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Effect Of Early Childhood Tobacco Education Program On Knowledge And Attitudes Of Elementary Students

Dianne G. Pittman
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EFFECT OF EARLY CHILDHOOD TOBACCO EDUCATION PROGRAM ON KNOWLEDGE AND ATTITUDES OF ELEMENTARY STUDENTS

by

DIANNE G. PITTMAN

A Thesis
Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Nursing in the Division of Nursing Mississippi University for Women

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Effect of Early Childhood Tobacco Education Program on Knowledge and Attitudes of Elementary Students

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Abstract

Tobacco use is recognized as the number one preventable cause of disease and death in the United States. As such, development of better tobacco-use prevention strategies, utilized by health care providers, is a worthy endeavor. Where it exists, initiation of formal tobacco education within the schools is focused at sixth- to eighth-grade students, the age research has shown when most tobacco experimentation begins, yet well beyond the age when ideas and attitudes are developed in favor of or in opposition to tobacco use. The purpose of this quasi-experimental study was to determine the effect of an early childhood tobacco education program on knowledge and attitudes of fourth-grade students. A convenience sample of 234 students from an elementary school in the southeastern United States was compared to a control group of 46 students from an area school of similar size and demographics who had not been exposed to the tobacco curriculum. Bandura’s Social Learning Theory and the Neuman Systems Model provided the theoretical frameworks
to guide the study. The Tupelo Tobacco Survey, an instrument used to measure scores in knowledge and attitude, was developed from an existing tool by Princeton Health Press. The null hypotheses tested were as follows: There will be no difference in knowledge scores for students who attended and those who did not attend an early education program and there will be no difference in attitude scores for students who attended and those who did not attend an early education program. Descriptive statistics were used and included frequencies, percentiles, and t test for data analysis. A statistically significant difference \( p < .001 \) was found for knowledge test scores, thus the first hypothesis was rejected. The null hypothesis, however, was accepted in statement two, since no difference emerged for attitude scores. This result was attributed to a ceiling effect explained by a preexisting high negative attitude toward tobacco use in both groups of children. The researcher concluded that an early childhood tobacco education is effective as a tobacco-use prevention strategy. There is an obvious role for the advanced practice nurse in the school setting relative to providing this health education foundation. The researcher recommends the incorporation of tobacco
education at an earlier age to effectively generate a knowledgeable youth population and promote attitudes consistent with postponement or abstinence of tobacco use onset.
Acknowledgments

Sometimes I go about with pity for myself and all the while the Great Winds are carrying me across the sky.--Ojibway Saying.

I am grateful for the Great Winds of God’s grace that during this challenging time provided for me loyal friends, loving, supportive family, and mentors who led by example. I have all that is necessary for contentment in life--something meaningful to do, someone to love, and something to hope for.

Thank you to all who saw me through: my sons, David and Jonathan Pittman; my mother and dad, Jan and Ed Gove; and my loyal friends, Jim and Alice Gordon, Ed and Kris Ivancic, and Frances Gregory Patterson.

A special thank you to my talented and patient faculty committee, Dr. Linda Sullivan and Dr. Patsy Smyth, who encouraged me to finish lest I be at this year’s Christmas party. A final and very special thank you to my committee chair, faculty advisor, mentor, and Patron Saint, Dr. Mary Pat Curtis. I am so very grateful for you.
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Chapter I

The Research Problem

Tobacco-related illnesses, both directly and indirectly, kill 434,000 people in the United States every year. It is well-documented that cigarette smoking causes heart disease, esophageal and lung cancer, and chronic lung disease (United States Department of Health and Human Services [DHHS], 1994). Consequences of smokeless tobacco use include cancer of the esophagus, gum, larynx, mouth, and pharynx (DHHS, 1994). Although it has been three and a half decades since the landmark 1964 Surgeon General’s Report on the hazards of smoking, cigarette smoking remains the single most preventable cause of death and disease in American society (DHHS, 1994).

According to the Centers for Disease Control and Prevention (CDC) (1999), 3,000 youths initiate the practice of smoking or use of smokeless tobacco each day. Approximately 1,000 of those will die from a smoking-related illness, despite monumental efforts to disseminate warnings to the American public (CDC, 1999). This number
overall accounts for one third of high-school-aged adolescents nationally. In certain rural southern states the statistics are even higher—as many as 42% of high school youth. Yet in these same states, only 40% of youth report being taught in their school curriculum about the deadly effects of tobacco use (Mississippi State Department of Health, 1999).

In the aftermath of tobacco lawsuit settlements, tobacco education funds are now available to all 50 states. With support from the CDC and renewed interest caused by the tobacco windfall, some grants have been designated for elementary level education. Thus, it is important to determine the effectiveness of these fledgling programs. The focus and purpose of this study were to evaluate the effects of a tobacco education program, a new part of a school’s curriculum, on the knowledge and attitudes of grade school children.

Establishment of the Problem

According to the Surgeon General’s report on preventing tobacco use among young people (DHHS, 1994), almost 90% of adult smokers began smoking by the time they were 18, with initiation of daily tobacco use most often
in Grades 6-9. Researchers have demonstrated that smokers who begin at this young age find it hardest to quit (Jackson, Henriksen, Dickinson, & Levine, 1998). Considerable evidence exists that health problems are a function of duration of years and intensity or amount (CDC, 1996). Thus, early onset of tobacco use increases the risk of serious health consequences.

Tobacco education has been regarded as one avenue to reduce use and physical consequences of smoking. Historically, tobacco prevention programs targeted high school and college-age students. Researchers gradually realized that the development of tobacco-use behavior typically follows a series of stages that begins earlier in life (Levanthal & Cleary, 1980).

Often this experimentation-initiation begins in elementary school. In a longitudinal study, Jackson et al. (1998) determined that students who initiated smoking before participating in middle-school tobacco prevention programs generally were unaffected by such programs. It changed neither their pro-tobacco-use attitudes nor their subsequent use of tobacco products. After years of research and data accumulation, the CDC came to the same conclusion. The CDC now recommends the most effective
tobacco education programs should begin in kindergarten and follow through with "booster sessions" through the 12th grade (CDC, 1994).

Stone and Kristellier (1992) found that 74% of occasional teen smokers and 65% of daily teen smokers wanted to quit their tobacco habit. Of these teens surveyed, only an estimated 1.5% were successful in cessation. These findings suggest that youth need to be targeted earlier before experimentation leads to nicotine addiction, and attention should be focused on the stages of development from nonuser to user.

The Surgeon General established, through extensive research on a wide variety of school-based tobacco education programs, that social learning programs are successful. Programs that relate social influences to the use of tobacco and teach skills to resist those influences demonstrated consistent success in reducing tobacco use among youth. An example of a successful program is the Princeton Health Press Life Skills Training (LST) (Botvin, 1999) recognized and recommended by the CDC for excellence. LST has effectively reduced existing youth tobacco use from 25 to 80%. LST dramatically curbed the number of those youth who started using tobacco products
as compared to groups who never received the treatment (Stone & Kristellier, 1992).

Based on years of accumulated research that began in the 1950s, the CDC also issued a list of guidelines for development of effective tobacco education programs (CDC, 1994). The CDC maintained that children were developmentally able to process prevention information as early as kindergarten. Therefore, an introduction to tobacco education before experimentation would be a logical and effective health prevention-intervention. Prevention information could be introduced at a time when teachers and other adults have a greater influence than the peer group. Because there has been minimal intervention at the elementary school level, thus published data, scant statistics are available regarding the effectiveness of the few programs which focus on elementary school youth.

Support from the general public for tobacco education efforts in the public school setting is particularly high. Unprecedented lawsuit settlements against the tobacco industry bolster tobacco education efforts. Resources are now available to fight the billions of dollars spent yearly by the tobacco industry in attempts to attract the
next generation of tobacco users. Each state has become the beneficiary of millions of tobacco industry dollars for discretionary use over the next 25 years. A significant portion of the money from the lawsuit settlement funds presently is funding health care programs across the country through appropriations of state legislatures. Many of these newly created anti-tobacco education programs are being piloted for further evaluation of their effectiveness (Mississippi State Department of Health, 1999).

