the records initially sought were available for children 2 years of age. The study finding did not specify military service, health care provider types, nor inclusion of all age groups.

Nurse practitioners can be seen as being cost effective to the demands of the current and future health care system. In a review of 187 existing studies addressing NP

effectiveness, analyses found NPs had positive influences on patient-related outcomes such as health knowledge, compliance, health maintenance and return for followup. NPs provided increased accessibility to health care with a reduction in hospital admissions. Even though the number of clinic visits increased, the researchers anticipated health care costs could still be considered lower overall. Further research was indicated (Ventura, Crosby, Feldman, 1991).

Yet another study conducted by the Care Clinic Association in Illinois identified similar findings. NPs in the ambulatory care settings were recognized to be cost effective in that they increased health care accessibility, reduced lab charges, saved physician time, reduced emergency room services, and provided more preventive and wellness care (McGrath, 1990).

The most effective interventions available to all health care providers for reducing potential health risks associated with tobacco use are those that address the personal health practices and behaviors of the individual (Best & Cameron, 1986). Many causes of illness have behavioral components. Personal, inventive strategies health care providers utilize in health education may change patients' behaviors in terms of such activities as smoking. These activities could make important contributions to cost containment in the area of health care (Damrosch, 1991). Patient education and tobacco cessation intervention typically fail because all of the determinants of health behavior were not addressed. The complex biological, behavioral, and sociocultural determinants of health behavior are not perfectly comprehended (Kulbok & Baldwin, 1992). Education alone does not ensure a change in behavior or motivation towards tobacco cessation.

### Tobacco Cessation and Nursing Theories

Teaching-learning principles make assumptions about both the learner and the educator (Knowles & Associates, 1984). These assumptions are that the learner is self-directing, has a baseline of life experiences upon which to build new learning, is ready to



learn, and has the perceived desire and motivation to know or do something. It is necessary that the educator take into account the learner's value systems, expectations, internal motivations, self-esteem, quality of life, self-confidence, and available resources (Krause, 1995; Pender & Pender, 1987; Sparks, 1995).

For successful patient education to occur, motivational factors of the patient related to learning, and motivational factors of the health care provider need to be addressed. Before a person can be motivated to learn, they must recognize that there is a need for the information being given and that they be physically and mentally ready to receive the information. Learning involves a cognitive knowledge and understanding of the meaning of the facts, the actual learning the new behavior or activity, and the willingness of the patient (Falvo, 1994; King, 1994). The concept of negotiating with patients as partners in their care have been met with varying degrees of acceptance by health care providers. The health care provider may assume that he or she knows what is best for the patient (active-passive role). The health care provider also may fear that patients may not choose what is best for them (guidance-cooperation role). For health education to be most successful, a mutual participation role in the decision making between the provider and the patient should exist (Falvo, 1994).

NP's activities in tobacco cessation intervention could be explained by Nola Pender's theory identifying health promoting behaviors integral to the individual's lifestyle. Pender described cognitive-perceptual factors which act as primary motivational mechanisms influencing health promotion activities (Pender et al., 1987; Smith & Draper, 1994). These factors include perceived importance of health, perceived health locus of control and self-efficacy, perceived health status, perceived benefits of the health promoting behavior, and perceived barriers. Pender also acknowledged demographic characteristics, biological characteristics, interpersonal and environmental factors which influence a person's health promotion decisions (Pender, et al., 1987).



Nursing theorist Dorothea Orem's self-care and self-care deficit models also could be applied to tobacco cessation strategies that NPs incorporate into their practice. Orem theorized that health promotion occurs when nursing care is designed to assist persons to develop and engage in self-care activities or self-care agency (Orem, 1995). The role of nurse educator and facilitator is one who is involved in assessing the individual's ability to act as their own self-care agent in performing those activities that are necessary to maintain life and health. The NP also assesses any limitations a person may exhibit which may restrict performance: self-care deficits (Denyes, 1988; Mariner-Tomey, 1994; Spellbring, 1991).

In keeping with Orem's theory, the goal of patient teaching/education, is to transfer information to the individual(s). This is done with the hope that it will be incorporated into their health behavior to improve their potential for positive health outcomes. The goal is for it to be put to use by the person receiving the information (Falvo, 1994).

Another model developed by Sister Callista Roy, integrated teaching-learning principles in the context of patient counseling. She described how nurse practitioners can utilize their skills of assessment, intervention and evaluation to assist the person to develop coping, adaptive skills through the environment to achieve wellness (Mariner-Tomey, 1994).

In summary, nursing theories and frameworks recognize the legitimacy of teaching as basic to the nursing role. NPs bring this part of their traditional nursing role to helping patients stop tobacco use.

### Tobacco Cessation Strategies

The review of literature is voluminous in the area of treatment strategies regarding tobacco cessation. Multiple researchers cite similar authored references which address clinical implications for health care providers (HCP) concerning tobacco cessation techniques. The most widely cited reference used in the clinical setting is the Clinician's Handbook of Preventive Services: Put Prevention Into Practice (USPTF, 1996).

A summary of the cessation interventions for all types of tobacco use recommended in the literature is outlined. Tobacco cessation strategies incorporate "the four A's": assessment (asking), advising (counseling), assisting (intervention), and arrangement for followup (Edmunds & Jones, 1995; Fiore, 1991; Frank & Jaen, 1993; Manley, Epps, Husten, Glynn & Shopland, 1991; Wong, 1993). Some references refer to five "A" strategies, which a) includes an additional first step referred to as "addressing the topic of tobacco use" (AHCPR Smoking Cessation Guideline, 1996), or b) adding a middle step between advising and assisting, referred to as "identifying smokers willing to make an attempt to quit" (Prochaska & Goldstein, 1991). In either case, the approaches and outcomes are the same. Research recommends individualized approaches which are tailored to meet each patient's needs. Literature corroborates evidence that intervention methods which simply provided educational materials were not as effective in altering the behaviors of patients towards tobacco cessation compared to direct interactions and multicomponent strategies utilized between HCPs and patients (Edmunds, et al., 1995; Wong, 1993). Multicomponent tobacco cessation strategies incorporating repeated health care provider advice, behavioral techniques, self-help materials, psychosocial support, pharmacological therapy, and followup have achieved higher rates of success towards tobacco cessation (Caplan, 1995; Lichtenstein, et al., 1994; Kottke, Battista, DeFreise & Brekke, 1988).

Assessment and documentation of tobacco use is the first step HCPs should perform for every patient at every visit. Assessment involves obtaining a history of tobacco use, quit attempts, knowledge of health risks, rationale for using tobacco, determining the patient's stage for cessation, and asking about fears and concerns about quitting. Behavioral determinants may incorporate smoking triggers, peer pressure and socialization, emotional dependence on tobacco, oral gratification, relaxation and stress reduction, and need for rewards. The five stages in the behavioral smoking-cessation process have been identified as pre-contemplation, contemplation, preparation, action, and maintenance (Prochaska & DiClemente, 1992; Prochaska et al., 1991). The Fagerstrom's Test for Nicotine



Dependence is reported to be a useful tool to assist the HCP in making these assessments (Caplan, 1995).

Advising (counseling) includes providing information and correcting misunderstandings about tobacco, identifying personalized risks and benefits, and urging the patient to quit. Patient education is recommended to be conducted at every patient encounter, and should reflect individual needs and strengths, setting goals that are realistic, achievable, and most meaningful to the individual (Falvo, 1994).

Assistance (intervention) engages the HCP to help the patient in setting a quit date, identifying barriers, providing resources and supplemental materials, teaching cessation skills, and referring to specialized programs. In providing intervention, techniques which have been identified in the literature to be equally important are both pharmacologic therapies, such as nicotine polacrilex gum or nicotine transdermal patches, and nonpharmacologic therapies, such as aversive conditioning, hypnosis, acupuncture, behavior modification, among other methods (Alexander, 1988; Edmunds et al., 1995; Fiore, 1991; Merrill, 1995; Smoking Cessation Guideline Panel, 1996; Wong, 1993).

Arranging followup entails contacting the patient after setting a quit date, during and after cessation efforts at various intervals. Reassurance and interventions should be given regarding potential relapse occurrence. Relapse prevention interventions related to weight gain, emotional stressors or depression, prolonged withdrawal symptoms, and lack of support for cessation need to be addressed.

Tobacco cessation activities may fall short of meeting the goals of reducing tobacco use for various reasons. These reasons may be intrinsic to the patient, or they may be extrinsic to environmental factors that might hinder or facilitate cessation activities. It is not within the scope of this research to describe all barriers which may exist, but to describe barriers which may most influence effectiveness of tobacco cessation activities.

McIlvain, Susman, Manners, Davis and Gilbert (1992) conducted a blind study that demonstrated that educational preparation of resident physicians was directly related to improved perceptions of competency, but showed little relationship to prevalence of

tobacco cessation activities over time. Twenty-eight medical residents participated in an education tobacco cessation program. Interviews with 517 smokers revealed an increase in counseling by residents at the three-month followup after the education program, with a regression at the six-month followup. Prevalence of activities dropped even with the use of formatted chart prompting. The study also found that increased number of patients seen per day reduced frequency of cessation efforts, while prior patient contact positively influenced the frequency of tobacco counseling (McIlvain, et al., 1992). Research conducted did not reveal any similarities for NPs, although similar conclusions could be assumed with regards to increased competency associated with educational preparation regarding tobacco issues. The researchers believed that system factors (variables within the clinical setting) may play an important role in long-term behavior change in the HCP.

