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IDENTIFYING THE BEHAVIOR, ATTITUDES, AND KNOWLEDGE
OF TOBACCO USE AMONG STUDENTS ENROLLED IN
ORIENTATION COURSES IN
SIX COMMUNITY COLLEGES IN
THE TENNESSEE BOARD OF REGENTS SYSTEM

A Dissertation
Presented to
the Faculty of the
Department of Educational Leadership
and Policy Analysis
East Tennessee State University

In Partial Fulfillment
of the Requirement for the Degree
Doctor of Education

by
G. Elaine Clark Boone

May 1999

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APPROVAL

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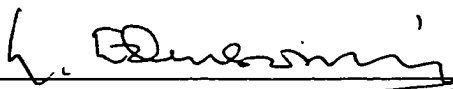
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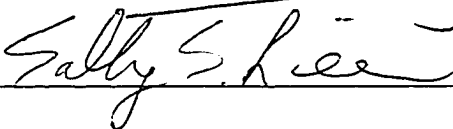
26th day of March, 1999.

The committee read and examined her dissertation, supervised her defense of it in an oral examination, and decided to recommend that her study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Doctorate in Education.



Chair, Graduate Committee







Signed on behalf of
The Graduate Council


Dean, School of Graduate
Studies

ABSTRACT

IDENTIFYING THE BEHAVIOR, ATTITUDES, AND KNOWLEDGE OF TOBACCO USE AMONG STUDENTS ENROLLED IN ORIENTATION COURSES IN SIX COMMUNITY COLLEGES IN THE TENNESSEE BOARD OF REGENTS SYSTEM

by

G. Elaine Clark Boone

The purpose of this study was to examine the behavior, attitudes, and knowledge regarding tobacco use of students enrolled in orientation courses in Tennessee community colleges. The six community colleges selected for the study were members of the Tennessee Board of Regents system that offered mandatory orientation courses.

Data were collected by use of the College Tobacco Behavior, Attitude, and Knowledge Survey. A response rate of (72.5%) from 700 students was analyzed. Three research questions guided the study and 17 null hypotheses were formulated and tested at the .05 alpha level of significance. Data were analyzed by using *t*-tests, crosstabs, analysis of variance, Chi-square, and Pearson's *r* correlation coefficients.

Results of the study revealed that, of those students who ever smoked regularly, differences in age and ethnicity were found and no differences were found between males and females. There was no difference between males and females and when they first started smoking cigarettes regularly; however, differences were found among students of varying ethnicities. There was no relationship between students' age and how many days they smoked; however, differences were found between males and females and ethnicities. There was no relationship regarding students' age and no difference between males and females and how many days they used smokeless tobacco. There were differences between smokers' and nonsmokers' attitudes pertaining to a smokefree campus, a designated smoking area indoors, and that a tobacco awareness program would be beneficial to college students. There was no relationship between knowledge score and age, and no difference between males and females, and smokers and nonsmokers regarding their knowledge score. However, differences in knowledge scores were found among students of different ethnicities.

In Loving Memory of my grandparents,
Mr. and Mrs. Lloyd C. Martin, Sr., and Mr. and Mrs. James B. Clark, Sr.,
my great uncle, Wright C. Kirk,
my uncle, Jackie Mabelitini,
my uncle Hansel Duncan,
my brother-in-law, Ronnie L. Boone,
unborn children, and
those who have died from tobacco-related illnesses.

DEDICATION

This study is dedicated to my loving husband, Pat Boone. I believe that God has used him to be the “wind beneath my wings.” His constant encouragement and support has helped me throughout obtaining this dream. I will be forever grateful for the stability of life that he provides and his endless patience.

My deepest appreciation goes to my parents, John and Ina Clark for their prayers, love, endurance, guidance, and sacrifice they have given me my entire life. I would not have had the strength to persist through this part of my educational goals without them.

My gratitude goes to my Aunt Dorothy Kirk, who is like a grandmother to me and gave me encouragement and laughter during one of the darkest times in my life. Also, a special thank you to my step grandmother, Thelma C. Martin, who is very dear to my heart.

To my special friend, James Alexander Chatman, who is like a son to me.

And, to my pets, Balkie, Mysti Sue (who have been with me for 13 years), Burley, Konrad, Luther, Solemn, Lucy, Dixie Darling, Sir Chester, and Petunia who give unconditional love.

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CHAPTER 1

INTRODUCTION

Cigarette smoking has been called the single most preventable cause of premature death in the U.S. (U. S. Department of Health and Human Services, 1989; McGinnis & Foege, 1993). The American Cancer Society (1997) estimated that more than 400,000 Americans die yearly due to smoking (1,100 each day; U.S. Department of Health and Human Services, 1998a), a figure that is greater than the number of deaths attributed to AIDS, alcohol abuse, automobile accidents, illegal drugs, fires, homicide, and suicide combined (McGinnis & Foege, 1993). Whelan (1994), President of the American Council on Science and Health, stated that tobacco was the cause of 500,000 premature deaths in the U.S. The Office of Smoking and Health (OSH, 1997) reported that in 1995 an estimated 47 million adults in the U.S. smoked cigarettes, even though this behavior will result in death or disability for one out of every two regular users. Tobacco use results in one in every five deaths.

Tobacco costs to society are measured by the number of people who die or suffer illness because of tobacco use. Health care cost and lost productivity drains the economy by an estimated \$100 billion annually. This expenditure does not include costs associated with diseases caused by environmental tobacco smoke (ETS), burn care resulting from cigarette-smoking-related fires, or perinatal care for low birth-weight infants of mothers who smoke (Centers for Disease Control and Prevention, 1994b). Hodgson (1992) reported that even though smokers died younger than the average American, over the

course of their lives, current and former smokers generated an estimated \$501 billion in excess health care costs or \$6,239, per smoker. Each year, more than one million young people make the decision to start smoking, and this commits the healthcare system to \$8.2 billion in extra medical expenditures over their lifetimes. Expected lifetime medical expenditures of the average smoker exceed those of the average never-smoker by 28% for males and 21% for females.

Since the release in 1964 of the first Surgeon General's report on smoking and health, scientific knowledge about the health consequences of tobacco use has greatly increased. Documentation now exists to show that smoking can cause chronic lung disease, coronary heart disease, and stroke, as well as cancer of the lung, larynx, esophagus, mouth, and bladder. In addition, smoking is known to contribute to cancer of the cervix, pancreas, and kidney. Researchers have identified more than 40 chemicals in tobacco smoke that cause cancer in humans and animals. Smokeless tobacco and cigars also have deadly consequences, including lung, larynx, esophageal, and oral cancer (OSH, 1997).

Since the beginning of the 20th Century, cigarette smoking has remained the most popular method of taking nicotine. In 1989, the U.S. Surgeon General issued a report that concluded cigarettes and other forms of tobacco were addictive and that nicotine was the drug in tobacco that caused addiction. The report also determined that smoking was a major cause of stroke and the third leading cause of death in the United States. Despite the warning, the National Household Survey on Drug Abuse showed that more than 61 million Americans were cigarette smokers in 1996; nicotine was one of the most heavily used addictive drugs in the United States (National Institute on Drug Abuse, NIDA).

1998a). The college years (late teens to mid twenties) tended to be the period of greatest use of abusive substances (Johnston, O'Malley, Bachman, & Schulenberg, 1992).

Abuse of legal and illegal drugs was a major threat to America's most precious asset, its young citizens. While society has focused on drug abuse in high schools, abuse and addiction that involves all substances—alcohol, nicotine, illegal drugs and steroids—jeopardizes the quality of education and threatens the well-being of millions of young men and women enrolled in colleges and universities (Center on Addiction and Substance Abuse, CASA, 1993).

Significance of the Problem

Despite a dramatic reduction in smoking prevalence among the general population during the past 30 years, tobacco remains popular among adolescents and young adults. High school students' cigarette use increased by 32% between 1991 and 1997 following a decade of relative stability (CDC, 1994a). Unless many of those high school students quit smoking soon after adolescence, this rise in youth smoking will be reflected in rising smoking rates among young adults, 18-24. This trend threatens to slow or reverse the decline in adult smoking prevalence that has occurred since 1965 (U.S. Department of Health and Human Services, 1989; 1994a). Wechsler, Rigotti, Gledhill-Hoyt, and Lee (1998) reported that there is a general rise in smoking among all college students. The Commission on Substance Abuse at Colleges and Universities (CASA, 1993) stated that academic institutions have both a responsibility and an opportunity to discourage behaviors that would be harmful to one's health; therefore, encouraging healthful habits that could last a lifetime would be beneficial (Califano, 1993).

The Purpose of the Study

The purpose of the study is to examine the behavior, attitudes, and knowledge regarding tobacco use by students enrolled in orientation courses in Tennessee community colleges. Community colleges selected for the study were members of the Tennessee Board of Regents system that offered student orientation courses during the spring, 1999 semester. These community colleges included Dyersburg State Community College, Jackson State Community College, Northeast State Technical Community College, Roane State Community College, Shelby State Community College, and Walters State Community College.

Definitions of Terms

The definitions of the following terms were used in connection with this study:

Carcinogen is a substance or agent producing or inciting cancer. Carcinogens associated with occupational exposure include arsenic (lung cancer), asbestos (lung cancer and mesothelioma), aromatic amines (bladder cancer), benzene (leukemia), chromates (lung cancer), nickel (lung and nasal sinus cancer), and vinyl chloride (hepatoma). Chemicals associated with lifestyles that carry carcinogenic risk are alcohol (esophageal and oropharyngeal cancer), betel nuts (oropharyngeal cancer), and tobacco (head and neck, lung, esophageal, and bladder cancer) (Berkow & Fletcher, 1992).

Environmental Tobacco Smoke (ETS), also referred to as “secondhand smoke,” or “passive smoke,” is a combination of smoke produced from a tobacco product such as cigarettes, cigars, or pipes and smoke exhaled by the smoker, which can be inhaled by a nonsmoker (U.S. Department of Health and Human Services, 1998a).

Nicotine is a poisonous alkaloid, $C_{10}H_{14}N_2$, that is the chief active ingredient of tobacco and is thought to be a cause of addiction. In small doses, nicotine stimulates the nervous system, causing an increase in pulse rate, a rise in blood pressure, and a decrease in appetite. In large doses, it is a depressant, slowing the heartbeat and leading to respiratory depression (Rothenberg & Chapman, 1994).

Orientation course is a course designed to meet the needs of first-semester students who are not familiar with the college environment. The course explores career preparation, college policies and procedures, academic advisement, time management, personal enrichment and development, and Library resources (Northeast State Technical Community College Catalog and Student Handbook, 1998).

Research Questions

Research Question 1

What are community college students' behaviors regarding tobacco use?

Research Question 2

What are community college students' attitudes regarding smoking on a college campus?

Research Question 3

What is community college students' knowledge regarding tobacco and health-related issues?

Research Limitations

- 1) Research was limited to community college students in Tennessee who were enrolled in orientation classes and who elected to complete the survey. Generalizations to other populations may not be made.
- 2) Validity and reliability of the study may be reduced by the number of students who did not complete the survey (265 out of 965 did not complete the survey).

Research Assumption

Basic to the investigation of this problem, the following assumption was made: It was assumed that students understood and honestly answered the questions on the survey instrument administered during orientation courses during the spring semester, 1999.

Organization of the Study

The study includes five chapters. Chapter 1 provides an introduction to the study and includes the following: significance of the problem, purpose, definitions of terms, research questions, research limitations, a research assumption, and organization of the study.

A review of related literature and research is presented in Chapter 2.

Descriptions of the research design, the target population, and data collection instruments are provided, and statistical procedures employed also are explained in Chapter 3.

Analysis of the data and findings are presented in Chapter 4.

A summary, conclusions, and recommendations to improve practice and recommendations for further research are presented in Chapter 5.

CHAPTER 2

REVIEW OF LITERATURE

Krupka, Vener, and Engelmann (1996) stated that the use of tobacco and alcohol, which are readily available drugs, has had enormous biological and social ramifications. The American Cancer Society (1997) reported that 2.5 million persons worldwide died annually from smoking tobacco and in the United States an estimated 400,000 deaths were linked to smoking. One in every six deaths in the United States could be traced to the use of tobacco products (U.S. Department of Health and Human Service, 1989). The American Cancer Society (1997) found that tobacco smoke contained more than 4,000 chemical compounds, including at least 43 carcinogenic substances. Tobacco caused 90% of lung cancer deaths among men and 79% among women. The difference in percentages was due primarily to the fact that in the past more men than women smoked. The Public Health Service (1990) stated that gender smoking rates had been in the process of converging. The U.S. Department of Health, Education, and Welfare (USDHEW) 1964 (as cited in Gray, 1987) stated that:

The United States Public Health Service first became officially involved in an appraisal of the available data on smoking and health in June, 1956. A scientific Study Group on the subject was established jointly by the National Cancer Institute, the National Heart Institute, the American Cancer Society, and the American Heart Association at that time (United States Department of Health, Education, and Welfare [USDHEW], 1964). This group appraised 16 independent studies conducted in five countries over a period of 18 years and concluded that there was a causal relationship between excessive smoking of cigarettes and lung cancer. Following the conclusion of this study, the Surgeon General Leroy E. Burney issued a statement in July of 1957 declaring that, "The Public Health Service feels the weight of the evidence is increasingly pointing in one direction; that excessive smoking is one of the causative factors in lung cancer."

Prevalence of cigarette smoking was added to the list of nationally notifiable health conditions reported by states to the Centers for Disease Control and Prevention (American Cancer Society, 1996). This addition of health-related behavior to the list of diseases and illnesses reflected the recognized role of tobacco use as the leading preventable cause of death in the United States (CDC, 1997). Major health-risk factors that are deemed related to smoking include heart disease, chronic bronchitis and emphysema, cerebrovascular disease, and cancers of the larynx, pharynx, oral cavity, esophagus, pancreas, cervix, bladder, and kidney (American Cancer Society, 1997). Smoking was reported to be responsible for 30% of all cancer deaths. Both smoking and secondhand smoke (passive smoke) were responsible for conditions such as respiratory infections and stomach ulcers (Office of Smoking and Health, 1986). Babies exposed to secondhand smoke were twice as likely to die from Sudden Infant Death Syndrome (SIDS) as were unexposed infants, even if their mothers were nonsmokers (Schoendorf & Kiely, 1992). Ong, Lee, Shi, Ong, and Lee (1994) reported that cigarette smoking is associated with significant additional exposure to benzene and its related compounds. Benzene exposure causes leukemia and lymphomas and these compounds were found at significantly higher levels in smokers than in nonsmokers.

The American Cancer Society (1998) predicted that an estimated 171,500 new cases of lung cancer would be diagnosed in 1998, accounting for 14% of all cancer diagnoses. Incidence rates had declined in men, from a high of 87 per 100,000 in 1984 to 74 per 100,000 in 1994. Recently, the rate of increase among women has begun to slow. The incidence rate in women in 1994 was 42 per 100,000. By far, the most important risk factor in the development of lung cancer was cigarette smoking. Other risk factors

included exposure to certain industrial substances, such as arsenic; some organic chemicals and radon and asbestos, particularly for persons who smoke; radiation exposure from occupational, medical, and environmental sources; air pollution; tuberculosis; and environmental tobacco smoke in nonsmokers. More women have died each year since 1987 of lung cancer than breast cancer, which, for over 40 years, was the major cause of cancer death in women. Also reported by the American Cancer Society (1998) it was estimated that 54,400 new cases of bladder cancer would occur in 1998. Rates had been stable at about 17 per 100,000 people. Incidences of bladder cancer occurred nearly four times higher in men than in women, and two times higher in Whites than African Americans. Risk factors for bladder cancer is greatest if one smokes, with smokers experiencing twice the risk of nonsmokers. Deaths from bladder cancer attributed to smoking is estimated, 47% among men and 37% among women. Percentages are figured on a total of 12,500 deaths. Mortality rates due to bladder cancer have decreased in both Whites and African Americans. Gray (1987) reported that cigarettes appeared to produce an increase in gastric secretions causing an increased number of ulcers in smokers. Also, peptic ulcers were twice as common in smokers. Piper, McIntosh, and Hudson (1985) maintained that symptoms of duodenal ulcers were worse when a higher daily consumption of cigarettes was reported. (See Appendix A—Health Consequences of Tobacco Use.)

Krupka et al. (1996) stated that smoking rates were typically higher among blue-collar workers, African Americans, and individuals with fewer years of education. In 1990, 37% of individuals with less than 12 years of formal schooling smoked, compared to 14% of those with 16 or more years. Emont et al. (1995) found in their study of

employees of the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry that there was no significant difference between sex or race regarding cigarette smoking prevalence. This prevalence varied little by age group. Of these, 34% of current smokers stated that they began smoking regularly between the ages of 18 and 24.

The American Cancer Society (1997) reported that adolescents were beginning to smoke at an earlier age. In 1990, approximately one out of eight high school students smoked daily. Johnston et al. (1992) reported that initiation of daily smoking most often occurred in grades 6 through 9 at ages 11-12 to 14-15, with little further initiation after high school, although a number of light smokers made the transition to heavy smoking in the first two years after high school. In 1986, 53% of the seniors in high school who smoked a half-pack a day (or more) stated they had tried to quit smoking and found they could not. Of those who stated they were daily smokers in high school, approximately 75% were daily smokers 7 to 9 years later. It is clear that the smoking habit established at an early age is difficult to break, and young people greatly overrate their own ability to quit. Younger children are even more likely than older ones to underestimate the dangers of smoking.

Whelan (1995) stated that over 75% of current smokers began smoking as children. Cigarette smoking is a physical addiction, and most children and adults have little specific knowledge of the array of health risks associated with smoking. She stated that these reasons do not validate the attitude of "everyone knows smoking is hazardous and it's a free choice." Few know the fact that smoking is now the leading preventable cause of blindness and hearing loss and impotence in men under age 60. It is difficult to

argue that smoking is a “free choice” when the majority of smokers wish they could quit. One pack a day will increase lung cancer risk by over 1,000%. O’Connell (1990a) stated that the following shows how a smoker uses cigarettes through the day and the effect the drug has: when a smoker lights the first cigarette of the day, there are almost immediate feelings of euphoria and satisfaction as the nicotine reaches the brain. To maintain this mood-altered state, the smoker puffs at intervals during the day, and as the level of nicotine in the blood rises, the person may feel nauseated, lightheaded, and have a rapid heartbeat. The smoker uses whatever amount of nicotine fits his or her emotional needs. A fact about the drug nicotine is that sometimes it stimulates like an amphetamine and at other times it lessens anxiety like a tranquilizer. Nicotine is a powerful, multipurpose drug; it is legal, and it is portable. Withdrawal from nicotine includes symptoms of craving for nicotine, irritability, anxiety, difficulty concentrating, restlessness, impatience, somatic complaints, and hunger.

Reports from the American Cancer Society (1997) indicated that forms of smokeless tobacco use have increased among youth as well as cigarette smoking. Smokeless tobacco usage between the ages of 5 and 8 accounted for one in four young consumers. Another 25% began using smokeless tobacco between the ages of 9 and 12 years of age. Cancer risk was greatly increased due to early onset of usage. In 1990, 19% of male high school students chewed tobacco, which represented a 12% increase from 1987. According to the American Cancer Society (1998) there were an estimated 30,300 new cases of oral and pharynx cancer in 1998, with 8,000 deaths. Incidence rates are more than twice as high in men as in women and are more prevalent in men who are over age 40. Mortality rates have been declining since the early 1980s. Risk factors

associated with oral and pharynx cancer include cigarettes, cigar or pipe smoking, use of smokeless tobacco, and excessive consumption of alcohol.

O'Connell (1990a) maintained that because it was known that the longer one has a habit, the more it is reinforced, the nation needs to be concerned about drug addicts. This population's smoking cannot be allowed to go unchallenged when it is known how dangerous and deadly nicotine is. Not only is nicotine addiction lethal, but it could be an easy transition from taking a puff on a cigarette to inhaling a marijuana joint, perhaps laced with crack cocaine, or using cocaine or amphetamines in other forms. He stated that the nation does a disservice to people who are recovering drug addicts if it looks the other way while they use mood-altering cigarettes and smokeless tobacco products.

The Doctor's Guide to Medical and Other News (1998) reported that smoking contributed to mental decline in the elder population. Smokers may lose some of their cognitive abilities, such as remembering, thinking, or perceiving, more rapidly than elder nonsmokers. Smoking may cause damage to cerebral function by silent small strokes that are not clinically detected. The results suggest that smoking increased silent cerebral disease that affects cognitive functioning.

Tobacco has had a major impact on the lives of Americans from infancy to adulthood. This review focused on age, sex, and varying ethnicities regarding tobacco. Because the subjects of this study were college students, the review emphasized and began with this population as related to tobacco use. Facts regarding tobacco include the general population, and for purposes of this review, emphasis was on those 18 and older, which included college students. Other topics were briefly discussed because of the

interrelationship with the college student population. These topics were: African Americans and other ethnicities, women, and ETS (Environmental Tobacco Smoke).

College Students

Dangers of tobacco use and ETS have been emphasized by the Environmental Protection Agency (EPA, 1992); therefore, a call for immediate action to protect young Americans must take precedence. Because virtually all adults who smoke were addicted to nicotine during their teenage years and early twenties, and because institutions of higher learning set the style and culture for millions of young Americans, colleges and universities have a special opportunity and obligation to act. Men and women enrolled in America's colleges and universities are tomorrow's leaders and it is in society's interest for institutions of higher learning to encourage healthy lifestyles as they spark intellectual curiosity and foster intellectual discipline. The health of the body and mind nourish one another (Califano, 1993).