Significance to Nursing

There are multiple opportunities for the nurse practitioner to spread the anti-tobacco message in today’s politically supportive environment. The informed nurse practitioner can have a unique anti-tobacco voice in the community as a respected health care provider working individually with clients in a clinical setting for tobacco use cessation. The clinician who is knowledgeable of the risk factors predictive of youth tobacco-use onset can work with high-risk client families to intervene before risky behavior begins (DHHS, 1994). The nurse practitioner can act as a community resource to help
implement or teach an effective curriculum in community institutions, such as schools, churches, and civic organizations. She can assist with cessation education programs for individuals who are already addicted to nicotine, as well as become involved in research to establish more effective anti-tobacco use programs and methods.

As an advocate for public health promotion, it is the responsibility of the nurse practitioner to become knowledgeable of the tobacco settlement funds awarded to the state where he or she practices. The nurse practitioner should follow these appropriations through the media as well as through participation in professional nursing organizations. The impact of this tremendous financial resource for health promotion in each of the 50 states can be far-reaching and warrants monitoring and proactive input by concerned health care professionals as expenditure decisions are made from capitol to capitol.

Additionally, knowledgeable practitioners, aware of the far-reaching impact of tobacco use in the family, can carefully screen new patients through history-gathering tools in the clinic. Finally, the nurse practitioner can
serve as a role model of healthy, tobacco-free living in his or her community.

The nurse practitioner must be cognizant of the most effective practices in educating the nation’s youth regarding tobacco as a number one cause of debilitating disease and death. Continued research into the most effective methods and curricula will serve health educators as well as the children they wish to influence.

The researcher’s goal was to add to the nursing knowledge base of what is effective elementary tobacco education. The ultimate goal and the purpose of this study were to evaluate the effects of an early tobacco education intervention on the attitudes and knowledge of fourth-grade students. The researcher also sought to test the hypothesis that earlier tobacco education is effective in generating a knowledgeable youth population and promoting an attitude consistent with postponement or abstinence of tobacco use onset. With age appropriate booster sessions in the years following an elementary introduction and greater community-wide involvement, as recommended by the CDC, the researcher hopes the problem of tobacco addiction will be eradicated from this and future generations.
Theoretical Framework

Throughout this study Bandura’s theory will serve as one of the two theoretical frameworks for research application (Bandura & Walters, 1963; Thomas, 1985). Bandura’s observational learning or “modeling” theory has been frequently cited in tobacco-education research literature. Cultural role models prominent in the entertainment industry and promoted by the mediums of television, movie, or print journalism (“modeling” either desirable or undesirable behavior) have a high degree of influence on the behavior of children at this developmental stage (Bandura & Walters, 1963).

Bandura established that there were certain steps involved in the learning process through modeling. In order to learn, one needs to pay attention (Bandura & Walters, 1963; Thomas, 1985). Tobacco companies have spent billions of dollars each year getting the attention of potential tobacco users, such as youth, by the models used in tobacco advertisements. Joe Camel is an example of perhaps the most effective campaign in advertising history. Easy recognition and identification with this cartoon character by the world’s children eventually
forced the tobacco industry to "retire" Joe (Mangini Collection, Tobacco Control Archives, 1998).

Current tobacco industry advertising methods are geared toward the teenage population (CDC, 1994).

Bandura's theory notes that individuals are attracted to the modeling behavior of the competent, attractive, "just like I hope to become" models in the ads. Children observe the behavior of these role models, take note of the culturally attractive setting, and retain the images subconsciously--often images of beautiful scenery, or associations with desirable possessions or activities, such as athletic events, sports cars, and beautiful clothes and people. According to Bandura and Walters (1963),

... audiovisual mass media are ... extremely influential sources of social behavior patterns. Because of the amount of time during which most young people are exposed to pictorially presented models, mainly through television, such models play a major part in shaping behavior and in modifying social norms and thus exert a strong influence on the behavior of children. (p. 49)

This association is part of Bandura's retention aspect of learning (Bandura & Walters, 1963; Thomas, 1985).

Reproduction is the next skill which children use to add to the learning process. According to Bandura (1986),
children begin to practice the observed behavior--
experiment with tobacco either in reality or vicariously
in imagination, through watching parents, siblings, or
peers. Eventually the undesirable behavior becomes
normalized or acceptable (Bandura & Walters, 1963; Thomas,
1984).

The next step in the learning process of modeling is
motivation (Thomas, 1985). According to Bandura and
Walters (1963),

Motivational factors or the anticipation of
positive or negative reinforcement may augment
or reduce the probability of occurrence of
observing responses, which is an essential
aspect of imitative learning . . . . Moreover,
findings . . . indicate not only that prior
learning experiences enhance the distinctiveness
of certain cues but also that cues that have
been associated with these experiences retain
their acquired distinctiveness in new stimulus
contexts. (p. 59)

Children who are not motivated to experiment with
tobacco will not do so. Finally, with those children who
do experiment, motivational factors, such as a sense of
belonging, fitting in with peers, and feeling "grown up,"
are all part of the process. Researchers have shown
repeatedly that the modeling behavior of family members
and significant peers such as best friends has a
tremendous influence over initiation of tobacco use practices (Jackson et al., 1998; Patton & Carlin, 1998).

Modeling can influence both desirable and undesirable behavior. One way in which tobacco educators used Bandura's modeling framework for positive outcomes was to allow children to practice modeling positive and appropriate responses to the negative stimuli. Many of the social reinforcement curricula encouraged acting out situations in which the child experiences saying "no" to the stressor which encouraged the negative behavior. In other words, to practice discussing with peers why tobacco use was to be resisted.

According to Bandura and Walters (1963),

Role-playing may be a particularly effective means of producing behavior change, since (at least in most experimental situations) the role-player dependently accepts the assigned role and then is usually reinforced by approval for reproducing the behavior of the model. Indeed, during the role-playing process, when his own previous activities become a model for his own further behavior, the agent may be receiving reinforcement both in his capacity as a model and in his capacity of observer and imitator. (p. 91)

Much of the current anti-tobacco curricula, which have been established as effective, allows youth to practice new skills before they are called upon to use
them. When youth eventually confront the real-life stressors, such as advertising, peer pressure, and availability of tobacco products in the home, theoretically and in practice, they have already modeled appropriate, resistant responses and are confident in using them (Botvin, 1999).

To further guide this study, the author selected the Neuman Systems Model (Neuman, 1982) as a secondary framework. Neuman views the client as an open system in interaction with his environment through five interrelated variables. The model of client system is depicted as a central core surrounded by concentric rings. The basic core represents a structure of survival factors common to the human species containing many variables. Neuman suggests some of these variable as innate or genetic features, temperature range, genetic response patterns, ego structure, strength and weaknesses of body organs, and cognitive ability. As Neuman (1982) pointed out,

There are many known stressors. Each stressor is different in its potential to disturb an individual’s equilibrium or “normal line of defense.” Moreover, particular relationships of the variables--physiologic, psychologic, sociocultural, developmental, and spiritual--at any point in time can affect the degree to which an individual is able to use his “flexible line of defense” to defend against possible reaction
to a single stressor or combination of stressors. (p. 189)

The Neuman Systems Model had broad relevance for the current study that provided a format for prevention as intervention, particularly applicable to tobacco education. Health care providers, in the role of tobacco educators, can provide additional lines of defense that are called upon when known stressors in the environment attack. Peer pressure, tobacco advertising bombardment, and negative parental and sibling role models of tobacco-use attempt to penetrate an individual’s normal lines of defense. Providing children opportunities to develop skills that are needed to resist tobacco involvement can strengthen the normal lines of resistance. Children and youth need appropriate primary, secondary, and tertiary interventions provided by tobacco education health practitioners who recognize children at risk. Using Neuman’s format for Prevention as Intervention, the nurse practitioner, or other health educator in the elementary school setting, can intervene at Neuman’s Primary Prevention level. For many children this is the time before a known risk has invaded the child’s normal lines of defense and a reaction, such as a decision to use
tobacco or the action of smoking a cigarette, has occurred. Secondary and tertiary intervention, in Neuman’s format for Prevention as Intervention, involves the nurse in tobacco cessation activities with a child who is already addicted and in aiding that child in a return to the balance and stability that existed before the stressor of tobacco entered his life. Primary prevention through programs, such as Life Skills Training, prepares a child with knowledge and skills developed through such activities as role-playing or the preview and class discussion of tobacco advertisements. Researchers have demonstrated that a child with an attitude toward tobacco avoidance is better able to make appropriate decisions when the need arises (CDC, 1999).