How do we know that tobacco cessation guidelines will necessarily lead to improved patient care? Evidence regarding strong support of tobacco guidelines may not predict implementation of the guidelines into practice. A study conducted by Conway, Hurtado & Woodruff (1996) surveyed 2,287 U.S. Navy HCPs regarding patient care practices and attitudes related to tobacco use. HCP survey responses identified the following attitudes or perceptions: a) time could be better spent doing other things than trying to reduce tobacco use in patients, b) most people will not give up tobacco even if their HCP tells them to, and c) it is the HCP's responsibility to help patients who wish to stop using tobacco as well as to convince patients to stop tobacco use. The NP group (93.4%) when compared to all other HCP groups (85.1%) reported stronger agreement that providers are responsible in helping patients regarding tobacco prevention and cessation. Fifty-three percent of the NPs also reported less agreement that most people will not quit even with advice and that time could be better spent doing other things when compared to all other HCP groups (78.9%). Overall, NPs were more optimistic and had more positive attitudes towards tobacco cessation activities than other HCP groups (Conway, et al, 1996). Even the smallest of interventions over time may produce success.



This knowledge should provide encouragement to HCPs who often are discouraged by low success rates in counseling patients to stop tobacco use.

In summary, the literature reviewed supports how adverse health effects of tobacco correlates to the ever rising costs of health care services. Tobacco use places individuals at risk for many types of disease and cancers. Studies support the relationship between tobacco use and reduced productivity and physical fitness. Statistics show that rates of all forms of tobacco use among military members remain well above the Healthy People 2000 Objectives goal of 4.0% for tobacco use. Department of Defense surveys identified groups at increased risk and associated variables within the military population. Recent military statistics reported higher tobacco use than civilian counterparts, and that smokeless tobacco use is perceived as less detrimental to health. Attempts towards successful tobacco cessation in the military have historically been demonstrated to be poor, thus supporting the need for more efficient military health promotion and tobacco cessation activities. Military health promotion and tobacco cessation programs require multifaceted intervention strategies and support at all levels. Military NPs function as health promotion advocates, exerting vital energies required for a healthier military. NP health promotion activities are driven by behavioral theorists Bandura, Orem, Sister Callista Roy, and Pender. Understanding the multiple behavioral and sociocultural components of health behaviors is complex and requires separate research. Tobacco cessation strategies, available throughout various literature sources, outline techniques HCPs can utilize with patients for reducing tobacco use.

In chapter three, methodology used in this study will be discussed.

## CHAPTER THREE: METHODOLOGY

The purpose of this study is to describe health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners. This chapter describes the methodology of the study: the research design, tool development and instrumentation, validity and reliability testing, protection of human rights, and sampling. The identified population for this study was Air Force Nurse Practitioners (NPs).

The following research questions were addressed: 1) What health promotion activities do Air Force NPs provide with regards to assessment (screening), counseling, intervention and followup for tobacco cessation for clients, 2) How often do Air Force NPs provide health promotion activities with regards to assessment (screening), counseling, intervention, and followup for clients using tobacco products, 3) What resources are present to the NP regarding tobacco cessation with regards to clinical settings, clinical practice activities, and what resources are available to clients regarding tobacco use, 4) What were NPs taught about tobacco cessation activities, and 5) What are NP's attitudes towards providing tobacco cessation counseling.

### Research Design

A descriptive research design was implemented in order to describe health promotion activities related to tobacco prevention and cessation utilized by Air Force Nurse Practitioners. Accordingly, the description of data lead to an interpretation of the findings, development of conclusions, and potential for further research.

Descriptive statistics were generated to summarize the data and provide response frequencies, percentages, and means of the total. The percentage used in this study is the percentage calculated from responses with missing data omitted. This percentage is called valid percentage in the Statistical Packages for the Social Sciences (SPSS) program.



### Instrumentation: Tool Development and Design

The initial steps in conducting this study was to develop and finalize a tool to be mailed to a sample of Air Force NPs. To accurately obtain information regarding the research questions, a tool was developed based on a thorough literature review of demonstrated tobacco cessation strategies that are anticipated to be most successful for health care providers in the clinical setting (Alexander, 1988; Edmunds et al., 1995; Frank et al., 1993; Manley, et al., 1991; PHS, USDHHS, 1994; Smoking Cessation Guideline Panel, 1996; USDHHS, PHS, CDC & NCHS, 1995; Wong, 1993). However, an assessment tool was not found in the literature which specifically addressed tobacco cessation activities of NPs. Although literature indicated NPs provide more patient education than physicians (Brown et al., 1987; Clawson et al., 1993; Zahnd, et al., 1990), references did not indicate whether military NPs actually performed specific tobacco cessation activities in their clinical setting. The major teaching-learning principles of assessment, advising (counseling), assistance (intervention), and arrangement of followup were also used in questionnaire development.

The questionnaire consisted of four parts. See Appendix C. Part One requested demographic data to include age, gender, years worked as NP, years worked as a military member, practice specialty, and geographic location. This data is relevant to the role of the nurse practitioner functioning within the military health care setting. Age and gender was commonly obtained to describe the sample. It is possible that age and gender may also play a role in NP attitudes regarding tobacco use. NP specialties were asked to obtain equal sampling size for each specialty. Different patient populations require different tobacco cessation strategies and approaches. An example would be differences between pediatrics, adult, or women's health issues. Geographic location was originally included in the questionnaire when the sample was to be mailed to NPs in the overseas arena.

Part Two addressed clinical practice setting. This section incorporated a large number of variables addressing both the resources available to NP's and the resources available to patients regarding what extent and how often tobacco cessation activities occur

in the clinical practice setting. In this section NP's were asked to describe 1) their duty station facility services (size of hospital, outpatient services, teaching facility or trauma center), 2) what common duties NPs perform, 3) what percent of their clinical practice used tobacco products, 4) the average number of patients seen per day, 5) the frequency interval and length of appointments time, 6) the time spent during patient visits for tobacco education, 7) the availability of tobacco information to patients, and 8) the availability, location, frequency, and length of non-military and military cessation programs. The literature shows the above variables may be directly or indirectly correlated to the success of health promotion activities.

Part Three seeks information concerning the educational preparation of NPs regarding the topic of tobacco cessation. Respondents were asked how they learned about tobacco cessation. Learning may occur not only within a formal program of instruction, but also within various settings, such as through continuing education workshops, conferences, or through self-learning. This section also queried the respondents about their perceived knowledge and skill level for providing tobacco cessation care. Obtaining data regarding the NP's educational preparation and perceived knowledge is important when understanding how the NP role as educator promotes health regarding tobacco issues (Kaplun, 1992; Orem, 1995). These questions are based on the principles of teaching-learning.

Part Four requested data about what actual tobacco cessation activities are performed by the NP during the patient encounter, and what perceived feelings NPs have towards providing tobacco cessation counseling. Attitudes of the health care provider may influence how successful they are in providing tobacco cessation activities to those patients who use tobacco products. Again, teaching-learning principles suggest that how the NP views the patient's underlying behavioral components for personal health may impact how the NP directs his/her efforts toward tobacco cessation activities (Krause, 1995; Pender et al., 1987; Sparks, 1995).



## Instrumentation: Validity and Reliability

### Validity Testing:

Validity pertains to the extent to which the tool actually reflects the problem being measured. Evidence for content validity of the newly developed questionnaire was obtained by utilizing an informal review panel of two experienced nurse practitioners who evaluated the tool. Both experts had a master's degree with research experience, clinical experience in tobacco cessation activities, and a minimum of five year's experience as a nurse practitioner. Members of the panel were selected through referral from the Graduate School of Nursing staff at the Uniformed Services University of the Health Sciences. Based upon reviewer recommendations, revisions to the original questionnaire were made with regards to question format. Type set was reset for improved readability. Categories describing tobacco cessation activities were clarified. The question asking years worked as a registered nurse was found to be irrelevant and was deleted. Federal guidelines govern where military NPs should practice, so therefore questions concerning specific clinical practice settings were recategorized and simplified. Questions concerning NP attitudes towards tobacco cessation counseling were restructured to avoid judgemental implications. The underlying content of each question remained unchanged. A numeric value, reflecting the level of content-related validity, was measured by using a content validity index developed by Waltz and Bausell (1981) (Burns & Grove, 1993). The finding showed the validity rating to be 0.83. This score was determined to reflect validity in the tool.

### Reliability Testing:

Reliability is concerned with how consistently the tool measures variables relating to the research problem (Burns et al., 1993). For this study, test-retest reliability was performed in order to elicit information regarding the consistency of the measured responses over time. The participants were selected from the Uniformed Services University of the Health Sciences alumni and faculty. The instrument was administered to ten (10) Air Force nurse practitioners on two separate occasions, two weeks apart. Scores

were compared by computing a percent agreement between the two sets of scores. Of the original mailing, six (6) questionnaires were completed, with a return of four (4) from the second mailing. The percent agreement for this tool was 92% with a two week interval between the first and second time of completion of the questionnaires. The results provided supporting evidence for use of the tool with the military NP population.

Institutional Review Board (IRB) authorization was obtained through the research office of the Uniformed Services University of the Health Sciences (USUHS). IRB authorization for a tri-service study was delayed by more than three (3) months. The researcher was unable to meet the multiple and complex requirements involving multiple DoD departments. Due to severe time constraints, survey approval was sought only for military nurse practitioners in the Air Force. An Air Force survey number was easily obtained through the personnel office. A further delay of four weeks occurred in obtaining the most current active duty Air Force military nurse practitioner mailing listing from the Air Force Freedom of Information Act office. Because of time constraints, the researcher was prompted by the research committee members to utilize the older 1995 mailing list obtained from the service personnel office by an alumni member of the USUHS Graduate School of Nursing.