Astin, Dey, Korn, and Riggs (1991) reported that the percentage of freshmen who frequently smoked cigarettes increased for the fourth straight year to 11.3%, after a decline of nearly 50% between 1966 and 1987. Gray (1987) reported an annual prevalence of daily smoking of 13% for college students compared to 30% among their noncollege peers. Wechsler, Rigoetti, Gledhill-Hoyt, and Lee (1998) found that over a period of four years (1993-1997), college students who smoked cigarettes in the past 30 days rose from 22.3% to 28.5%; those who smoked in the past year rose from 31.6% to 39.5%; those who had ever smoked rose from 41.5% to 54.3%; and those who were former smokers rose from 25.2% to 25.8%. Schwartz (1997) reported that the overall

number of adolescents who smoked and used smokeless tobacco was decreasing, and that the decrease was sharpest among minority youth; still, one third of high school students used tobacco products. Califano (1993) reported that an individual who reached age 25 without becoming addicted to nicotine was almost certain never to smoke or use smokeless tobacco.

College and university students are at an especially vulnerable age when they are placed in a new, often stressful social and academic environment. The Center on Addiction and Substance Abuse (CASA, 1993) maintained that academic institutions have both a responsibility and an opportunity to discourage behaviors that would possibly be detrimental to one's health; therefore, encouragement of healthful habits that could last a lifetime was found to be beneficial to college students.

In 1988, The American College Health Association (ACHA) released a "Statement on Tobacco Use on College and University Campuses" that urged the nation's institutions of higher learning to establish campus-wide tobacco/smokefree environments. The ACHA suggested prohibiting smoking in public areas, forbidding the advertising, sale, or free sampling of tobacco products on campus, and providing and encouraging the use of education programs highlighting the hazards of tobacco, including practical steps to help individuals stop smoking. Califano (1993) recommended that all members of colleges be encouraged to stop smoking and protect nonsmokers from the dangers of secondhand smoke. CASA (1993) considered a smokefree campus a necessary step to protect all students, faculty, and staff from the risks of smoking. They maintained that a smokefree campus was no longer an option for colleges and universities; it was an obligation.

Blackburn (1988) stated that smokers were losing in their struggle for “rights” with nonsmokers in changing campus policies. Charney (1994) maintained that alcohol, tobacco, and other drug use and abuse continued to permeate the college campus environment. This use and abuse affects all aspects of campus life, from economic to interpersonal relationships. Even after years of warnings by the surgeon general, the fight to reduce tobacco’s use and harmful effects has continued. Current studies indicate that tobacco use is increasing among teenagers, particularly women. However, public attitudes are changing as evidenced by institutions initiating policies eliminating or restricting tobacco use on campuses. Breidenthal (1998) stated that in 1994, the National Collegiate Athletic Association (NCAA) passed a rule banning the use of smokeless tobacco at all baseball games. Daily tobacco use by college baseball players decreased from 25% in 1996 to 19.5% in 1997. Increased awareness presented an excellent opportunity for health center education programs to offer smoking cessation classes, not only to students but also to faculty and staff. CASA (1993) established a special Commission on Substance Abuse at Colleges and Universities. The Commission examined the abuse of all substances at institutions of higher learning and recommended strategies to curb such abuse. One of the recommendations focused on the importance of the development of smokefree campuses. Recommended steps for a campus to become smokefree included: 1) eliminate smoking in all campus buildings and at all campus events; 2) provide assistance to those who need help with smoking cessation and ensure that this treatment is covered by the college health plan and is available repeatedly to those who relapse; 3) ban the sale of tobacco products on campus; 4) prohibit the advertisement and distribution of tobacco products on campus; 5) deny the use of the

school logo on smoking paraphernalia, such as cigarette lighters and ashtrays; and 6) join with students in creating and nourishing a culture and atmosphere in which smoking is widely seen as a socially unacceptable and unhealthy habit. Califano (1993) stated that with the exception of certain schools (e.g. Brigham Young University) which forbade smoking on religious grounds; most institutions of higher learning paralleled industry in the rationale used to restrict campus smoking. Like industry, higher education institutions want to protect the health of those in their communities. Institutions may also fear the specter of future litigation by past graduates seeking damages for an illness asserted to have come from exposure to environmental smoke during their college years. Smokefree campuses can be a powerful tool in the ongoing effort to encourage healthy lifestyles.

Califano (1993) stated that leaders in higher education institutions must ask themselves a question of responsibility. Who is responsible for the current drug situation, for solving the problems, and for changing both behavior and the environment? Ultimately, it is the responsibility of healthcare providers, professionals, and concerned citizens; therefore, these people should continue to take a leading role in assuming the leadership in solving the problems on college campuses.

Zinser, Kloosterman, and Williams (1994) asked college students at East Tennessee State University to rank factors that they thought influenced smoking behavior. Students ranked peers first and cigarette advertisements last as causes of starting to smoke. In contrast, the number one reason students stated that influenced their decision to quit was health education advertisements and they ranked influence from peers as the lowest reason to quit smoking. Altman, Slater, Albright, and Maccoby

(1987) conducted a content analysis of cigarette advertisements and concluded that in recent years the smoking industry targeted adolescents and women in their advertisements, apparently with noticeable effect. They reported that the industry made use of erotic images in women's magazines and adventure, risk, and recreation themes in youth magazines.

CASA (1993) reported that cigarette smoking was one of the greatest threats to the health of students on college campuses. Almost one fourth of college students smoke cigarettes, and more than half on a daily basis. Douglas et al.(1997) stated that higher education institutions could provide an important setting for reaching young people and reducing health risk behaviors among them. The results of the 1995 National College Risk Behavior Survey conducted by the U.S. Department of Health and Human Services (1997) reported that almost one third (31.3%) of students had smoked cigarettes daily (at least one cigarette every day for 30 days) at some time during their lifetime. Of these respondents, 29% were current cigarette smokers (had smoked one or more cigarettes during the 30 days preceding the survey), and 16.5% were currently frequent cigarette smokers (had smoked cigarettes on at least 20 of the 30 days preceding the survey). Wechsler et al. (1998) reported that in 1997, 28.5% of students had smoked cigarettes in the last 30 days. Of those, 11.8% smoked 20 or more cigarettes per day. The largest increase of per day smokers was regular light smokers, one to nine cigarettes per day. The U.S. Department of Health and Human Services (1997) found that students who were 25 years of age or older were significantly more likely than younger students to have smoked cigarettes daily during their lifetimes and to be current, frequent cigarette smokers. White students were significantly more likely than either African American or

Hispanic students to have smoked cigarettes during their lifetimes, but Hispanic students were significantly more likely than African American students to be current smokers. Students in two-year institutions were significantly more likely than students in four-year institutions to have smoked cigarettes daily during their lifetimes and to currently smoke. Results of the survey also revealed that among all students, 5.4% had used smokeless tobacco on one or more of the 30 days preceding the survey. Of those students, males were significantly more likely than females, students aged 18 to 24 were significantly more likely than older students, and White students were significantly more likely than either African American or Hispanic students to have used smokeless tobacco. The study showed that cigarette use did not vary between males and females and that many college students in the U.S. engaged in behaviors that placed them at risk for serious health problems.

A nationwide survey of high school students and young adults conducted annually by the National Institute on Drug Abuse (NIDA, 1997b) by the University of Michigan Institute for Social Research reported trends in drug use among college students. College students who had used cigarettes within the past 30 days were tracked from 1980 to 1990. In 1980, 36.2% used cigarettes as compared to 35.5% in 1990. The fluctuation from year to year was not significant. The 10-year study revealed that the smoking behavior of college students during this period had not changed. The NIDA (1997a) reported that in 1995, 39.3% of college students had smoked cigarettes within the past year and 26.8% within the past month. Of those young adults aged 19 to 28, approximately 39% had smoked cigarettes within the past year and 29.4% within the past month. In the general population, people aged 18 through 25 had the highest rates of smoking and in this age

group, 38.3% had smoked cigarettes within the past month. Approximately 32 million males (31.1%) and almost 30 million females (26.7%) reported they had smoked cigarettes within the past month.

Reports by the National Clearinghouse of Statistics (1998) showed that in 1994, cigarette use among the general population of all males 18 years of age and over was 27.8% and, for females, 23.3%. The percentage of White males who smoked cigarettes was 27.5% and African American males was 33.5%. The percentage of White females who smoked cigarettes was 24.3% and African American females was 21.1%. The age category that showed the highest percentage in all categories was 25 to 34, with the exception of African American females, where the highest was in the age category 35 to 44. Wechsler et al. (1998) reported that in 1997 the prevalence of current smoking increased over the four-year period across all subgroups defined by sex, race/ethnicity, age, and year in school. Except for Hispanic students, the increase was significant. No group was increasing its smoking rate faster than any other. A general rise in smoking among all college students is occurring. This study showed that smoking prevalence was higher in Whites than African Americans or Asians and higher in freshmen, sophomores, and juniors than seniors and fifth-year students. Sex did not appear to be associated with smoking behavior. The CDC (1994a) found that although current smoking prevalence among females began exceeding that among males in the late-to-mid 1970s, both sexes are now equally likely to smoke.

Cigarette use among college students was 29% (CDC, 1994a). Jenson, Peterson, Murphy, and Emmerling (1992) stated that many college students' behaviors jeopardized

their current and future health status. Colleges and universities offer an important avenue for providing health-related services and education to large numbers of young adults.

Ford and Goode (1994) stated the importance of identification of unhealthy behavior patterns during adolescence and the young adult years so that education programs could be implemented to motivate young people to change their unhealthy behaviors to more positive ones. College students were more prone to change their health behaviors if the related health issue was perceived as relevant and of concern to them or their peers. It was not uncommon for youth to be concerned about health issues that affect them or their peers, and these issues should be identified so that health educators could develop effective health programs. The authors suggested that a survey was an initial step in learning about specific groups of students who were participants in health promotion activities. Student involvement in planning and implementation of health promotion programs was essential because they were more interested and more motivated to participate if they believed the issues discussed were relevant to them. Current and accurate data must be gathered to identify health behaviors of students if institutions are to develop, implement, and improve health promotion programs that focus on primary prevention.

Brandon and Baker (1990) suggested that the college years often represented a period during which occasional cigarette use either tapered off or instead developed into a full addiction. They speculated that because smoking expectancies might moderate this progression, measurement of expectancies could permit identification of students at risk for greater smoking. In their study, they examined whether the relationship between levels of alcohol use and expectancies was paralleled with cigarette smoking and also

attempted to identify the content of smoking expectancies. Emmons, Wechsler, Dowdall, and Abraham (1998) found that precollege drinking behavior had a strong relationship with smoking status and was found to raise the likelihood of smoking in college more than threefold. Other college lifestyle choices of participation in activities such as community service, academics, religion, and athletics were predictors of smoking status. Those activities that increased smoking were those not participating in collegiate athletics (men only), not considering religion to be very important, and endorsement of parties as important. Belonging to a fraternity or sorority increased the likelihood of a student being a smoker, as did residing in a coed dorm. High-risk behaviors, such as using marijuana, binge drinking, and having two or more sex partners increased the likelihood of smoking among men and almost tripled the likelihood of smoking among women. Brandon and Baker (1990) found that during late adolescence and early adulthood many lighter and occasional smokers appeared either to shift to heavier, chronic smoking, or to taper off toward abstinence; therefore, if those individuals who were at high risk for escalated smoking could be identified, they might be targeted for preventive interventions.

Johnston et al. (1992) reported that among college students in 1991, females had a slightly higher probability of being daily smokers. Krupka et al. (1996) found that significantly more women than men knew that nicotine was toxic, that smoking accelerated the aging of skin, and that children of smoking parents were more likely to develop pulmonary problems. More men than women knew that smoking could impair female fertility and that nicotine could cause nausea. Anti-smoking campaigns may have contributed to the reduction of smoking prevalence. Although these campaigns have

relied on sound scientific data, they may owe their success to the promulgation of fear as well as knowledge. Their findings suggested that tobacco education programs have been successful in illuminating tobacco's linkage to certain pathological conditions such as heart disease, stroke, lung cancer, premature aging, miscarriages, fertility impairment and children's pulmonary problems.

Johnston et al. (1992) showed that cigarette smoking among American college students declined modestly in the first half of the 1980s. Those who smoked regularly for 30 days fell from 26% to 22% between 1980 and 1985, but remained stable to 1991 at 23%. The findings showed that the rates of smoking have dramatically lowered among college students compared to those not in college. However, more than one in every five young adults aged 19 to 28 is a daily smoker (22%) and one in six (16%) smoke a half-pack-a-day or more. Wechsler et al. (1998) reported that, although 11% of smokers had their first cigarette at or after 19 years of age, approximately 28% of current smokers began smoking regularly at age 19 or older, at which time they were in college. Fifty percent of current smokers in 1997 had quit smoking for at least 24 hours in the past year, including 18% who had made five or more attempts to quit. The rise in cigarette smoking appears to be more rapid in public colleges.

Emmons et al. (1998) suggested that 18% of smokers born between 1960 and 1962 did not start to smoke until their young adult years. College students who smoked cigarettes within the previous 30 days were reported as 24.5%. Forty percent of all college students had used cigarettes at least once during a 12-month period of time, suggesting that considerable experimentation with smoking occurs during the college years.

African Americans

The Office of Disease Prevention and Health Promotion (1991) found that minorities, specifically African Americans, were disproportionately affected by a variety of health problems, including the two leading causes of death, cardiovascular diseases and cancer. These causes of death, as well as a number of other health problems could be reduced and, in some instances, eliminated by changes in health-related behavior.

Each year, approximately 45,000 African Americans die from smoking-related diseases that could have been prevented (CDC, 1998a). African Americans accounted for approximately 12% of the 47 million adult smokers in the U.S. in 1995. Prevalence of smoking declined as education increased among African Americans, as also was the case for other U.S. ethnic groups. Smoking rates were higher among those who had less than a high school education, 34.8%, compared to those with a college education, 16.7% (U.S. Department of Health and Human Services, 1998b). Reports by the American Cancer Society (1998) found that African Americans were approximately 30% more likely to die of cancer than Whites. However, mortality rates for both Whites and African Americans have declined recently. African Americans are 50% more likely to die of cancers of the esophagus, cervix, larynx, prostate, stomach, oral cavity, uterus, liver, and pancreas than Whites. With lung cancer being the leading cause of cancer deaths in 1994, the following percentages are those who died of lung cancer by race: White (28%); African American (26.1); Native American (27.7%); Asian and Pacific Islander (21.5%); and Hispanic (17.8%).

In 1990, the U.S. population included 30 million African Americans, who accounted for 12% of the population. Cancer is common among Americans of all racial

and ethnic groups, but the rate of cancer occurrence varied from group to group. Among men, cancer rates were highest among African Americans, followed by White men. Differences in rates across racial and ethnic groups among women were less evident than among men. Rates were highest among Alaska-Native women, followed by White women (American Cancer Society, 1997).

Incidence of pancreatic cancer in African Americans is higher than in White Americans. Of the 29,000 new cases of pancreatic cancer in the U.S. in 1998, an estimated 28,900 deaths would occur. Mortality rates among White Americans since the early 1970s have decreased. Smoking is a risk factor and incidence rates are more than twice as high for smokers than for nonsmokers. The risk also increases after age 50. The report also found that rates for cervix cancer had declined 45% between 1972-1974 and 1992-1994. Cancer of the cervix for African Americans declined more rapidly than for Whites; however, in 1994 the mortality rate for African American women continues to be more than two times greater than the rate among White women (ACS, 1997).

The CDC (1992) reported that African Americans were specifically targeted by the tobacco advertising industry. African American magazines received disproportionately more revenues from cigarette advertising than other consumer magazines. Billboards that advertised tobacco products were seen four to five times more frequently in communities of color than in White areas.

Delene and Brogowicz (1990) stated that a national focus on fitness and a movement toward healthier lifestyles has spread to college campuses. The authors concluded that the major health concerns of undergraduate college students were concerns about body image, AIDS, weight control, physical fitness, and cancer. Under

the category of general health knowledge, 90% disagreed that just one or two cigarettes a day cannot really hurt. College students' concern about healthcare issues regarding smoking indicated that 12.1% were extremely or very worried; 23.8% somewhat or slightly worried; and 64% not at all worried. Most studies regarding college students' health were based on predominantly White samples and may not be generalizable to the African American college population. If institutions of higher learning are to provide adequate health promotion planning, it is important to determine whether differences exist in the health behaviors of African American and White college students.

Johnston et al. (1992) found important racial/ethnic differences in cigarette smoking that have emerged among high school seniors, 1975-1991. In the late 1970s, smoking rates mirrored the general population's decline in smoking from 1977-1981. Since 1981, smoking rates have slightly declined for Whites and Hispanics, but the rates for African Americans continued to steadily decline. As a result, the daily smoking rates in 1991 for African Americans was 25% to 33% for Whites.

The American Cancer Society (1998) reported a five-year survival rate for African Americans diagnosed with cancer between 1989 and 1993 was 44% compared to 60% for Whites. This difference in survival could be attributed to African Americans being diagnosed at a later stage of the disease.

Women

In 1990, an estimated 61,000 women in the U.S. died from cardiovascular disease attributed to smoking (CDC, 1995). Carter and Sedlecek (1989) reported that drug use in general was on the decline, with the exception of alcohol and beer for both men and

women and cigarettes for women. Student attitudes appeared to be more conservative than in the past, although women were more tolerant than men and more supportive of campus programming. The differential use and attitude patterns of women must be considered when developing any education or counseling programs on campus. The researchers suggested separate programs for men and women might be considered because of these differences. A program aimed at the reduction of cigarette smoking among women might be useful.

Blumenthal (1997) reported that smoking was the number one preventable cause of death in women in the U.S. Of the more than 140,000 women who died prematurely from tobacco-related illnesses each year, 80% had begun smoking during adolescence. Evidence demonstrated that young people who began using tobacco did not understand the nature of the addiction and, as a result, believed they would be able to avoid harmful consequences of tobacco use. Each day in the U.S., approximately 1,500 young women begin smoking and their first use of tobacco occurred before high school graduation. Cigarette smoking by adolescents has risen annually since 1991. Approximately one of five teenage women was a smoker in 1991. The Youth Risk Behavior Survey (YRBS) conducted by the CDC in 1995 indicated an increased number of high school students were smoking on a regular basis (Blumenthal, 1997). Results of the survey revealed the following about high school females and their smoking behavior:

- 1) 39.8% of White, non-Hispanic females were current smokers and 20.8% were frequent smokers.
- 2) 32.9% of Hispanic females were current smokers and 9.3% were frequent smokers.

- 3) 12.2% of African Americans, non-Hispanic females were current smokers and 1.3% were frequent smokers.
- 4) Overall, 34.3% of high school females were current smokers and 5.9% were frequent smokers.

Johnston et al. (1992) reported similar findings in The Monitoring the Future Study, a survey of 8th, 10th, and 12th graders sponsored by the National Institute on Drug Abuse:

- 1) Cigarette use by females and males combined increased from 28.5% in 1991 to 33.5% in 1995.
- 2) Prevalence of smoking among 8th grade females rose from 13.1% in 1991 to 19% in 1995. For 10th grade females the increase during this time period was even higher—20.7% to 27.9%—and for the 12th grade females it rose from 27.5% to 32%.

Blumenthal (1997) stated reasons why young women smoked were usually that they were caught up in the moment, in the experience of what appeared to be a “cool,” “adult,” or even “glamorous” behavior. They were naïve about the powerful addictive nature of nicotine. Onset of cigarette smoking was influenced by several interrelated factors:

- 1) Having friends who smoked and having a best friend who smoked.
- 2) Parental smoking, which tended to establish smoking as a normative behavior.
- 3) Low self-esteem, poor self-esteem, low perception of self-efficacy, and susceptibility to peer pressure.
- 4) Sensation-seeking, rebelliousness, and a sense of invulnerability.
- 5) Low knowledge level of the adverse effects of cigarette smoking.

- 6) Anxiety or depression.
- 7) Sociodemographic characteristics. Females were more likely to smoke if they did not plan to complete four years of college, if their parents had a low number of years of education, or if they lived in a single-parent or unsupervised household.
- 8) Pharmacologic response.
- 9) Advertising and exposure to smoking in mass media outlets such as television, movies, and sports events which reinforced the idea that smoking was a normal, sophisticated, adult behavior and that it was glamorous.

Advertising that was specifically targeted to teenage women in the late 1960s and early 1970s correlated with smoking initiation by teenage women during the same period. Data from the National Health Interview Survey of more than 102,600 women showed an abrupt increase in smoking initiation in females under age 18 around 1967, when tobacco advertising introduced specific brands of cigarettes for women.

Blumenthal (1997) reported that the short-term effects of smoking in women were nicotine addiction, respiratory problems, coronary artery disease, dental problems, mental health effects, health-damaging behaviors, and negative effects on quality of life. Long-term health effects included cancer, cardiovascular and respiratory diseases, reproductive health problems, and children's health problems (see Appendix B).

Effects of smoking do not end with the smoke (American Cancer Society, 1997). Women who use tobacco during pregnancy were more likely to have adverse birth outcomes, including babies with low birthweight, a leading cause of death among infants. Cigarette smoking has been associated with an increase in spontaneous abortions, a

greater incidence of bleeding during pregnancy, premature and prolonged rupture of amniotic membranes, abruption placentae and placenta previa (U.S. Department of Health and Human Services, 1980). Finette and Albertini (1998) found that if pregnant women are exposed to cigarette smoke, the mutation-making enzyme (genetic mutation in blood cells often found in childhood leukemia and lymphoma) might become more active in the fetus, thus the risk of hazardous mutations in cancer-related genes is increased. Ness et al. (1999) reported that smokers are almost twice as likely to miscarry as nonsmokers. In a study of 970 women who sought emergency room treatment for miscarriage at the Hospital of Pennsylvania, Philadelphia, urine tests showed that about 35% of the women who miscarried were smokers, compared to 22% of the nonsmokers. Most of these women were black, poor, single, and had not received prenatal care. Walsh (1994) stated that nicotine is a strong vasoconstrictor that reduces uterine and placental blood flow. Other toxic components of tobacco smoke include carbon monoxide, which binds to hemoglobin and decreases the oxygen supply to the fetus, and cyanide, which depletes vitamin B₁₂, a necessary cofactor for fetal growth and development.