Assumptions

The assumptions accepted as a basis for this study were as follows:

1. Disease and death caused by tobacco use are preventable.

2. Tobacco use is a learned behavior acquired from the modeling behavior of significant adults, siblings, and peers.
3. At any point in a person's life, stressors can permeate the normal lines of defense, making an individual susceptible to habits which may lead to changes in the wellness state.

Statement of the Problem

This study explored the knowledge and attitudes of fourth-grade students exposed to an early elementary tobacco education program. Most formal tobacco education has been studied in the middle school years (Grades 6-9) after many children have already experimented with tobacco or developed an attitude regarding tobacco use. Because many children will have already experimented with tobacco, prevention-intervention programs are not as effective as they could be in helping children make good decisions toward tobacco abstinence. Consequently, numbers from the next generation of tobacco users are continuing to rise as will the resultant illness and death directly related to amount and duration of tobacco use. A myriad of health problems and lost years for the next generation is predictable.
Hypotheses/Research Questions

For the purposes of this study, the null hypotheses were as follows:

1. There will be no difference in knowledge scores on the Tupelo Tobacco Survey for students who attend and those who did not attend an education program.

2. There will be no difference in attitude scores on the Tupelo Tobacco Survey for students who attend and those who did not attend an education program.

Definition of Terms

The following terms were defined for the purposes of this study:

Knowledge: Theoretical: Knowledge is the state of knowing, cognition, understanding; that which is known (Cayne et al., 1992; Morris, 1970). Operational: Knowledge is determined as a demonstration of understanding, awareness, or familiarity of the harmful effects of tobacco use and ways in which to avoid it as taught through the Tupelo Tobacco Curriculum and demonstrated by scores measured on the Tupelo Tobacco Survey.

Attitudes: Theoretical: Attitude is defined as a demonstration of a state of mind, feeling, or orientation,
mental attitude, posture (Cayne et al., 1992; Morris, 1970). Operational: Attitude is demonstrated by a posture or orientation with regard to tobacco-use measured by scores on the Tupelo Tobacco Survey.

**Students:** Theoretical: A student is a person who attends a school for the purpose of studying (Cayne et al., 1992; Morris, 1970). Operational: For the purposes of this study, students are children between the ages of 9 and 12 years who are enrolled in the fourth-grade for the 1999-2000 school year. An additional criterion for the experimental group is enrollment since the 1998 school year.

**Tobacco education:** Theoretical: Tobacco education is a course of study regarding the dangers of tobacco use (Cayne et al., 1992; Morris, 1970). Operational: For the purposes of this research, tobacco education is a course of study regarding the dangers of tobacco use. Specifically, a formal curriculum that includes Life Skills Training by Princeton Health Press (Botvin, 1999) and Tar Wars by the American Academy of Family Physicians (1995). The curriculum includes additional components, such as demonstrations of smoking doll, smoker’s lung model, and smoke-filled room demonstrator, special
emphasis events, such as a thematic "anti-tobacco week," guest presentations, art projects, and media involvement projects. Classes were implemented over a course of 9 school months beginning in February 1999 and ending in March 2000 with a summer break interruption. Formal classes were held for one-half hour every other week during scheduled health and physical education class times.

**Tupelo Tobacco Survey: Theoretical:** The Tupelo Tobacco Survey is an instrument to measure knowledge and attitudes of students who have participated in a 9-month tobacco education program and those who have not participated in an education program. **Operational:** For the purposes of this study, the Tupelo Tobacco Survey is an instrument designed to measure knowledge and attitudes of fourth-grade children who have participated in a 9-month tobacco education program and those students who have not participated in an education program. The instrument was developed from an existing seven-part survey used to evaluate Life Skills Training 3 and 4 with additional items incorporated from elements that were part of the Tupelo Tobacco Curriculum.
Chapter II

Review of the Literature

Tobacco education is a relatively new concept initiated after the 1964 Surgeon General’s report on the hazards of smoking (U.S. Department of Health, Education, and Welfare [DHHS], 1964). Since this landmark report, there has been little controversy regarding the need to educate the American public regarding the dangers of tobacco use. A considerable amount of private and public monies has gone into research over the last 35 years due to recognition of this significant, yet preventable, health hazard. As a result of this impetus, a tremendous volume of literature was produced by researchers on tobacco use, much of it promulgated by the U.S. Government through the Centers for Disease Control and Prevention and the Surgeon General’s annual reports. A review of the literature revealed a significant number of studies germane to the author’s study regarding effective tobacco education. Most of the research, however, focused on an older youth population. Of the few studies available which
were based on an elementary population, the author selected research that related specifically to demographics, elementary education program outcomes, parental and peer modeling, and cultural influence on risk behavior. The researcher also reviewed literature regarding smokeless tobacco (SLT) use, an often overlooked and undervalued substance in relationship to its addictive properties, carcinogenic characteristics, and increasing popularity with youth.

Linerski, McClary, Brown, Martin, and Jones (1991) documented the alarming rise of SLT use in the United States, including use by increasingly younger children. Linerski et al. (1991) cited a national survey conducted by the National Institute on Drug Abuse that estimated as many as 20% of males aged 12 through 17 years used smokeless tobacco in 1985. No national data were identified on SLT use by children under age 12 years. Several surveys indicated regular use of more than once per week by children in Grades 3 through 6, with a national average of 17% for boys and 2% for girls. Considering these alarming statistics, Linerski et al. (1991) assessed the basic demographics and predictive correlates of smokeless tobacco use in school-age
children. A stratified random sample of 559 rural and urban first, third, fifth, and seventh graders in western North Carolina was surveyed regarding experimentation with smokeless tobacco. Linerski et al. (1991) assessed the prevalence of "have tried" (initial) and "still use" (continued use) smokeless tobacco products among children surveyed. The researchers focused on when children began using smokeless tobacco products, what type of children tried and still used, and what demographic and attitudinal variables were associated with smokeless tobacco use. Of particular interest to the researchers were the usage patterns of first graders, since there were little data on that age group at the time of the study.

Linerski et al. (1991) developed two versions of a smokeless tobacco inventory that were administered to the sample of 559 children, categorized by grade, gender, and rural or urban residence. Included were 138 first graders, 146 third graders, 130 fifth graders, and 145 seventh graders (287 males, 260 females, and 12 unspecified). Questionnaires were developed through pilot research and consisted of three questions identifying gender, age, and grade, and 20 questions for third, fifth, and seventh graders, asking about smokeless tobacco use; attitudes
toward smokeless tobacco; familial, peer-group and role-model use; and awareness of health risks associated with tobacco. A shorter version was administered to first graders. With the exception of questions regarding age, grade, and gender, the responses consisted of “yes,” “no,” and “don’t know.”

Overall, Linerski et al. (1991) discovered that 22.4% of respondents reported having tried smokeless tobacco at least once, and 5.72% reported continued use. The percentages were broken down by grade, residence, and gender in a 4 x 2 x 2 analysis of variance. The percentage of children who tried smokeless tobacco was greater for males than for females (p < .01), increased substantially with grade (p < .01), and was far more prevalent with rural as opposed to urban children (p < .01). Additionally, there was an interaction between grade and gender (p < .05), indicating that “have tried” smokeless tobacco by males increased more precipitously with grade than for females. In addition, the difference in “have tried” was greater between urban and rural males than for urban and rural females (p < .01), suggesting lower levels of experimentation among urban females. The authors concluded that experimentation with and continued use of
smokeless tobacco was particularly prevalent among rural males, outnumbering urban males by a ratio of 4:1. A striking 36.4% of male rural first graders reported “have tried” smokeless tobacco, increasing to 72.5% by the seventh grade. Twenty percent of all rural male seventh graders reported “still use.” Use of smokeless tobacco products was considerably less for urban males and both female groups, however, were still of significant proportions.

The strongest associations for having tried smokeless tobacco identified by the authors were as follows: the opinion that “it tastes good,” that use of smokeless tobacco makes one feel “grown-up,” use of smokeless tobacco by members of the household, and identification with admired sports figures who modeled the use of smokeless tobacco. Somewhat weaker associations of “have tried” were as follows: consumption by friends, parents, grandparents, and athletic coaches; exposure to radio programming; and memory for commercials on the radio.