#### Protection of Human Rights

This study did not involve patient contact of any nature. Participant names were known to the researcher for mailing purposes only. The respondents returned completed questionnaires anonymously via a self-addressed, stamped envelope provided. Participants could withdraw from the study simply by not returning the questionnaire. A returned completed questionnaire was taken as evidence of permission to participate. There were no risks to nonparticipants and no direct benefits to participants. Indirectly, it is hoped that all will benefit educationally from the research conducted.

Anonymity was also maintained by not marking identifying information on the questionnaire by either the researcher nor the participant. No followup was attempted.



Data was reported as aggregate data and no individual could be identified through their responses. See Appendixes A and B for NP and Privacy Act cover letters to participants.

### Sample

The target population consisted of active duty nurse practitioners within the Air Force. The sampling criteria were nurse practitioners currently practicing in one of the following specialty areas: pediatrics, adult, womens' health, family, or primary care. Due to unequal specialty representation, the sampling plan was to stratify and randomly choose equal numbers from each specialty, selecting all of the participants in specialties having the smallest number represented and an equal number of participants from specialties having the largest number represented. Participants eliminated from the sample had incomplete addresses, were identified as a nurse midwife, clinical specialists, or as a student NP, or had addresses outside the United States.

The questionnaire was mailed to 142 Air Force NPs, from a total 177 of prospective participants obtained from a 1995 mailing list provided by the Air Force personnel office. Every potential participant on the personnel list had the opportunity to be selected into the study. A response date of three (3) weeks was requested. NPs selected for the validity and reliability testing were excluded from the sample. An accompanying cover letter explained the purpose of the research along with protection of human rights. Only 47 questionnaires were returned completed, for a response rate of 33.0%.

Variables were coded for computerized data entry and analysis. The Statistical Packages for the Social Sciences (SPSS) computer program was utilized which generated statistics that summarized descriptively large quantities of data into meaningful frequency distributions, measuring variability, and interpreting raw scores into valid percentages. Table 3 lists the potential participants from which the actual stratified sample was drawn.

Table 3

Description of Sample by Nurse Practitioner Specialty Identifying Target Population.  
Stratified Random Sample, Percentage of Target Population.

NP Specialty	Target Population	Stratified Sample	% of N (N = 206)
Pediatric NP	74	68	91.8%
Women's Health NP	97	68	70.1%
Primary Care NP	3	3	100.0%
Adult NP	1	1	100.0%
Family NP	2	2	100.0%
Internal Medicine NP	0	0	0.0%
Totals	177	142	80.2%

Note. %= Valid percentages; N= Number of responses.

### Summary

This descriptive study was designed to gain more information about tobacco related interventions and activities of nurse practitioners. Teacher-learner principles support using a questionnaire as a strategy for describing health promotion activities of military NP's regarding tobacco cessation. The questionnaire was a researcher-developed self-reporting tool used to obtain data as described in a single sample. The selected sample was stratified and randomized to permit adequate representation of the nurse practitioner's specialty area. Content-related validity of the instrument was determined through an informal review panel of experienced nurse practitioners. Preliminary data was collected using a pilot study to verify instrument validity and reliability with the population for this study. Human rights were protected through the use of anonymous questionnaire responses. Chapter four of this study presents an analysis of the data collected in the questionnaire.



## CHAPTER FOUR: DATA ANALYSIS

The purpose of this study was to describe the health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners (NPs). This chapter describes the sample size, demographics, clinical practice setting, NP education, and tobacco cessation activities utilized by Air Force NPs.

The methodology for this study consisted of using a descriptive design for a single sample to explore real life phenomena and to generate new knowledge in an area of limited research. Conceptual teacher-learner principles were used when referring to the NP as educator and patient as learner. These principles may interface with the many facets of the health promotion process. By describing and identifying health promotion activities of NP's regarding tobacco cessation and potential variables influencing this process, theoretical meaning may be given to the findings. Further research may be applied to enhance correlational understanding of the stated variables.

### Sample

A total of 142 questionnaires were mailed. A total of 49 questionnaires were returned, for a 34.5% response rate. Six (6) questionnaires were returned after the collection deadline (4.2%) and were not included in the data analysis. Eighty-seven (87) questionnaires were returned undeliverable (61.3%). Of the returned completed questionnaires, two were unusable because the respondents were no longer NPs. Therefore, data analysis was compiled from the 47 (33.0%) completed questionnaires returned by currently practicing NPs. Because of the anonymity of the questionnaire, respondents who chose not to return the questionnaire could not be identified; therefore, it could not be ascertained if the respondents were different from the nonrespondents. Also, no followup strategies could be implemented to encourage questionnaire return.

The data was summarized to describe the sample demographics and to respond to the research questions.

## Demographics

Table 4 summarizes the demographic data obtained from the military NPs. The age of respondents ranged from 33 to 55 years of age. The mean age was 40.48. Ninety-seven percent (97.9%; N=46) of the respondents were female, with one respondent electing not to answer. All reported to be female, with the exception of one non-answer. Geographic location was limited to those NPs located in the United States.

Table 4

### Demographics of Air Force Nurse Practitioners Who Participated in the Study According to Age and Gender

Demographic Variables	N	Percent
<b>Age:</b>		
33-38	17	36.3%
39-44	21	44.8%
45-55	9	19.1%
<b>Gender</b>		
Female	46	97.9%
Male	0	0.0%
Missing data	1	2.1%

Note. Percent= Valid percentages; N= Frequency of response.

Specific employment history was limited to the number of years worked in the military and the number of years worked as NP. Respondents worked in the military from 3 to 22 years (N=47), averaging 13.4 years. Years worked as a NP ranged from less than one (1) year to 22 years (N=47), averaging 8.2 years. Only 9 of the respondents (19.1%) reported they had prior or current facilitator experience in tobacco cessation programs.



The participants were asked their area of clinical specialty. The response rate for each specialty are summarized in Table 5.

Table 5.

Clinical Specialties of Air Force Nurse Practitioners Who Participated in the Study

Clinical Specialties	N	Percent
Pediatric	22	46.8%
Women's Health	22	46.8%
Primary Care	1	2.1%
Adult	1	2.1%
Family	3	6.4%
Emergency Room	1	2.1%

Note. Percent= Valid percentages; N= Frequency of response. Some respondents gave more than one answer.

Research Questions

Research question one asked what health promotion activities do Air Force NPs provide in the clinical setting regarding tobacco cessation. Missing data ranged from 2.1% (N=1) to 6.3% (N=3) for all items in the four categories.

The tobacco cessation activities that NPs were reported to perform included assessment (screening), counseling, intervention, and followup. Screening activities reported were giving a clinic questionnaire, asking about tobacco use, assessing readiness to quit, and chart documentation. Reported activities involving counseling were for tobacco products, health effects/risks, withdrawal symptoms, and stages of tobacco cessation. Intervention activities were reported to be providing literature, negotiating a quit date, referral to a program, and nicotine gum/patch prescription. Followup activities reported by participants were phone calls, appointments after program completion, and relapse prevention. Refer to Table 6.

Research question two asked how often Air Force NPs provide tobacco cessation activities. Missing data consisted of 1-3 responses for each of the four categories. NPs were asked to rank how often they provided screening (assessment), counseling, intervention, and followup for all patients independent of tobacco use in a four item likert scale (1= never to 4= always). For the category screening for tobacco use, the mean responses were 2.73 for use of a clinic questionnaire, 3.44 for asked about tobacco use, 2.47 for assessed readiness to quit, and 3.14 for documented tobacco use in the chart. For the category concerning tobacco cessation counseling, the mean responses were 2.89 for tobacco products, 3.19 for health effects and risks, 2.0 for withdrawal symptoms, and 1.67 for stages of tobacco cessation. For the category concerning tobacco cessation intervention, the mean responses were 2.14 for providing written literature, 1.39 for negotiating quit dates, 3.07 for referral to a tobacco cessation program, 1.25 for nicotine gum prescription, and 1.21 for nicotine patch prescriptions. For the category regarding followup, the mean responses were 1.16 for provided phone call after tobacco cessation program enrollment, 1.22 for making appointment after program completion, and 1.13 for relapse prevention followup. Table 6 illustrates the percentage and number of responses.

Research question three asked what resources are present regarding tobacco cessation. Variables identified were duty station facility services, duties common to NPs, percent of clinical practice using tobacco products, average number of patients seen per day, time allotted for patient visits, time allotted and spent for patient tobacco cessation education, waiting time to enter tobacco cessation programs, location and type of tobacco cessation information available to patients, and descriptions of non-military and military tobacco cessation programs.

Findings showed that the majority of NPs were stationed at duty facilities which provided either a less than 50 bed hospital (40.4%, N=19), or an outpatient setting only (38.3%, N=18). The remainder of NPs were stationed at facilities providing the following services: 50-149 bed hospital (14.9%, N=7), teaching hospital (10.6%, N=5), greater than 150 bed hospital (8.5%, N=4), and trauma center (2.1%, N=1).



