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A DESCRIPTIVE STUDY OF SMOKING BEHAVIOR AMONG AIR FORCE TRAINEES

Phoebe Carter Fisher, B.S., B.S.N.
The University of Texas
Health Science Center at Houston
School of Public Health, 1985

Supervising Professor: Alfonso H. Holguin, M.D., M.P.H.

A descriptive study to determine the magnitude and extent of cigarette smoking among Air Force trainees is proposed. Using random sampling techniques, 2500 recruits will be surveyed by questionnaire before and after six weeks of basic training at Lackland Air Force Base, Texas. Data will be analyzed in terms of gender-specific and overall smoking prevalence, as well as incidence of change at completion of the training period. Results will assist health personnel in planning interventions to decrease future Air Force morbidity and mortality associated with cigarette smoking.

A1

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The purpose of this questionnaire is to ascertain the value and/or contribution of research accomplished by students or faculty of the Air Force Institute of Technology (AU). It would be greatly appreciated if you would complete the following questionnaire and return it to:

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AUTHOR: Phoebe Carter Fisher

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5. AFIT welcomes any further comments you may have on the above questions, or any additional details concerning the current application, future potential, or other value of this research. Please use the bottom part of this questionnaire for your statement(s).

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STATEMENT(s):

A DESCRIPTIVE STUDY OF SMOKING BEHAVIOR AMONG AIR FORCE TRAINEES

By

Phoebe Carter Fisher, B.S., B.S.N

THESIS PROPOSAL

Presented to the Faculty of The University of Texas

Health Science Center at Houston

School of Public Health

in Partial Fulfillment

of the Requirements

for the Degree of

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THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
SCHOOL OF PUBLIC HEALTH
Houston, Texas
June 1985

A DESCRIPTIVE STUDY OF SMOKING BEHAVIOR AMONG AIR FORCE TRAINEES

By

Phoebe Carter Fisher, B.S, B.S.N.

APPROVED:

_____

Alfonso H. Holguin, M.D., M.P.H.

_____

Martin D. Werner, Ph.D.

ACKNOWLEDGEMENT

I would like to acknowledge with gratitude the invaluable assistance, advice, and guidance received from both Dr. Alfonso H. Holguin and Dr. Martin D. Werner in the preparation of this thesis proposal.

Submitted May 24, 1985

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CHAPTER I

INTRODUCTION

Review of the Literature

Much of the morbidity and mortality in the United States today is related to life style and behavior. One behavior in particular--smoking--has been implicated as a major risk factor in as many as a dozen conditions, among them cardiovascular disease, respiratory disease, and cancer (McGinnis, 1982). Smokers have a 70% higher overall death rate than nonsmokers; an excess of approximately 300,000 deaths a year occurs with regular tobacco use (Pub. Health Service, 1983).

Attempts to eradicate this "largest single remaining preventable cause of death and disease" (Stepney, 1984) have been only partially successful. While cigarette smoking in the United States for adults over the age of 21 has declined in recent years, there has been an apparent increase in smoking among the pre-adult population, especially among teenage girls (Masironi, 1983). Whether this trend is presently reversing itself has been debated in the literature (Mittelmark et al, 1982; Luoto, 1983). What is not disputed, however, is the strong evidence of higher overall mortality ratios for those who begin smoking at younger ages compared to those who start later in life (HEW, 1979). Consequently, irrespective of the present magnitude of

cigarette use among teens, early initiation of smoking remains a serious health problem in the United States today.

A statewide survey by Chen (1983) indicated that 50% of all current smokers in Ohio began their habit between the ages of 14-18. Data from a longitudinal study of 1300 New York adolescents support these findings; according to Kandel (1984), the period for highest risk of smoking initiation peaks at 18 and ends around the age of 20. After that time, individuals who have not already started smoking are unlikely to do so.

Why do teenagers start smoking? Several explanations have been offered. Peer pressure may play a major part in determining tobacco use (Evans, 1979); as McAllister and Perry (1979) suggest, peers tend to replace adults as sources of influence in early adolescence. Having a best friend or group of friends who smoke appears to be a good predictor of smoking in children, at least for fifth through twelfth grades (Levitt and Edwards, 1970). A related element may be social anxiety--smoking helps to promote social cohesion and reduce anxiety arising from social situations (Mausner, 1971). Other reasons range from physiological stimulation and pleasure to the desire to feel more mature by doing something "adult-like", as well as defiance of authority figures (Evans, 1979).