Conclusions of Linerski et al. (1991) have particular bearing for educators involved in coordinating tobacco education curriculum in an elementary school setting. Results of this study supported other data regarding the
age at which tobacco education should begin. The researchers suggested that kindergarten and first grade are not too early to begin teaching the anti-tobacco message. Tobacco education efforts should work to increase the awareness of children that smokeless tobacco is not a safe alternative to smoking. The researchers concluded that education should not be restricted to males and that rural regions must be a particularly high priority.

Linerski et al. (1991) believed educational curricula must take into account that familial tolerance of smokeless tobacco use is common and educational programs must take into consideration a variety of sociopsychological issues that affect first-time use. The researchers concluded that health education should send a strong anti-tobacco message early, often, and strongly in order to eventually have an impact. Since there is a paucity of research on elementary school level children, this study was particularly helpful in describing demography and methodology. Evaluation of an elementary curriculum requires approaches and procedures different from that of other ages due to the developmental and maturity level of the participants.

Another elementary school study by Elder et al. (1996) addressed the sociopsychological variables of first
use of tobacco. The authors asserted the initiation of regular smoking began almost entirely by age 18. According to Elder et al. (1996), the percentage of seniors who were daily smokers leveled off at 17% by 1993, after decreasing throughout the 1970s. New data gathered by researchers discovered that the numbers have begun to rise. More recent information from the University of Michigan was alarming: smoking rates among eighth graders rose from 14.3% to 18.6% from 1991 to 1994 and among 10th graders from 20.8% to 25.4% during this same time. Indications from collected data suggested that programs which targeted only one (e.g., seventh grade) and were of short duration have had limited, or no effect, especially when friends, siblings, and or parents smoked.

Elder et al. (1996) conducted the Child and Adolescent Trial for Cardiovascular Health (CATCH) involving 96 elementary schools at four sites, with a cohort initially in the third grade. The intervention program was based on principles derived from social learning theory and organizational change. The program addressed heart-healthy diets, increased moderate to vigorous physical exercise, and the prevention of smoking-onset behavior. Interventions were conducted over three
school years (1991 to 1994) and emphasized social influences and environmental factors, as well as interpersonal and intrapersonal behavior variables associated with promoting heart-healthy lifestyles. The intervention also included a smoking prevention curriculum taught to students in the fifth grade and the promotion of policy and implementation procedures for totally smoke-free schools.

CATCH was a multi-center randomized trial with four study centers in four states with a data coordinating center at the New England Research Institute in Watertown, Massachusetts. The four sites included the University of California-San Diego, Tulane University School of Public Health, University of Minnesota, and the University of Texas Health Science Center at Houston. Each site recruited 24 elementary schools to participate in the full trial. Ten schools at each site were randomly assigned to the control condition and seven schools each to a school-based intervention. All eligible schools had Grades 3 through 5 in a single school. All fifth-grade students in the 96 study schools participated in the classroom survey where the health behavior questionnaire was administered in the spring of 1994.
The Health Behavior Questionnaire (HBQ), including smoking acquisition items, was administered to all fifth-grade students in CATCH study schools who were present on the day of data collection. In their last semester of the fifth grade, an overall total of 7,827 subjects responded to the tobacco use items. For the regression analysis, 6,527 fifth graders who were Caucasian, Hispanic, or African American, who did not have missing values for any of the covarities, and who could be classified as “ever smokers” or “never smokers” were included. Of these, 4,610 were Caucasians, 1,019 were Hispanics, and 898 were African Americans. There were 3,305 girls and 3,222 boys.

At the end of the third grade and during each subsequent spring, the behavioral and psychosocial instruments comprising the Health Behavior Questionnaire were re-administered. In addition to specific smoking acquisition items, questions were asked regarding the smoking behavior of friends and family. Students were asked whether their best friend, mother-stepmother, father-stepfather, or siblings smoked and whether cigarettes were easily obtained at home.

The intervention at the classroom level was a curriculum for smoking prevention titled, Facts and
Activities about Chewing Tobacco and Smoking (F.A.C.T.S.). "F.A.C.T.S. for 5" was a brief (four 50-minute sessions) program developed for fifth-grade students and led by classroom teachers. The program focused on aspects of both smoking and chewing tobacco that are dangerous to health, costly in terms of dollars, and socially unattractive. The curriculum emphasized the benefits of not using tobacco and suggested that living tobacco-free was the most acceptable way of life. Session one (four 50-minute sessions) described all the short-term and long-term consequences of tobacco use. The second session covered youth's motivations and perceptions fallacies regarding tobacco use. Session three identified the economic costs of tobacco use and exposed the efforts of the tobacco companies to hook their next generation of nicotine addicts. The final session focused on passive smoking hazards and taught students how to be supportive of those who wanted to quit. The final session encouraged students to make a commitment to remain tobacco free in the future. Other components of CATCH were a home-based, four-session program from the American Lung Association, "The Unpuffables," made to complement and reinforce what was presented at school and an additional environmental
tobacco intervention component. The purpose of this environmental component was to encourage the adoption of a formal policy to become tobacco-free within the 56 intervention schools.

Significant findings included the information that an overall 4.8% of the respondents were “ever smokers.” The strongest predictors of ever smoking in this cohort of fifth-grade students were the key people in the students’ social network, such as friends and siblings, and the availability of tobacco products in the home environment. In regard to the environmental policy component, the number of schools adopting smoke-free policies increased markedly from baseline to fourth grade and again to fifth grade. Elder et al. (1996) maintained that tobacco-free school policies appeared to be a crucial part of successful school-based interventions.

As a rare, multi-region study of elementary school youth and tobacco use, the CATCH study lent support to other researchers’ outcomes that suggested an environmental component of school policy must be incorporated for greater effectiveness in an educational program. The findings of these authors supported the effectiveness of a broad sociopsychological approach to
tobacco education as was implemented in the Tupelo Tobacco Curriculum. CATCH researchers suggested that early interventions may be more effective if a focus is placed on policy development and reinforcement in the school environment and on the reduction of social environmental influences, such as family and peer smoking. Again, because relatively few studies of smoking onset have been conducted with this age group or with multiple geographical sites, this study was particularly significant to the current researcher.

Other important authors concluded that the prevalence of cigarette smoking could be significantly reduced through implementation of a combined school and mass media intervention as opposed to a school-only program. According to a longitudinal study of a 3-year urban elementary school tobacco prevention program affiliated with the University of Toledo, researchers Price, Beach, Everett, Telljohann, and Lewis (1998) indicated that in order to reduce health problems, both behavioral and environmental factors that influenced poor health must change. Through this study researchers compared effects of varying amounts of tobacco instruction (1, 2, and 3 years) on the knowledge, attitudes, and behavioral intentions of
urban elementary students. The study was based on a 3-year, fourth- through sixth-grade tobacco prevention curriculum developed using most of the recommendations from the Centers for Disease Control and Prevention Guidelines for School Health Programs to Prevent Tobacco Use and Addiction. This curriculum comprised five 45-minute lessons per year using the same trained instructor all 3 years. There were six intervention schools that taught the curriculum and two control schools that did not teach the curriculum. Tobacco knowledge, attitudes, and behavior intention were compared between students who had not received the curriculum in any of the three preceding years, students who received only the sixth-grade curriculum, those who received the sixth and either the fourth- or fifth-grade curriculum, and students who received all 3 years of tobacco intervention. The researchers determined the control group’s knowledge scores were significantly lower than each of the intervention group’s scores ($p < .001$), while no significant differences emerged for knowledge scores between the 1-, 2-, and 3-year intervention groups.

The following conclusion by Price et al. (1998) deserves further explanation than the study provided:
The control group's attitude scores were statistically significantly lower than the three-year intervention group's scores (p < .001). Students in the three-year intervention group had more positive attitudes (toward not using tobacco) than students in the control group. Finally, there were no statistically significant differences in behavior intention scores identified between the control and intervention groups. (p. 29)

According to Price et al. (1998), a number of correlates were identified regarding adolescent tobacco use. Among the most important for white students was smoking among peers. Price et al. maintained that many studies have demonstrated risk-taking tendencies also served as a predictor of tobacco use as well as intention to use tobacco, dropping out of school, and living with adult smokers.

"There was no significant difference found in knowledge, attitude and behavioral intention scores between girls and boys, white and African-American students, students who liked and didn’t like school, and students who reported that someone with whom they lived smoked" (p. 30). Statistically significant differences emerged among those who reported some of their best friends smoked and those who did not, and students who believed people with whom they lived would be disappointed
if they thought they (students) smoked, rather than those who did not have those significant people in their lives.