Gender differences vary in the effects of tobacco use. Women appear to be more susceptible to the addictive properties of nicotine and to metabolically clear nicotine from their bodies more slowly than do men. Women also appear to be more susceptible to the effects of tobacco carcinogens than men. Women have experienced higher rates of lung cancer than men, even though, they smoked the same number of cigarettes. Women were significantly more likely than men to feel dependent on cigarettes and more likely to report being unable to cut down on smoking (Blumenthal, 1997). Hall (1998) reported that an intensive new study of sperm samples taken from 18-year-olds found disturbing

links between a “smoking lifestyle” and potential birth defects. Results of this study trigger new warnings about the potential hazards of cigarette smoking. Now, along with the well-known risk of smokers of lung cancer and other respiratory diseases, is the possibility of males transmitting a genetic change to their offspring.

Johnston et al. (1992) stated that the segment of the population, 18-22 not enrolled in college (traditional college-age group), had consistently shown little or no sex-based difference in smoking rates in recent years. Among college students of this same age group, there had been a consistent and appreciable sex difference in smoking. College women were more likely to smoke than college men. In 1991, 16% of females versus 12% of males indicated daily smoking. Astin et al. (1991) found trends suggest college students are using cigarettes much less than in the past, but there were gender differences. Freshman men entering college in 1966 were about 50% more likely to be smokers than were women. However, in 1991, women were approximately 20% more likely than men to be smokers. While smoking among freshman men has declined by 50% during the past 26 years, smoking among women has declined only 10%.

Measures to prevent the adverse health effects and deaths in women caused by tobacco use included: deterring smoking initiation by girls and adolescent women, education, restriction of advertising to young people, reduced access, and restriction of smoking in public places. One of the most important objectives of the Healthy People 2000 initiative sponsored by the U.S. Public Health Service (PHS) was to “reduce the initiation of cigarette smoking by children and youth so that no more than 15% have become regular cigarette smokers by age 20” (Department of Health and Human Services, 1990) (see Appendix C). What this suggests for community colleges is that

they should educate their students, many of whom are parents, so they can help with this process by educating their children. Tobacco use by adolescent women is a public health problem of enormous magnitude that demands a tremendous cost on the health of our Nation's youth today and tomorrow. The Department of Health and Human Services is working to provide a healthier future for all women in the U.S. by using a combination of leadership, creativity, and determination in the fight against tobacco-related issues.

The CDC (1994b) reported that, in 1993, an estimated 22 million U.S. women smoked. Of these, 73% wanted to quit. Women who attend college account for one half of the student population, and more women indicated they were open to education programs. Therefore, Ford and Goode (1994) maintained that current and accurate data must be gathered to identify health behaviors of students if institutions are to develop, implement, and improve health promotion programs that focus on primary prevention.

Environmental Tobacco Smoke (ETS)

Environmental tobacco smoke (ETS) contains over 4,000 chemical compounds, including carbon monoxide, formaldehyde, ammonia, nickel, zinc, acetone, cholesterol, hydrogen cyanide, and formic acid. Four chemicals in secondhand smoke are known human carcinogens, based on EPA standards, and 10 others are probable human carcinogens (American Cancer Society, 1997). The Environmental Protection Agency (1992) stated that environmental tobacco smoke (ETS) was an established Group A carcinogen (as have asbestos and benzene) known to cause cancer in humans. Indoor air has presented a greater burden of pollutants than outdoor air. The U.S. Department of Health and Human Services (1982) reported that certain carcinogens were more potent in

secondhand smoke than they are in mainstream smoke. Nitrosamines, which are primary carcinogens, exist at a level that is 50 times greater in secondhand smoke than mainstream smoke. Another carcinogen, Quinoline, is a nitrogen-containing organic compound that is derived from coal tar. It is a known liver carcinogen in animals and is found in concentrations of 11 times that which is contained in mainstream smoke. Promoters, substances that assists a catalyst to be activated, are also more potent in secondhand smoke than in mainstream smoke. The promotor alone is not harmful, but when it acts with a co-carcinogen, the cell may develop into a malignancy. One of the most potent promoters is benzopyrene, which is found in concentrations three times more in secondhand smoke than in mainstream smoke. Other toxic agents found at greater levels in secondhand smoke than in mainstream smoke are formaldehyde, hydrogen cyanide, hydrogen sulfide, and arsenic.

Nonsmokers' health is adversely affected by environmental tobacco smoke (ETS) (See Appendix D—Health Consequences ETS). Each year, exposure to ETS causes an estimated 3,000 nonsmoking Americans to die of lung cancer and causes up to 300,000 children to suffer from lower respiratory tract infections (American Cancer Society, 1997). Evidence also indicated that ETS increased the risk of coronary heart disease (OSH, 1998). The Action on Smoking and Health (1998a) reported that a study by the American Cancer Society in 1996 found that married persons living with smoking spouses increased their risk of heart attack by approximately 20%. This means that ETS may be responsible for approximately 40,000 heart attack deaths in the U.S. each year. The Doctor's Guide and Other News (1997) reported that the American Heart Association found that children that are in danger of developing heart disease because of

high cholesterol blood levels face a triple jeopardy if they reside in smoke-filled homes. Findings suggested that secondhand smoke lowers the good level of cholesterol (HDL) by 10%, which protects against heart attacks. Whelan (1994) reported that there is unequivocal scientific evidence that children who are subjected to smoke over a period of time have substantially higher rates of asthma, other respiratory distress, and school absenteeism than children of nonsmoking parents.

Califano (1993) stated that American industries had moved aggressively to curb worksite smoking due to concerns about the health and well-being of employees, the alarming rise in medical costs, potential fire hazards, additional maintenance costs associated with worksite smoking, and the fear of future law suits from individuals who experienced illness as a result of exposure to secondhand smoke in the workplace. Companies are saving millions of dollars as a result of going smokefree. A professor at the Seattle University Albers School of Business estimated these savings to be as high as \$4,500 per employee per year. Smoking costs more than \$80 billion in health care and lost worker productivity annually (U.S. Department of Health and Human Services, 1994b). Estimated direct medical costs due to smoking were more than \$50 billion in 1993 (CDC, 1994b). Burner, Waldo, and McKusick (1992) stated that healthcare costs in the U.S. in 1993 were expected to be approximately \$900 billion, an average of more than \$14,000 annually for each family of four, if equally allocated across the population. The majority of this expenditure was devoted to treatment of conditions ultimately recorded on death certificates as the nation's leading killers. A small fraction of funds would go to the control of factors that have been identified as a substantial public health burden.

Industrial workers were reported by the American Cancer Society (1997) to have had an increased risk of developing lung diseases because of the synergistic effects of certain chemicals with cigarette smoke. Exposure to asbestos fibers while smoking increased the risk of lung cancer by as much as 60 times. A smoker who breathed air laden with fumes from rubber, coal, cotton, chlorine, and radon exacerbated the risk of lung disease.

Women exposed to secondhand smoke, even as little as one hour a day, could almost triple their risk of contracting breast cancer, the second leading cause of deaths among all American women, and the leading cause of death among middle-aged women. In 1997, physicians diagnosed cancer of the breast in 182,000 women, and 46,000 died from the disease. Breast cancer killed more middle-aged women than any other disease. Approximately three women develop breast cancer every 15 minutes, and one dies. Fifty years ago barely one out of every 28 women got breast cancer. Today, the rate is one in eight. One of the most important changes in women's lives has been the tremendous increase in smoking by American women. Another was the widespread exposure of nonsmoking women to tobacco smoke as more Americans smoked, and as women far more frequently worked outside the home in workplaces where smoking was permitted. Women were advised to be especially careful to avoid any situation in which they were exposed to tobacco smoke. This would be particularly true for women who had a higher-than-normal risk of developing breast cancer. These would include women who:

- 1) were overweight, especially if they were over age 50
- 2) started their menstrual period before they were 12 or stopped menstruation after age 55

- 3) had a close blood relative such as a mother or sister who died of the disease
- 4) never had children or who had their first pregnancy after age 20
- 5) never breast fed their children
- 6) had only one child
- 7) never exercised (Action on Smoking and Health (ASH, 1998b).

“Secondhand smoke” (1998) reported that in Concord, New Hampshire, six tobacco companies could be sued over the lung cancer death of a nonsmoker exposed to secondhand smoke. Daniel Donahue, deputy general counsel and senior vice president of R.J. Reynolds, stated, “It is our firm belief that exposure to environmental tobacco smoke has not been proved to cause disease, even today” (p. 5). The tobacco industry has never lost a secondhand smoke lawsuit; however, the industry reached a \$349 million settlement last year of a class-action lawsuit brought by flight attendants who claimed they were harmed by exposure to secondhand smoke on flights. Wollenberg (1998) reported that a \$206 billion settlement was made with the tobacco industry and 46 states. This settlement was reached to assist the states with healthcare costs associated with tobacco-related illnesses. However, Keeling (1999) stated that among the \$206 billion settlement, that of the millions of dollars that would reach Tennessee during 1999, special interest groups ranging from education to highway construction would be trying to get a portion of the tobacco funds. Healthcare officials would have to lobby for the funds to be allocated toward programs that would help the healthcare system that has been damaged by the very reason the states are receiving the money in the first place—tobacco-related illnesses.

Public policies to protect people from secondhand smoke could be enacted at local, state, or federal levels. Because there are no safe levels of secondhand smoke, it was imperative that these policies be as strong as possible (American Cancer Society, 1997). Emont et al. (1995) reported that the U.S. Department of Health and Human Services indicated that the percentage of businesses with smoking policies has more than doubled from 27% in 1985 to 59% in 1992.

O'Connell (1990b) stated that the nation was rapidly moving toward the goal of a smokefree society by the year 2000. Evidence of this trend existed everywhere: smoking restrictions are common on airlines, in workplaces, and in addiction treatment facilities. Group therapy and 12-step programs were banning smoking and the awareness about nicotine addiction had substantially grown. The Americans with Disabilities Act (ADA) offers protection for one to assert one's right to smokefree air. (See Appendix E for questions to ask regarding seeking protection of ADA from secondhand smoke).

Conclusions

Wechsler et al. (1998) suggests that college years provide a window of opportunity for interventions focused on blocking the transition from occasional smoking to regular nicotine-dependent smoking and for efforts to increase the success of substantial numbers of smokers who are already trying to quit. Stephens, Pederson, Koval, and Kim (1997) suggested that efforts to decrease smoking were more likely to be successful paired with environmental and policy changes that discouraged tobacco use and reinforced to young adults that not smoking is the norm.

Schwartz (1997) maintained that anti-tobacco education should begin at an early age. The CDC (1995) stated that 87% of daily smokers began prior to the age of 18. Tobacco companies asserted publicly that minors should not smoke; however, to offset the overall decline in smoking, companies have stepped up their efforts to influence 14-year-olds at a susceptible time in their lives. Advertisements feature young, attractive, and successful people, and companies sponsor youth sporting and rock music events (CDC, 1994a; Carol, 1988). "Team jerseys" (1998) reported that a juvenile little league baseball team, comprised of 11- and 12-year-olds, advertised the dangers of smoking through their team name, "Smoking Kills," which was displayed on the backs of their shirts. The idea originated with the coach in Kentucky, which produces more burley tobacco than any other state and has the highest adult and youth smoking rates in America. Anti-smoking advocates said the baseball field was the perfect place for a message on the dangers of smoking because that message reached children at an age when they were being tempted by tobacco. It was also appropriate because tobacco companies have used sports extensively to promote cigarettes and smokeless tobacco. Stoddard et al. (1997) reported that there is a higher density of tobacco billboards in racial/ethnic communities compared to those placed in white communities.

Wiley et al. (1996) stated that college students who were classified as traditional and undergraduate, may have engaged in risky behaviors that could have impaired their health and affected their lifetime health status. Adolescents and young adults could also establish protective patterns of health behavior that could last well into adulthood (Ajdukovic & Ajdukovic, 1991). High-risk behavior (cigarette smoking, excessive alcohol consumption, and physical inactivity) and lack of preventive health care

(screening for cancer) are associated with chronic disease and injury-related morbidity and mortality (CDC, 1998b). Wiley et al. (1996) stated that it was evident that administrators and health officials must address a number of health issues in dealing with college and university students. Findings from their study on Texas college students that revealed 30.9% current smokers, provided additional justification for college health officials to begin or continue to provide proactive educational programs to address health concerns of young adults.

Cinelli and Rose-Colley (1991) maintained that health care providers and educators who dealt with college-age students should make efforts to focus not only on prevention of unhealthy behaviors, but also intervention and the implementation of cessation programs for those students who wished to quit. Many college students were also unaware of the serious health risks and addiction associated with the use of smokeless tobacco products. Steps that could be taken to educate college students of the potentially serious health consequences of this substance included health education courses, campus-wide health promotion campaigns, communication with athletic coaches, and removal of environmental triggers that encourage use or relapse of smokeless tobacco.

Bobo (1998) reported that tobacco use continues to pose serious health risks among the entire population; however, research is being conducted into more positive uses for the crop. Acuff, a professor at East Tennessee State University has completed research that showed that tobacco plants contain a large quantity of antioxidants including Vitamin E and beta carotene, as well as phito estrogen, which is valuable as a hormonal supplement. Vitamin E and beta carotene are valuable dietary supplements

commonly used for their ability to reduce the chance of cancer and heart disease and phyto estrogen can be used as a hormonal supplement to help prevent osteoporosis. The downside of this research is that the U.S. Department of Agriculture (USDA) has shown no interest in pursuance of alternative uses for the tobacco plant; therefore, funds have not been available and the research has stagnated. Also, tobacco farmers currently receive a price of \$1.90 to \$2.00 per pound of tobacco and the estimation that revenues from the sale of tobacco for vitamin extraction would result in only \$0.80 per pound. However, the packaging for market in bales similar to hay would be much less time-consuming and labor-intensive as compared to the current preparation of tobacco for market (Bobo, 1998).

The American Cancer Society (1997) stated that all cancers caused by cigarette smoking could be prevented completely. Estimations in 1997 were that 174,000 cancer deaths were expected to be caused by tobacco use. People who smoke are 10 times more likely to develop lung cancer than non-smokers. Death rates due to many cancers have leveled off or declined over the past 60 years, except lung cancer, which have increased.

Moskal, Dziuban, and West (1996) stated that in 1990, the U.S. Public Health Service published a document entitled, Healthy People 2000: National Health Promotion and Disease Prevention Objectives. The report outlined objectives of the national health agenda aimed at increased prevention of disease and promoted positive health behaviors in Americans (see Appendix B). The American College Health Association formed a task force on National Health Objectives in Higher Education that focused on these national health objectives more specifically toward the college population. The resulting publication was the Healthy Campus 2000: Making it Happen. This document provided

objectives intended to increase the health awareness practices of college students in America.

Trends in substance use among American college students generally parallel closely those occurring among their age group as a whole; however, few important differences occur. Cigarette use continues to fall among those not enrolled in college, but has remained stable among college students (Johnston et al.1992). Wechsler et al. (1998) maintained that smoking behavior of college students provides valuable information about trends in smoking among young adults. Cigarette smoking among college students increased by 28% from 1993 to 1997. Roberts and Jackson (1993) stated that the trend was for younger females to begin smoking in greater numbers. Because women smoked more heavily than men, this suggested that the women would be at a greater risk in later life. This would cause increased costs to individuals and the community from health problems associated with women's smoking. Delene and Brogowicz (1990) reported that national trends were mirrored in expanded student interest programs including smoking-cessation.

Brody (1996) reported that in a 15-year study of more than 10,000 youth at the Harvard School of Public Health and Women's Hospital in Boston, the more cigarettes the subjects smoked, and the longer they smoked, the greater the impairment of their lung growth and breathing capacity. This impairment was more severe in females than in males. Respiratory health of children who smoked was more likely to be poor both in adolescence and in adulthood. Results of the study revealed that lung development was impaired in teenagers who smoked as few as five cigarettes a day. The author asked the readers to suppose an authority (or a celebrity) declared publicly that childhood exposure

to a particular food additive or pesticide residue caused irreversible damage to health. Media coverage would probably be intensive and press releases from self-appointed environmental groups, expressions of outrage, insistent demands for protective action, and front-page stories in the nation's major papers would probably prevail.

In 1995, a risk behavior study of college students in the U.S. regarding cigarette smoking, revealed that 31% had smoked cigarettes regularly at some time in their lives. White students were significantly more likely than African American or Hispanic students to have smoked cigarettes and cigarette use did not vary by gender (CDC, 1997). The CDC (1998a) found that smoking rates among African American adults historically have been higher than among the general U.S. population; however, the smoking rates have been similar in recent years. In 1995, 26.5% African American adults smoked, compared to 25.9% of White adults. As education increased, smoking rates declined. However, a recent study within the college population indicates there is an increase of smoking among all students from 1993 (22.3%) to 1997 (28.5%) (Wechsler et al., 1998). The CDC (1998a) found that African American male high school students (3.2%) were less likely to use smokeless tobacco products than White male (20.6%) and Hispanic male (5.1%) high school students.

Cancer prevention is synonymous with the prevention of smoking. Health and wellness programs are encouraged in every aspect of society, particularly in education. These programs are designed to help people make health-enhancing decisions and act on them, especially regarding tobacco control (American Cancer Society, 1997). Selingo (1997) stated that, because smoking behavior can lead to death or illness, college officials

should be as concerned about students' bringing this risk behavior to college as they are about the students' academic performance.

Initiation and development of tobacco use among children and adolescents progresses in five stages: 1) forming attitudes and beliefs about tobacco, 2) trying the product, 3) experimenting with the product, 4) using the product regularly, and 5) becoming addicted. This progress generally takes approximately three years (CDC, 1994a).

Today, nearly 3,000 young people across our country will begin smoking regularly. Of these 3,000, 1,000 will lose that gamble to the diseases caused by smoking. The net effect of this is that among children living in America today, 5 million will die an early preventable death because of a decision made as a child (Shalala, 1998).

CHAPTER 3

METHODOLOGY

Chapter 3 details the research method that was used for this study. The following aspects are described: research design, population, instrumentation, procedures, data analysis, null hypotheses, and summary.

Research Design

Components of descriptive and inferential research were used in this study. Students' responses to a survey were used to analyze quantitatively using descriptive research their relative importance. Generalizations about community college students' responses as compared with specific demographic subgroups within the study were obtained by using inferential analyses. Community colleges governed by the Tennessee Board of Regents participated in this study. They were Dyersburg State Community College, Jackson State Community College, Northeast State Technical Community College, Roane State Community College, Shelby State Community College, and Walters State Community College. These institutions were selected because they offered an orientation course during the 1999 spring semester. Responses to a survey by students enrolled in the above named community colleges who were enrolled in an orientation course, spring, 1999, were analyzed using the Statistical Package for Social Sciences (SPSS).

The study employed a pencil-and-paper survey. A modified version of The Health Knowledge Survey: Alcohol and Tobacco (with permission, see Appendix F)

(Krupka, Vener, & Engelmann, 1996), and the 1995 National College Health Risk Behavior Survey (U.S. Department of Health and Human Services, 1997) with modifications on questions pertaining to age, and questions from the researcher regarding attitude were included on the survey. Students completed the surveys on a voluntary basis during their orientation class following verbal and/or written instructions for its completion and assurances of confidentiality. Orientation course titles varied with each institution, but the curriculum is similar. These courses are designed to meet the needs of first semester students who are not familiar with the college environment. Course content includes: exploration of career preparation, college policies and procedures, academic advisement, time management, personal enrichment and development, and Library resources. Following are the orientation course titles at the selected institutions:

Dyersburg State Community College:	The College Experience
Jackson State Community College:	Orientation to College
Northeast State Technical Community College:	The Freshman Experience
Roane State Community College:	Orientation
Shelby State Community College:	Student Success Seminar
Walters State Community College:	The Freshman Experience

A written instruction sheet was provided for the individual selected to administer the survey at each institution. A portion of the instruction sheet was read during class before each survey administration to students who elected to participate in this study (see Appendix G). Instructions were provided to promote consistency in the administration of the survey.

Population

Participants for this study were students enrolled during the spring, 1999 semester, in orientation courses at their respective institutions. Orientation courses were selected because health issues were included in the curriculum of the course. All students enrolled in these courses during the spring, 1999 semester served as the target population; therefore, each member of the population had an equal chance of selection for this study. Persons responsible for the orientation courses were contacted to obtain the number of students enrolled in the courses. Students enrolled in all sections on the main campus of each institution were surveyed. Following are the colleges selected for the study, the enrollment during the spring, 1999 semester, and percentage of race.

- 1) Dyersburg State Community College is a rural college, 78 miles from Memphis. The college's total enrollment during the spring, 1999, semester was 1,995, and was comprised of 14% African Americans and 83% Whites.
- 2) Jackson State Community College is a suburban college, 80 miles from Memphis, 130 miles from Nashville. The college's total enrollment during the spring, 1999, semester was 3,361, and was comprised of 16% African Americans and 81% Whites.
- 3) Northeast State Technical Community College is a suburban college, 12 miles from Johnson City, 10 miles from Kingsport and Bristol. The college's total enrollment during the spring, 1999, semester was 3,493, and was comprised of 2% African Americans and 96% Whites.
- 4) Roane State Community College, is a rural college in Harriman, 40 miles from Knoxville. The college's total enrollment during the spring, 1999, semester was 4,676, and was comprised of 2% African Americans and 96% Whites.

- 5) Shelby State Community College is an urban college in Memphis. The college's total enrollment during the spring, 1999, semester was 3,902, and was comprised of 65% African Americans and 32% Whites.
- 6) Walters State Community College is a suburban college in Morristown, 45 miles from the Knoxville commuter campus. The college's total enrollment during the spring, 1999, semester was 4,567 (race not available). (College Handbook, 1998; Tennessee Board of Regents, 1999).