Most of the available data concerning psychosocial determinants of adolescent smoking, as Evans and colleagues

indicate, tend to be correlational in nature. Factors associated with smoking onset among teenagers include: employment outside the home, life changes such as parental absence or attending college, spending leisure time with mixed-sex peer groups or youth clubs (Evans et al, 1979), and having more money (Chen and Bill, 1983). Probably several of these elements act in concert to precipitate the onset of smoking.

Irregardless of cause, however, the youth who smokes heavily in adolescence begins a pattern which persists through adulthood and results in a behavior very resistant to change (Mittelmark et al, 1982). It would thus make good sense to focus primary efforts of prevention and dissuasion on individuals in the so-called "high-risk" age groups, rather than face the difficult and often futile task of getting adults to quit in the future.

A review of the literature reveals a higher prevalence of smoking among military than among civilian personnel. Seventy-two percent of 505 Naval enlistees were found to smoke in one study, 78% of 5153 enlistees in another (Burr, 1984). An Army study undertaken in 1980 indicated a 57% smoking rate, compared with the national average of 41% (Patton and Vogel, 1980). Little data is available regarding Air Force smoking habits, although in one survey of personnel at four Air Force bases, approximately 50% of all age groups were found to be smokers (Hatsell and Gaughan, 1983).

Relatively more is known about Air Force morbidity and mortality outcomes; among active duty members the primary medical cause of death is cardiovascular disease (CVD). One form of CVD, coronary heart disease (CHD), not only often results in early retirement and/or permanent disability, but in the process also deprives the Air Force of its core "middle managers" (Hatsell and Gaughan, 1983). It is estimated that up to 30% of deaths from CVD can be attributed to smoking (Public Health Service, 1984). With taxpayers paying more than $60 million annually to care for Air Force members with CHD and cardiovascular disease in general, thousands of dollars worth of hospital care, retirement, and death benefits could theoretically be saved--solely with cessation of smoking by Air Force personnel.

If smoking does occur to a greater extent in the military, and among Air Force members in particular, it would be useful to determine if these differences are related to some bias wherein more smokers than nonsmokers happen to be selected for military service initially, or if there might be factors in military training or lifestyle which influence the acquisition of the smoking habit. The former is an unlikely explanation, but at least one study suggested that smoking behavior increases within a year of military induction. In a major longitudinal investigation of drug habits of high school students, Johnston (1974) found a significantly higher use of both licit (including cigarettes and alcohol) and

illicit drugs among males joining the military after graduation. He hypothesized that the findings were partially explained by the relatively greater immersion in a "youth culture" than is experienced by civilian males working in the company of older adults.

Anecdotal information obtained from graduate Air Force recruits suggests an additional area to investigate, namely, that going through basic training itself may play a part in smoking initiation. It was hypothesized that smoking may be one mechanism used to cope with the stresses encountered in adaptation to military life. However, information from other groups of adolescents involved in similar life change circumstances have not consistently supported this hypothesis. For example, a study of student nurses shows a rise in tobacco use during the last year of training associated with concomitant changes in work routine and apparent added responsibilities (Murray et al, 1983). Vener and Krupka (1982), on the other hand, found no increase in smoking when comparing behavior of college students during exam week (a presumably stressful period) and other times of the semester. Another study of nurses working on hospital wards showed a change in smoking habits with high-stress situations, but the type of change was quite variable; some nurses smoked more, some less, and some quit entirely (Hillier, 1981).

Purpose of Proposed Research

The proposed study will determine the extent of smoking behavior prior to basic training, and changes in smoking behavior during training for a large sample of Air Force recruits. The basic training environment affords an excellent opportunity to measure health risk behaviors among individuals newly introduced to Air Force life. It also provides an ideal setting for modification of poor health practices, should results of this study indicate need for intervention.

In light of available information, objectives of this proposal are two-fold: first, to measure the prevalence of cigarette smoking among Air Force trainees entering basic training, and second, to determine the incidence of smoking increase or decrease during the six-week training period. Data obtained will be used to generate hypotheses regarding onset of smoking in the military population, and to determine the need for integrating risk behavior reduction programs into basic training curriculum.