Table 6

Percentage and Frequency of Responses for Tobacco Cessation Activities Reported by Air Force Nurse Practitioners

	<u>Never</u> % (N)	<u>Sometimes</u> % (N)	<u>Often</u> % (N)	<u>Always</u> % (N)
<u>Screening Activities</u>				
Clinic question	31.1 (14)	11.1 (5)	11.1 (5)	46.7 (21)
Ask about tobacco use	2.2 (1)	8.7 (4)	32.6 (15)	56.5 (26)
Assess Readiness to quit	17.8 (8)	40.0 (18)	20.0 (9)	22.2 (10)
Chart documentation	6.8 (3)	18.2 (8)	29.5 (13)	45.5 (20)
<u>Counseling Activities</u>				
Tobacco products	11.1 (5)	20.0 (9)	37.8 (17)	31.1 (14)
Health effects/risks	2.2 (1)	17.4 (8)	39.1 (18)	41.3 (19)
Withdrawal symptoms	33.3 (15)	42.2 (19)	15.6 (7)	8.9 (4)
Stages of tobacco cessation	55.6 (25)	31.1 (14)	4.4 (2)	8.9 (4)
<u>Intervention Activities</u>				
Provide written literature	34.9 (15)	23.3 (10)	34.9 (15)	7.0 (3)
Negotiate quit date	75.0 (33)	13.6 (6)	9.1 (4)	2.3 (1)
Referral to program	4.4 (2)	26.7 (12)	26.7 (12)	42.2 (19)
Nicorette gum Rx	86.4 (38)	6.8 (3)	2.3 (1)	4.5 (2)
Nicoderm patch Rx	86.4 (38)	9.1 (4)	2.3 (1)	2.3 (1)
<u>Followup Activities</u>				
Phone call program start	90.9 (40)	2.3 (1)	6.8 (3)	0.0 (0)
Appt post program	86.7 (39)	6.7 (3)	4.4 (2)	2.2 (1)
Relapse prevention	90.9 (40)	6.8 (3)	0.0 (0)	2.3 (1)

Note. %= Valid percentages, N= Frequency of response (in parentheses).

All NPs responded (N=47) to the question asking the percentage of duties performed over a period of one month. The average duties performed by NPs were found to be clinical (74.2%, ranging from 25% to 100%), patient education (11.2%, ranging from 0.0% to 50.0%), administrative (9.7%, ranging from 0.0% to 50.0%), staff education (2.7%, ranging from 0.0% to 20.0%), and research (0.68%, ranging from 0.0% to 10.0%). Other duties were identified as being a preceptor (20.0%, N=1), consultant (10.0%, N=2), serving on committees (5.0%, N=1), and working at a counseling center for student health (2.0%, N=1).

NPs perceived the greatest percentage of clinical practice utilizing tobacco products was 20.0% (N=8, valid percent of 19.0%). The range of percentages varied from 0.0% to 70.0%. Five respondents (10.6%) elected not to answer this question. NPs reported the number of patients seen during an eight hour period averaged 20-25 patients (50th percentile =22), with a range from 4 patients (N=1) to 40 patients (N=1).

Fifty-four percent of respondents (N=25), and 28.3% of respondents (N=28.3), stated that appointment lengths for new patients were 20 minutes and 15 minutes, respectively. The length of appointments for established patients averaged 17.6 minutes and for followup visits averaged 15.7 minutes. Length of appointments ranged from 4 minutes to 60 minutes, with written comments of examples representing uncomplicated followups (ear checks) or complicated followups (physicals, well baby exams, and obstetrical or gynecological exams or procedures).

Participants were queried as to whether there was adequate time for tobacco cessation education during each patient encounter. Of the four response options (never, sometimes, often, and always), the majority of respondents (47.7%) reported that "sometimes" there is adequate time for education during initial visits, followup visits (47.7%), and during visits relating to disease-related ailment (41.5%). See Table 7.

As can be seen in Table 8, the majority of NPs found they spent an average of 1-3 minutes discussing tobacco cessation with both new (mean= 3.05 minutes) and established



patients (mean= 2.22 minutes). Forty-one NPs responded to this question, 6 respondents left this question blank (12.8%).

Table 7

Patient Tobacco Cessation Education as Reported by Air Force Nurse Practitioners

Adequate Time	Never	Sometimes	Often	Always
	% (N)	% (N)	% (N)	% (N)
Initial Visit*	11.4% (5)	47.7% (21)	15.9% (7)	25.0% (11)
Followup visit*	9.1% (4)	47.7% (21)	20.5% (9)	22.7% (10)
Disease related visit**	12.2% (5)	41.5% (17)	17.1% (7)	29.3% (12)

Note. %= Valid percentages, N= Frequency of response (in parentheses). \* Three questionnaires with no response to this variable (6.4%). \*\* Six questionnaires with no response to this variable (12.8%).

Table 8

Time Spent by Military Nurse Practitioners on Tobacco Cessation Education for New and Established Patients

Time in Minutes	New Patient		Established Patient	
	N	%	N	%
0 - <1	4	9.8%	6	14.7%
1-3	24	58.5%	28	68.3%
4-6	10	24.4%	6	12.8%
7-10	3	7.3%	1	2.4%

Note. N= Frequency of response; % = valid percent.

NPs reported that the majority of tobacco prevention information available to patients is in the form of printed literature for the topics related to tobacco health risks (70.2%), cessation programs (61.7%), second-hand smoke (58.7%), and tobacco statistics

(45.7%). Varied responses occurred for each variable listed for the categories videos, none, and other. For the "other" category, written responses by NPs stated that tobacco statistics were available only through tobacco cessation classes, gum/patches were available only through over-the-counter (OTC) prescriptions or by attending tobacco cessation classes. One respondent (2.1%) wrote that information about smoking risks during pregnancy was available in printed literature. There was no missing data for this question. Table 9 summarizes the data obtained.

Locations of tobacco education information available to patients was reported by respondents to be in the waiting area (73.3%, N=33), the NP's office (43.5%, N= 20), in the exam room (34.8%, N= 16), and in other locations, not specified (28.3%, N= 13).

Table 9

Tobacco Prevention Information Available to Patients as Reported by Air Force Nurse Practitioners in Their Clinical Practice Setting

Educational Topic	Printed Lit.	Videos	None	Other
	% (N)	% (N)	% (N)	% (N)
Tobacco health risks	70.2 (33)	14.9 (7)	21.3 (10)	0 (0)
Tobacco statistics	45.7 (21)	10.9 (5)	26.1 (12)	2.2 (1)
Gum/patches	35.6 (16)	6.7 (3)	44.4 (20)	6.7 (3)
Cessation programs	61.7 (29)	14.9 (7)	14.9 (7)	14.9 (7)
Second-hand smoke	58.7 (27)	10.9 (5)	26.1 (12)	2.2 (1)
Other	8.7 (4)	0.0 (0)	10.9 (5)	0.0 (0)

Note. %= Valid percentages, N= Frequency of response (in parentheses).

Sixty-five percent (65.2%, N= 30) of respondents stated that the waiting time for patients to enter into a tobacco cessation program was not known, whereas only 19.6%



(N= 9) reported 1-4 weeks waiting time, 10.9% (N=5) reported 1-3 months waiting time, and 6.5% (N=3) reported walk-ins were accepted without appointment. Waiting times of three months or more were not reported by any respondent. One questionnaire had no responses marked for the entire question.

A large percentage of the respondents indicated that either non-military tobacco cessation programs were not available (40.4%, N=19) or that it was unknown whether non-military programs were available (44.7%, N= 21). If the NPs responded by checking none or unknown to this question, they were requested to skip further questions addressing non-military programs.

A small percentage of NPs stated that non-military programs were offered as group sessions (10.6%, N= 5), or as individual sessions (4.3%, N= 2). Of these responses, 2 NPs (4.3%) stated programs were either offered at the military clinic/medical facility on the installation or off the installation. Six NPs (12.8%) stated programs were offered at some other place on the military installation. Six NPs stated the programs were offered monthly (12.8%), 9 NPs (19.2%) reported program frequency of every 6 weeks (N=2) or every 2 weeks (N=7).

In contrast, the majority of NPs were knowledgeable about the availability of military tobacco cessation programs in the form of group sessions (87.2%, N=41) or individual sessions (23.4%, N=11). NPs who responded by answering that military programs were not available (2.1%, N= 1), or that it was unknown if military programs were available (10.6%, N= 5), were asked to skip further questions which addressed military programs. Military programs were offered at the military clinic/medical facility on the installation (46.5%, N=20), or offered at some other place on the installation (72.1%, N=31). Four NPs responded to both variables. There was 100.0% response that military programs were not offered off the installation.

A majority of respondents quantified how frequent military tobacco cessation programs were offered. There were eight missing data entries. Thirty-nine NPs (100.0%) reported that programs were offered at least annually. Twenty-four NPs (61.5%) reported

monthly programs, and 5 NP's (12.8%) reported quarterly programs. Nine NPs (23.1%) provided written answers that programs are offered every 6 months. The number of classes required to complete a military tobacco cessation program was reported by NPs to be 4 classes (4.9%, N=2), 6 classes (12.2%, N=5), and 8 classes (4.9%, N=2). There were 32 (78%) responses where the number of classes was unknown. Table 10 summarizes the data obtained regarding types, locations and occurrence rates for non-military and military tobacco cessation programs.

Table 10.

Comparison Between Types, Locations, and Occurrences of Non-Military and Military Tobacco Cessation Programs as Reported by Air Force Nurse Practitioners

	Non-Military		Military	
	N	%	N	%
<b>Types of Tobacco Cessation Program</b>				
Group sessions	5	10.6%	41	87.2%
Individual sessions	2	4.3%	11	23.4%
No sessions	19	40.4%	1	2.1%
Unknown	21	44.7%	5	10.6%
<b>Locations of Tobacco Cessation Program</b>				
Installation (clinic/medical facility)	2	4.3%	20	46.5%
Installation (other location)	6	12.8%	31	72.1%
Non-installation	2	4.3%	0	0.0%
<b>Frequency of Programs Offered</b>				
Monthly	6	12.8%	24	61.5%
Quarterly	0	0.0%	5	12.8%
Annually	0	0.0%	39	100.0%
Other	9	19.2%	9	23.1%

Note. N= Frequency of response; %= Valid percentage.