Instrumentation

A modified version of The Health Knowledge Survey: Alcohol and Tobacco (Michigan State University), the 1995 National College Health Risk Behavior Survey (U.S. Department of Health and Human Services, 1997) and questions from the researcher regarding attitude were included on the survey instrument. Questions from the National College Health Risk Behavior Survey were modified to adapt to the profile of the community college student.

The Health Knowledge Survey: Alcohol and Tobacco instrument (see Appendix H) (Krupka et al., 1996) consists of 27 true-false and multiple-choice questions that test knowledge regarding tobacco. All questions are health-related and were developed from sources readily available to the public (newspapers, magazines, newscasts, and Alcohol Among College Students brochures at Michigan State University). Administration of this survey occurred during the spring and fall of 1992 to students at Michigan State University who were enrolled in required core courses in the natural and social sciences (Krupka et al., 1996). Douglas et al. (1997) stated that the National College Health Risk

Behavior Survey (see Appendix I) was a modification of the Centers for Disease Control and Prevention (CDC) Youth Risk Behavior Survey (YRBS) that has been implemented nationally in secondary schools since 1991. Questions regarding demographic data and personal behaviors in the areas of: alcohol and other drug use, violence, sexuality, nutrition, exercise, safety, and mental health were included on the survey.

Administration of the survey occurred in 1995 at five universities throughout the U.S. as part of a grant provided by the Centers for Disease Control and Prevention.

For the purpose of this study, questions taken from the 1995 National College Health Risk Behavior Survey (U.S. Department of Health and Human Services, 1997) that addressed tobacco use and portions of demographic questions were used. Questions regarding attitude toward tobacco use were derived from the literature on smokefree campuses and current news regarding tobacco issues. The College Tobacco Behavior, Attitudes, and Knowledge Survey (see Appendix J) was the title chosen for the survey instrument for this study.

A pilot study was conducted at Northeast State Technical Community College during the fall semester of 1998. Administration of the survey instrument included 63 students enrolled in orientation classes. Instructions on how to complete the questionnaire were provided to students. In addition, careful review of the survey instrument itself was requested and comments about the survey questions and/or the layout of the instrument were encouraged. Suggestions from the participants were analyzed and minor changes in wording were made.

Data from the pilot study were analyzed using the Statistical Package for Social Sciences (SPSS). Cronbach's Alpha is the general test for reliability. Questions (12)

regarding knowledge of tobacco-related health risks were analyzed. Reliability coefficient for these questions on the pilot study was 0.5824. Upon reviewing the questions, three were removed and the reliability coefficient for the remaining nine questions was 0.6735. Based upon a review of the instrument by the researcher's chair, and the decision was made to leave the 12 items as stated on the questionnaire and continue the study based on Thorndike and Hagen's (1977) interpretation that the appraisal of reliability in any new measurement procedure must always be made in terms of other procedures with which it is in competition. No other similar surveys were found in the literature search. No reliability coefficient was found for the original instrument; therefore, the reliability coefficient cited above was deemed adequate.

Procedures

After the research proposal was approved by the East Tennessee State University Institutional Review Board, permission to administer the survey in orientation courses was obtained from the academic vice presidents of five of the selected institutions and from the dean of instruction at one institution (see Appendix K). The researcher worked closely with individuals at each institution who assisted with the survey process during the spring, 1999 semester. Individuals were selected because they were responsible for the orientation courses at their respective colleges.

Individuals responsible for the orientation courses informed the researcher of the number of students enrolled in the orientation courses after registration for the spring, 1999 semester was completed. Upon receiving this information, a specific number of copies of the survey instrument was requested by each institution. Surveys were color-

coded by institution to determine the ratio of response. Institutions received by certified mail the surveys, instruction sheet, and a predetermined amount of postage for returning the surveys. Administration of the surveys was conducted by designated administrative personnel and faculty at participating institutions. Students enrolled in orientation courses at these selected institutions anonymously completed the survey during the spring, 1999 semester. Data were analyzed using SPSS and disseminated to participating institutions.

Data Analysis

Descriptive and inferential statistics were used to analyze the data from this study. Demographic information used for analysis included all variables found on the inventory form including age, gender, and ethnicity. Data analysis included the following tests: *t*-tests, crosstabulations, Oneway ANOVAs, and Pearson *r* correlation coefficients.

Survey data included demographic information as age, sex, and ethnicity; description of survey question 5; description of student's attitudes pertaining to survey questions 15, 16, 17, and 18; knowledge score, smokers versus nonsmokers responses to survey questions 10 and 11; smokeless tobacco use by ethnicities; and, current smokers (sex and ethnicities for comparison with available national data).

The following analysis pertained to hypotheses 1, 4, 6, 9, 15, and 17. Group statistics to establish the means and standard deviations were used for those who smoked regularly and those who did not, for males and females, for differences in age, and for differences in smokers versus nonsmokers. Independent Samples Tests [Levine's Test

for Equality of Variances (equal variance assumed or not assumed)] and *t*-test for Equality of Means were used.

The following analysis pertained to hypotheses 2, 3, 7, 8, 10, 11, 12, and 13. Crosstabulations were used to identify the number of students and percentages of males, females, and ethnicities who ever smoked regularly; males, females, and ethnicities and how many days they smoked during the past 30 days; males and females and how many days they used smokeless tobacco during the past 30 days; and, smokers versus nonsmokers and their stated beliefs regarding a smokefree campus, a designated smoking area indoors, and a tobacco awareness program. There are two assumptions of Chi-square. No more than 20% of the cells had an expected frequency < 5 and the minimum expected frequency should be at least one or larger (Siegal, 1956). After the assumptions were met, Chi-square tests were used.

Oneway analysis of variance was used to analyze the data for hypotheses 5 and 16. The mean and standard deviations of ethnicities (White, African American, and Other, which included Hispanic or Latino, Asian or Pacific Islander, American Indian or Alaskan Native, and Other) were reported. After Levine's Test for Homogeneity of Variance was completed and the significance was greater than .05 alpha level, the assumptions were met, an ANOVA was used to analyze the data.

Pearson *r* was used to analyze the data regarding hypothesis 14 to test for relationship between age and knowledge scores.

Research Hypotheses

H₀1: There is no difference in the mean age between students who ever smoked cigarettes regularly (at least one cigarette every day for 30 days) and students who did not ever smoke regularly.

H₀2: There is no difference between male and female students regarding the percentages who ever smoked cigarettes regularly (at least one cigarette every day for 30 days).

H₀3: There is no difference among students of varying ethnicities regarding the percentages who ever smoked cigarettes regularly (at least one cigarette every day for 30 days).

H₀4: There is no difference between male and female students regarding their ages when they first started smoking cigarettes regularly (at least one cigarette every day for 30 days).

H₀5: There is no difference among students of varying ethnicities regarding their ages when they first started smoking cigarettes regularly (at least one cigarette every day for 30 days).

H₀6: There is no relationship between students' ages and how many days they smoked during the past 30 days.

H₀7: There is no difference between male and female students regarding how many days they smoked during the past 30 days.

H₀8: There is no difference among students of varying ethnicities of students regarding how many days they smoked during the past 30 days.

H₀9: There is no relationship between students' ages and how many days they used smokeless tobacco during the past 30 days.

H₀10: There is no difference between male and female students regarding how many days they used smokeless tobacco during the past 30 days.

H₀11: There is no difference between smokers' and nonsmokers' stated beliefs that a college campus should be smokefree.

H₀12: There is no difference between smokers' and nonsmokers' stated beliefs that a college should provide a designated smoking area indoors.

H₀13: There is no difference between smokers' and nonsmokers' stated beliefs that a tobacco awareness program would benefit college students.

H₀14: There is no relationship between students' tobacco knowledge scores and their ages.

H₀15: There is no difference between male and female students' tobacco knowledge scores.

H₀16: There is no difference among students of varying ethnicities in their tobacco knowledge scores.

H₀17: There is no difference between students who are smokers and nonsmokers in their knowledge scores.

Summary

Methods and procedures used for this study are presented in this chapter. The population for the study consisted of students enrolled in orientation courses at the following community colleges in Tennessee: Dyersburg State Community College,

Jackson State Community College, Northeast State Technical Community College, Roane State Community College, Shelby State Community College, and Walters State Community College. Students who completed the survey for this study provided a profile of behavior, attitude, and knowledge regarding tobacco use among community college students in the state of Tennessee. Analyses of the findings are presented in Chapter 4 and the summary, conclusions, recommendations to improve practice and recommendations for further research are presented in Chapter 5.

CHAPTER 4

DATA ANALYSIS

Chapter 4 presents an analysis of the data collected from six of the 14 community colleges in the Tennessee Board of Regents system relative to student behavior, attitude, and knowledge of tobacco use. Data were obtained from surveys administered to students enrolled in orientation courses. Surveys and instructions were mailed to each institution and a designated person disseminated the surveys to faculty teaching the orientation courses.

Students were surveyed in all orientation classes during the spring, 1999 semester on the main campus of the six selected institutions. A total of 965 (divided by the specific number requested from each institution) surveys was mailed to the institutions for administration. A total of 700 surveys was returned to the researcher before the requested date of January 29, 1999. This total represents 72.5% of the sample. Response rates by institution varied from a low of 39% to a high of 92% (see Appendix L).

Organization of this chapter includes: descriptive data and analysis of data for research questions.

Descriptive Analysis

Descriptive analyses of data were obtained from the following: age (survey questions 1, 8, 9, and 12); sex (survey question 2); ethnicity (survey question 4); Survey Question 5; attitude (survey questions 15 – 18); knowledge score (survey questions 19 – 30); and smoker versus nonsmoker (survey questions 10 and 11); smokeless tobacco and

ethnicity (survey question 13). Tables 1 - 12 reported data regarding age, sex, ethnicities and current cigarette use.

Age – Survey Question 1, “What is your age?”

Results showed that the minimum age reported was 16 and the maximum age reported was 55 (698 out of 700 responded). Mean age = 23.67 and the standard deviation = 7.61 and the median age = 20 and the mode = 19. Table 1 presents the frequency and percent of age of students.

Age – Survey Question 8, “How old were you when you smoked a whole cigarette for the first time?”

Results found that the minimum age reported was 4 and the maximum reported was 32 (336 responded). Mean age = 14.63 and the standard deviation = 3.33.

Age – Survey Question 9, “How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days)?”

Results revealed that the minimum age reported was 9 and the maximum reported was 32 (312 responded). Mean age = 16.21 and the standard deviation = 3.07.

Age – Survey Question 12, “How old were you when you tried smokeless tobacco?”

Results showed that the minimum age reported was 5 and the maximum reported was 28 (179 responded). Mean age = 14.20 and the standard deviation = 3.00.

Sex – Survey Question 2, “What is your sex?”

Of the respondents, 253 (36.2%) were male and 446 (63.8%) were female. One participant did not respond.

TABLE 1

AGE, FREQUENCY AND PERCENT OF STUDENTS WHO PARTICIPATED

Age	<i>f</i>	<i>P</i>	Cumulative <i>P</i>
16	1	.1	.1
17	9	1.3	1.4
18	123	17.6	19.1
19	158	22.6	41.7
20	76	10.9	52.6
21	59	8.4	61.0
22	30	4.3	65.3
23	27	3.9	69.2
24	16	2.3	71.5
25	16	2.3	76.5
26	19	2.7	76.5
27	12	1.7	78.2
28	23	3.3	81.5
29	5	.7	82.2
30	8	1.1	83.4
31	13	1.9	85.2
32	8	1.1	86.4
33	6	.9	87.2
34	13	1.9	89.1
35	6	.9	90.0
36	12	1.7	91.7
37	8	1.1	92.8
38	1	.1	93.0
39	3	.4	93.4
40	6	.9	94.3
41	2	.3	94.6
42	5	.7	95.3
43	6	.9	96.1
44	3	.4	96.6
45	3	.4	97.0
46	6	.9	97.9
47	1	.1	98.0
48	5	.7	98.7
49	2	.3	99.0
50	4	.6	99.6
51	2	.3	99.9
55	1	.1	100.0

Ethnicity – Survey Question 4, “How do you describe yourself?”

Ethnicity was collapsed into three categories based on the results of the survey. Of the participants, 514 (73.4%) were White, 159 (22.7%) were African American, and 27 (3.9%) were classified as Other which included Hispanic or Latino, Asian or Pacific Islander, and American Indian or Alaskan Native. Table 2 presents the frequency and percent of students of varying ethnicities before being collapsed into three groups.

TABLE 2
ETHNICITIES, FREQUENCY AND PERCENT (BEFORE COLLAPSED INTO THREE GROUPS)

Ethnicities	<i>f</i>	<i>P</i>	Valid <i>P</i>	Cumulative <i>P</i>
White	514	73.4	73.4	73.4
African American	159	22.7	22.7	96.1
Hispanic or Latino	8	1.1	1.1	97.3
Asian or Pacific Islander	5	.7	.7	98.0
American Indian or Alaskan Native	4	.6	.6	98.6
Other	10	1.4	1.4	100.0
Total	700	100.0	100.0	

Survey Question 5, “Have you ever tried cigarette smoking, even one or two puffs?”

Students who responded if they had ever tried cigarette smoking, even one or two puffs, were 558 (79.8%) yes, and 141 (20.2%) no. One student did not respond.

Attitude – Survey Question 15, “If the price of tobacco products were to increase, would you still purchase the product for yourself?”

Students who indicated they were current tobacco users responded to this question (these were identified by those who answered survey questions 7 and 13. The total who responded were 210 (9 did not answer). Those who stated yes were 83 (39.5%); stated no were 24 (11.4%); stated it depends on the amount of the increase were 103 (49%).

Attitude – Survey Question 16, “I believe that a college campus should be smokefree”.

All 700 students responded to this statement. A 5-point Likert scale was used to analyze the data whereas 1 = Strongly Agree, 2 = Agree, 3 = No Opinion, 4 = Disagree, and 5 = Strongly Disagree. Table 3 presents students’ attitude regarding their stated beliefs that a college campus should be smokefree.

TABLE 3

ATTITUDE OF STUDENTS REGARDING A COLLEGE CAMPUS SHOULD BE SMOKEFREE

I believe that a college campus should be smokefree.	<i>f</i>	<i>P</i>	Cumulative <i>P</i>
Strongly Agree	178	25.4	25.4
Agree	87	12.4	37.9
No Opinion	151	21.6	59.4
Disagree	182	26.0	85.4
Strongly Disagree	102	14.6	100.0
Total	700	100.0	

Attitude – Survey Question 17, “I believe that colleges should provide a designated smoking area indoors.”

Of the 700 students who participated, 698 responded to this statement. A 5-point Likert scale was used to analyze the data. Table 4 presents a summary analysis of attitude and students’ stated beliefs that a college should provide a designated smoking area indoors.

TABLE 4

ATTITUDE OF STUDENTS REGARDING A COLLEGE SHOULD PROVIDE A DESIGNATED SMOKING AREA INDOORS

I believe a college should provide a designated smoking area indoors.	<i>f</i>	<i>P</i>	Valid <i>P</i>	Cumulative <i>P</i>
Strongly Agree	118	16.9	16.9	16.9
Agree	130	18.6	18.6	35.5
No Opinion	147	21.0	21.1	56.6
Disagree	142	20.3	20.3	76.9
Strongly Disagree	161	23.0	23.1	100.0
Total	698	99.7	100.0	
Missing	2	.3		
Total	700			

Attitude – Survey Question 18, “I believe that a tobacco awareness program would benefit college students.”

Of the 700 students who participated, 697 responded to this statement. A 5-point Likert scale was used to analyze the data. Table 5 presents a summary analysis of attitude of students' stated beliefs that a tobacco awareness program would benefit college students.

TABLE 5

ATTITUDE OF STUDENTS REGARDING A TOBACCO AWARENESS PROGRAM
WOULD BENEFIT COLLEGE STUDENTS

I believe that a tobacco awareness program would benefit college students.	<i>f</i>	<i>P</i>	Valid <i>P</i>	Cumulative <i>P</i>
Strongly Agree	128	18.3	18.4	18.4
Agree	224	32.0	32.1	50.5
No Opinion	219	31.3	31.4	81.9
Disagree	105	15.0	15.1	97.0
Strongly Disagree	21	3.0	3.0	100.0
Total	697	99.6	100.0	
Missing	3	.4		
Total	700	100.0		

Knowledge –Survey Questions 19 - 30 (See Appendix H)

Total knowledge score was the sum of test items scored Wrong and Right answers. Of the 700 students who answered the questions regarding knowledge of health-related issues in section four of the survey, the minimum number answered wrong was 0 and the maximum answered right was 8. Results revealed that the mean score =

2.7086 and the standard deviation = 1.6593. Table 6 presents a summary analysis of the number of right answers on the knowledge survey questions 19 – 30. The first column shows the number of right answers. For example, 64 subjects (9.1%) did not answer any correctly; 121 (17.3%) answered one question correctly.

TABLE 6
RIGHT ANSWERS OF STUDENTS' KNOWLEDGE SCORE

Right Answers	<i>f</i>	<i>P</i>	Cumulative <i>P</i>
.00	64	9.1	9.1
1.00	121	17.3	26.4
2.00	141	20.1	46.6
3.00	148	21.1	67.7
4.00	126	18.0	85.7
5.00	69	9.9	95.6
6.00	19	2.7	98.3
7.00	10	1.4	99.7
8.00	2	.3	100.0
Total	700	100.0	

Smoker/Nonsmoker

Data indicated that 199 (29.7%) students were smokers and 470 (70.3%) were nonsmokers.

Survey Question 10, “During the past 30 days, on how many days did you smoke cigarettes?”

Results showed that the total response to question 10 was 249 (35.6%). Mean = 20 – 29 days, median = 30 days, and the standard deviation = 1.39. The minimum number of days students smoked was 1 – 2 days and the maximum number of days students smoked was all 30 days. Table 7 presents a summary analysis of how many days students smoked cigarettes during the past 30 days.

TABLE 7

TOTAL NUMBER OF DAYS STUDENTS SMOKED CIGARETTES DURING THE PAST 30 DAYS

During the past 30 days, on how many days did you smoke cigarettes?	<i>f</i>	<i>P</i>	Valid <i>P</i>	Cumulative <i>P</i>
1-2	15	2.1	6.0	6.0
3-5	6	.9	2.4	8.4
6-9	3	.4	1.2	9.6
10-19	18	2.6	7.2	16.9
20-29	36	5.1	14.5	31.3
all 30	171	24.4	68.7	100.0
Missing	451	64.4		
Total	700	100.0		

Survey Question 11, “During the past 30 days, on the days you smoked, how many cigarettes did you smoke?”

Results showed that the total response to this question was 251. Mean = 6 to 10 days, the median = 11 to 20 days and the standard deviation = 1.23. Table 13 presents the frequency and percent of how many cigarettes students smoked during the past 30 days.

TABLE 8

TOTAL NUMBER OF CIGARETTES STUDENTS SMOKED IN THE PAST 30 DAYS

During the past 30 days, on the days you smoked, how many cigarettes did you smoke?	<i>f</i>	<i>P</i>	Valid <i>P</i>	Cumulative <i>P</i>
Less than 1	6	.9	2.4	2.4
1	9	1.3	3.6	6.0
2-5	59	8.4	23.5	29.5
6-10	49	7.0	19.5	49.0
11-20	86	12.3	34.3	83.3
more than 20	42	6.0	16.7	100.0
Total	251	35.9	100.0	
Missing	449	64.1		
Total	700	100.0		

Survey Question 13. "During the past 30 days, on how many days did you use smokeless tobacco?"

Results revealed that a total of 57 (8.1%) stated they had used smokeless tobacco during the past 30 days. Mean = 6 to 9 days, the median = 9 days, and the standard deviation = 2.03. There were 57.7% (Whites) and 75% (African Americans) and 0.0% (Others) indicated they had used smokeless tobacco less than 20 days during the past 30 days. There were 42.3% (Whites), 25% (African Americans) and 100% (Others) who said they had used smokeless tobacco 20 days or more. Results showed that of the 57 who responded, more Whites than African Americans or Others used smokeless tobacco during the past 30 days. Analysis of the data showed that the majority of students who used smokeless tobacco during the last 30 days were White (91.2%).

Table 9 presents demographic data regarding age, sex, and if they ever used cigarettes regularly (percentages based on students who answered both questions). Table 10 presents data regarding age, sex, and current smokers. Table 11 presents data regarding ethnicity, sex, and current smokers.

TABLE 9
AGE, SEX, AND IF STUDENTS EVER USED CIGARETTES REGULARLY

	Age	
	18 – 24	25 and older
All Students	30.1%	15.2%
Sex		
Males	29.8%	7.8%
Females	36.6%	25.9%

TABLE 10
AGE, SEX AND CURRENT SMOKERS

Age	<i>P</i>	Male	Female
18-24	27.3%	28.9%	36.6%
<u>25</u> >	34.9%	6.7%	27.8%
All Students	29.7%		

TABLE 11
ETHNICITY, SEX AND CURRENT SMOKERS

Ethnicity	% within Smokers	% within Entire Sample	Male	Female
White	35.3%	26.6%	32.8%	59.3%
African American	10.0%	8.2%	2.1%	5.8%

Analysis of Data for Null Hypotheses

Research questions investigated in this study included questions regarding age, sex, and ethnicity as related to behavior, attitude, and knowledge regarding tobacco use. Student responses to the survey were reviewed for analysis to test the null hypotheses. The survey instrument was divided into four sections: a) demographic information, b) behavior associated with tobacco use, c) attitudes related to tobacco use, and d) knowledge of tobacco-related health risks.

An alpha level of .05 was used for the analysis of data. Data collected from the survey participants provided the necessary information to analyze the null hypotheses in order as stated in Chapter Three. Hypotheses 1 – 10 addressed behavior associated with tobacco use, 11 – 13 addressed attitude regarding smoking on campus, and 14-17 addressed tobacco knowledge.

H₀1: There is no difference in the mean age between students who ever smoked cigarettes regularly (at least one cigarette every day for 30 days) and students who did not ever smoke regularly.