CHAPTER II

METHODS

Coordination of Study

Air Force clearance through the Medical Service Center/SGP will be obtained before implementation of the study. Approval is anticipated because the proposal does not affect the health or well-being of trainees, and because information resulting from the study will be useful in assessing trainee risk for future disease.

Study Population

Approximately 60,000 Air Force trainees--50,000 males and 10,000 females--successfully complete the six-week basic training program each year at Lackland Air Force Base, Texas. Trainees are grouped by sex into "flights" or classes of 50. Age of trainees ranges from 17 to 35 years; most are 18-20 years old.

Sample Size

Two thousand (2000) males and five hundred (500) females were determined to provide an adequate sample size representative of the Air Force basic training population. From a purely statistical perspective, a sample size of 800-1000 would have sufficed (Lupin, 1982); however, in view of the relatively low costs associated with the study and the

increased reliability gained with greater numbers of subjects, the size of the sample was enlarged.

The larger sample size takes into consideration dropouts from the program, given a 6.2% overall failure rate for trainees. In addition, it permits relatively small alterations in smoking behavior to be detected, anticipating that the lowest incidence of smoking change between pre- and post-basic training will be 5 to 10%.

Sample Selection

Subjects are to be drawn from ten flights per month for five consecutive months. Flights will first be stratified by sex and then selected at random with the use of a three-digit random number table. A "batch" number will be assigned to each chosen flight for identification purposes. To maintain the proper proportion of males to females in the total trainee population, forty male flights and ten female flights will be chosen; all members of the selected flights will be encouraged to participate in the study. Trainees joining selected flights for any reason after onset of data collection will be excluded from the study.

Data

Information on gender and smoking behavior will be obtained by self-report using a simple questionnaire. A sample "computer-scanned" questionnaire form can be found in

appendix 1.

Questionnaires will be "linked" using social security numerals from pre- and post-training respondents; those with unmatched numerals will be considered "loss to follow-up" data and tabulated separately from the "smoker"/"nonsmoker" data.

The questionnaire itself will consist of four short-answer items. Question one will determine status of respondent in terms of smoking or nonsmoking. In question two, subjects will quantitate cigarette smoking by filling in a numerical estimation of daily cigarette consumption. Question three will identify sex of the subject, and the final question will ask trainees for the last six digits of their social security number. This is necessary to identify response information from subjects who drop out during the training period, and will not be used in any other manner to identify subjects.

Operational Definitions

A "smoker" will be defined as an individual smoking one or more cigarettes weekly. This definition is often employed in published surveys of smoking, and thus will permit meaningful comparison between this study and others.

"Change in smoking behavior" will be determined from linked records (see Data section regarding "linking"). This variable will be classified as: 1) "No Change" (status same

for pre- and post-training surveys), 2) "Smoking Initiated" (started smoking during training period), 3)"Smoking Ceased" (stopped smoking during training period), or 4) "Missing Values".

"At Risk" variables will also be examined by grouping numerical data into sub-categories of "At Less Risk" and "At Greater Risk" for morbidity/mortality, based on number of cigarettes smoked. The "At Less Risk" group will include all smokers of less than ten cigarettes daily; those smoking ten or more cigarettes will comprise the "At Greater Risk" group. Ten cigarettes was selected to divide the categories because, although there is generally a linear relationship between number of cigarettes smoked and illness (HEW, 1979), there is no essential difference in mortality risk between occasional cigarette smokers and non-cigarette smokers (Roget, 1974), and several studies suggest only small increments in morbidity/mortality risk until ten or more cigarettes (half a pack) are smoked daily (HEW,1979).

Plan of Data Collection

Subjects will be given the questionnaire to complete during normal "in-processing paperwork" sessions on the first day of training. Replies will be voluntary. A cover sheet (appendix 2) will be attached to each questionnaire and will briefly describe the purpose of the survey, as well as assure participants that their replies will be confidential. After

each flight's questionnaires are collected by "in-processing" personnel, they will be placed in a manila folder labelled with the batch number previously assigned to that flight and sent via base distribution to the Lackland Biostatistics Lab for tabulation.

Upon graduation, the sampled trainees will be given an identical questionnaire during the two-hour departure briefing scheduled by Air Force staff members. Responses will be collected by "out-processing" personnel and sent to the Biostatistics Lab in batches.