Research question four asked about NPs' educational preparation regarding tobacco cessation activities. The sections are broken into two main areas of study. The first area asked how NPs in general learned about tobacco cessation, and then asked what methods and topics regarding tobacco cessation were learned specifically in their NP program. The second area asked the NP to describe knowledge and skill levels relating to tobacco cessation activities. Multiple answers for each item for each variable were noted.

Learning not only happens in a formal educational setting, but can occur in other settings. Respondents were queried about where (how) they learned about tobacco cessation. Variables included undergraduate programs, nurse practitioner programs, continuing education provided by pharmaceutical companies, workshops, or conferences, and self-learned research. Additional selected learning opportunities reported by NPs (13.0%, N=6) included the wellness center, health promotions, and published literature, such as Put Prevention into Practice (PPIP). The most frequent opportunities for learning occurred in the nurse practitioner program (56.5%, N=26) and self-learned research (52.2%, N=24).

The most frequently occurring methods of learning in nurse practitioner programs reported by NPs were lectures varying from 10 minutes to 2 hours followed by reports of no methods, discussion, film, and role play. Topics that addressed tobacco cessation in the nurse practitioner programs identified by respondents were health behaviors followed by, counseling/advising, screening/evaluation, intervention, and management/followup. Five respondents answered "other" category without specifications. One NP had not remembered learning about tobacco cessation in the NP program attended over twenty years ago. Table 11 summarizes the findings obtained in descending order.

Table 11

Air Force Nurse Practitioner Education Preparation Regarding Tobacco Cessation

Education Variables	N	%
<b>Learning opportunities</b>		
NP program	26	56.5%
Self-learned research	24	52.2%
Undergrad. program	16	34.8%
Cont. educ. conference	12	26.1%
Cont. educ. workshop	11	23.9%
Other	6	13.0%
Cont. educ. pharm. co.	4	8.7%
<b>Methods used in NP Program</b>		
Lecture	26	56.5%
None	14	30.4%
Discussion	11	23.9%
Film	5	10.9%
Other	5	10.9%
Role play	1	2.2%
<b>Topics discussed in NP program</b>		
Health Behaviors	27	60.0%
Counseling/advising	26	57.8%
Screening/evaluation	24	53.3%
Intervention	13	28.9%
Management/Followup	9	20.0%
None	9	20.0%
Other	1	2.2%

Note. %= Valid percent; N= Frequency of response (in parentheses).



Air Force NPs were queried to describe their knowledge level regarding tobacco cessation activities based on a four item likert scale (1= no knowledge to 4= proficient knowledge). There was no missing data. The mean (average) knowledge was ranked from highest to lowest according to the range of responses. The most frequent scores were seen in both likert scale items 2 ("some") and 3 ("good"). Knowledge levels described under the item "good" in ranked order were tobacco health effects, types of tobacco use, health behaviors/beliefs, addictive characteristics (N=17), and Put Prevention into Practice. Knowledge levels described under the item "some knowledge" in ranked order were stages of tobacco cessation, tobacco use statistics, use of nicorette gum and nicoderm patch, patient resources available, tobacco dependency stages, addictive characteristics (N=17), Healthy People 2000 Objectives (see Table 12). Between 30.0% to 44.7% of responses described proficient knowledge level regarding tobacco health effects (44.7%), Put Prevention into Practice (38.3%), types of tobacco use (36.2%), health behaviors/beliefs (31.9%), and Healthy People 2000 Objectives (30.4%).

Table 12

Description of Knowledge Level Reported by Air Force Nurse Practitioners Regarding Tobacco Cessation Activities

Tobacco Cessation Activity	Mean	N	%	Mode (Likert Item)
Tobacco health effects	3.43	25	53.2%	3
Types of tobacco use	3.15	20	42.6%	3
Put prevention in practice	3.11	18	38.3%	4
Health behaviors/beliefs	2.98	18	38.3%	3
Addictive characteristics	2.89	17	37.0%	2
Healthy people 2000	2.65	16	34.8%	2
Patient resources available	2.64	22	46.8%	2
Use of nicoderm patch	2.62	22	46.8%	2
Use of nicorette gum	2.57	22	46.8%	2
Tobacco use statistics	2.55	22	46.8%	2
Stages of tobacco cessation	2.23	24	51.1%	2
Tobacco dependency stages	2.15	21	44.7%	2

Note. Mean= Average of response, from highest to lowest; N= Number of responses; %= Valid percentage; Mode= Most frequently occurring likert item response; Likert scale item: 1= Poor knowledge level, 2= fair knowledge level, 3= good knowledge level, 4= proficient knowledge level.

Similarly, respondents were asked to describe their skill level for providing tobacco cessation care using a four item likert scale (1= poor skill level to 4= excellent skill level). There were no missing data. Table 13 contains a listing of the skills ranked from highest to lowest according to the mean of response. The most frequent occurring score (mode) was reported for likert items 1 (poor) to 3 (fair). Less than 38.3% of respondents felt they had



excellent skill levels. A few respondents commented that prescribing nicotine gum or patch is done through cessation classes, or over-the-counter purchase is discussed. Two NPs commented that they have no credentialing for writing nicotine prescriptions (see Table 13).

Table 13.

Description of Skill Level Reported by Air Force Nurse Practitioners Regarding Tobacco Cessation Care

Tobacco Cessation Activity	Mean	N	%	Mode
				(Likert Item)
Discussing tobacco health effects	3.19	21	44.7%	3
Answering Questions	2.72	15	31.9%	3
Providing anticipatory guidance	2.64	17	36.2%	3
Assessing readiness to quit	2.40	22	46.8%	2
Counseling to quit	2.36	16	34.0%	2
Providing followup	1.75	23	52.3%	1
Prescribing nicorette gum	1.66	27	61.4%	1
Prescribing nicoderm patch	1.66	27	61.4%	1

Note. Mean= average of response, from highest to lowest; N= Frequency of response; %= Valid percentage; Mode= Most frequently occurring likert item response; Likert scale item: 1= Poor skill level, 2= Fair skill level, 3= Good skill level, 4= excellent skill level.

Research question five asked what are nurse practitioner's attitudes towards providing tobacco cessation counseling. NPs were requested to rate their responses on a five item likert scale (1= strongly disagree to 5= strongly agree). Respondents were asked to rate their extent of agreement with items regarding tobacco cessation counseling. The majority of respondents strongly disagreed that only patients having health risks need counseling (59.6%, N=28), disagreed that patients would not change tobacco habits despite

counseling (41.3%, N=19), agreed that tobacco users need long term followup after quitting (60.9%, N=28), and strongly agreed that counseling patients to quit is worth the effort (53.2%, N=25). The majority of uncertain responses fell under the variables stating that patients would not change despite counseling and long term followup is needed after quitting. Table 14 summarizes the data obtained.

Table 14

Air Force Nurse Practitioner Responses Regarding Attitudes Towards Providing Tobacco Cessation Counseling

	S.D.	D.	U.	A.	S.A.
Variables	% (N)	% (N)	% (N)	% (N)	% (N)
Pts. only with health risks need counseling	59.6 (28)	31.9 (15)	2.1 (1)	4.3 (2)	2.1 (1)
Pts. will not change despite counseling	30.4 (14)	41.3 (19)	17.4 (8)	10.9 (5)	0.0 (0)
Tobacco users need long-term F/U after quit	0.0 (0)	6.5 (3)	15.2 (7)	60.9 (28)	17.4 (8)
Counseling pts to quit is worth the effort	0.0 (0)	2.1 (1)	4.3 (2)	40.4 (19)	53.2 (25)

**Note.** %= Valid percentage; N= Frequency of response (in parentheses); S.D.= Strongly disagree; D.= Disagree; U.= Uncertain; A.= Agree; S.A.= Strongly Agree

### Summary

The purpose of this thesis was to describe the health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners. This chapter has presented a discussion of the sample, the demographics, and the data relevant to each research question.

The variables employed in the questionnaire elicited data pertaining to the Air Force NP's demographics, clinical practice setting, nurse practitioner education related to tobacco cessation, and nurse practitioner activities related to tobacco cessation. A description of the



data presented identified the frequency of responses, valid percentages, means and modes of the total for each of the identified variables. Because this was a descriptive study, no manipulation of the data, or correlational analyses were made. "Relationship among variables are identified to obtain an overall picture of the phenomenon being examined. Examination of types and degrees of relationships are not the primary purpose of descriptive study" (Burns et al., 1993).

Chapter five will provide a discussion of the data, and make recommendations for further research. Implications for education, and for military nurse practitioners will also be discussed.

## CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to describe health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners (NP). A descriptive research design was implemented. Correlational analyses were not done. Methodology consisted of developing a tool in the format of a questionnaire to query Air Force nurse practitioners about their tobacco cessation activities in the clinical setting. The questionnaire was tested for a content validity index of 0.83, providing supporting evidence for the content validity of the tool. A pilot study was conducted using test-retest methodology to obtain estimates of reliability and validity, and to test the data collection and analysis procedures. Using a test-retest procedure, estimates of stability were obtained. A 92.0% agreement provided supporting evidence of reliability for the use of the tool with a military NP population. Data was obtained from 47 of the 142 returned questionnaires, for a response rate of 33.0%.