Price et al. (1998) concluded that five class periods, each year for 3 years, had a modest, short-term effect on these students. The authors believed their study supported the theory that the prevalence of cigarette smoking can be significantly reduced through implementation of a combined school and mass media intervention as opposed to a school-only program. Price et al. further suggested that had the curriculum been started at the kindergarten level with more parental involvement (the two recommendations from the CDC that were not implemented) the effectiveness, particularly on behavioral intentions, may have been greater.

Significant for the current research was the way in which the pretests and posttests were administered. Price et al. (1998) recommended that students at the elementary level be read the instrument to increase internal validity of the evaluation by limiting problems inherent in reading. A 49-item instrument was used and deemed appropriate for this young age, information that proved helpful in designing an instrument and implementing it in the Tupelo Tobacco Survey.
Price et al. (1998) concluded, "It may be unreasonable to expect that a 15-hour, school only, smoking prevention program for elementary grades will have major long-term effects on students" (p. 31). The authors believed that the impact of a program is greatly weakened without support from parents, community, and media.

Through additional studies the use of tobacco and alcohol during childhood was shown to predict heavy use of these substances as well as illicit drugs during adolescence and adulthood. The use of tobacco and alcohol during childhood also was associated with unresponsiveness to school-based prevention programs. According to the author of The Early Use of Alcohol and Tobacco: Its Relation to Children’s Competence and Parents’ Behavior, demonstration studies of middle-school prevention programs consistently found that children most likely to report substance use after completion of such programs were those reporting prior use at the baseline. It also should be noted that elementary school initiators of cigarette smoking were least likely to attempt and least likely to succeed in cessation and were most likely to smoke as adults. Because of these earlier findings researchers Jackson, Henriksen, Dickinson, and Levine (1998) supported
by the National Institute on Drug Abuse, examined the developmental association of tobacco and alcohol use among elementary school children in the United States. These researchers studied factors associated with the use of tobacco and alcohol during childhood.

In a study that used child development constructs to broaden the public health model of substance use, Jackson et al. (1998) hoped that identifying predisposing variables might facilitate efforts to develop early intervention strategies for prevention of substance abuse. The researchers, acknowledging a 20-year cohort study by Kandel, Yamaguchi, and Chin (1992), concluded that the early use of tobacco and alcohol is the strongest predictor of progression to the use of marijuana and other illicit drugs. Jackson et al. (1998) concluded that early intervention to delay the onset of tobacco and alcohol use should constitute the principal approach to drug-use prevention.

According to Jackson et al. (1998), the field has continued to concentrate on the prevention of adolescent use of substances. The researchers proposed that the greatest research need was to examine the initial phase of tobacco and alcohol use, most specifically, research that
identified modifiable risk factors for early use. The researchers’ premise was that certain socialization experiences predispose some children to early use of alcohol and tobacco. By identifying these variables, efforts to develop early intervention strategies for substance-use prevention would be facilitated.

Jackson et al. (1998) defined socialization as a developmental process through which children learn and internalize the normative beliefs, knowledge, skills, values, and behaviors important to members of their social groups. Jackson et al. believed that during childhood socialization processes are fundamentally concentrated on the development of competencies that include behavioral self-regulation, a positive work orientation, interpersonal skills, and a positive self-image. Childhood competencies enable children to establish warm and supportive relationships with significant others. They are better able to act autonomously, respond to challenges in their environment, and to achieve success at school and in life. Jackson et al. (1998) stated that those children with poorly developed competencies were much more likely to develop behavioral problems that included problems in conduct and social delinquency.
When applied to Jackson et al.'s (1998) study, this socialization model posited an inverse association between competence and the risk of early use of tobacco. The current author believes that although competence has been widely studied in linking risk-taking behaviors to adolescents, little has been investigated regarding competence and early childhood. Jackson et al. (1998) examined the association between competence and early use of tobacco and alcohol and hypothesized an inverse association between measures of children’s personal, social, and academic competence and their risk of early illicit substance use.

It has long been acknowledged that parental child-rearing practices strongly influence a child’s development of competence. By nurturing and being responsive, and by exercising firm, assertive control without permissiveness or intrusiveness, parents can maximize their child’s potential to develop competencies. According to Jackson et al. (1998), these parenting behaviors have encouraged independence, academic achievement, social maturity, self-esteem, and other competencies. Thus, the authors defended their assessment of parenting behaviors in enhancing our understanding of children’s substance use. Jackson et al.
(1998) hypothesized there would be an inverse association between parenting that fosters competence (effective parenting) and children’s use of alcohol and tobacco.

An additional factor Jackson et al. (1998) addressed was the widely studied and generally accepted prediction of parental modeling of tobacco and alcohol use on adolescents’ use of the substances. In the researchers’ study, a similar association was tested to see if an association existed between parental modeling and use of tobacco and alcohol among elementary school children. In addition, the researchers assessed the relative strength of parenting behaviors and parental modeling as predictors of early use of alcohol and tobacco.

Jackson et al. (1998) studied all third- and fifth-grade children enrolled in 12 elementary schools composing a county school district in central North Carolina. The students lived in small communities (population of 10,500) or the surrounding rural areas (population 80 per square mile). Median family reported income was $32,000, and the racial composition was 80% Caucasian, 18% African American, and 2% other. Female representation was 49%. The sample included all third- and fifth-grade teachers in the district.
Measures of alcohol and tobacco use, child competence, parenting behaviors, and parental modeling were developed for this study. The researcher noted difficulty in locating a tool with appropriate wording for a third-grade reading level, an experience common with this current researcher and suggestive of the dearth of information related to this age group. Only tobacco data were collected from third-grade children due to the time allocations needed to test this less advanced age group.

The child survey included 27 items measuring self-regulation, self-esteem, work orientation, peer acceptance, and resistance to peer pressure—items selected to test "competence." Children then completed 20 items measuring various aspects of effective parenting behavior, such as parental acceptance, rule setting, and supervision behaviors. The researchers noted that perceived parenting (not actual parenting skills) was measured. Jackson et al. (1998) ascertained that what children believed to be true regarding their parents' treatment of them ultimately affected their attitudes and behaviors. Parental modeling was based on one or more parents who currently smoked. Children who reported that
both parents were nonsmokers were coded as having no current exposure to parent modeling of smoking.

The teacher portion of Jackson et al.'s (1998) survey was a brief checklist developed to obtain teachers' global assessments of students' academic abilities, social skills, and self-confidence, ranked as high, moderate, or low levels of competencies. Teacher-rated parental support factored in a teacher's global assessment of the parental support given to each student.

Jackson et al. (1998) used a passive consent protocol to obtain parental permission, followed by an active consent protocol to obtain children's permission. Both mail and take-home channels were used to deliver consent forms to parents, and postage-paid refusal postcards were included with each form. All data were collected in the classroom, and children were informed that they could choose not to participate at any time. Survey items were read aloud by graduate students who were trained to standardize the pace and modulation of their reading and to standardize their responses to predictable questions. Teachers did not leave their desks in order to protect confidentiality of student responses.
Jackson et al. (1998) used t tests to compare respondents with non-respondents. To check construct validity, a correlation between the competency and parenting measures was reported. Hypotheses were tested for both teacher and child data. Because of the dichotomy of using tobacco and alcohol as variables, logistic regression analysis was used.

Jackson et al. (1998) found no differences in the grade, gender, and race distributions of responding and non-responding students. Because teacher-rated competence and teacher-rated parental support data were obtained on all students, responding and non-responding students could be compared on these variables.

Significant probability values emerged for non-respondents who had lower academic competence ($t = 3.4$, $p < .001$), social skills ($t = 2.9$, $p < .01$), and self-confidence ($t = 2.7$, $p < .01$), but did not differ in parental support. According to the authors, a consistency of results with other studies and the conceptual model emerged: positive correlations between effective parenting and child self-esteem, $r = .35$, $p < .01$; self-regulation, $r = .42$, $p < .01$; work orientation, $r = .37$, $p < .01$; peer
resistance, \( r = .14, p < .01 \); and peer acceptance, \( r = .26, p < .01 \).

Findings related to child competence and early tobacco use indicated the following: 10.3% (\( n = 788 \)) of third-grade children reported tobacco use, 21% (\( n = 682 \)) of fifth-grade children, and 15.3% (\( n = 1,470 \)) of all children. According to Jackson et al. (1998), the results, adjusted for age and gender, clearly revealed support for the hypothesized relationship--use of tobacco increased as competence levels decreased. Children with low levels of competence were at least twice as likely to report early use of tobacco than children having higher levels of competence. Children’s self-report data indicated the lower the self-reported competence, the greater the odds of reporting tobacco use.