Analysis of student responses regarding age and if they ever smoked cigarettes regularly revealed that 314 (44.8%) of the respondents with a mean age of 24.82 and a standard deviation of 8.42 had ever smoked cigarettes regularly; 377 (53.8%) with a mean age of 22.70 and a standard deviation of 6.70 had not smoked cigarettes regularly.

Levine's Test for Homogeneity of Variance indicated the assumption of equal variances could not be assumed. A *t*-test with a correction for inequality of variance was used and the two-tailed probability was .0005; therefore, the null hypothesis was rejected.

H₀2: There is no difference between male and female students who had ever smoked cigarettes regularly.

Analysis of the data showed that 119 (47.4% males and 195 (44.2%) females had ever smoked cigarettes regularly. Chi-square test of significance was used to test whether or not the proportion (or percentage) of males who had ever smoked cigarettes regularly was equal to the proportion (or percentage) of females who had ever smoked cigarettes regularly. Both assumptions of Chi-square (no more than 20% of the cells had an expected frequency < 5 and the minimum expected frequency was at least ≥ 1) were met.

A Chi-square test was used to test the null hypothesis. Results showed $\chi^2 (1, N = 692) = .417, p > .05$; therefore, the findings failed to reject the null hypothesis.

H₀3: There is no difference among varying ethnicities of students and if they had ever smoked cigarettes regularly (at least one cigarette every day for 30 days).

Data revealed that 273 (53.2%) Whites, 28 (18.3%) African Americans, and 14 (51.9%) Other students had ever smoked cigarettes regularly. Both assumptions of the Chi-square (no more than 20% of the cells had an expected frequency < 5 and the minimum expected frequency was at least > 1) were met. A Chi-square test was used to test the null hypothesis. Results showed $\chi^2 (2, N = 693) = .0005, p < .05$; therefore, the null hypothesis was rejected.

H₀4: There is no difference between male and female students regarding age and when they first started smoking cigarettes regularly.

Analysis of responses between male and female students regarding the age at which they first started smoking cigarettes regularly revealed that there were 117 (37.6%) males with a mean age of 16.09, standard deviation = 3.17 and 194 (62.3%) females with a mean age of 16.25, and a standard deviation = 3.00.

Levine's Test for Homogeneity of Variance showed that there was no violation of the assumption of homogeneity of variance; therefore, equal variances was assumed. A *t*-test for equality of means was used to test the null hypothesis. The two-tailed probability was .652; therefore, the findings failed to reject the null hypothesis.

H₀5: There is no difference among students of varying ethnicities regarding their ages when they first started smoking cigarettes regularly.

Analysis of responses between students of varying ethnicities regarding age at which they first started smoking cigarettes regularly revealed that 268 (85.8%) Whites had a mean age of 16.02, standard deviation = 2.94; 30 (9.6%) African Americans had a mean age of 18.30, standard deviation = 3.80; and, 14 (4.4%) Others had a mean age of 16.21, standard deviation = 3.07. Levine's Test for Homogeneity of Variance showed the variances of the three groups were equal or similar. The assumption of equality of variances was met. Because ethnicity has three categories (White, African American, and Other) a Oneway ANOVA was used instead of a *t*-test. The ANOVA tests the null hypothesis that the mean ages when students first smoked cigarettes regularly are equal. Results revealed that there was statistical differences between the three groups ($F = 8.570$, $p = .0005$); therefore, the null hypothesis was rejected.

H₀₆: There is no relationship between students' age and how many days they smoked during the past 30 days.

A new variable was created for survey question 10. For the new variable, answer 1 (smoked 0 days) was defined as missing and excluded from the analysis. The purpose was to exclude students who do not currently smoke. An examination of the frequency table for this modified version showed a highly skewed distribution with 68.7% of current smokers indicating they had smoked all 30 days. Because of this finding, another new variable was created from the previous modified version of the question. The version used a dichotomous variable coded: (1 = smoked less than 20 days and 2 = smoked 20 days or more). Intuitively, it made sense to combine those who smoked at least 20 days out of the last 30 days with those who smoked all 30 days.

An analysis of the data showed that 42 (16.8%) students indicated they had smoked fewer than 20 days out of the last 30 days. For this group the mean age was 22.64 with a standard deviation of 6.47. There were 207 students (83.1%) who said they had smoked at least 20 days or more out of the last 30 days. This group's mean was 24.61 with a standard deviation of 8.22. The *t*-test for independent samples was used because one variable was a dichotomy (smoked < 20 days and smoked 20 days or more) and the other variable was interval (current age).

Levine's Test for Homogeneity of Variance showed the null hypothesis of equal variances of the two groups was rejected. Therefore, the *t*-test with a correction for unequal variances was used and the two-tailed probability was .092; therefore, the findings failed to reject the null hypothesis.

H₀7: There is no difference between male and female students regarding how many days they smoked during the past 30 days.

An analysis of the data showed that 24 (23.8%) males and 18 (12.2%) females indicated they had smoked fewer than 20 days out of the last 30 days. There were 77 (76.2%) males and 130 (87.8%) females who said they had smoked at least 20 days or more out of the last 30 days.

Chi-square test of significance was used to analyze the data after the assumptions were met. Results showed $X^2(1, N = 249) = .016, p < .05$; therefore, the null hypothesis was rejected.

H₀8: There is no difference among varying ethnicities of students and how many days they smoked during the past 30 days. Because one variable was changed to

NonWhite, the hypothesis was changed to: There is no difference between White and NonWhite students regarding how many days they smoked during the past 30 days.

Chi-square results showed that the assumptions were violated when three categories of ethnicity were used. A decision was made to drop the Other category and evaluate the assumptions of the Chi-square test using only Whites and African Americans. In the latter analysis, there continued to be violations of the assumptions of Chi-square. Finally, the Other category was combined with African Americans into a single category for a comparison between Whites and NonWhites.

An analysis of the data showed that 29 (13.7%) Whites and 13 (34.2%) NonWhites indicated they had smoked fewer than 20 days during the last 30 days. There were 182 (86.3%) Whites and 25 (65.8%) NonWhites who said they had smoked more than 20 days during the last 30 days. Chi-square test of significance was used to analyze the data after the assumptions were met. Results showed $X^2(1, N = 249) = .002, p < .05$; therefore, the null hypothesis was rejected.

H₀9: There is no relationship between students' age and how many days they used smokeless tobacco during the past 30 days.

An analysis of the data showed that 33 students with a mean age of 20.45 indicated they had used smokeless tobacco fewer than 20 days during the last 30 days. There were 24 students with a mean age of 22.13 who said they had used smokeless tobacco 20 days or more during the last 30 days.

Levine's Test for Homogeneity of Variance showed that there was no violation of the assumption of homogeneity of variance; therefore, equal variances was assumed. A

t-test for equality of means was used to test the null hypothesis. The two-tailed probability was .230; therefore, the findings failed to reject the null hypothesis.

H₀10: There is no difference between male and female students and how many days they used smokeless tobacco during the last 30 days.

An analysis of the data showed that 24 (53.3%) males and 9 (75.0%) females indicated they had used smokeless tobacco fewer than 20 days during the last 30 days. There were 21 (46.7%) males and 3 (25.0%) females who said they had used smokeless tobacco 20 days or more during the last 30 days. Chi-square test of significance was used to analyze the data after the assumptions were met. Results showed $X^2(1, N = 57) = .177, p > .05$; therefore, the findings failed to reject the null hypothesis.

H₀11: There is no difference between smokers' and nonsmokers' stated beliefs that a college campus should be smokefree.

A 5-point Likert Scale was used for Survey Question 16 whereas: 1 = strongly agree, 2 = agree, 3 = no opinion, 4 = disagree, and 5 = strongly disagree. Table 12 presents a summary of analysis between smokers' and nonsmokers' stated beliefs that a college campus should be smokefree.

Chi-square test of significance was used to analyze the data after assumptions were met. Results showed $X^2(4, N = 669) = .0005, p < .05$; therefore, the null hypothesis was rejected.

H₀12: There is no difference between smokers' and nonsmokers' stated beliefs that a college should provide a designated smoking area indoors.

A 5-point Likert scale was used for Survey Question 17 whereas: 1 = strongly agree, 2 = agree, 3 = no opinion, 4 = disagree, and 5 = strongly disagree. Table 13

presents a summary of analysis between smokers' and nonsmokers' stated beliefs that a college should provide a designated smoking area indoors.

TABLE 12
SMOKERS' AND NONSMOKERS' STATED BELIEFS THAT A COLLEGE
CAMPUS SHOULD BE SMOKEFREE

I believe that a college campus should be smokefree.	Smoker		Nonsmoker		Total	
	n	P	n	P	n	P
Strongly Agree	8	4.0%	164	34.9%	172	25.7%
Agree	4	2.0%	79	16.8%	83	12.4%
No Opinion	30	15.1%	114	24.3%	144	21.5%
Disagree	83	41.7%	90	19.1%	173	25.9%
Strongly Disagree	74	37.2%	23	4.9%	97	14.5%
Total	199	100%	470	100%	669	100%

Chi-square test of significance was used to analyze the data after assumptions were met. Results showed $X^2(4, N = 667) = .0005, p < .05$; therefore, the null hypothesis was rejected.

H₀13: There is no difference between smokers' and nonsmokers' stated beliefs that a tobacco awareness program would benefit college students.

A 5-point Likert scale was used for Survey Question 18 whereas: 1 = strongly agree, 2 = agree, 3 = no opinion, 4 = disagree, and 5 = strongly disagree. Table 14 presents a summary of analysis between smokers' and nonsmokers' stated beliefs that a tobacco awareness program would benefit college students.

TABLE 13

SMOKERS' AND NONSMOKERS' STATED BELIEFS THAT A COLLEGE
SHOULD PROVIDE A DESIGNATED SMOKING AREA INDOORS

I believe that a college should provide a designated smoking area indoors.	Smoker		Nonsmoker		Total	
	n	P	n	P	n	P
Strongly Agree	72	36.2%	37	7.9%	109	16.3%
Agree	56	28.1%	69	14.7%	125	18.7%
No Opinion	40	20.1%	102	21.8%	142	21.3%
Disagree	22	11.1%	114	24.4%	136	20.4%
Strongly Disagree	9	4.5%	146	31.2%	155	23.2%
Total	199	100%	468	100%	667	100%

Chi-square test of significance was used to analyze the data after assumptions were met. Results showed $\chi^2(4, N = 666) = .002, p < .05$; therefore, the null hypothesis was rejected.

H₀14: There is no relationship between students' tobacco knowledge scores and ages.

An analysis of the data showed that of the 698 who responded, the mean age was 23.67 with a knowledge score of 2.7086, and the standard deviation = 7.61. The knowledge score represents the number of correct responses for survey questions 19 – 30 (12 items). Pearson's *r* was used to test the null hypothesis. The two-tailed probability was $.826 > .05$; therefore, there was no relationship between age and knowledge score and the findings failed to reject the null hypothesis.

TABLE 14

SMOKERS' AND NONSMOKERS' STATED BELIEFS THAT A TOBACCO
AWARENESS PROGRAM WOULD BENEFIT COLLEGE STUDENTS

I believe that a tobacco awareness program would benefit college students.	Smoker		Nonsmoker		Total	
	n	P	n	P	n	P
Strongly Agree	23	11.6%	99	21.2%	122	18.3%
Agree	54	27.1%	157	33.6%	211	31.7%
No Opinion	78	39.2%	133	28.5	211	31.7%
Disagree	38	19.1%	64	13.7%	102	15.3%
Strongly Disagree	6	3.0%	14	3.0%	20	3.0%
Total	19	100%	467	100%	666	100%

H_0 15: There is no difference between male and female students' tobacco knowledge scores.

Analysis of responses between male and female students' knowledge scores revealed that there were 253 (36.1%) males with a mean knowledge score = 2.71, a standard deviation = 1.70 and 446 (63.8%) females with a mean knowledge score = 2.70 and a standard deviation = 1.64.

Levine's Test for Homogeneity of Variance showed that there was no violation of the assumption of homogeneity of variance; therefore, equal variances was assumed. A *t*-test for equality of means was used to test the null hypothesis. The two-tailed probability was .982; therefore, the findings failed to reject the null hypothesis.

H₀16: There is no difference among students of varying ethnicities in their knowledge scores of tobacco use.

Analysis of responses among students of varying ethnicities and their knowledge scores revealed that there were 514 (73.4%) Whites with a knowledge score = 2.78, standard deviation = 1.64; 159 (22.7%) African Americans with a knowledge score = 2.37, standard deviation = 1.58, and 27 (3.8%) Other with a knowledge score = 3.25 and a standard deviation = 2.06. Levine's Test for Homogeneity of Variance revealed that three groups were equal; therefore, assumptions of homogeneity of variance were met.

ANOVA was used to analyze variances among students of varying ethnicities. Results revealed there was statistical significant differences between the three groups ($F = 5.374, p = .005$); therefore, the null hypothesis was rejected.

H₀17: There is no difference between students who are smokers and nonsmokers in their tobacco knowledge scores.

Analysis of responses between smokers' and nonsmokers' knowledge scores revealed that there were 199 (29.7%) smokers with a mean knowledge score = 2.85, a standard deviation = 1.65 and 470 nonsmokers (70.2%) with a mean knowledge score of 2.62 and a standard deviation = 1.68.

Levine's Test for Homogeneity of Variance showed that there was no violation of the assumption of homogeneity of variance; therefore, equal variances was assumed. A *t*-test for equality of means was used to test the null hypothesis. The two-tailed probability was .111; therefore, the findings failed to reject the null hypothesis.

Chapter 4 presented a statistical analysis of the quantitative data collected from the College Tobacco Behavior, Attitude, and Knowledge Survey. A summary, conclusions drawn from this analysis, improved practice recommendations, and recommendations for further research are presented in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study's primary purpose was to identify the behavior, attitude, and knowledge regarding tobacco use of students enrolled in orientation courses in Tennessee community colleges. Six community colleges in the Tennessee Board of Regents system that offered orientation courses were selected for this study.

Research for this study was descriptive in nature and used data gathered from a survey instrument entitled, College Tobacco Behavior, Attitude, and Knowledge Survey (see Appendix H). Demographic information on age, sex, and ethnicity, questions regarding behavior associated with tobacco use, attitudes related to tobacco use, and knowledge of tobacco-related health risks were included on the survey. Students enrolled in all orientation classes on the main campus of the six selected institutions completed the survey during the spring, 1999 semester. A total of 965 (the specific number requested from each institution was disseminated to designated individuals who were responsible for the orientation courses) surveys was mailed to the institutions for administration. A total of 700 surveys was returned before the researcher's requested date of January 29, 1999, which represented 72.5% of the sample.

Quantitative statistical methods used in this study included descriptive and inferential statistics. For significance testing, Alpha levels were set at .05 for all data analyses. Data analysis of survey results was performed using the Statistical Package for the Social Sciences (SPSS).

Results of the study revealed that, of those students who ever smoked regularly, differences in age and ethnicity were found and no differences were indicated between males and females. There was no difference between males and females and when they first started smoking cigarettes regularly; however, differences were found among students of varying ethnicities. There was no relationship between students' age and how many days they smoked; however, differences were found between males and females and ethnicities. There was no relationship regarding students' age and no difference between males and females and how many days they used smokeless tobacco. There were differences between smokers' and nonsmokers' attitudes regarding a smokefree campus, a designated smoking area indoors, and that a tobacco awareness program would be beneficial to college students. There was no relationship between knowledge score and age, and no difference between males and females. and smokers and nonsmokers regarding knowledge score. There was a difference in knowledge score among students of different ethnicities.

Conclusions

Findings reported in this study were relevant to college students regarding tobacco use if institutions choose to provide a tobacco awareness or cessation program. Conclusions were drawn from descriptive data regarding: demographics, current cigarette use, and data analyzed with inferential statistics. Selected findings were compared to the CDC, 1995 National College Behavior Risk Survey and the 1997 Harvard School of Public Health College Alcohol Study (Wechsler et al., 1998).

Students in this study indicated that the percentage of current smokers were similar to other college students. Current smoking prevalence between males and females showed that they smoked at a similar rate; however, the percentage of females, age 18-24, was higher than males in this age category. Females in this study currently smoke at a higher rate than other female college students as reported in the CDC study. The percentage of current smokers by ethnicity revealed that Whites smoked at a higher rate than African Americans, which supports findings of other studies. Students in this study indicated they first started smoking regularly during high school. Attitudes of students pertaining to a smokefree campus, a designated smoking area indoors, and a tobacco awareness program clearly indicated a need for institutions to review their policies in reference to tobacco use on campus. Conclusions pertaining to the hypotheses of the study are presented by sections: behavior, attitude, and knowledge. Information is also included in relation to current smokers.

Behavior

This study showed that 79.8% of the students had ever tried cigarette smoking, which was higher than the 1995 CDC study, where the rate was 74.8%.

Results of mean age and ethnicity regarding whether students ever smoked regularly showed differences between ages and among students of varying ethnicities (Whites, 53.2%; African Americans, 18.3%, and Others, 51.9%). There were no differences between males and females and if they ever smoked regularly. Students in this study who ever smoked regularly were older than those who did not ever smoke regularly.

In regards to when students first started smoking regularly, there was no difference between the ages of males (16.00) and females (16.25). There was a difference between Whites (16.02) and African Americans (18.30) and the ages at which they first started smoking regularly. No differences were reported between Whites (16.02) and Others (16.21); however, there was a difference between African Americans (18.30) and Others (16.21). No differences were found between the proportion of male and female students and when they first started smoking regularly. However, there were differences between ages of Whites and African Americans, and African Americans and Others (White, 16.02; African American, 18.30; Other, 15.21). No differences were found between Whites and Others. A conclusion could be drawn that tobacco intervention programs should be implemented prior to high school.

No relationship was found between student's ages and the number of days they smoked. Differences were found between males (76.2%) and females (87.8%) who indicated they smoked 20 days or more and among Whites (86.3%) and NonWhites (65.8%). When these data were analyzed using the entire sample, the percentage of Whites who smoked 20 days or more was 26% compared to the 1995 CDC study, where the rate was 19%. The conclusion is that females and Whites are smoking at a higher rate and that age was not a factor regarding the number of days they smoked and that there has been an increase in the number of days students smoked during the past four years.

No relationship between age and the days students used smokeless tobacco was found in this study. There was no difference between male and female students regarding days they used smokeless tobacco. There were 8.1% of the students who reported they currently used smokeless tobacco. This percentage was higher than the CDC reported for

two-year institutions (3.9%). Nationally, males use smokeless tobacco at a substantially higher rate than females. Because there were 57 students in this study who indicated they used smokeless tobacco and no differences were found between sex, the researcher deemed that the findings of this study may not accurately reflect smokeless tobacco use among community college students.

Attitude

Current tobacco users' attitude in this study regarding a price increase revealed that 39.5% would still purchase the product, 11.4% would not, and 49% stated it would depend on the amount of the increase. The conclusion from this finding suggested that almost half of the current tobacco users indicated they might consider not using the product if the price were increased. The CDC (1994a) reported that tobacco use was down among adolescents when the prices were higher. This study revealed there was a difference between smokers' and nonsmokers' attitude regarding a smokefree campus. Nonsmokers (51.7%) were in favor of a smokefree campus; smokers (6.0%) were opposed; smokers, no opinion was (15.1%) and nonsmokers, no opinion was (24.3%). It was concluded that a larger percentage of nonsmokers were in favor of a smokefree campus than smokers and nearly 20% of students had no opinion.

This study found that there was a difference between smokers' and nonsmokers' attitude regarding a designated smoking area indoors. It was concluded that a higher percentage of smokers were in favor of a designated smoking area indoors. Also, over 20% of the students had no opinion on the matter.

This study found that there was a difference between smokers' and nonsmokers' attitude regarding a tobacco awareness program. There were (54.8%) nonsmokers who were in favor; (38.7%) smokers in favor; and (39.2%) smokers and (28.5%) nonsmokers who had no opinion on the matter. It was concluded that a high percentage of students were in favor of a tobacco awareness program and nearly 20% had no opinion.

Knowledge

Comparisons of age, sex, and ethnicities with knowledge scores revealed there was no relationship between the mean age (23.67) and knowledge score (2.7); no difference between sex and knowledge scores (males—2.71, females—2.70); and no difference between Whites and Others (Whites—2.78, Others—3.25). However, there was a difference between knowledge scores of Whites (2.78) and African Americans (2.37) and African Americans (2.37) and Others (3.25). It was concluded that students' knowledge of tobacco-related health risks had no bearing on the smoking behavior of college students in this study.

Current Smokers

Students who indicated they were current smokers were 29.7%. The 1995, CDC study found that 29.9% were current smokers and Wechsler's 1997 study showed that 28.5% of college students were current smokers. These findings showed that the percentage of current smokers in this study was similar to the national studies. Current smokers in this study, age 18-24 were 27.3%, and 34.9% age 25 and older. The CDC (1995) reported 22.6%, age 18-24, and 47.0%, age 25 and older. The percentage of

students in this study who indicated they were current smokers ages 18-24 was higher than the percentage reported in the national study and lower for those 25 and older.

This study showed that 30.4% of males and 29.5% of females were current smokers. The national CDC 1995 study (U.S. Department of Health and Human Services, 1997) indicated that 24% of males and 23% of females were current smokers. In this study, 35.3% of Whites and 10% of African Americans were current smokers (percentages were based on the entire population of Whites and African Americans who participated in this study). The CDC found that 31.8% of Whites and 14.2% of African Americans were current smokers. There were 30.4% of the Whites and 13.7% of the African Americans who reported in Wechsler's study that they were current smokers. This study showed that the percentage of Whites who smoked was higher than in the national studies, but the percentage in this study of African Americans who smoked was lower than in the national studies.

In 1995, the general population age 18 and older found that 25.6% Whites and 25.8% African Americans were current smokers. Compared to the general population, smoking rates among college students by race in this study were higher (35.3%) for Whites and lower for African Americans (10%).