### Conclusions

#### Sample

The sample was randomly selected and then stratified to present as equal a representation of the clinical specialties as possible. Historically, the Air Force has utilized adult, pediatric, and women's health nurse practitioners. In the past five years, the Air Force has initiated the utilization of family NPs. Inadvertently, an unequal representation of NP clinical specialty areas was unavoidable. The majority of participants selected were pediatric and women's health NPs, with the remainder of the sample including the total number for all family, adult, and primary care NPs.

Forty-seven questionnaires were returned by currently practicing NPs. A return rate of 33.0% reflects a limitation of this study. Rapid military personnel mobility is apparent from the undelivered questionnaires obtained from addresses on a mailing list one year old.



In addition, the complexity and length of the questionnaire could contribute to the lower response rate. This low response rate limits the generalizability of the findings.

### Demographics

The average Air Force NP age was 40. None of the respondents were less than 33 years of age and only 4 were older than 48 years of age. According to a study done by Hupcey (1993), the mean age of NPs in the state of Pennsylvania was 40, +/-8 years. As expected, it appears that the age of Air Force NPs are generally equivalent to civilian counterparts. The majority of the respondents were female which also corresponded to Hupcey's study (1993) reporting 93.0% of NPs being female.

The number of years respondents worked in the military averaged 13.4 years. Years worked as a NP ranged from less than 1 year to 22 years, averaging 8.2 years. Similar civilian findings by Hupcey (1993) correlated similar civilian findings of 1-15 years (+/-5 years), averaging 6 years experience. The questionnaire did not differentiate nor show correlation between what percentage of years worked as a NP were worked in the military setting. It could be contemplated that as the NP acquires more experience, both in and outside of the military system, the greater the knowledge and comfort level acquired regarding tobacco cessation education and resources available.

Nine out of 38 respondents reported prior or current experience as a facilitator in a tobacco cessation program. This data could reflect possible NP disinterest in this area, or limited time or resources to devote to this activity. Inadequate knowledge or skill levels may also be a factor as to why NPs are not involved. Other health professionals may already be involved as facilitators through the health and wellness centers or health promotion.

Limitations in the areas of clinical specialties may be, in part, governed by the military's perceived view of NP roles. Review of the literature supported that increased acceptance and integration of NPs in the civilian sector regarding health promotion and lowered health care costs may influence how the military perceives and utilizes NPs.

## Research Questions

Research question one. What health promotion activities related to tobacco cessation do Air Force NP's provide in the clinical setting?

Responses occurred for each item listed related to tobacco cessation strategies: screening, counseling, intervention, and followup. This finding demonstrated that Air Force NPs were to some degree aware of the current recommended practice guidelines as outlined in the literature, and the teaching-learning principles discussed in the conceptual framework. Types of NP activities related to tobacco cessation are in part governed by the military directives on tobacco use and the Healthy People 2000 Objectives. Not addressed in this study were the individual characteristics NPs contribute to the teacher role that may influence their methods of practice with patients who function as learners (Brown, et al., 1987).

Data indicated that not all activities are done during one appointment session, and only some are done consistently. The most prevalent tobacco cessation activities reported to be performed were assessing tobacco use by asking and documenting, counseling (advising) about tobacco products and health risks, intervening (assisting) through referral. The least prevalent activity was reported to be arranging followup. Time elements may indeed influence intervention and followup activities. Counseling about tobacco cessation involves addressing many sensitive topics, which may be uncomfortable to both the NP and patient. Established rapport with patients is essential in the education process.

Research question two. How often do Air Force NPs provide health promotion activities related to tobacco cessation in the clinical setting?

Respondents reported they were more inclined to screen for use by utilizing a questionnaire, by direct patient questioning, and through chart documentation. Researchers Brown and Waybrant (1987), Conway, et al. (1996), Crawford & Stahl (1995), and Smith (1992) supported these findings showing NPs are more attuned to health promotion issues by virtue of their education and nursing background. Two NPs wrote comments stating that questionnaires routinely used for routine gynecology appointments also contain items



requesting information about tobacco use. The greatest percentage of NPs reported that they "sometimes" assessed readiness to quit, whereas the greatest percentage of NPs indicated they "always" performed other listed screening activities. It is unclear whether NP's feel uneasy in this area, or whether time constraints during appointments are contributing factors.

Findings demonstrated that more counseling is provided for the topics of tobacco products and health effects/risks than for withdrawal symptoms and stages of tobacco cessation. This may reflect the NP's familiarity with tobacco products and health risks through prior personal life experiences, or through media advertisements. Discussing withdrawal symptoms or stages of tobacco cessation may be uncomfortable for both the NP and the patient. One respondent commented that "as a prior smoker, I resented when a health care provider 'harped about quitting'. This only caused me to become more embarrassed and furthered my resolve not to quit." The respondent also indicated that she believed smokers know how harmful smoking is to health.

The majority of respondents reported that they most often or always provided intervention activities by giving patients written literature or by referring the patient to a tobacco cessation program. These findings were expected as these interventions may be the least time consuming and the easiest to perform. Most NPs did not report negotiating or contracting with patients quit dates for tobacco cessation (75.0% response). The reasons seem unclear and may involve multiple, unknown, underlying behavioral components requiring further research as supported in the literature and conceptual framework. Interfering factors may also be related to time constraints during appointments, the assumption by the NP that the patient is in the pre/ contemplation stage of cessation, or existing incongruencies between NP's, and patient's value systems and expectations as stated by researchers Krause (1995), Pender & Pender (1987), Smith & Draper (1994), and Sparks (1995). The DoD WWS (1992) also addressed health risk perceptions as being an indicator associated with readiness for behavioral change, although

researchers Falvo (1994) and King (1994) indicated that motivation is probably the single greatest factor for predicting tobacco cessation.

Eighty-four respondents reported they never prescribed nicotine gum or patches. NPs commented that prescriptions could either be provided upon entering a cessation program or obtained over-the-counter. Many military pharmacies no longer offer the gum or patches. This additional expense to patients could influence tobacco cessation success rates. Further research may show a correlation between NP knowledge level of nicotine replacements and frequency of prescription writing.

It was not surprising to find that NPs rarely provided followup in regards to phone calls after program enrollment, appointments after program completion, or for relapse prevention. Findings in this study were supported by research conducted by Conway, et al., (1996) addressing Navy HCP tobacco cessation practices. Continuity of care may not be the case in all military health care settings. Patients are seen by many health care providers for various reasons, therefore, neither discussions regarding tobacco or followup may occur due to inherent factors of the military health care system. Respondents commented that there was little or no time available in a busy work day to make followup phone calls. Relapse prevention may be perceived with either positive or negative connotations by both the patient, health care provider or significant others.

Data findings suggest that pediatric NPs may have fewer patients using tobacco as compared to other NP specialties. Pediatric NPs commented that the questionnaire was not specific to the pediatric patient population. Parent education was viewed to be more significant. Therefore, tobacco cessation activities were perceived to be different.

Research question three. What resources are present regarding tobacco cessation?

The resources identified for this study were duty station facility services, duties most common to NPs, percent of clinical practice using tobacco products, average number of patients seen per day, time allotted for appointments, time allotted and spent for patient tobacco cessation education, waiting time to enter tobacco cessation programs, location and



types of tobacco cessation information available to patients, and descriptions of both non-military and military tobacco cessation programs. A discussion of variables follows.

The majority of Air Force NPs were stationed on installations having small sized hospitals and outpatient services (40.4% and 38.3%, respectively). This is consistent with the civilian setting as well in that Hupcey (1993) found NPs practiced most commonly in outpatient departments and in primary/ambulatory care settings.

The questionnaire asked respondents to describe the most common duties performed. Clinical duties related to direct patient care predominated. Several NPs reported they integrated patient education with clinical duties. Some NPs commented they thought both patient education and staff education was part of clinical duties.

The average perceived percentage of clients in their clinical practice reporting use of tobacco products was 20.0% (N=8). Five NPs elected not to answer this question. Based on the responses and written comments, the term "clinical practice" may have been misinterpreted. Some respondents thought "clinical practice" meant patient population, whereas other respondents thought clinical practice meant staff population. Additionally, smaller percentages reported may reflect pediatric NPs who stated the majority of their population using tobacco are parents, not patients. Data analysis was determined to be incomplete.

The amount of time spent on tobacco cessation education was reported by NPs to be brief. There may be a relationship between actual time given for patient education and frequency of appointments. Respondents reported seeing an average of 20-25 patients in an eight hour period. It would appear that the more patients seen in an eight hour day, the less time is spent on tobacco cessation issues. The majority of NPs reported they "sometimes" have adequate time for education during any type of appointment. Again, this finding may relate to the number of patients seen per day, the frequency of appointments, or the purpose of the patient's visit.

The majority of tobacco cessation information available to patients was in the form of printed literature for the following topics: health risks, statistics, cessation programs, and

second-hand smoke. The second most frequent response indicated that no information was available to patients for any tobacco topics. It is possible that respondents were not aware of information available. Information about nicotine gum or patches was either not available (44.4%) or was available as printed literature (35.6%). NPs commented that information is often provided by the health and wellness or health promotion centers on the installation. A few NPs often referred patients to the cessation programs for additional information. Many pediatric NPs commented that they often discussed second-hand smoke health risks with parents. It was unclear whether the categories for "none" or "other" meant no information was available or that it was unknown to respondents whether information was available. Two items for "other" category may be confusing in the table format, thus not providing accurate findings.