Four logistic regression analyses were conducted to examine the relative strength of the competence variables in predicting tobacco and alcohol use. As was expected, these analyses indicated that age and gender are significant predictors, with males and older children (fifth graders as opposed to third graders) more likely to report tobacco use, and fifth-grade males more likely to report alcohol use. Using regression models, Jackson et
al. (1998) noted all teacher-rated competence variables indicated academic competence was most strongly associated with both tobacco and alcohol use. According to Jackson et al. (1998), the regression models with all child-rated competence variables indicated that self-regulation and self-esteem were most strongly associated with tobacco and alcohol use.

Next, the levels of effective parenting and tobacco and alcohol use were analyzed according to children's self-reporting. When high and low levels of effective parenting were compared, 9.2% and 28.5%, respectively, of children reported tobacco use, and 14.4% and 47.7%, respectively, of children reported alcohol use.

Jackson et al. (1998) hypothesized an inverse relationship between tobacco and alcohol use and teacher-rated parental support or child-rated effective parenting. Findings supported these relationships: Children with a low level of teacher-rated parental support were more than twice as likely to report tobacco and alcohol use than children with a high level of parental support. Additionally, the lower the children's perceptions of effective parenting behaviors, the more likely children were to report use of tobacco and alcohol.
It has long been believed that parental modeling influences adolescents' experimental and regular use of tobacco and alcohol. Jackson et al. (1998) reported results that children's use of tobacco was also strongly associated with parental modeling. Specifically, 9.8% of children reported tobacco use when neither parent was a current smoker, and 21% reported tobacco use when one or both parents smoked. In comparison to children of nonsmokers, children with at least one parent modeling smoking behavior were more than twice as likely to report use of tobacco.

In summary, Jackson et al. (1998) reported that each of the parent variables was significantly associated with early use of tobacco. In the discussion segment of the study, the authors maintained that use of tobacco during early childhood had a strong inverse association with several measures of child competence, perceived effective parenting, and was positively related to parental modeling of tobacco use. According to Jackson et al. (1998), child development literature indicates that competence level and parenting behaviors remain relatively stable during childhood. Thus, the authors believe that early tobacco use is related to weak competence development and
socialization factors that are likely to have persistent negative consequences for substance-use behaviors as the child grows up.

Jackson et al.'s (1998) study was the first study to compare the combined association of parental modeling and parenting behaviors with the early use of tobacco. These findings underscored a shortcoming of prevention programs, which generally do not have the changing of parenting behaviors or parental modeling to prevent children’s substance use as a primary objective. Jackson et al. (1998) believed that direct modeling on how to use tobacco was only one of several ways that parents influence children’s use of tobacco. Parental use of tobacco may provide easier access to the products, communicate information about the physical and psychological effects of use, and convey positive norms about tobacco use.

In conclusion, Jackson et al. (1998) believed their results strongly supported the hypothesized associations between child socialization variables and early use of tobacco. According to the authors, early use is significantly less likely to occur among children who have strong competence development, high levels of effective
parenting, and no exposure to a parental modeling of tobacco use.

The particular findings of Jackson et al.'s (1998) study strongly support the socialization skills training curriculum used in the current study. Further support was documented for use of Albert Bandura’s Social Learning Theory as a framework for the current study. Effective tobacco education methods recognize "modeling" as a core component to learning behavior in early childhood. Additionally, Jackson et al. (1998) were particularly helpful in the details provided regarding the actual investigation practices of working with elementary school children. Suggestions were protracted from this study regarding methodology of the survey.

An additional relevant study by Pesa (1998) focused on an emerging trend involving demographics in the United States. Nearly 22 million people in the United States are of Latino background, with population projections indicating that the Latino population will be the largest minority population in the country by the year 2010. Health educators in the southern United States, with a growing wave of immigrants from Mexico, should think in terms of an ever-increasing Latino population and the
impact this culture will have on health care education in the future.

Pesa (1998) performed a secondary analysis of national data obtained from interviews of Mexican-American youth, ages 10 through 18, who participated in the 1993 Teenage Attitudes and Practices Survey (TAPS II). Data collected included smoking status and participation in certain unhealthy practices, such as non-seatbelt use and physical fighting. Youth smokers were less likely to be involved in organized sports, performed poorly in academics, liked involvement in risky behavior, and were willing to ride in a car with a drunk or drug-high driver. Church attendance by these youth also was low. These results suggested that Mexican-American youth who smoked were at a higher risk for engaging in other high-risk behaviors that compromised health and safety and that they were not involved in activities that might have been protective.

According to Pesa (1998), the young and rapidly growing Latino and Mexican-American population warrants an acceleration of efforts by health care providers to stave off high rates of disease associated with cigarette smoking. According to Pesa, Latino youth are smoking at
rates similar to their white peers. Speculation partially attributes this to an aggressive campaign by the tobacco industry toward Latino communities.

Because Pesa (1998) examined the possibility that cigarette smoking was associated with youth participation in certain unhealthy lifestyle behaviors, the lifestyle concept has spawned other research for evidence of clustering behaviors both for health promotion and proneness to problem behavior. Pesa (1998) focused attention on an understudied yet rapidly expanding population.

For the purposes of Pesa's (1998) study, all subjects who indicated they were of Mexican-Mexican or Mexican-American background, between the ages of 10 and 18 years, and took part in the 1993 Teenage Attitudes and Practices Survey II (TAPS II) were included in this analysis. The National Center for Health Statistics, the National Cancer Institute, and the Office on Smoking and Health conducted TAPS I and II as part of the National Health Interview Survey conducted during the last two quarters of 1988 and first half of 1989. TAPS II included 9,135 teens surveyed for TAPS I in addition to 5,590 new subjects.
All persons eligible in a household were selected in each TAPS II sample component. The principal means of collecting data was through computer-assisted telephone interviewing (CATI). In the follow-up component, 87% (n = 7,960) responded and for the new TAPS II persons, 89% (n = 4,992) responded. Behaviors chosen for analysis included physical fighting, seatbelt use, riding in a car with a drunk or high driver, school performance, church attendance, and participation in organized sports. Subjects were asked about enjoyment of high-risk behavior. Those subjects who responded that seatbelt usage was nonexistent or rare, engaged in physical fights at the rate of two or more per year, or had ever ridden in a car with an intoxicated or high driver were categorized as participating in high-risk behaviors. A below-average performance in school, rare, or nonexistent attendance at church, and nonparticipation in organized sports were also considered unhealthy behaviors.

Results from the sample of 580 Mexican-American adolescents (282 girls, 298 boys) determined the average age for girls at 13.92 and boys at 13.96. Genderized smoking rates were at 29% for girls and 35% for boys. Based on the resultant data, smokers of both genders
appeared to participate in unhealthy behaviors more frequently than nonsmokers. In particular, smokers were more likely to have reported enjoyment of high-risk behavior, nonuse of seatbelts, involvement in physical fighting, having ridden in a car with an intoxicated or “high” driver, nonattendance at church, and poor school performance. Boys who smoked were 2.6 times more likely to report high-risk behavior compared to nonsmokers and 5.4 times more likely to perform poorly in school if they smoked. For females, the association was even stronger. Church attendance, physical fighting, and school performance were significantly associated with smoking among boys. Interestingly, all behaviors (except church attendance) were significantly associated with smoking and other high-risk behaviors among girls. Girls who smoked were 6.4 times more likely to report having ridden in a car with a drunk or high driver. Smoking status and school performance were strongly associated, with girls 12 times more likely to perform poorly in school if they smoked.

Pesas (1998) suggested that many factors can contribute to high-risk behavior of youth. For instance, poor academic performance can be both an antecedent as well as a consequence of other types of unhealthy
behaviors. Some of the results suggested that greater conventionality (as determined by church attendance, involvement in school activities, and other behaviors deemed socially approved and appropriate) was positively associated with less involvement in problem behaviors. More traditional and adult-led activities, such as church involvement, may also exert a protective influence. An association with high-risk behaviors, such as failure to use safety belts and willingness to ride with a drunk driver, is also consistent with cluster behaviors of U.S. adults, according to Pesa (1998). The willingness to participate in high-risk behaviors may represent conventionality or lack of conventionality characteristics which predict the likelihood of engaging in other oppositional behaviors (Pesa, 1998).