Findings in this study revealed that among students in the community colleges, smoking prevalence among all students was similar to those in nationwide studies. Current smokers were approximately 29%. However, in subgroups, white females in this study smoked at a higher rate than white females in the 1995 CDC study, and Whites smoked at a higher rate than African Americans, which supported the findings of the national studies. This also supports the literature that smoking prevalence had decreased

with more years of education regarding African Americans, but not for Whites. It was concluded that the findings of this study clearly indicated that increased interventive efforts were needed with all students.

Recommendations

Improved Practice

This study indicated there was no difference between smokers (2.85) mean knowledge scores and nonsmokers (2.62). Students averaged approximately 2.73 correct answers out of 12 test items. This would indicate that perhaps the test questions were too specific and that students' knowledge regarding tobacco-related illnesses was limited, and so if the latter were true, then a tobacco awareness program might prove beneficial to college students.

This study indicated that more women than men used cigarettes on 20 or more days during the last 30 days and that more female students (36.6%), age 18-24, were current smokers compared to both the CDC, (28.2%) and Wechsler (29.2%). Because the literature indicated that women were more susceptible to the dangers of tobacco and that women were more receptive to cessation programs, the researcher recommends that it would be beneficial to target females for tobacco awareness and cessation programs.

Students were asked, "if the price of tobacco products were to increase, would you still purchase the product for yourself?" This study revealed that 49% of current smokers indicated it would depend on the amount of the increase. Because nicotine was a highly addictive drug, students who wanted to quit would need a cessation program that may include medical resources to help them stop using tobacco products. That almost

half of the current smokers in this study indicated they may stop purchasing the product if the price of tobacco products was increased, affirms the decision for colleges to offer a tobacco awareness and cessation program. The American Cancer Society (1996) stated some benefits of cessation (see Appendix M).

Williams (1998) stated that conflict of wishes between smokers and nonsmokers was more of a contentious issue regarding publicly-owned places because property rights are defined in the sense of who owns what. Smokers, as well as nonsmokers, pay taxes and both can claim partial ownership of publicly owned places, such as, municipal airports, parks, schools, and state and federal buildings. The right to smoke and have cigarette-polluted air or the right to ban smoking and have nonpolluted air in publicly-owned places probably prevails as a result of which group has the dominant political power. Students in this study were asked if they believed a college should provide a designated smoking area indoors. Because 35.5% (29.7% indicated they were smokers; therefore, it was assumed that a portion of the nonsmoking population comprised the 35.5% who answered in this category) of the students agreed or strongly agreed, and they pay taxes while attending a publicly-owned institution, the researcher recommends that colleges explore the possibility of providing an indoor smoking area. Because of the addictive nature of tobacco it is very difficult for users to quit. In fact, withdrawal of nicotine has been compared to withdrawal of heroine. In some cases, kicking the habit was more difficult than quitting other drugs. Therefore, just because a campus is “smokefree” does not mean that students will just quit because they cannot smoke. This is obvious when students stand out in the cold and rain while supporting their habit.

However, colleges can help students combat their addiction by offering a cessation program.

College campuses have different smoking policies, such as, smokefree in designated buildings, smokefree in all buildings, and designated smoking areas. Individual campuses have solicited opinions from members of the college community, but specific data were not reported, only data regarding smoking behavior. It would appear that attitudes were taken into consideration only to the extent of recognizing opinions existed, but not to determine a decision to be smokefree or not. Some campuses supported participation in the decision-making process of policies regarding smoking. The studies suggested students had an opinion, but specific data were not reported; therefore, results regarding attitude about a smokefree campus, designated smoking area indoors, and a tobacco awareness program were additions to the literature.

Findings from this study clearly indicate the need for institutions to provide tobacco awareness and cessation programs. Most institutions have focused on drug or alcohol awareness programs, but reality is that more attention needs to be placed on tobacco use because of the numerous health complications associated with its use; therefore, the researcher suggests that the participating institutions in this study review their individual results to ascertain specific policies regarding tobacco issues and all institutions are encouraged to review their smoking policies and consider increasing tobacco awareness for their students.

Further Study

- 1) Improvements pertaining to the survey instrument were a) because Survey question 7 was a two-part question, this may have been confusing for the reader; therefore, the

- researcher recommends that it be separated into two questions; and b) Survey questions 19, 23, and 24 should be rewritten because the current wording asks for an answer so specific that the results may not accurately reflect knowledge about tobacco-related illnesses in relation to the issues of these questions (see Appendix J),
- 2) examine social, psychological, and marketing factors that influence individual's decision to use tobacco products,
 - 3) evaluate current efforts of prevention and cessation at the institution,
 - 4) examine those who have tried to quit using tobacco products,
 - 5) examine tobacco products as predictors of other drug use,
 - 6) evaluate one's perceived health risks of smoking and one's perception about smoking and smokers,
 - 7) examine personal risk factors such as self-image and self-esteem,
 - 8) evaluate tobacco use and levels of academic achievement and school involvement,
 - 9) examine income level and years of education as it relates to smoking,
 - 10) explore the link between suicide and smoking (Garrison, McKeown, Valois, & Vincent, 1993; Hemenway, Solnick, & Colditz, 1993),
 - 11) examine student's current cigar usage, and
 - 12) investigate differences among the participating institutions in this study.

Tobacco-related issues continue to be a topic at the forefront of our daily lives. A plethora of information is available through daily media, Internet, and professional journals. Everyone in society is affected by the unhealthy habits of nicotine addiction. The researcher recommends that all citizens contribute to the overall good health of our country by choosing not to use tobacco products and educating children of the harmful

properties of nicotine. Many students who attend community colleges have children; therefore, the information they receive from the institution about tobacco could be shared with their children.

Literature regarding tobacco use and college students (especially community college) was limited. The majority of studies have been conducted with adolescents or the general population. Comparisons of students in this study and available national studies was limited. However, the findings of this study represented community college students enrolled in orientation courses and the results will be useful in planning a tobacco awareness program.

In light of the recent \$206 billion tobacco settlement to 49 states, and the daily media coverage regarding tobacco issues, the researcher believes, now, more than ever, is the time for colleges to unite in the fight against the most preventable cause of death in the United States. It is the researcher's hope that state government officials will vote to allocate the funds for educational and cessation programs regarding tobacco-related issues.

REFERENCES

REFERENCES

- Action on Smoking and Health (ASH). (1998a, June 8). ETS exposure increases heart attack risk 20%. [Announcement posted on the World Wide Web]. Washington, DC: Author. Retrieved June 8, 1998 from the World Wide Web:
<http://www.org/dangers/heartattack.html>
- Action on Smoking and Health (ASH). (1998b, June 8). Involuntary smoking causes breast cancer too. [Announcement posted on the World Wide Web]. Washington DC: Author. Retrieved June 8, 1998 from the World Wide Web:
<http://www.ash.org/danger/bcancer.html>
- Ajdukovic, D., & Ajdukovic, M. (1991). University students and AIDS: Knowledge, attitudes, and behavioral adjustment. Psychology Report, *69* (1), 203-210.
- Altman, D.G., Slater, M.D., Albright, C.L., & Maccoby, N. (1987). How an unhealthy product is sold: Cigarette advertising in magazines, 1960-1985. Journal of Communication, *37* (4), 95-106.
- American Cancer Society (1996). Environmental tobacco smoke and coronary heart disease in the American cancer society. 94 (4), 622-628, August 15.
- American Cancer Society (1997). Cancer facts and figures—1997. (1-32). Atlanta: American Cancer Society.
- American Cancer Society (1998). Cancer facts and figures—1998. (1-36). Atlanta: American Cancer Society.
- American College Health Association (ACHA). (1988, May). Statement on tobacco use on college and university campuses. Baltimore, MD.

- Astin, A.W., Dey, E.L., Korn, W.S., & Riggs, E.R. (1991). The American freshman: National norms for fall 1991. Los Angeles: Higher Education Research Institute, UCLA. (ERIC Document Reproduction Services No. ED 340 326)
- Berkow, R., & Fletcher, A. J. (1992). The Merck manual of diagnosis and therapy (16th ed., p. 1268). Rahway, NJ: Merck Research Laboratories.
- Blackburn, R.D. (1988, March). Back to basics: Unions reaffirms their campus goals. Association of College Unions-International (ACU-I Bulletin), 59 (2), 12-16.
- Blumenthal, S. J. (1997). Fact Sheet: U.S. Public Health Services Office on Women's Health. Washington, D.C.: U.S. Public Health Services, Department of Health and Human Services.
- Bobo, J. (1998, November 12). Researcher: Tobacco can supply nutritional, hormone supplements. Kingsport Times News, p. 1B.
- Brandon, T. H., & Baker, T.B. (1990, April). Smoking outcomes expectancies among college students. Paper presented at the meeting of the Annual Society of Behavioral Medicine Scientific Sessions (11th), Chicago, IL. (ERIC Document Reproduction Services No. ED 327 799)
- Breidenthal, T.A. (1998, April). Baseball scores in fight against chewing tobacco. The NCAA News and Features. Retrieved April 16, 1999 from the World Wide Web: <http://www.ncaa.org/news/19980420/active/3516n03.html>
- Brody, J.E. (1996, September 26). Study finds stunted lungs in young smokers. New York Time News, p. B10.
- Burner, S.T., Waldo, D.R., & McKusick, D.R. (1992). National health expenditures projections through 2030. Health Care Finance Review, 14, 1-15.

- Califano, J. (1993). The smokefree campus. New York: Columbia University, Center on Addiction and Substance Abuse. (ERIC Document Reproduction Service No. ED 371 680)
- Carol, J. (1988). Cigarette ads and youth. Social Science Record, 25 (2), 12-13.
- Carter, R. & Sedlacek, W. (1989). Sex differences in student attitudes and behavior toward drugs over a decade. Southern Association for College Student Affairs, 9 (1), 27-34.
- Center on Addiction and Substance Abuse (CASA) (1993). The smokefree campus. New York: Columbia University, Center on Addiction and Substance Abuse. (ERIC Document Reproduction Service No. ED 371 680)
- Centers for Disease Control and Prevention (CDC). (1992). African Americans and smoking. Atlanta: U.S. Department of Health and Human Services.
- Centers for Disease Control and Prevention (CDC) (1994a). Preventing tobacco use among young people: A report of the Surgeon General. U.S. Department of Health and Human Services. (ERIC Document Reproduction Services No. ED 382 918)
- Centers for Disease Control and Prevention (CDC) (1994b). Cigarette smoking among Adults—United States. Morbidity and Mortality Weekly Report, 43, (50) 925-930.
- Centers for Disease Control and Prevention (CDC) (1995). Indicators of nicotine addiction among women—United States, 1990 and 1991. Morbidity and Mortality Weekly Report 1995, 44, (6) 102-105.

Centers for Disease Control and Prevention (CDC) (1997). Smoking—attributable mortality and years of potential life lost—United States, 1984. Morbidity and Mortality Weekly Report, 46, 444-451.

Centers for Disease Control and Prevention (CDC). (1998a). African Americans and tobacco [Announcement posted on the World Wide Web]. Atlanta, GA: Author. Retrieved June 5, 1998 from the World Wide Web: <http://www.gov/nccdphp/oshsgr-min-fs-afr.htm>.

Centers for Disease Control and Prevention (CDC) (1998b). Tobacco use among high school students—United States, 1997. Morbidity and Mortality Weekly Report, 46, 433-440.

Charney, M.H. (1994). College health and the responsibility for solving problems of alcohol, tobacco, and other drug use. College Teaching, 42 (3), 119.

Cinelli, B., & Rose-Colley, M. (1991). Prevalence and patterns of smokeless tobacco use in Pennsylvania colleges and universities. The Eta Sigma Gamman, 22 (2), 16-19.

College Handbook (1998). Thirty-fifth edition. New York: College Board Publications.

Delene, L.M., & Brogowica, A.A. (1990). Student healthcare needs, attitudes, and behavior: marketing implications for college health centers. Journal of American College Health, 38 (4), 157-164.

Doctor's Guide to Medical and Other News. (1997, September 4). Living with secondhand smoke can lower levels of good cholesterol. [Announcement posted on the World Wide Web]. Dallas, TX: Author. Retrieved October 12, 1998 from the World Wide Web: <http://www.pslgroup.com/dg/368f6.htm>

Doctor's Guide to Medical and Other News. (1998, April 29). Smoking contributes to mental decline in elderly. [Announcement posted on the World Wide Web].

Minneapolis, MN: Author. Retrieved October 12, 1998 from the World Wide Web: <http://www.pslgroup.com/dg/6fb06.htm>

Douglas, K. A., Collins, J. L., Warren, C., Kann, L., Gold, R., Clayton, S., Ross, J. G., & Kolbe, L. J. (1997). Results from the 1995 national college health risk behavior survey. Journal of American College Health, 46 (2), 55-66.

Emmons, K.M., Wechsler, H., Dowdall, G., & Abraham, M. (1998). Predictors of smoking among U.S. college students. American Journal of Public Health, 88 (1), 104-107.

Emont, S.L., Zahniser, S.C., Marcus, S.E., Trontell, A.E., Mills, E., Frazier, E.L., Waller, M.N., & Giovino, G.A. (1995). Evaluation of the 1990 Centers for Disease and Control and Prevention smoke-free policy. American Journal of Health Promotion, 9 (6), 456-461.

Environmental Protection Agency (EPA) (1992). Respiratory health effects of passive smoking, lung cancer, and other disorders. Washington, DC: US Environmental Protection Agency. (EPA Publication No. 600/6-90/006F)

Finette, B., & Albertini, R. (1998). Smoke may raise fetus' cancer risk. Nature Medicine. Retrieved October 14, 1998 from the World Wide Web: <http://www.tobacco.org/health/healthnews.html>

Ford, D.S., & Goode, C.R. (1994). African American college students' health behaviors and perceptions of related health issues. Journal of American College Health, 42 (5), 206-210.

- Garrison, C.Z., McKeown, R.E., Valois, R.F., & Vincent, M.L. (1993). Aggression, substance use, and suicidal behaviors in high school students. American Journal of Public Health, 83 (2), 179-184.
- Gray, N. (1987). A comparative analysis of factors influencing smoking behaviors of college students (1963-1987). Dissertation Abstracts International, 48 (09A), 2248.
- Hall, C.T. (1998, October 2). Teen males who smoke risk sperm damage: Study links birth defects to tobacco. San Francisco Chronicle, p. A2.
- Hemenway, D., Solnick, S.J., & Colditz, G.A. (1993). Smoking and suicide among Nurses. American Journal of Public Health, 83, 249-251.
- Hodgson, T.A. (1992). Cigarette smoking and lifetime medical expenditures. Milbank Quarterly, 70, 81-125.
- Jenson, M.A., Peterson, T.L., Murphy, R.J., & Emmerling, D.A. (1992). Relationship of health behaviors to alcohol and cigarette use by college students. Journal of College Student Development, 33 (2), 163-170.
- Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, T. (1992). Smoking, drinking, and illicit drug use among American secondary school students, college students, and young adults, 1975-1991. Volume II: College Students and Young Adults. (ERIC Document Reproduction Service No. ED 364 783)
- Keeling, J. (1999, January 28). Doctor seeks tobacco money for rehab program. Johnson City Press, p. 1.

- Krupka, L.R., Vener, A.M. & Engelmann, M.D. (1996). Biological knowledge of tobacco and alcohol among college students. The American Biology Teacher, 58 (2), 71-77.
- McGinnis, J. M. & Foege, W. H. (1993). Actual causes of death in the United States. Journal of American Medical Association, 270 (18), 2208-2212.
- Moskal, P.D., Dziuban, C.D., & West, G.B. (1996). Scaling health risk behaviors of college students. (ERIC Document Reproduction Service ED 396 001)
- National Clearinghouse of Statistics (1998, June 3). Tobacco use [Announcement posted on the World Wide Web]. Atlanta, GA: Author. Retrieved September 8, 1998 from the World Wide Web: <http://www.cdc.gov/hchswww/tobaccouse>
- National Institute on Drug Abuse (NIDA) (1997a, September). Cigarette smoking. [Announcement posted on the World Wide Web]. Washington, DC: Author. Retrieved June 5, 1998 from the World Wide Web: <http://www.health.org/pubs/caps/nccigs.htm>
- National Institute on Drug Abuse (NIDA) (1997b, September). Trends in drug use among college students. [Announcement posted on the World Wide Web]. Washington, DC: Author. Retrieved June 5, 1998 from the World Wide Web: <http://www.health.org/pubs/caps/nc.collegetrends.htm>
- Ness, R.B., Grisso, J.A., Hirschinger, N., Markovic, N., Shaw, L.M., Day, N.L., & Kline, J. (1999). Cocaine and tobacco use and the risk of spontaneous abortion. New England Journal of Medicine, 340 (5), 333-339.
- Northeast State Technical Community College Catalog and Student Handbook (1998-99). Blountville: Northeast State Technical Community College.

- O'Connell, T. (1990a). Up in smoke: The nicotine challenge in recovery. [Brochure].
Center City, MN: Hazelden Educational Materials.
- O'Connell, T. (1990b). Ways to quit smoking. [Brochure]. Center City, MN: Hazelden
Educational Materials.
- Office of Disease Prevention and Health Promotion (1991). Health objectives for the year
2000. Rockville, MD: Public Health Service (DHHS).
- Office on Smoking and Health (OSH) (1986). Smoking and health: A national status
report: a report of the surgeon general. (DHHS Pub No. (PHS) 87-8396).
Washington, D.C.: U.S. Department of Health and Human Services.
- Office on Smoking and Health (OSH). (1997). Smoking among U.S. adults.
[Announcement posted on the World Wide Web]. Author. Retrieved
April 18, 1999 from the World Wide Web: Atlanta, GA.
<http://www.cdc.gov/od/oc/media/fact/smok1995.htm>
- Ong, C. N., Lee, B. L., Shi, C. Y., Ong, H. Y., & Lee, H. P. (1994). Elevated levels of
benzene-related compounds in the urine of cigarette smokers. International
Journal of Cancer, 59 (2), 177-180.
- Piper, D., McIntosh, J., & Hudson, H. (1985). Factors relevant to the prognosis of
chronic duodenal ulcer. Digestion, 31 (1), 9-16.
- Public Health Service (1990). Healthy people 2000—national health promotion and
disease prevention objectives. Washington D.C.: U.S. Department of Health and
Human Services, Conference Edition, Summary.

- Roberts, K.L., & Jackson, A.S. (1993). Drinking and smoking habits of students at Northern Territory University. Australia: Northern Territory University. (ERIC Document Reproduction Service No. ED 400 480)
- Rothenberg, M.A., & Chapman, C.F. 1994. Dictionary of medical terms (3rd ed.). New York: Barron's Educational Series.
- Schwartz, W. (1997, March). Smoking prevention strategies for urban and minority youth. Clearinghouse on Urban Education Digest, 120. New York: Clearinghouse on Urban Education. (ERIC Document Reproduction Service No. ED 408 371)
- Schoendorf, K.C. & Kiely, J.L. (1992). Sudden infant death syndrome and maternal smoking. Pediatrics, 90, 905-908.
- Secondhand smoke suit reinstated. (1998, May 30). Johnson City Press, p.5.
- Selingo, J. (1997). Students engage in behavior posing serious health risks, CDC study finds. The Chronicle of Higher Education, 44 (2), 66.
- Shalala, D.E. (1998). Testimony before the Senate Labor and Human Resources Committee (September 25, 1997). Secretary, U.S. Department of Health and Human Services. Targeting tobacco use: The nation's leading cause of death. Washington, D.C.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.
- Siegal, S. (1956). Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, p. 178.

- Stephens, T., Pederson, L.L., Koval, J.J., & Kim, C. (1997). The relationship of cigarette prices and no-smoking bylaws to the prevalence of smoking in Canada. American Journal of Public Health, 87, 1519-1525.
- Stoddard, J.L., Johnson, C.A., Boley-Cruz, T., Sussman, S. (1997) Target tobacco markets: Outdoor advertising in Los Angeles minority neighborhoods. American Journal of Public Health, 87, 1232-1233.
- Team jerseys carry message: Smoking kills. (1998b, July 5). Johnson City Press, p.4.
- Tennessee Board of Regents (1999). Final spring 1999 enrollment. [Online]. Available e-mail: lhsu@tbr.state.tn.us
- Thorndike, R.L., & Hagen, E.P. (1977). Measurement and evaluation in psychology and education. New York: John Wiley & Sons.
- Tobacco Control Resource Center, Incorporated. Can the ADA protect me from secondhand smoke? Boston, MA.
- United States Department of Health, Education, and Welfare (1964). Smoking and health: A report of the advisory committee to the Surgeon General of the Public Health Service (DHEW Publication No. PHS 79-50066). Washington, D.C.: U.S. Government Printing Office.
- United States Department of Health and Human Services (1980). The health consequences of smoking for women: A report of the Surgeon General (DHHS Publication). Washington, D.C.: U.S. Government Printing Office.