Data Processing

Batched questionnaire responses arriving at the Lackland Biostatistics Lab will be entered into the computer via Optical Scanning techniques. Two separate computer files will be created for pre- and post-training data. One computer-generated file will be developed by merging the data from the two surveys by training flight. Subsequently, individual records within these files will be combined according to social security numbers, resulting in a collated master file. The latter will serve as the basic record.

Data Analysis

Smoking habits of trainees will be analyzed both qualitatively and quantitatively.

Using data obtained from pre-training questionnaires,

the frequency and relative frequency of smoking and non-smoking will be calculated for male, female, and grouped values (table 1). The numerator for each proportion will be the number of smokers or nonsmokers in each group; denominators will be the "population surveyed" at that point in time.

TABLE 1-Frequency (Relative Frequency)* of Smokers by Training Period

	PRE-TRAINING			POST-TRAINING		
	SMOKERS	NONSMOKERS	TOTAL	SMOKERS	NONSMOKERS	TOTAL
MALES	( )	( )		( )	( )	
FEMALES	( )	( )		( )	( )	
GROUP	( )	( )		( )	( )	

* CALCULATED BY FORMULA: $\frac{\text{NUMBER OF SMOKERS (OR NONSMOKERS)}}{\text{"POPULATION SURVEYED"}}$

Incomplete questionnaire information will be tabulated under "Missing Values" (see table 2).

TABLE 2 - Frequency and Relative Frequency of Complete Questionnaire Data

	FREQUENCY	MISSING VALUES	RELATIVE FREQUENCY (%)*
MALES	2000		
FEMALES	500		
GROUP	2500		
SMOKERS			
NONSMOKERS			

* CALCULATED BY FORMULA: $\frac{\text{MISSING VALUES}}{\text{FREQUENCY IN EACH CELL}} \times 100$

Frequency and relative frequency of cigarettes smoked by each group will be calculated and displayed in table 3. The median grouped value, a measure of central location, will also be determined from these calculations for the entire sample, as well as for males and females. A "dummy"table showing male smoking distribution illustrates this procedure in table 4.

TABLE 3-Frequency (Relative Frequency) of Number of Cigarettes Smoked by Training Period

	PRE-TRAINING			POST-TRAINING		
	MALES	FEMALES	GROUP	MALES	FEMALES	GROUP
	F* (RF)**	F (RF)	F (RF)	F (RF)	F (RF)	F (RF)
0	( )	( )	( )	( )	( )	( )
1 - 4	( )	( )	( )	( )	( )	( )
5 - 9	( )	( )	( )	( )	( )	( )
10 - 14	( )	( )	( )	( )	( )	( )
15 - 20	( )	( )	( )	( )	( )	( )
OVER 20	( )	( )	( )	( )	( )	( )

* : FREQUENCY
** = RELATIVE FREQUENCY

TABLE 4-Determination of Median Grouped Value Using "Dummy" Male Smoking Distribution Data

	FREQUENCY	RELATIVE FREQUENCY	CUMULATIVE FREQUENCY
0	700	0.35	700
1 - 4	350	0.175	1050
5 - 9	200	0.10	1250
10 - 14	400	0.20	1650
15 - 20	225	0.113	1875
OVER 20	125	0.063	2000
TOTAL	2000		

FORMULA FOR APPROXIMATING THE MEDIAN FROM GROUPED DATA:

$$\text{GROUPED MEDIAN} = \left(\text{LOWER END POINT OF INTERVAL}\right) + \left(\frac{\text{INTERVAL LENGTH}}{\text{INTERVAL FREQ.}}\right) \times \left[\frac{N}{2} - \left(\text{CUM. FREQ. UP TO LOWER END POINT}\right)\right]$$

GROUPED MEDIAN VALUE FOR MALES: $(0) + (.014) (300) = 4.20$ • APPROXIMATELY 4 CIGARETTES

Frequency of "At Less Risk" and "At Greater Risk" will be determined and exhibited as in table 5.