Tobacco information was found to be located in various settings. Respondents reported information is most commonly located in the waiting area, NP's office, and exam rooms. Thirteen respondents (28.3%) commented that information is in view throughout the hospitals, health and wellness centers, health promotion centers and in the family practice clinics in the form of posters or pamphlets. One respondent stated that business-type cards are given patients with programs offered and phone numbers. Although written literature may be the easiest method of intervention, Edmunds and Jones (1995) reported brief and direct interaction to be the most effective method to significantly reduce tobacco use among patients.

The waiting time for patients to enter into a tobacco cessation program was unknown to the majority of NP respondents (65.2%, N=30). No distinction in the questionnaire was made between non-military or military programs. Once a referral is made to a program, the waiting time may not be known to the referring NP unless patient followup is conducted or through direct inquiry by the NP. Waiting times may fluctuate due to the availability of spaces in the classes, and how often the programs are offered.

NPs were queried about what non-military versus military tobacco cessation programs are offered. Findings demonstrated that the majority of respondents were more



aware of military programs as compared to non-military programs with regards to what programs are available, location of programs, and offered frequency of programs.

Seventy-eight percent of respondents reported not knowing the program length, which may indicate the lack of coordinated efforts between organizations involved in tobacco cessation activities. Most military programs were reported to be group sessions and were either offered at the clinic or medical facility or some other location on the installation. No respondents answered that the military programs were offered off the installation. The data may indicate that these programs are military sponsored. Frequency of military programs appeared to vary from installation to installation, with respondents reporting monthly, quarterly, annually, or other (twice a year) frequencies.

In further analysis of the findings, the meaning of non-military and military became vague. Does the term "non-military" mean a civilian sponsored program? Does the term "military" mean a military sponsored program? The questionnaire did not identify programs military groups could attend. Are both military and non-military programs open to beneficiaries and non-beneficiaries?

To summarize, the availability of resources may directly or indirectly influence the success of health promotion activities related to tobacco cessation. As stated in the review of literature; tobacco cessation directives which are in part developed, coordinated, and supervised at the military DoD level are then given to each military service and respective installation commander to develop and implement according to the installation's requirements. There may be some differences in the types of tobacco cessation programs, the frequency that programs are offered, which organization provides the programs, and what specific funds are allocated.

Research question four. What were nurse practitioners taught about tobacco cessation activities? In describing how they learned about tobacco cessation, 46 respondents reported a variety of learning opportunities. Opportunities ranged from undergraduate programs, NP programs, continuing education (through pharmaceutical companies, workshops, or conferences), and self-learned research. Self-learned research is

considered to be ongoing, and may be related to on- the- job learning, journals, or other references. The items for continuing education through workshops and conferences may have had the same meaning for some respondents. Item for "other" were not explained by respondents in this study. It was believed that education through a formal program or on the job would be recent, and would therefore contain more tobacco cessation topics. Findings of 56.5% (N=26) for NP program and 52.2% (N=24) for self-learned research supported this belief.

Lecture and discussion format was reported by NPs to be the most common methods used that addressed tobacco cessation in their NP program. Some NPs commented the length of lectures in their programs ranged from 10 minutes to 2 hours. This was an expected finding considering the variety of program requirements throughout the country.

Fifty percent of respondents stated that the topics discussed in their NP program included screening/evaluation (53.3%, N=24), counseling/advising (57.8%, N=26), and health behaviors (60%, N=27). Less than 30% responded that intervention and management/followup was addressed in their program. Twenty percent (N=9) of respondents reported that no topics regarding tobacco cessation were addressed in their NP program; 30.4% (N=14) who reported that no methods were used in their NP program.

Findings revealed that the majority of respondents perceived knowledge level regarding tobacco cessation activities to be between "some knowledge" to "good knowledge". Similarly, respondents' perceived skill levels in providing tobacco cessation care averaged between "fair" to "good", except for the "poor" rating given to the variables prescribing gum/patches and followup.

Research question five. What are nurse practitioner's attitudes towards providing tobacco cessation counseling?

The majority of respondents strongly disagreed or disagreed that only patients having health risks needed counseling and that patients would not change despite counseling. Research findings reported by Brown, et al. (1987) provided evidence that



health promotion has been long viewed by NPs to be relevant for every person walking into their office and that counseling is most important part of the NP's role (Conway, et al., 1996).

Similarly, research by Brown and Waybrant (1987) and Conway, et al. (1996) support this study's findings showing that the majority of respondents either agreed or strongly agreed that tobacco users require some kind of followup to reduce relapse occurrence, and that counseling patients to quit is worth the effort. These findings may reflect perceived importance of responsibility and role of NPs in reducing patient tobacco use despite low success rates of cessation attempts reported in the literature review.

## Recommendations

### Implications for Further Research

This study supports the previous literature, but contributes new information regarding the specific challenges faced by military NPs. The research questions presented were all encompassing and involved a multitude of variables, therefore making the process of analyzing data and drawing conclusions tedious and complex. Information gathered in this study may provide a starting point for further research. Replication of this study addressing each research question separately is recommended to obtain more detailed, meaningful results.

Air Force NPs reported they performed all tobacco cessation activities as supported by the literature and teaching-learning principles. The question content was supported by the literature review. Due to the fact that the questionnaire was lengthy, responses may not have been representative. How does stated performance compare to documented performance? How do work-related variables, attitudes, educational and skill levels, or behavioral components effect performance of activities? These are just a few issues that may enhance success rates for tobacco cessation. This study identified that differences in tobacco cessation strategies exist between different NP specialties. Perhaps additional research could address NP specialties individually to gain more complete data.

Additional research is needed to evaluate the correlations between NP educational preparation in the area of tobacco cessation and NP's competencies in providing tobacco cessation activities. All respondents completed the section asking to describe knowledge and skill levels. Anonymity of the questionnaire may have reflected more honest responses. The information may indicate that more educational preparation and experience is needed. The study did not show the possible relationships between educational preparation, performance level, resources, or attitudes. Further research is recommended.

This study identified many resources that may influence or effect tobacco cessation activities. These findings are supported by the literature. By studying how certain groups of resources effect tobacco cessation, more complete data may be obtained. Defining and clarifying the specificities of tobacco cessation programs offered to military personnel is important in developing a better understanding of health promotion activities.

Understanding the possible relationships between tobacco cessation activities, clinical settings, patient load, and availability of patient resources is complex. The tool provided incomplete data regarding the identification of patient populations who use tobacco, and clinical versus teaching NP duties. Additional research may be needed to further define and investigate the specificities of tobacco cessation programs offered to military personnel.

Otaining tri-service approval for research of this type in a graduate level program caused many delays with regards to data collection. It is not recommended until the approval process at the DoD level involves fewer departmental layers and requirements.

### Implications for Education

The findings of this study suggest that tobacco cessation be incorporated in all nurse practitioner curricula either as separate lecture topics or through integraton along with disease related or health promotion/screening topics in order to improve intervention competencies. Military NPs have an additional responsibility over their civilian counterparts in providing health promotion activities for a specialized population during peacetime or during times of deployment. Conducting research on this topic has



broadened my knowledge level so that I might assist in the education process to other nurse practitioners through inservice presentations and through distribution of compiled literature regarding tobacco cessation clinical practice guidelines. Reaching greater numbers of NPs could also be accomplished through the presentation of the data in the military NP journal.

### Implications for Military Nurse Practitioners in Clinical Practice

Military nurse practitioners are in a prime position to be effective advocates and change agents for health promotion as the military implements new health care directives. Maintaining an optimally physically fit military is vital to the future of peace keeping missions. NPs are encouraged to take a more proactive role in finding out what tobacco cessation resources are available to patients, and then making the resources available to patients. NPs may actively need to bargain for longer patient appointments, more time for followup of patients for relapse prevention, and time to participate as tobacco cessation program facilitator. NPs could be resource managers in obtaining resources for use in the clinical setting. Attending tobacco cessation conferences or workshops may enhance knowledge and skill levels, and performance, thus having a positive effect on tobacco cessation rates.

### Summary

The purpose of this thesis was to describe the health promotion activities related to tobacco cessation utilized by Air Force nurse practitioners. A questionnaire was developed to gather the information. Tobacco cessation activities have relevance for all military nurse practitioners. Findings suggested that nurse practitioners are involved in multiple tobacco cessation activities in their clinical practice. Inconsistencies may exist between what and how often tobacco cessation activities are performed when compared to varied knowledge and skill levels, resources that may hinder or support tobacco cessation activities, and nurse practitioner attitudes toward individuals who use tobacco products. Recommendations for further research, for education and clinical practice are made.

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## APPENDIX A

January 10, 1997

### Nurse Practitioner Questionnaire Cover Letter

Dear Nurse Practitioner,

In the never-ending, ever-changing, exciting world of military health care, could you spare approximately twenty (20 minutes) of your time for "a penny for your thoughts"? Allow me to introduce myself and the purpose of this letter and accompanying questionnaire.

I am a graduate student in the family nurse practitioner program at the Uniformed Services University of the Health Sciences in Bethesda, MD. As part of my program requirements, a thesis must be completed. My thesis topic is titled: "A Descriptive Study of Health Promotion Activities Related to Tobacco Cessation Utilized by Military Nurse Practitioners".

You were selected randomly from a list of Air Force nurse practitioners provided by the United States Air Force service personnel office. The enclosed questionnaire requests information about your work experience as a nurse practitioner, your clinical practice setting, your educational preparation related to tobacco cessation, what methods of tobacco cessation intervention you use, and your views of success. While this study may not help you personally, it may provide useful information to help health care providers and the military improve health promotion. Please read the attached Privacy Act Statement. Should you desire results, please send a separate request.