- United States Department of Health and Human Services (1982). The health consequences of smoking: Cancer; A report of the Surgeon General (DHHS Publication No. PHS82-50179). Washington, D.C: U.S. Government Printing Office.
- United States Department of Health and Human Services (1989). Reducing the health consequences of smoking: 25 years of progress—a report of the surgeon general. DHHS Publication No. Centers for Disease Control and Prevention 89-8411. Rockville, MD: Public Health Service.
- United States Department of Health and Human Services (1990). Healthy People 2000. (DHHS Publication No. 91-50213).
- United States Department of Health and Human Services (1994a). Surveillance for selected tobacco use behavior – United States, 1900 – 1994. Morbidity and Mortality Weekly Report. 43 (SS-3), 1-33.
- United States Department of Health and Human Services (1994b). U.S. Department of Health and Human Services: returns of investment in public health. Washington, D.C.: Public Health Service.
- United States Department of Health and Human Services (1997). Youth risk behavior surveillances. National college health risk behavior survey—United States, 1995. Morbidity and Mortality Weekly Report. 46 (55-6), 1-56.
- United States Department of Health and Human Services (1998a). Making your workplace smokefree: A decision maker’s guide. Washington, D.C.: U.S. Department of Health and Human Services

- United States Department of Health and Human Services. (1998b). Tobacco use among U.S. racial/ethnic groups—African Americans, American Indian and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A report of the Surgeon General. Atlanta: CDC.
- Walsh, R.A. (1994). Effects of maternal smoking on adverse pregnancy outcomes: Examination of criteria of causation. Human Biology, 66, 1059-92.
- Wechsler, H., Rigotti, N.A., Gledhill-Hoyt, J., & Lee, H. (1998). Increased levels of cigarette use among college students. Journal of the American Medical Association, 280 (19), 1673-1678.
- Whelan, E.M. (1994). Cigarettes and blurred vision among “right” minded people. American Council on Science and Health, 6 (3). Retrieved October 8, 1998 from the World Wide Web:
<http://www.ACSH.org/publications/priorities/0603/cigarettes.html>
- Whelan, E.M. (1995). The tobacco cartel’s most valuable asset: Societal complacency. American Council on Science and Health, 7 (2). Retrieved October 8, 1998 from the World Wide Web:
<http://www.ACSH.org/publications/priorities/0702/complacency.html>
- Wiley, D.C., James, G., Jordan-Belver, C., Furney, S., Calsbeek, F., Benjamin, J., & Kathcart, T. (1996). Assessing the health behaviors of Texas college students. Journal of American College Health, 44 (4), 167-172.
- Williams, W.E. (1998). Cigarettes and property rights. In J.A. Schaler & M.E. Schaler (Eds.), Smoking: Who has the right? (pp 305 – 317). Amherst: Prometheus Books.

Wollenberg, S. (1998, November 15) Many states to get money in tobacco deal.

Johnson City Press, p.11.

Zinser, O., Kloosterman, R., & William, A. (1994). Advertisements, volition and peers among other causes of smoking. Journal of alcohol and drug education, 39 (3), 13-26.

APPENDICES

APPENDIX A
HEALTH CONSEQUENCES OF TOBACCO USE

HEALTH CONSEQUENCES OF TOBACCO USE

Mortality and Morbidity

- Results in premature death
- Causes significant disease and disability

Cardiovascular Effects

- A cause of coronary heart disease
- A cause of cerebrovascular disease (stroke)
- A cause of atherosclerotic peripheral vascular disease

Cancer

- A cause of lung cancer
- A contributing factor for pancreatic cancer
- A cause of laryngeal cancer
- A contributing factor for renal cancer
- A cause of cancer of the oral cavity (lip, tongue, mouth, and pharynx); smokeless tobacco is also a cause of oral cancer
- Associated with gastric cancer
- A cause of esophageal cancer
- A cause of bladder cancer

Lung Diseases

- A cause of chronic bronchitis
- A cause of emphysema

Women's Health Effects

- A cause of intrauterine growth retardation, leading to low birth weight babies
- A contributing factor for cervical cancer
- A probable cause of unsuccessful pregnancies

Other Health Effects

- Addiction to nicotine
- Adverse interactions with occupational hazards that increase the risk of cancer
- Alteration of the actions and effects of prescription and nonprescription medications
- A probable cause of peptic ulcer disease

Source: U.S. Department of Health and Human Services (1998a)

APPENDIX B
HEALTH EFFECTS OF SMOKING IN WOMEN

HEALTH EFFECTS OF SMOKING IN WOMEN

The Short-Term Effects of Smoking include:

- *Nicotine Addiction.* The younger an adolescent is when she begins to smoke, the more severe her level of nicotine addiction is likely to be.
- *Respiratory Problems.* Cigarette smoking during childhood and adolescence causes an increase in cough and phlegm production, an increase in the number and severity of respiratory illnesses, decreased physical fitness, and potential retardation in the rate of lung growth and in the level of maximum lung function.
- *Coronary Artery Disease.* Smokers have early development of coronary artery disease and abnormal lipid levels, possible precursors of heart disease.
- *Dental Problems.* Tobacco use by adolescents is associated with early signs of periodontal degeneration and with lesions in the mouth that can develop into oral cancers.
- *Mental Health Effects.* Many adolescent smokers report mental health effects, such as nervousness and depression, and tend to engage in more high-risk behaviors than adolescents who do not smoke.
- *Health-Damaging Behaviors.* Tobacco is associated with a range of health-damaging behaviors, including an increased risk of being involved in fights, engaging in high-risk sexual behavior, and using alcohol and other drugs.
- *Negative Effects on Quality of Life.* Smoking affects a young woman's quality of life—leading to bad breath, wrinkled skin, stained teeth, and other negative effects that influence how she looks and feels.

Long-Term Health Effects of Smoking include:

- *Cancer.* Women who smoke have at least a 10 times greater likelihood of developing lung cancer than nonsmoking women. The increase in lung cancer among women parallels the increase in smoking in women over the past six decades. Between 1960 and 1990, the death rate from lung cancer among women increased by more than 400 percent, and the rate is continuing to increase. In 1987, lung cancer surpassed breast cancer as the number one cause of cancer deaths among American women. In 1995, lung cancer killed 62,000 women; of those deaths, 47,187 (76.1 percent) are attributable to smoking. In addition to lung cancer, tobacco use is a major risk factor for cancers of the mouth, throat, esophagus, kidney, pancreas, bladder, and cervix.
- *Cardiovascular and Respiratory Diseases.* Cigarette smoking greatly increases a woman's chance of developing cardiovascular diseases. Smoking by women in the United States is associated with almost as many deaths from heart disease as from lung cancer, more than 61,000 each year. A woman who smokes is two to six times more likely to suffer a heart attack than a nonsmoking woman, and the risk increases with the number of cigarettes smoked each day. The risk for cardiovascular disease also increases among young women who both smoke and use oral contraceptives. In addition, smoking increases the risk of having a stroke. Each year, about 8,000 women die from strokes attributable to smoking. The risks for emphysema, bronchitis, and pneumonia also are increased among women who smoke.
- *Reproductive Health.* Smoking may be damaging to women's reproductive health. It is associated with infertility, complications during pregnancy, and an earlier onset of menopause. The estimated 18 to 20 percent of pregnant women who smoke throughout their pregnancies subject themselves and their fetuses and newborns to significant health risks, including miscarriage, stillbirth, preterm delivery, low birth weight infants, and higher rates of infant mortality.
- *Children's Health.* Tobacco use by mothers can also adversely affect the health of their children. The risk for Sudden Infant Death Syndrome (SIDS) increases among infants who are exposed to intrauterine smoke and to secondhand smoke after pregnancy. A study from the Centers for Disease Control and Prevention (CDC) and Emory University reports that smoking during pregnancy also increases the risk by 50 percent of having a child with mental retardation; this increased risk rises to 85 percent among those who smoke a pack or more of cigarettes each day. The health of as many as 1 million children with asthma is worsened by exposure to secondhand smoke.

Source: Blumenthal (1997)

APPENDIX C

TOBACCO – HEALTHY PEOPLE 2000 OBJECTIVES

TOBACCO

HEALTH STATUS OBJECTIVES

Reduce coronary heart disease deaths to no more than 100 per 100,000 people. Age-adjusted baseline: 135 per 100,000 in 1987)

<i>Coronary Deaths (per 100,000)</i>	<i>Special Population Target</i>	
	<i>1987 Baseline</i>	<i>2000 Target</i>
Blacks	163	115

Slow the rise in lung cancer deaths to achieve a rate of no more than 42 per 100,000 people. (Age-adjusted baseline: 37.9 per 100,000 in 1987)

Note: In its publications, the National Cancer Institute age adjusts cancer death rates to the 1970 U.S. population. Using the 1970 standard, the equivalent baseline and target values for this objective would be 47.9 and 53 per 100,000 respectively.

Slow the rise in deaths from chronic obstructive pulmonary disease to achieve a rate of no more than 25 per 100,000 people (Age-adjusted baseline: 18.7 per 100,000 in 1987)

Note: Deaths from chronic obstructive pulmonary disease include deaths due to chronic bronchitis, emphysema, asthma, and other chronic obstructive pulmonary diseases and allied conditions.

RISK REDUCTION OBJECTIVES

Reduce cigarette smoking to a prevalence of no more than 15 percent among people aged 20 and older. (Baseline: 29 percent in 1987, 32 percent for men and 27 percent for women)

<i>Cigarette Smoking Prevalence</i>	<i>Special Population Target</i>	
	<i>1987 Baseline</i>	<i>2000 Target</i>
People with a high school education or less	34%	20%
Aged 20 and older		
Blue-collar workers aged 20 and older	36%†	20%
Military personnel	42%	20%
Blacks aged 20 and older	34%	18%
Hispanics aged 20 and older	33%‡	18%
American Indians/Alaska Natives	42-70%§	20%
Southeast Asian men	55%†	20%
Women of reproductive age	29%±	12%
Pregnant women	25%¶	10%
Women who use oral contraceptives	36%§§	10%

†1988 baseline ‡1982-84 baseline for Hispanics aged 20-74
 §1979-87 estimates for different tribes
 †1984-88 baseline ±Baseline for women aged 18-44
 ¥1985 baseline §§1983 baseline

Note: A cigarette smoker is a person who has smoked at least 100 cigarettes and currently smokes cigarettes.

Reduce the initiation of cigarette smoking by children and youth so that no more than 15 percent have become regular cigarette smokers by age 20 (Baseline: 30 percent of youth had become regular cigarette smokers by ages 20 through 24 in 1987)

Special Population Target

<i>Initiation of Smoking</i>	<i>1987 Baseline</i>	<i>2000 Target</i>
Lower socioeconomic status youth†	40%	18%
† <i>As measured by people aged 20-24 with a high school education or less</i>		

Increase to at least 50 percent the proportion of cigarette smokers aged 18 and older who stopped smoking cigarettes for at least one day during the preceding year. (Baseline: In 1986, 34 percent of people who smoked in the preceding year stopped for at least one day during that year)

Increase smoking cessation during pregnancy so that at least 60 percent of women who are cigarette smokers at the time they become pregnant quit smoking early in pregnancy and maintain abstinence for the remainder of their pregnancy. (Baseline: 39 percent of white women aged 20 through 44 quit at any time during pregnancy in 1985)

Special Population Target

<i>Cessation and Abstinence During Pregnancy</i>	<i>1985 Baseline</i>	<i>2000 Target</i>
Women with less than a high school education	28%†	45%
† <i>Baseline for white women aged 20-44</i>		

Reduce to no more than 20 percent the proportion of children aged 6 and younger who are regularly exposed to tobacco smoke at home. (Baseline: More than 39 percent in 1986, as 39 percent of households with one or more children aged 6 or younger had a cigarette smoker in the household)

Note: Regular exposure to tobacco smoke at home is defined as the occurrence of tobacco smoking anywhere in the home on more than 3 days a week.

Reduce smokeless tobacco use by males aged 12 through 24 to a prevalence of no more than 4 percent (Baseline: 6.6 percent among males aged 12 through 17 in 1988; 8.9 percent among males aged 18 through 24 in 1987)

	<i>Special Population Target</i>	
<i>Smokeless Tobacco Use</i>	<i>1986-87 Baseline</i>	<i>2000 Target</i>
American Indian/Alaska Native Youth	18-64%	10%

Note: For males aged 12 through 17, a smokeless tobacco user is someone who has used snuff or chewing tobacco in the preceding month. For males aged 18 through 24, a smokeless tobacco user is someone who has used either snuff or chewing tobacco at least 20 times and who currently uses snuff or chewing tobacco.

SOURCE: Office of Disease Prevention and Health Promotion (1991)

APPENDIX D

HEALTH CONSEQUENCES OF ENVIRONMENTAL TOBACCO SMOKE (ETS)

HEALTH CONSEQUENCES OF ETS

- A cause of lung cancer in nonsmokers
- Associated with higher death rates from cardiovascular disease in nonsmokers
- In children, associated with respiratory tract infections, increased prevalence of fluid in the middle ear, additional episodes of asthma, and increased severity of symptoms in children with asthma, and a risk factor for new onset of asthma in children who have not previously displayed symptoms
- Associated with increased risk of sudden infant death syndrome (SIDS)
- Associated with increased irritant effects, particularly eye irritation, among allergic persons

SOURCE: U.S. Department of Health and Human Services (1998a)

APPENDIX E

CAN THE ADA PROTECT ME FROM SECONDHAND SMOKE?

CAN THE ADA PROTECT ME FROM SECONDHAND SMOKE?

Before seeking the protection of ADA from secondhand smoke, ask yourself the following three questions:

1. Am I probably disabled under the ADA, that is, do I suffer from a physical impairment that *substantially* limits one or more major life activities such as breathing, walking?
2. Have I been discriminated against by an employer (or potential employer) within the past 6 months, or by a state or local government (i.e., access to services); or by a manager or owner of a public accommodation due to a smoking policy that exposes me to ETS?
3. Have I brought my disability to the attention of the entity, asserted rights provided by the ADA, and attempted to negotiate a resolution including reasonable accommodation or reasonable modification of policies or practices?

If you answered “yes” to these three questions and you are still being denied a reasonable accommodation or policy modification, you may wish to consider asserting your rights to smokefree air under the Americans with Disabilities Act or state disability anti-discrimination statute.

The Tobacco Control Resource Center, Inc.
102 The Fenway, Suite 117, Boston MA 02115
(617) 373-2026, Fax (617) 373-3672

APPENDIX F
PERMISSION TO USE TOBACCO KNOWLEDGE SURVEY

September 10, 1998

Dr. Arthur M. Vener
1160 Fox Chase
Okemos, Michigan 48864-3064

Dr. Vener:

I am writing this correspondence to request permission to use a modified version of the survey used at Michigan State University regarding the questions on tobacco knowledge. I plan to give the survey to community college students enrolled in institutions governed by the Tennessee Board of Regents.

Your signature serves as an endorsement for me to use the survey. Thank you for your cooperation in this matter and especially for your suggestions when we talked by telephone. I enjoyed visiting with you.

Sincerely,

Elaine Boone

Elaine Boone
Doctoral Student at East Tennessee State University
Johnson City, Tennessee

APPROVAL:

Arthur M. Vener
Dr. Arthur M. Vener

9/15/98
Date

*Wishing you much success on
this project.*

A M V

APPENDIX G
INSTRUCTIONS FOR COLLEGE TOBACCO BEHAVIOR, ATTITUDE
AND KNOWLEDGE SURVEY

**Instructions for
College Tobacco Behavior, Attitude, and Knowledge Survey**

To: Staff, Faculty or Administrative Personnel

Thank you for participating in a study of community college students to obtain a profile of their knowledge, behavior, and attitude regarding tobacco use. The data obtained from the survey will provide information in developing a dissertation project for Dr. Terry Tollefson, Professor in the Educational Leadership and Policy Analysis program and the Chair of my doctoral committee at East Tennessee State University.

Please administer the surveys between **January 19 and 22, 1999**.

INSTRUCTIONS FOR STUDENTS:

Ask your students to read the directions on the survey instrument and answer the survey. Their informed consent is included at the beginning of the survey.

INSTRUCTIONS FOR RETURNING SURVEYS:

Six community colleges are participating in this project and a member of the professional staff and/or faculty has agreed to distribute the surveys. After the students have completed the survey, please return the surveys to the person who gave them to you and he or she will return the surveys to me.

Thank you,

Elaine Boone, Coordinator
Assessment and Counseling Services
Northeast State Technical Community College
Doctoral Student, East Tennessee State University

Please contact me if you have questions: Work: 423-323-0219
Home: 423-753-0525
E-mail: GEBOONE@NSTCC.CC.TN.US

APPENDIX H

HEALTH KNOWLEDGE SURVEY: ALCOHOL AND TOBACCO

HEALTH KNOWLEDGE SURVEY

ALCOHOL AND TOBACCO

INSTRUCTIONS:

Please use the answer sheets and scoring pencils provided. Do not place any marks on the booklet. This survey is anonymous. Do not indicate your name or student number. Thank you for your cooperation.

Professor Manfred D. Engelmann, Ph.D.
College of Natural Sciences

Professor Lawrence R. Krupka, Ph.D.
College of Natural Sciences

Professor Arthur M. Vener, Ph.D.
College of Social Science
Michigan State University
East Lansing, Michigan

Source: Krupka, L.R., Vener, A.M., and Engelmann, M.D. (1996)

1. Cigarette smoking can impair the fertility of women.
a) True b) False
2. Pregnant women who smoke have a higher incidence of spontaneous abortions.
a) True b) False
3. Tobacco smoke does not affect human sperm development.
a) True b) False
4. Babies whose parents smoke have a greater risk of developing:
a) sudden infant death syndrome (SIDS)
b) juvenile diabetes
c) spina bifida (neural tube defect)
d) Down's Syndrome
5. When cigarette smoke is inhaled, what percentage of the nicotine it contains enters the blood stream?
a) 15
b) 30
c) 60
d) 90
6. The smoke from _____ contains the most carbon monoxide.
a) cigarettes
b) pipes
c) cigars
d) all contain the same amount of carbon monoxide

APPENDIX I

1995 NATIONAL COLLEGE HEALTH RISK BEHAVIOR SURVEY

1995
National College Health Risk Behavior
Survey

This survey is about health behavior. The information you provide will help to identify the kind of health programs and services college students need.

Completing the survey is voluntary and the answers you give will be safeguarded to the fullest extent possible in accordance with the applicable statutes. No individual responses will be reported, so please answer every question as honestly as you can. Mark only one answer to every question unless otherwise indicated.

Do not write your name on this survey.

Thank You Very Much For Your Help.

Source: U.S. Department of Health and Human Services (1997)

1. How old are you?
2. What is your sex?
3. How do you describe yourself?
White – not Hispanic
Black – not Hispanic
Hispanic or Latino
Asian or Pacific Islander
American Indian or Alaskan Native
Other (specify) _____
4. Have you ever tried cigarette smoking, even one or two puffs? Yes No – SKIP to 11
5. How old were you when you smoked a whole cigarette
I have never smoked a whole cigarette
12 years old or younger
13 or 14 years old
15 or 16 years old
17 or 18 years old
19 or 20 years old
21 to 24 years old
25 years old or older
6. During the past 30 days, on how many days did you smoke cigarettes?
0 days
1 or 2 days
3 to 5 days
6 to 9 days
10 to 19 days
20 to 29 days
All 30 days
7. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?
I did not smoke cigarettes during the past 30 days
Less than 1 cigarette per day
1 cigarette per day
2 to 5 cigarettes per day
6 to 10 cigarettes per day
11 to 20 cigarettes per day
More than 20 cigarettes per day
8. Have you ever smoked cigarettes regularly, that is, at least one cigarette every day for 30 days?
Yes No
9. How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days)?
I have never smoked cigarettes regularly.
12 years old or younger
13 or 14 years old
15 or 16 years old
17 or 18 years old
19 or 20 years old
21 to 24 years old
25 years old or older
10. Have you ever tried to quit smoking? Yes No
11. During the past 30 days, on how many days did you use chewing tobacco or snuff, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?
0 days
1 or 2 days
3 to 5 days
6 to 9 days
10 to 19 days
20 to 29 days
All 30 days

APPENDIX J

COLLEGE TOBACCO BEHAVIOR, ATTITUDE AND KNOWLEDGE SURVEY

COLLEGE TOBACCO BEHAVIOR, ATTITUDE AND KNOWLEDGE SURVEY
By Elaine Boone, Coordinator, Assessment and Counseling Services
Northeast State Technical Community College

This survey is about behavior, attitude, and knowledge regarding tobacco. The information you provide will help to identify the kind of health programs and services college students need. Completing the survey is voluntary and the answers you give will be safeguarded to the fullest extent possible. No individual responses will be reported, so please answer every question as honestly as you can. Mark only one answer to every question. Please do not write your name on the survey.

Thank you for your cooperation.

This questionnaire is a modified version of *The National College Health Risk Behavior Survey*, U.S. Department of Health and Human Services and the *Health Knowledge Survey: Alcohol and Tobacco*, Michigan State University.

Please circle only one response or write in your answer.