TABLE 5-Frequency of Trainees in "At Less Risk"* and "At Greater Risk"* Categories of Smoking

	PRE-TRAINING AT RISK		POST-TRAINING AT RISK	
	LESS	GREATER	LESS	GREATER
MALES				
FEMALES				
GROUP				

* "LESS RISK" • SMOKERS OF LESS THAN TEN (10) CIGARETTES A DAY
** "GREATER RISK" • SMOKERS OF MORE THAN TEN (10) CIGARETTES A DAY

After collection of post-training questionnaires, gender-specific and total prevalence rates of smokers will again be calculated (table 1). In addition, rate of change will be determined for both "Smoking Initiated" and "Smoking Ceased" variables. The population-at-risk for the "Smoking Initiated" group will be the nonsmokers from the first survey. For the "Smoking Ceased" or "Smoking Decreased" groups the population-at-risk will be smokers (by quantity) from the first survey. These data will be presented in the format of table 6.

TABLE 6-Frequency of Change in Smoking Habits as Indicated by Post-Training Questionnaires

	PRE-TRAINING SMOKER	PRE-TRAINING NONSMOKER	SMOKING INITIATED	SMOKING CEASED	NO CHANGE
MALES					
FEMALES					
GROUP					

Discussion of Possible Study Biases

Several sampling and validity issues must be addressed in the proposed study. First, randomization of flight selection and the large number of trainees sampled should allow the researcher to be confident of study results in terms of precision, or lack of random error (Kleinbaum et al,

1982). Regarding internal validity, or bias, the major problem appears to be reliance on self-reported data. As Mittelmark (1982) indicates, adolescents tend to underreport behavior which might carry disciplinary sanctions and parental disapproval. Cigarette smoking clearly falls into this category, at least for teenagers still living at home. Another study (Vogt, 1977) cites several examples of smokers giving different answers to identical questionnaires administered an hour apart. One subject in particular admitted to smoking 50 cigarettes per day on one questionnaire and only two a day on the other. But in a review of high school smoking data collected by questionnaire, O'Malley (1984) concludes:

> Overall, the data...suggest that there is probably very little underreporting by older students, with perhaps some underreporting in questionnaires by younger students who are not convinced that their responses will be kept confidential.

The two criteria for validity in questionnaire data regarding cigarette use thus appear to be 1) age; i.e. old enough to have little fear of parental reprisal for smoking, and 2) confidence that replies will be kept confidential. In the proposed study respondents will have no identified motivation to underreport their smoking behavior. Since they are away from parental influence and will be assured of the anonymity of their replies, trainees should prove to be dependable

sources of information.

Bias may also be a concern in regard to the effect of the questionnaire itself on subsequent behavior. Will respondents alter cigarette consumption patterns as a consequence of answering questions about their smoking habits? An alternate method of questionnaire administration--giving only one questionnaire at the end of basic training--would eliminate possible bias associated with double administration, but replies might then be less accurate due to memory or retention factors, especially when estimating number of cigarettes smoked. It is thus acknowledged that the pre-training questionnaire might conceivably influence trainees to decrease cigarette consumption over time; however, due to the brief and innocuous character of the questionnaire, effects are anticipated to be minimal.

Implementation

An approximate schedule for implementation of this proposal, as well as requirements for personnel and other resources, can be found in appendix 3.

CHAPTER III

RESULTS AND DISCUSSION

Quality Issue Results

The quality of study results depends largely on the extent of information and/or subject loss from pre- to post-questionnaire data collection. In other words, how representative is the final sample to the initial sample?

This question may be resolved by determining the initial frequency of trainees in "male", "female", "smoker" and "nonsmoker" cells, measuring the number of "missing value" items in each by comparing linked questionnaires, and then using this information to calculate relative frequencies for these cells, as shown in table 2. Three sources of potential "missing value" data are: refusal to fill out the second questionnaire, failure to fill out the questionnaire correctly or completely, and failure to complete basic training itself. If program dropout rate is estimated as 6.2% from prior years and the combined rate of the other two sources is conservatively estimated to be 5-10%, relative frequency of each cell should be at least 85% to assure confidence regarding data representativeness and quality. If, on the other hand, relative frequency in one or more cells is lower than 85%, results of the study will have to be interpreted with caution.

Representativeness of the final sample may also be

verified by comparing responses regarding gender of respondent on the two questionnaires. Answers should be consistent; if not, information gained from the remainder of the survey tool can not be accepted as reliable.

Outcome Results

Smoking habits among a new group of trainees not yet exposed to military life should approximate those of youths obtained nationally. Latest data from the National Institute of Education (NIE) indicate prevalence of current, regular smokers to be 19.3 for males and 26.2 for females in the 17-18 age group (Green, 1979; Pub. Health Service, 1979).