Pesa (1998) concluded that an association between smoking and unhealthy behaviors in Mexican-American youth supports a common culture experienced by all youth, which may influence health behavior and lifestyle decisions. The author believed the study would be helpful to health educators, school personnel, and counselors as they design and implement community and school-based programs. Smoking behavior in an adolescent may serve as an indicator of
effective preventive strategies to deal with alcohol and tobacco use among the young.

The sample included 759 first-, third-, and fifth-grade children from elementary schools in nine different Arkansas cities. The schools were representative of a widely divergent population with both urban and rural districts included as well as student populations. Children represented both highly stable and widely transient backgrounds. Eight of the nine schools were public, one was a private, church-oriented school and one was in a “dry” (no alcohol) county (Young & Fouk, 1985).

Each child was interviewed individually with responses recorded on audiotape. General background questions were asked as well as questions concerning self-esteem, recognition of tobacco and alcohol products, questions regarding personal, family, and peer use of the products and, finally, questions regarding expectations for future use. The interviews took approximately 9 to 12 minutes. Answers to most questions were mostly in the yes and no format.

Results regarding tobacco use showed an expectation of future use at 5.6%, those unsure at 5.2%, and 89.2% had no expectation of future use. At 96% there was near
universal recognition of tobacco products, even among first graders, 83.4% claimed knowing someone who used tobacco products, 4.4% admitted use of tobacco products, and 60.4% indicated they had seen tobacco products in their homes. Of the students who indicated they were unsure or expected to use tobacco products, 75% and 78% stated they did not know why they might.

The second highest response given by those who expected to smoke was a modeling type of reasoning. (Example: "It’s okay when you grow up" and "Dad smokes.") Among those who said they did not expect to use tobacco, reasons given for nonuse were as follows: (a) health reasons such as "It will give you cancer" (64.2%), (b) could not give a reason (16.7%), (c) aesthetic reasons such as "It stinks" (10.3%), (d) moral reasons such as "It’s wrong" (4.6%), and (e) modeling "My parents don’t smoke" (2.8%). Correlates of expected use yielded significant (p < .05) chi-square values including (a) grade in school, (b) personal use, (c) having seen the product used at home, and (d) expected use of alcohol. According to Young and Foulk (1985), one of the strongest predictors of teenage smoking was the family’s smoking habits. Adolescents are most likely to use tobacco if one
or both parents or an older sibling smokes. The chances are even greater that an adolescent will smoke if one or both parents do not live at home. When data were further analyzed, controlling first for grade level and then for whether the child lived with both parents, the following were significant predictors of expected tobacco use:

1. Grade in school was significant when the child did not live with both parents.

2. Personal use was significant at the first and fifth grades and also when the child did not live with both parents.

3. Having seen the product at home was significant at the first and fifth grades.

4. Expected use of alcohol was significant regardless of the child's living arrangements.

Young and Foulk (1985) raised several interesting points relevant to health education. There was near universal product recognition and a significant number of children reported having seen tobacco products modeled at home, supporting the theory that modeling in the home does play a major role in determination of tobacco and alcohol use. The self-reported data from young children were believed to be accurate. To support their contention,
Young and Foulk cited earlier works by previous authors who stated that behavioral intentions expressed by the children can be viewed as determinants of a child's future behavior.

Young and Foulk (1985) noted that their outcomes were reflective of children's expectations of using alcohol at 8.6% and tobacco use at 5.6%. The general adult population estimated a use at 70% alcohol and 40% tobacco. The question became one of reconciling the figures. The authors contended that most children begin with a nonuse orientation. A lack of positive reinforcement for this attitude may allow them to alter their perspective as they are exposed to alcohol and tobacco. The authors believed that without positive reinforcement of nonabusive attitudes, there was reinforcement for misuse and abuse in the form of peer pressure and advertising.

Additionally, Young and Foulk (1985) discovered a significant number of children who indicated no expectation of future use, but could not defend their expected nonuse. The researchers suggested these children would be the most easily swayed from their original nonuse orientation. This theory could have significance for educators who will be able to provide multiple reasons for
nonuse of tobacco substances in future health education programs.

The concluding implications of the study were significant to this current researcher. Because large numbers of children reported seeing tobacco and alcohol used at home and a significant number of these children reported a modeling reason for expected use of tobacco products, one may deduce that health educators should involve parents in educational programs. Young and Foulk (1985) recommended sending educational information home, providing educational activities to be completed jointly by parent and child, and encouraging programs sponsored by PTA/PTO organizations. Research has demonstrated the effectiveness of entire family involvement in the educational process.

Finally, Young and Foulk (1985) included support of a health educator position to assist teaching of decision-making skills, resistance of peer pressure, and reinforcement of nonabusive attitudes. The researchers believed the development of health skills can be a unique and an important contribution of health educators.

Although these were developing ideas in the 1985 study, the current researcher notes 15 years later in
tobacco research and education, social skills training is the most widely accepted method for effective substance resistance. This training is the core of the most highly recommended tobacco curriculums such as the Princeton Health Press Life Skills Training (Botvin, 1999).

Young and Foulk (1985) concluded that the findings of the study lent support to the concept of drug education at the elementary level, particularly a program that reinforced nonabusive attitudes and developed decision-making skills.

The current researcher concludes that much has been learned since the earliest tobacco studies began in the 1950s and resulted in the explosive 1964 Surgeon General’s Report on the hazards of smoking. Methods of educating the public have changed over the last 35 years, along with the theories that have proven less than effective in curtailing tobacco use. Current thought incorporates the best of all preceding theories. At the present time the gold standard for tobacco education is based on the CDC’s recommendations for a social influences curriculum.

Clearly, organized interventions can help prevent the onset of tobacco use. School-based prevention programs, based on a model of identifying social influences on
tobacco use and providing skills to help adolescents resist those influences, have demonstrated significant and consistent reductions in tobacco use prevalence. Such programs become even more effective when adding community-wide programs that involve parents, youth-oriented mass media, and counter-advertising. An additional element found crucial in prevention is denying youth access to purchasing tobacco in their home communities.

Because tobacco use is almost always initiated and established in adolescence, this researcher contends and found support in the literature for the necessity of a consistent, emphatic, and redundant message prior to the period when most experimentation occurs. Theoretically, as Neuman’s flexible line of defense is broached, youth will have been assisted in developing an additional line of defense to resist the tobacco stressor.

Health care providers in schools, clinics, and community settings should take responsibility to assist youth in developing a negative mindset toward tobacco use. Tobacco education should be taught by the most effective methods, garnered from years of tobacco research and reviewed through the literature. This resultant negative mindset will be inconsistent with Bandura’s motivational
step, which is necessary for youth to model, thus learn the dangerous, addictive tobacco-use behavior.
Chapter III

The Method

Because tobacco is acknowledged as the number one preventable cause of disease and death in the United States, it benefits the nurse practitioner to become a knowledgeable health care provider regarding the most effective ways to educate the next generation of health care recipients concerning tobacco avoidance. An informed youth populace, savvy to Madison Avenue advertising, and proficient and confident in the use of life skills, will be much more resistant to nicotine’s deadly attraction. The purpose of this quasi-experimental study was to determine the effectiveness of an early childhood tobacco education on knowledge and attitudes of fourth-grade students. This chapter clarifies the method by which data were obtained.

Design of the Study

A two-group posttest design was employed in this study to determine if there was a difference between the
knowledge and attitudes of those students who received an anti-tobacco educational intervention and those who did not. This study was quasi-experimental due to the inability to randomly select the individuals for the study. The independent variable was the intervention, the Tupelo Tobacco Curriculum, taught by the researcher and another school nurse educator, and the dependent variables were knowledge and attitude scores as measured on the Tupelo Tobacco Survey.

Setting, Population, and Sample

The setting was an elementary school in a small city (< 30,000 population) in the southeastern United States where fourth-grade students were taught the Tupelo Tobacco Curriculum. The target population was all students enrolled in the fourth grade for the year 1999-2000, ages 9 to 12, in northeast Mississippi. The actual sample was 70 children. A total of 24 children from the experimental group responded with parental permission to participate in the study and otherwise met the criteria for inclusion. Of these, there were 15 girls (62.5%) and 9 boys (37.5%) racially representing African American (n = 7, 29.2%) and Caucasian children (n = 17, 70.8%).
The control site was an elementary school in the same community with a similar population and demographics. A total of 46 children from the control group responded with parental permission to participate in the study. There were 29 girls (63%) and 17 boys (37%) racially representing African American (n = 6, 13%) and 40 Caucasian children (n = 40, 87%). Oriental and Latino children in both groups were classified as Caucasian for the purposes of this study due to their small numbers. Age 10 years was the mean for both the experimental and control groups.