This thesis research is conducted under the direction of Marilyn Edmunds, Ph.D., ANP. Should any questions or concerns arise, you may contact her at 301-295-1992.

In order to allow me to meet required deadlines, please return the questionnaire in the self-addressed stamped envelope by FEBRUARY 28, 1997.

I ask you to please take time to help me complete my education and to support research which may have an impact on the future of military health care. I thank you for your assistance and cooperation!

Sincerely,

Patricia L. Aken, Captain, USAF, NC  
4028-6 Ashwood Circle  
Andrews AFB, Maryland 20762

## APPENDIX B

### PRIVACY ACT STATEMENT

In accordance with the Privacy Act of 1974 (Public Law 93-579), this notice informs you of the purpose of the questionnaire and how the findings will be used. Please read it carefully.

Authority: 10 United States Code 451 note.

Principle Purpose: The purpose of this research is to gain information about what activities are provided by military nurse practitioners to active duty service members, dependents, and the retired population who use tobacco products, and what potential barriers may prevent adequate health promotion intervention. Describing tobacco cessation clinical practice activities may provide an understanding of the role of both the nurse practitioner and the military in promoting a healthier military population. The questionnaire results may also provide an opportunity for growth within the military service for health promotion and education. Findings will be reported as aggregate data and printed in a thesis manuscript available at the Uniformed Services University for the Health Sciences.

Routine Uses: None.

Disclosure: Providing information on this questionnaire is voluntary. There is no penalty if you choose not to respond. This study involves no physical risks or discomfort to you. Completion of the questionnaire implies consent to participate. However, maximum participation is encouraged so that the data will be complete and representative. Your questionnaire form will be treated as confidential. No coded identifying information is found on the questionnaire. Participants will remain anonymous throughout the study. Only group statistics will be reported.



## APPENDIX C

### Nurse Practitioner Tobacco Cessation Questionnaire

#### PART I: Demographic Data (Place a check for each question)

1. \_\_\_ Age
2. Sex: \_\_\_ M \_\_\_ F
3. \_\_\_ Years worked in the military
4. \_\_\_ Years worked as nurse practitioner (NP)
5. Currently practicing as a N.P.: \_\_\_ Yes \_\_\_ No  
*\* (if your answer is no to question 5, I thank you for your cooperation. Please return this questionnaire in the supplied return self-addressed stamped envelope.)*
6. Prior or current facilitator in a tobacco cessation program: \_\_\_ Yes \_\_\_ No
7. What is your area of clinical specialty in which you are working? (check all answers that apply):
  - \_\_\_ a. Pediatrics
  - \_\_\_ b. Women's Health
  - \_\_\_ c. Primary Care
  - \_\_\_ d. Adult
  - \_\_\_ e. Family
  - \_\_\_ f. Internal Medicine*If no item above applies, please state your specialty: \_\_\_\_\_*
8. What is your geographic location?: \_\_\_ In the U.S., \_\_\_ Outside the U.S.

#### PART II: Clinical Practice Setting

9. Describe your duty station facility services (Check all answers that apply):
  - \_\_\_ a. Hospital (> 150 beds)
  - \_\_\_ b. Hospital (50-149 beds)
  - \_\_\_ c. Hospital (< 50 beds)
  - \_\_\_ d. Outpatient Services only
  - \_\_\_ e. Teaching Hospital
  - \_\_\_ f. Trauma Center*If no item above applies, please describe your facility services on the line below:*  
\_\_\_\_\_
10. Below are listed six duties common to most nursing practice. Indicate what percentage of time each month is spent on each duty. Enter "0" for any duty that you do not perform. When you have entered the six percentages, please add them together to make sure that they total to 100%.
  - a. Clinical: \_\_\_\_\_ %
  - b. Administration: \_\_\_\_\_ %
  - c. Teaching: Staff education \_\_\_\_\_ %  
Patient education \_\_\_\_\_ %
  - d. Research: \_\_\_\_\_ %
  - e. Other: \_\_\_\_\_ % Please specify \_\_\_\_\_100%
11. What percentage of your clinical practice use tobacco products? \_\_\_\_\_ %.

## Nurse Practitioner Tobacco Cessation Questionnaire

12. Average number of patients seen per eight (8) hour period: \_\_\_\_\_
13. How much time does your facility allot for a patient visit? (*Place an answer for each item*):
- New patient? \_\_\_\_\_ minutes
  - Established patient? \_\_\_\_\_ minutes
  - Followup visit? \_\_\_\_\_ minutes
  - Other? \_\_\_\_\_ minutes *Please explain* \_\_\_\_\_
14. Is there adequate time for tobacco cessation education? (*Check one box for each item -- a through c*):
- |                                                | Never | Sometimes | Often | Always |
|------------------------------------------------|-------|-----------|-------|--------|
| a. During an initial visit?                    | _____ | _____     | _____ | _____  |
| b. During a followup visit?                    | _____ | _____     | _____ | _____  |
| c. During a visit for disease related ailment? | _____ | _____     | _____ | _____  |
15. How much time do you spend on tobacco cessation education for a:
- New Patient \_\_\_\_\_ minutes
  - Established Patient \_\_\_\_\_ minutes
16. What is the waiting time for a patient to enter into a tobacco cessation program? (*Check all answers that apply*):
- Walk-ins accepted without appointment
  - 1-6 days
  - 1-4 weeks
  - 1-3 months
  - Longer than 3 months
  - Not known
  - Other
17. What tobacco prevention information is available to the patients in your practice? (*Check all boxes that apply for each item -- a through f*):
- |                         | Printed literature | Videos | None  | Other |
|-------------------------|--------------------|--------|-------|-------|
| a. Tobacco health risks | _____              | _____  | _____ | _____ |
| b. Tobacco statistics   | _____              | _____  | _____ | _____ |
| c. Nicotine gum/patches | _____              | _____  | _____ | _____ |
| d. Cessation programs   | _____              | _____  | _____ | _____ |
| e. Second-hand smoke    | _____              | _____  | _____ | _____ |
| f. Other: (specify)     | _____              | _____  | _____ | _____ |
18. Where is tobacco education information available to patients? (*Check all answers that apply*):
- Waiting area
  - Exam room
  - NP's office
  - Other



## Nurse Practitioner Questionnaire

19. What non-military tobacco cessation programs are available at your duty facility? (Check all answers that apply):
- a. None --> Go to question 23
  - b. Unknown --> Go to question 23
  - c. Group sessions
  - d. Individual sessions
20. Where are non-military programs offered? (Check all answers that apply):
- a. At the military clinic or medical facility on the installation
  - b. At some other place on the installation
  - c. Off the installation
21. How often are non-military programs offered? (Check all answers that apply):
- a. Monthly
  - b. Quarterly
  - c. Annually
  - d. Other
22. How many classes are required to finish non-military programs?  Classes  
 Unknown
23. What military tobacco cessation programs are available at your duty facility? (Check all answers that apply):
- a. None --> Go to question 27
  - b. Unknown --> Go to question 27
  - c. Group sessions
  - d. Individual sessions
24. Where are military programs offered? (Check all answers that apply):
- a. At the military clinic or medical facility on the installation
  - b. At some other place on the installation
  - c. Off the installation
25. How often are military programs offered? (Check all answers that apply):
- a. Monthly
  - b. Quarterly
  - c. Annually
  - d. Other
26. How many classes are required to finish military programs?  Classes  
 Unknown
27. How did you learn about tobacco cessation? (check all answers that apply):
- a. Undergraduate program
  - b. Nurse practitioner program
  - c. Continuing educ. pharmaceutical Co.
  - d. Continuing education workshop
  - e. Continuing education conference
  - f. Self-learned research
  - g. Other (please Specify): \_\_\_\_\_

## Nurse Practitioner Questionnaire

28. What methods were used that addressed tobacco cessation in your nurse practitioner program?

(Check all answers that apply):

- a. Lecture; (Specify length) \_\_\_\_\_  
 b. Role Play  
 c. Discussion  
 d. Film  
 e. None  
 f. Other (Specify) \_\_\_\_\_

29. What topics that addressed tobacco cessation were discussed in your nurse practitioner program? (check all answers that apply):

- a. Screening/Evaluation  
 b. Counseling/Advising  
 c. Intervention  
 d. Management/Followup  
 e. Health behaviors  
 f. None  
 g. Other (Please Specify) \_\_\_\_\_

30. How would you describe your knowledge level for the following? (check one box for each item -- a through l):

	No Knowledge	Some Knowledge	Good Knowledge	Proficient Knowledge
a. Tobacco health effects				
b. Types of tobacco use				
c. Tobacco use statistics				
d. Healthy People 2000 Objectives				
e. Put Prevention into Practice				
f. Addictive characteristics				
g. Use of nicotine gum				
h. Use of nicotine patch				
i. Tobacco dependency stages				
j. Health behaviors/beliefs				
k. Stages of tobacco cessation				
l. Patient resources available				

31. What do you feel is your skill level for providing tobacco cessation care? (Check one box for each item -- a through h):

	Poor	Fair	Good	Excellent
a. Answering questions				
b. Providing anticipatory guidance				
c. Discussing health effects of tobacco				
d. Assessing readiness to quit				
e. Counseling to quit				
f. Prescribing nicotine gum				
g. Prescribing patch				
h. Providing followup				



## Nurse Practitioner Questionnaire

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**Please use the rest of this page to convey additional comments or questions you may have.  
Once again, your opinions are very valued and very important to this research project!!  
I thank you for your time and assistance!!**

Patricia L. Aken, Capt., USAF, NC

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Survey Approval Number is: USAF SCN-97-04 (Approved by USAF Survey Approval Office).