It is conceivable that initial trainee rates will be significantly lower than those of the NIE study. The most obvious explanation is that the NIE data do not reflect smoking rates of adolescents today. Since 1979, when the study was conducted, a great deal of attention has been given to the health risks involved with cigarette smoking, and it is very possible that large numbers of teens have decided to smoke less, or not at all. This issue could be resolved by using more current national data on adolescent smoking behavior when it becomes available.

Selection bias during military recruitment may also explain lower initial rates. "Fit" candidates (e.g., those who are healthier by virtue of little or no tobacco use) may be selected over their "pack-a-day" counterparts; smokers

would thus be underrepresented in the recruit population.

A third explanation--underreporting by respondents--has already been mentioned (see Discussion of Possible Study Biases, page 13).

If initial trainee rates are higher than the NIE data, it may again indicate some as yet unidentified selection bias--this time favoring smokers--during recruiting. It may also mean that NIE subjects were indeed underreporting smoking frequency, as suggested by Mittelmark and colleagues, and/or that trainees answer questions about tobacco use more honestly than civilian teens to satisfy military expectations for truthfulness.

On the basis of conclusions drawn from previously discussed investigations, cigarette smoking measurements are expected to reflect a higher incidence following basic training, both quantitatively and qualitatively, in terms of "smoking" versus "nonsmoking". The increase in incidence rates will probably not exceed 10-20%.

Theoretically, this study could also demonstrate significant smoking reduction or cessation among trainees. It is anticipated that rates of reduction or cessation, if any, will be low. Findings in this direction might be explained by the lack of leisure time to smoke, or perhaps an increase in "healthy" attitudes about physical conditioning and self-image secondary to military life.

Females are expected to have a prevalence rate of

smoking greater than males both before and after basic training, again assuming the representativeness of national trend data.

Although proportionately more females than males may be found in the smoker group, it is uncertain whether number of cigarettes smoked will be higher among females or not, as most of the studies reported in the literature did not quantify cigarette habits.

Implications

If results do show an increase in smoking behavior from onset to completion of basic training, given initial prevalence similar to national figures, it can be hypothesized that basic training and/or factors associated with this event (e.g., stress, the practice of having "smoking breaks", peer influences, role modeling, etc) do play a part in smoking initiation. Recommendations for risk-reduction interventions would then include: 1) additional studies to identify and modify implicated factors, and 2) an aggressive program of dissuasion or smoking prevention early in the training period.

A greater tobacco use among incoming trainees would, on the other hand, emphasize the need for strong smoking cessation techniques rather than purely preventative ones. Demonstrated decreases in smoking frequency are not expected, but would be applauded. Appropriate action on the part of

the health planner given this finding would include identifying as well as manipulating factors negatively affecting smoking in the basic training environment to further enhance cigarette reduction.

Analysis of smoking data in "At Less Risk" and "At Greater Risk" categories has important implications in terms of Air Force future morbidity and mortality. This tabulation will not only reveal the magnitude of trainee smoking practices but will enable Air Force personnel to predict health outcomes of both male and female military smokers. For example, results may show that overall, the prevalence rate of smoking is greater for females than males, but the prevalence rate for males may be greater than females in the "At Greater Risk" category; thus smoking cessation techniques would theoretically prevent more illness if targeted primarily at males. Because of the linear relationship between smoking and morbidity, if both groups are found to have high "At Greater Risk" values, implications for aggressive smoking programs will be stronger than they would if both groups had high numbers in the "At Less Risk" and low numbers in the "At Greater Risk" categories.