SECTION 1 - Demographic Information

1. What is your age? _____
2. What is your sex? _____
3. What is your class standing? 1) Freshman 2) Other
4. How do you describe yourself?
 - 1) White - not Hispanic
 - 2) Black or African American - not Hispanic
 - 3) Hispanic or Latino
 - 4) Asian or Pacific Islander
 - 5) American Indian or Alaskan Native
 - 6) Other (specify): _____

SECTION II - Behavior Associated with Tobacco Use

5. Have you ever tried cigarette smoking, even one or two puffs? 1) Yes 2) No
6. Have you ever smoked cigarettes regularly, that is, at least one cigarette every day for 30 days? 1) Yes 2) No (SKIP TO #12)
7. Do you describe yourself as
 - 1) currently a smoker (smoke one cigarette per day for 30 days)
 - 1a) If so, have you ever tried to quit? 1) Yes 2) No
 - 2) someone who smoked, but quit
8. How old were you when you smoked a whole cigarette for the first time? _____
9. How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days?) _____

10. During the past 30 days, on how many days did you smoke cigarettes?
- 1) 0 days
 - 2) 1 or 2 days
 - 3) 3 to 5 days
 - 4) 6 to 9 days
 - 5) 10 to 19 days
 - 6) 20 to 29 days
 - 7) All 30 days
11. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?
- 1) I did not smoke cigarettes during the past 30 days
 - 2) Less than 1 cigarette per day
 - 3) 1 cigarette per day
 - 4) 2 to 5 cigarettes per day
 - 5) 6 to 10 cigarettes per day
 - 6) 11 to 20 cigarettes per day
 - 7) More than 20 cigarettes per day
12. How old were you when you tried smokeless tobacco?
- 1) I have never tried smokeless tobacco (SKIP TO #15)
 - 2) _____
13. During the past 30 days, on how many days did you use smokeless tobacco?
- 1) 0 days (SKIP TO #15)
 - 2) 1 or 2 days
 - 3) 3 to 5 days
 - 4) 6 to 9 days
 - 5) 10 to 19 days
 - 6) 20 to 29 days
 - 7) All 30 days
14. Have you ever tried to quit using smokeless tobacco? 1) Yes 2) No

SECTION III - Attitudes Related to Tobacco Use

15. If the price of tobacco products were to increase, would you still purchase the product for yourself?
- 1) Yes
 - 2) No
 - 3) Not sure; it depends on the amount of the increase
 - 4) NA
16. I believe that a college campus should be smoke-free.
- | | | |
|-------------------|---------------|----------------------|
| 1) Strongly Agree | 3) No Opinion | 4) Disagree |
| 2) Agree | | 5) Strongly Disagree |
17. I believe that colleges should provide a designated smoking area indoors.
- | | | |
|-------------------|---------------|----------------------|
| 1) Strongly Agree | 3) No Opinion | 4) Disagree |
| 2) Agree | | 5) Strongly Disagree |
18. I believe that a tobacco awareness program would benefit college students.
- | | | |
|-------------------|---------------|----------------------|
| 1) Strongly Agree | 3) No Opinion | 4) Disagree |
| 2) Agree | | 5) Strongly Disagree |

SECTION IV-Knowledge of Tobacco-Related Health Risks

19. On an average, someone who smokes a pack of cigarettes each day, lives _____ years less than someone who never smoked regularly.
1) 2.5 2) 4 3) 6.6 4) 10 5) Not sure: would be guessing.
20. Cigarette smoking can impair the fertility of women.
1) True 2) False 3) Not sure; would be guessing.
21. Pregnant women who smoke have a higher incidence of miscarriages.
1) True 2) False 3) Not sure; would be guessing.
22. Tobacco smoke affects human sperm development by increasing the risk of birth defects.
1) True 2) False 3) Not sure; would be guessing
23. Exposure to environmental tobacco smoke (ETS, secondhand smoke) is responsible for _____ nonsmoking Americans to die from lung cancer each year.
1) 1,000 2) 3,000 3) 10,000 4) Not sure; would be guessing.
24. Each year, approximately _____ African Americans die from smoking-related diseases that could have been prevented.
1) 10,000 2) 15,000 3) 45,000 4) Not sure; would be guessing.
25. Skin cancer is linked to cigarette smoking.
1) True 2) False 3) Not sure; would be guessing.
26. Bladder cancer is linked to cigarette smoking.
1) True 2) False 3) Not sure; would be guessing.
27. Babies whose parents smoke have a greater risk of developing:
1) sudden infant death syndrome (SIDS). 3) spina bifida (neural tube defect).
2) juvenile diabetes. 4) Down's Syndrome.
5) Not sure; would be guessing
28. When cigarette smoke is inhaled, what percentage of the nicotine it contains enters the bloodstream?
1) 15 2) 30 3) 60 4) 90 5) Not sure; would be guessing
29. The smoke from _____ contains the most carbon monoxide.
1) cigarettes 2) pipes 3) cigars 4)all contain the same amount
5) Not sure; would be guessing.
30. The chances of getting lung cancer are increased when one uses smokeless tobacco.
1) True 2) False 3) Not sure; would be guessing.

RIGHT ANSWERS TO QUESTIONS 19 – 20

- 19. 3) 6.6
- 20. 1) True
- 21. 1) True
- 22. 1) True
- 23. 2) 3,000
- 24. 3) 45,000
- 25. 2) False
- 26. 1) True
- 27. 1) SIDS
- 28. 4) 90
- 29. 3) cigars
- 30. 1) True

APPENDIX K
PERMISSION TO SURVEY STUDENTS ENROLLED IN SELECTED
INSTITUTIONS



September 30, 1998

Dr. Peter Brown
Vice President for College/Academic Affairs
Dyersburg State Community College
1510 Lake Road
Dyersburg, TN 38024

Dear Dr. Brown: *Peter*

Ms. Elaine Boone, Coordinator of Assessment and Counseling Services at Northeast State, is currently in the dissertation phase for an Ed.D. degree in Higher Education Administration at East Tennessee State University. Ms. Boone has chosen to conduct a study of tobacco use among community college students in the Tennessee Board of Regents System. The purpose of the study is to:

- obtain a profile of knowledge, behavior, and attitude regarding tobacco.
- analyze the results, and
- organize a tobacco awareness program for the students at Northeast State.

In order to complete the study, Ms. Boone will need to survey students enrolled in orientation courses in the colleges that offer this course. Ms. Boone has reviewed with me the measures she will use to protect the privacy rights for all students who participate in the study. She is currently making arrangements with the person responsible for these courses on your campus and plans to conduct the survey contingent on your approval of this project.

I have reviewed the proposal for this study and believe that it will provide information that can be useful in organizing a health awareness program regarding tobacco use. I request your approval and support for this doctoral study on your campus. The *College Tobacco Knowledge, Behavior, and Attitude Survey* should arrive on your campus between October 8 and 15, 1998. A copy of the survey is included for your perusal. Your signature will provide an official endorsement of this project. A pre-addressed envelope is provided for your convenience.

Thank you in advance for your support of this project. If you have questions regarding this study or the survey instrument, please contact Ms. Boone at (423) 323-0219 or through e-mail: GEB Boone@NSTCC.CC.TN.US.

Sincerely,

Ellis H. Winkler
Vice President for Academic and Student Affairs

APPROVAL:

11/4/98

Dr. Peter Brown Date



September 30, 1998

Dr. Carol Dougan
Vice President of Academic Affairs
Jackson State Community College
2046 N. Parkway
Jackson, TN 38301

Dear Dr. Dougan: *Carol*

Ms. Elaine Boone, Coordinator of Assessment and Counseling Services at Northeast State, is currently in the dissertation phase for an Ed.D. degree in Higher Education Administration at East Tennessee State University. Ms. Boone has chosen to conduct a study of tobacco use among community college students in the Tennessee Board of Regents System. The purpose of the study is to:

- obtain a profile of knowledge, behavior, and attitude regarding tobacco.
- analyze the results, and
- organize a tobacco awareness program for the students at Northeast State.

In order to complete the study, Ms. Boone will need to survey students enrolled in orientation courses in the colleges that offer this course. Ms. Boone has reviewed with me the measures she will use to protect the privacy rights for all students who participate in the study. She is currently making arrangements with the person responsible for these courses on your campus and plans to conduct the survey contingent on your approval of this project.

I have reviewed the proposal for this study and believe that it will provide information that can be useful in organizing a health awareness program regarding tobacco use. I request your approval and support for this doctoral study on your campus. The *College Tobacco Knowledge, Behavior, and Attitude Survey* should arrive on your campus between October 8 and 15, 1998. A copy of the survey is included for your perusal. Your signature will provide an official endorsement of this project. A pre-addressed envelope is provided for your convenience.

Thank you in advance for your support of this project. If you have questions regarding this study or the survey instrument, please contact Ms. Boone at (423) 323-0219 or through e-mail: GEB Boone@NSTCC.CC.TN.US.

Sincerely,

Ellis H. Winkler

Vice President for Academic and Student Affairs

APPROVAL:

Dr. Carol Dougan

10/12/98
Date

Elaine Boone

September 29, 1998

Dr. Ellis Winkler
 Vice President, Academic and Student Affairs
 Northeast State Technical Community College
 P.O. Box 246
 Blountville, TN 37617

Dr. Winkler:

I am requesting permission to survey students enrolled in freshman experience courses at Northeast State as part of a dissertation project, supervised by Dr. Terry Tollefson, Chair of my doctoral committee, at East Tennessee State University. The purpose of the study is to obtain a profile of students' tobacco knowledge, behavior and attitude.

The survey consists of 42 questions and should take approximately 20 minutes to complete. The instrument is a modified version of The Health Knowledge Survey: Alcohol and Tobacco from Michigan State University, and The National College Health Risk Behavior Survey from the U.S. Department of Health and Human Services. The surveys will be administered in October, 1998. Based on the results of the survey, I plan to organize a tobacco awareness program at Northeast State.

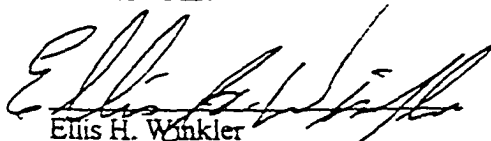
Thank you for considering this project.

Sincerely,



Elaine Boone, Coordinator
 Assessment and Counseling Services
 Northeast State Technical Community College
 Doctoral Student, East Tennessee State University

APPROVAL:



Ellis H. Winkler

9-30-98
 Date



RECEIVED ¹³⁷

OCT 5 1998

VICE PRESIDENT
Academic/Student Services

September 30, 1998

Dr. Patricia Land
Vice President for Academic/Student Affairs
Roane State Community College
Patten Lane
Harriman, TN 37748

Dear Dr. Land: *Pat*

Ms. Elaine Boone, Coordinator of Assessment and Counseling Services at Northeast State, is currently in the dissertation phase for an Ed.D. degree in Higher Education Administration at East Tennessee State University. Ms. Boone has chosen to conduct a study of tobacco use among community college students in the Tennessee Board of Regents System. The purpose of the study is to:

- obtain a profile of knowledge, behavior, and attitude regarding tobacco.
- analyze the results, and
- organize a tobacco awareness program for the students at Northeast State.

In order to complete the study, Ms. Boone will need to survey students enrolled in orientation courses in the colleges that offer this course. Ms. Boone has reviewed with me the measures she will use to protect the privacy rights for all students who participate in the study. She is currently making arrangements with the person responsible for these courses on your campus and plans to conduct the survey contingent on your approval of this project.

I have reviewed the proposal for this study and believe that it will provide information that can be useful in organizing a health awareness program regarding tobacco use. I request your approval and support for this doctoral study on your campus. The *College Tobacco Knowledge, Behavior, and Attitude Survey* should arrive on your campus between October 8 and 15, 1998. A copy of the survey is included for your perusal. Your signature will provide an official endorsement of this project. A pre-addressed envelope is provided for your convenience.

Thank you in advance for your support of this project. If you have questions regarding this study or the survey instrument, please contact Ms. Boone at (423) 323-0219 or through e-mail: GEBOONE@NSTCC.CC.TN.US.

Sincerely,
Ellis H. Winkler
Ellis H. Winkler
Vice President for Academic and Student Affairs

APPROVAL:
Patricia Land

Dr. Patricia Land

Denise approved by faculty
10-1-98
Date



RECEIVED

JAN 25 1999

January 25, 1999

DEAN of INSTRUCTION

My name is Elaine Boone and I am a doctoral student at East Tennessee State University and the Coordinator of Assessment and Counseling Services at Northeast State Technical Community College. My dissertation project is to identify tobacco behavior, attitude and knowledge of community college students in the Tennessee Board of Regents System.

I chose to survey students enrolled in Student Success Seminar courses. I have been communicating with Georgia Davis since last semester. Because I am on a deadline due to the nature of the course, I sent the surveys and Ms. Davis probably has them by now. She will proceed with distribution if you approve to have Shelby State participate. The other institutions that offer the orientation courses and that are participating in this study are: Dyersburg, Jackson, Northeast State, Roane, and Walters State. I truly hope you will permit the surveys to be conducted at Shelby State.

If you have any questions, please contact me at 423-323-0219.

Thank you,

Elaine Boone

Elaine Boone

APPROVAL: _____

Dr. Dorsey
Dr. Dorsey
Dean of Instruction

Date: _____

1/25/99

The vice presidents of the other institutions have given their approval based on a letter from Dr. Winkler, NSTCC Vice President's endorsement of this project during the Fall, 1998. I believe the delay from Shelby State is due to the fact that there was a change of vice presidents.

September 30, 1998

Dr. Wade B. McCamey
Vice President for Academic Affairs
Walters State Community College
500 S. Davy Crockett Parkway
Morristown, TN 37813

Dear Dr. ^{Wade} McCamey:

Ms. Elaine Boone, Coordinator of Assessment and Counseling Services at Northeast State, is currently in the dissertation phase for an Ed.D. degree in Higher Education Administration at East Tennessee State University. Ms. Boone has chosen to conduct a study of tobacco use among community college students in the Tennessee Board of Regents System. The purpose of the study is to:


- obtain a profile of knowledge, behavior, and attitude regarding tobacco,
- analyze the results, and
- organize a tobacco awareness program for the students at Northeast State.

In order to complete the study, Ms. Boone will need to survey students enrolled in orientation courses in the colleges that offer this course. Ms. Boone has reviewed with me the measures she will use to protect the privacy rights for all students who participate in the study. She is currently making arrangements with the person responsible for these courses on your campus and plans to conduct the survey contingent on your approval of this project.

I have reviewed the proposal for this study and believe that it will provide information that can be useful in organizing a health awareness program regarding tobacco use. I request your approval and support for this doctoral study on your campus. The *College Tobacco Knowledge, Behavior, and Attitude Survey* should arrive on your campus between October 8 and 15, 1998. A copy of the survey is included for your perusal. Your signature will provide an official endorsement of this project. A pre-addressed envelope is provided for your convenience.

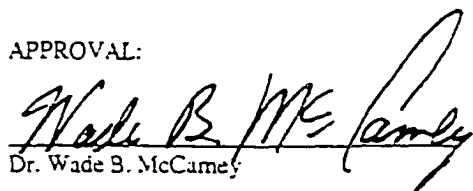
Thank you in advance for your support of this project. If you have questions regarding this study or the survey instrument, please contact Ms. Boone at (423) 323-0219 or through e-mail: GEBOONE@NSTCC.CC.TN.US.

Sincerely,


Ellis H. Winkler

Vice President for Academic and Student Affairs

APPROVAL:


Dr. Wade B. McCamey

10-9-98
Date

APPENDIX L
SURVEY RESPONSE RATE BY INSTITUTION

SURVEY RESPONSE RATE BY PARTICIPATING INSTITUTIONS

Institution	<i>f</i>	<i>P</i>	Cumulative <i>P</i>
Dyersburg	53	7.6	7.6
Jackson	102	14.6	22.1
Northeast State	142	20.3	42.4
Roane	114	16.3	58.7
Shelby	134	19.1	77.9
Walters	155	22.1	100.0
Total	700	100.0	

SURVEY RESPONSE BY INDIVIDUAL INSTITUTION

Institution	Surveys Requested	Surveys Received	<i>P</i> Return
Dyersburg	135	53	39.2%
Jackson	170	101	59.4%
Northeast State	167	142	85.0%
Roane	138	114	82.6%
Shelby	187	134	71.6%
Walters	168	155	92.2%
Total	965	700	72.5%

APPENDIX M
BENEFITS OF QUITTING SMOKING

BENEFITS OF QUITTING SMOKING
Source: American Cancer Society (1996)

Within 20 Minutes

Blood pressure drops to normal
Pulse rate drops to normal
Body temperature of hands and feet increases to normal

Within 8 Hours

Carbon monoxide level in blood drops to normal
Oxygen level in blood increases to normal

Within 24 Hours

Nerve endings start regrowing
Ability to smell and taste is enhanced

Within 2 Weeks to 3 Months

Circulation improves
Walking becomes easier
Lung function increases up to 30 percent

Within 1 to 9 Months

Coughing, sinus congestion, fatigue, shortness of breath ease
Cilia regrow in lungs, increasing ability to handle mucus, clean the lungs,
 reduce infection
Body's overall energy increases

Within 1 Year

Excess risk of coronary heart disease is half that of a smoker

Within 5 Years

Lung cancer death rate for average former smoker (one pack a day) decreases
 by almost half
Stroke risk is reduced to that of a nonsmoker 5-15 years after quitting
Risk of cancer of the mouth, throat, and esophagus is half that of a smoker's

Within 10 Years

Lung cancer death rate similar to that of nonsmokers
Precancerous cells are replaced
Risk of cancer of the mouth, throat, esophagus, bladder, kidney, and pancreas decreases

Within 15 Years

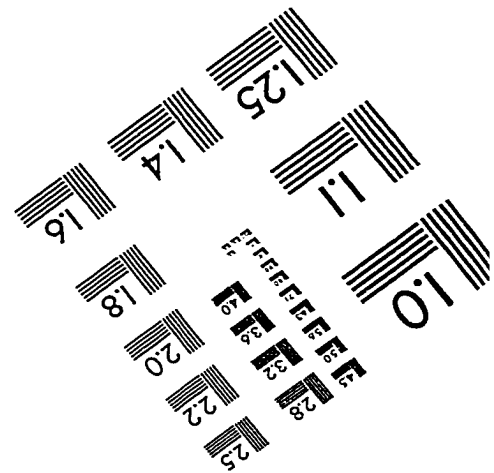
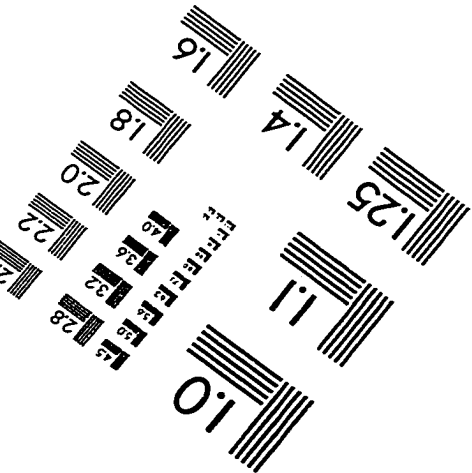
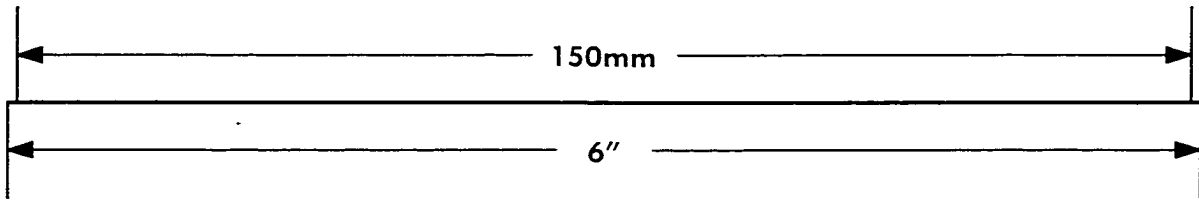
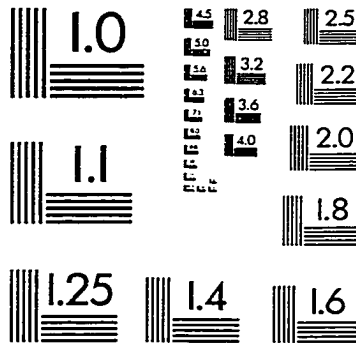
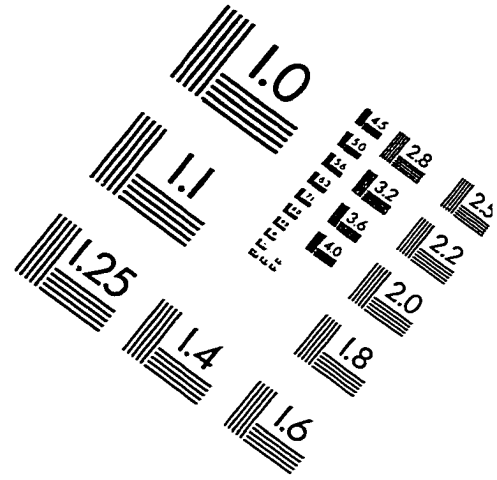
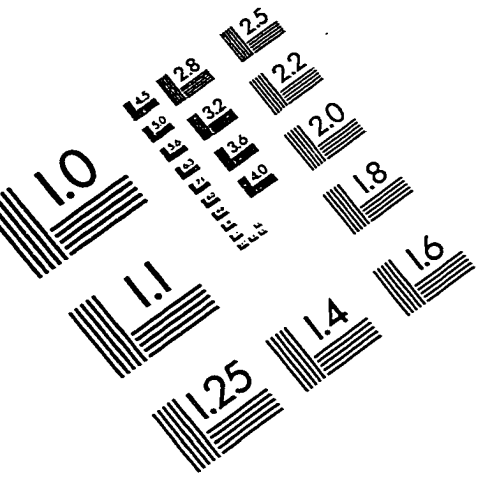
Risk of coronary heart disease is that of a nonsmoker

VITA

G. ELAINE CLARK BOONE

- Education: Andrew Johnson Elementary School
 Ross N. Robinson Junior High School
 Dobyms-Bennett High School
 Kingsport, Tennessee
 Hiwassee College, Madisonville, Tennessee
 Liberal Arts, A.A., 1980
 Milligan College, Milligan College, Tennessee
 Business Education, B.S., 1983
 Hardin-Simmons University, Abilene, Texas
 Counseling and Human Development, M.Ed., 1988
 East Tennessee State University, Johnson City, Tennessee
 Educational Leadership and Policy Analysis,
 Ed.D., 1999
- Professional Experience: Kingsport Adult Education, Kingsport, Tennessee, 1985
 Instructor
 Texas State Technical Institute, Abilene, Texas, 1986-1987
 Instructor
 Abilene Independent School District, Abilene, Texas
 Dyess Air Force Base, 1986-1989
 Adult Education Instructor
 McMurry University, Abilene, Texas, 1989-1990
 Assistant Director of Developmental Studies and
 Academic Advisement
 Northeast State Technical Community College,
 Blountville, Tennessee, 1991-present
 Counselor, Developmental Studies, 1991-1996
 Adjunct Faculty, Psychology, 1993-1996
 Coordinator, Assessment and Counseling Services,
 1996- present
- Honors and Awards: Outstanding Young Women of America, 1988
 National Distinguished Service Registry,
 Counseling and Development, 1989
 Northeast State Technical Community College,
 Outstanding Administrative Staff Award, 1994

IMAGE EVALUATION TEST TARGET (QA-3)



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Rochester, NY 14609 USA
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