CHAPTER IV

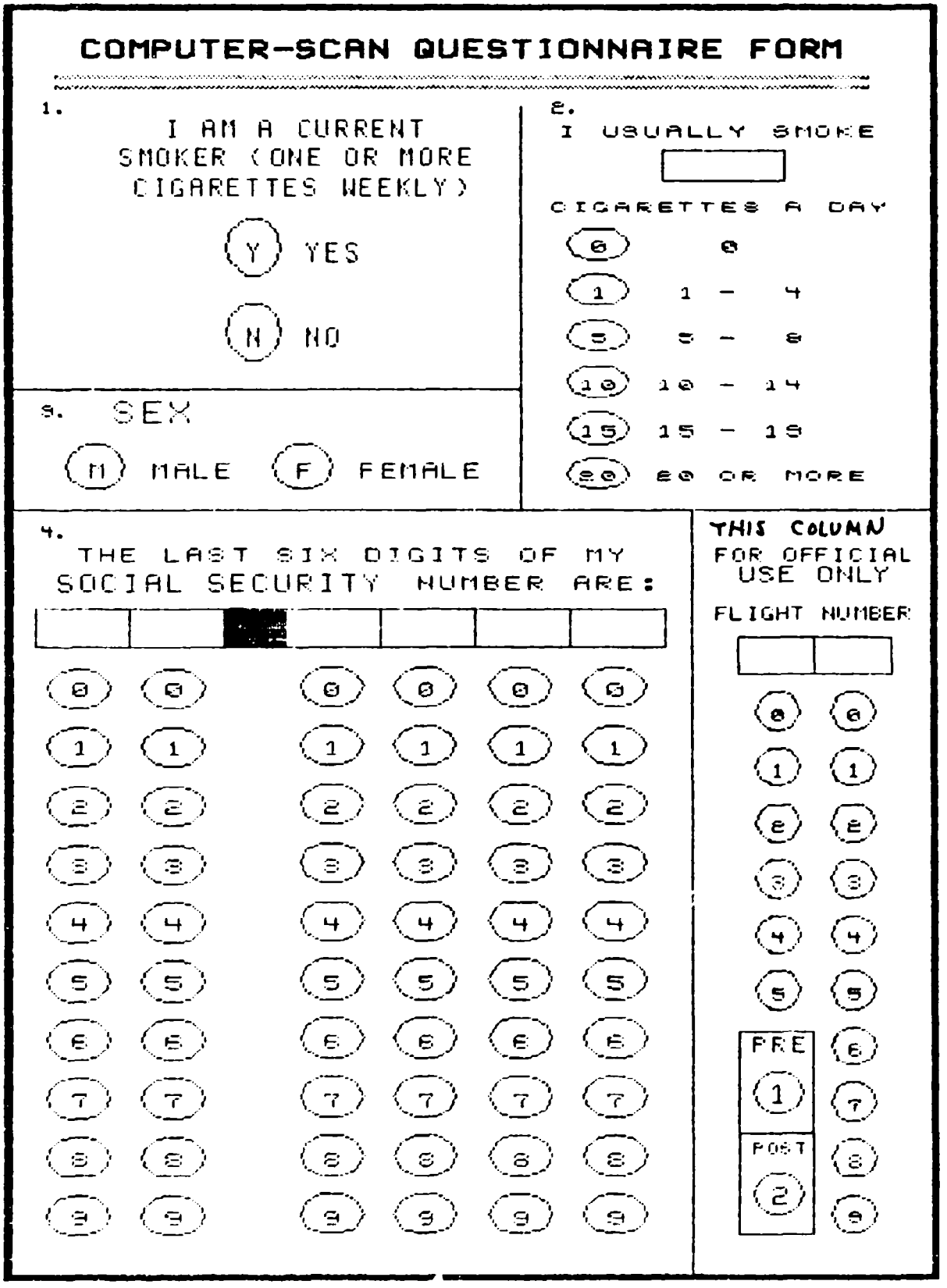
CONCLUSION

Cigarette smoking remains a problem for young adults, not only in terms of acute health effects but future chronic morbidity and mortality. While reported national declines in tobacco use among teens are encouraging, the decision to quit smoking, or not to start in the first place, still translates into measurable health benefits for the individual.

With information obtained from the proposed study of Air Force trainee smoking habits, health personnel will be better equipped to predict magnitude of smoking acquisition during the vulnerable period of trainee introduction to Air Force life, and to design effective programs of smoking prevention or cessation for this unique group of adolescents.

APPENDICES

APPENDIX 1.


COMPUTER-SCAN QUESTIONNAIRE FORM
1.
I AM A CURRENT SMOKER (ONE OR MORE CIGARETTES WEEKLY)
Y YES
N NO
2.
I USUALLY SMOKE
CIGARETTES A DAY
0 0
1 1 - 4
5 5 - 9
10 10 - 14
15 15 - 19
20 20 OR MORE
3. SEX
M MALE
F FEMALE
4.
THE LAST SIX DIGITS OF MY SOCIAL SECURITY NUMBER ARE:
THIS COLUMN FOR OFFICIAL USE ONLY
FLIGHT NUMBER
PRE 1
POST 2

APPENDIX 2.

SAMPLE COVER SHEET AND CONSENT FORM FOR QUESTIONNAIRE

We are collecting information on cigarette smoking in the Air Force. Participation in this survey is voluntary but strongly encouraged. Please take a minute to answer the questions below. Your replies will be confidential. We do need the last six numerals of your social security number for data collection purposes--the information will not be used in any way to identify you.

Thank you for your assistance.

I have read and understood the statements above. I agree to voluntarily participate in this survey.

_____

Signature of Participant

APPENDIX 3.

IMPLEMENTATION SCHEDULE AND REQUIRED RESOURCES

TIME	ACTION REQUIRED
Aug 1985	-Apply for study authorization from Air Force Medical Service Center/SGP RESOURCES *Program manager* *Copy of thesis proposal*
Dec 1985	-Meet with Commander of Air Force Basic Training to obtain cooperation of Training personnel (one hour). -Meet with Training staff to explain purpose of study and answer questions re: distributing and collecting questionnaire forms. -Enlist aid of Lackland Base Biostatistics Laboratory and biostatician to assist with data tabulation and analysis. -Arrange for computer time at Base Computer Center if not available in Biostatistics Laboratory. -Have smoking questionnaire and cover sheet forms printed and copied at Base

Reproductions.

TIME	ACTION REQUIRED
	RESOURCES
	Program Manager and Assistant Program Manager (8 hours)
	"Inprocessing" and "Outprocessing" personnel (approximately 5 of each) for one hour
	Base Statistician for consultation (one hour)
	Base computer operator (one hour)
	Office space
	Desk and file cabinet
	Reproduction machine (Xerox or similar)
	Base Reproduction personnel (2) to copy forms (2 hours)
	Questionnaire forms (2500 needed)
	Cover Sheets for Questionnaires (2500)
	Extra questionnaires and cover sheets (20 each) for demonstration of data collection to personnel
1 Jan 86	-Formal beginning of the study -Initial selection of flights for data collection

RESOURCES

Program Manager and assistant

Table of random numbers

Initial flight member rosters

Paper, pencils

Jan-May 86 -Data Collection

-Ongoing selection of flights for study

-Tabulation of data by Lackland

Biostatistics Lab

RESOURCES

Program Manager (on call)

Assistant (4 hours a day, 5 days a week)

"Inprocessing" and "Outprocessing personnel" (normal duty days) to administer and collect questionnaires per instructions when notified by assistant

Pencils (500--#2) for marking answer sheet

manila envelopes (50) with batch numbers

Base computer operator (2 hours each time batched flight data is received)

Assistant computer operator (2 hours as above)

Computer time (varies according to amount

of data received at any one period)

Locked files for raw and collated data

Jun 86 -Data analysis

RESOURCES

Program Manager, Assistant (one month at irregular intervals)

Base statistician (see time frame above)

Base computer operator (as needed)

July 86 -Publish results

RESOURCES

Secretary

Base Epidemiologist (consultant)

Typewriter or word processor

Paper, office supplies

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VITA

Phoebe Carter Fisher was born in Sharon, Connecticut on July 2, 1952, the daughter of Dr. Robert Lownds Fisher and Ruth Seeley Fisher. After graduating cum laude from Housatonic Valley Regional High school, Falls Village, Connecticut, in 1970, she attended Sweet Briar College until 1972, when she transferred to Tufts University. She graduated cum laude in 1974 with a Bachelor of Science degree in Psychology. During the next two years she was employed as a nurse's aide in Arlington, Massachusetts and Sharon, Connecticut, respectively. In September 1976, she entered Cornell University-New York Hospital School of Nursing, graduating in May 1978 with the degree of Bachelor of Science in Nursing. After employment as a Registered nurse at the American School for the Deaf in Hartford, Connecticut, and as a staff member of Baltimore County General Hospital in Maryland, she was commissioned a Second Lieutenant in the United States Air Force in 1979. Her assignments as an Air Force nurse have included Scott Air Force Base, Illinois, Incirlik, Turkey, and Bergstrom Air Force Base in Austin, Texas. She was promoted to the rank of Captain in 1982.

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