Instrumentation

The instrument used for assessment of knowledge and attitudes was developed from a copy of the seven-part instrument, Life Skills Training Health Survey, created by Princeton Health Press to evaluate the Life Skills Training Curriculum--Elementary 3 and 4, the core curriculum taught to the experimental group. The health survey was adapted for use as the Tupelo Tobacco Survey (see Appendix A). Additional items were incorporated into the Tupelo Tobacco Survey that were pertinent to the additions made to the curriculum taught by the researcher.
and school nurse educator in the setting (see teaching outline in Appendix B). The Tupelo Tobacco Survey consisted of four parts to facilitate comparison of the data. The categories included Part 1: Your Self and Your Family (13 demographic questions), Part 2: Your Attitudes About Smoking/Chewing Tobacco (23 attitude questions), Part 3: Your Health Knowledge (31 knowledge questions), and Part 4: More About You (11 risk-taking behavior questions). Because additions were made to the basic Life Skills curriculum, additional questions were incorporated to test for exposure to these complementary "multi-sensory" (touch, see, smell) components. Other original survey questions were deleted due to final length of the survey. Other than four demographic questions, all responses were in a yes or no format and read to the students.

Additional components to the original curriculum included videotapes, children’s books, “show and tell” models, such as “Black Lung,” “Smokey Sue” smoking doll, and “Smoke-Filled Room Poison Demonstrator.” Children from the experimental group also had been exposed to the following experiences: breathing exercises simulating emphysema, the design and publishing of a newspaper
advertisement for the regional newspaper, development of a school mascot, "Cool C.A.T." (Children Against Tobacco), and outside entertainment presentations from traveling anti-tobacco groups geared toward youth. The curriculum with added components was taught over a 9-month course beginning in February 1999 and ending in April 2000, excluding holiday periods and summer break.

The final survey consisted of three sections with a total of 78 items. Two fourth-grade teachers reviewed the Tupelo Tobacco Survey for language clarity and age appropriateness. The teachers then made recommendations for word changes prior to testing which were incorporated into the final draft.

**Pilot Test**

Prior to the survey date, a group of 4 fourth-grade students, comprised of 2 males and 2 females, with a coincidental racial mixture of African American, Caucasian, Oriental, and Mexican, piloted the survey. These students were chosen by their convenience availability to test the tool. The test was read to the students and testing took approximately 15 minutes to complete. Students stated they understood the questions,
all questions were completed on each survey, and no changes were made to the final tool which was administered to the experimental and control groups the following week.

Procedure

Of the 88 permission request letters sent home, a total of 24 children from the experimental group responded with parental consent to participate in the study and otherwise met the criteria for inclusion. Letters were sent home at the beginning of the week in the regular take-home folder with a consent form to be returned within a 3-day deadline. Teachers recommended this as an adequate time frame for response. Teachers were confident this method would be the most effective way to distribute the permission requests. Students were reminded each day by homeroom teachers and the researcher-nurse educator to return permission letters. A “blow-pop” was offered as an incentive to each child returning a form regardless of the response. Each day the researcher checked with homeroom teachers and retrieved response forms. Because forms were slow returning and few were back by the deadline, an extension was allowed until the morning of the testing, a day later. Method for the control group was similar.
During two morning sessions of testing, a total of 78 items was administered by the researcher-nurse educator to four different groups of children. Explanations were made regarding the purpose of the testing, truthfulness and confidentiality, and children were allowed to sign assent forms or refuse testing. (Four male youths in the experimental group who had parental consent to be tested left by choice prior to testing.)

A single group representing all three fourth-grade homerooms from the experimental school was tested simultaneously. Three separate groups from the control school were tested individually due to logistics of scheduling at each school. Questions were read to each group of students to compensate for various reading skills and students were allowed to ask for question clarification. During testing some confusion was noted regarding questions that contained the word “not.” This was not noted earlier during pilot testing. Students needed repeated reminders to avoid comments during testing which might bias other students. Testing took approximately 20 minutes after instructions were given and student permission letters were signed.
Data Collection

Prior to data collection, permission was obtained from Mississippi University for Women’s Institutional Review Board (see Appendix C), as well as the school board and superintendent of city schools, the principals of each elementary school, as well as the physical education, health, or homeroom teachers in charge of the students (see Appendix D). Parental consent and student assent forms also were administered prior to the survey (see Appendix E). Confidentiality was assured by requesting only the homeroom teacher’s name and date on the survey. Numbers were later assigned to surveys for scoring purposes. Students were also told they could leave the test at any time. Several students took advantage of this option. The experimental group and the control group were evaluated by the survey in the early spring after one full school year of curriculum implementation with the experimental group. In the experimental group 45% of permission letters sent home were returned. Two parental refusals were included. In the control group 42% of permission letters were returned with zero refusals for participation. Students in the experimental group were offered candy treats by the researcher for returning the
permission forms regardless of response. This method was used due to poor return responses historically in the experimental school. The permission forms for the control school were handled by the homeroom teachers without rewards.

Data Analysis

For the purposes of this study, the null hypotheses tested were as follows:

1. There will be no difference in knowledge scores on the Tupelo Tobacco Survey for students who attend and those who did not attend an education program.

2. There will be no difference in attitude scores on the Tupelo Tobacco Survey for students who attend and those who did not attend an education program.

Data were analyzed using descriptive statistics with means, percentages, and frequencies to summarize and describe findings. In order to determine if there were any significant differences, the t test was used. According to Polit and Hungler (1999), the t test is the basic parametric test for evaluating the differences between the mean of two groups, and it was considered to be an appropriate test to analyze data collected in this study.
The tool was scored with each correct knowledge and attitude question representing one point. The higher the scores, the greater the student knowledge of tobacco use and attitude avoidance. The statistical level of significance was .05.
Chapter IV

The Findings

The purpose of this study was to determine if there was a difference in the knowledge and attitude scores of elementary school children exposed to a tobacco intervention program compared to a control group with similar demographics. In this chapter the sample is described and data analysis is presented. The Tupelo Tobacco Survey was designed by the researcher from an original tool developed to assess the Princeton Health Press Life Skills Training Program for Elementary 3 & 4 (Botvin, 1999) and was the instrument used to obtain data. Descriptive statistics were used for data analysis.

Description of Sample

Results of the study indicated both the experimental and the control groups were homogenous, and the total sample was N = 70. The majority of the students surveyed were female (62.9%) and Caucasian (81.4%) with ages ranging from 9 to 12 years, with a mean age of 10 years. A
further breakdown of results by group is as follows. The experimental group (n = 24) included all 9- to 12-year-old fourth-grade students enrolled since the 1998 school year, who were taught the Tupelo Tobacco Curriculum, and who returned parental consent forms allowing them to participate in the study. Of the 88 letters sent home, a total of 26 consent forms were returned (29%), 24 giving parental consent (27%) and 2 parents denying participation. The sample included 15 girls (62.5%) and 9 boys (37.5%), racially divided into African American (n = 7, 29%) and Caucasian (n = 17, 70.8%).

Of the total 107 potential fourth-grade children from the control group, 46 children (42%) responded with parental consent to participate in the study as part of the control group. No forms were returned denying parental consent. There were 29 girls (63%) and 17 boys (37%), racially divided into groups of African American (n = 6, 13%) and Caucasian children (n = 40, 87%). Oriental and Latino children in both groups were classified as Caucasian for the purposes of this study due to their small numbers.
Analysis of Data

Two hypotheses guided this study. The first null hypothesis was as follows: There will be no difference in knowledge scores on the Tupelo Tobacco Survey for students who attend and those who do not attend an education program. Data were analyzed using a t-test.

The knowledge segment of the survey included 31 questions developed in relationship to the core curriculum taught to the experimental group, the Princeton Health Press Life Skills Training 3 & 4 (Botvin, 1999). The range of scores for the experimental group who attended the tobacco education program was from 20 to 30; the higher the score, the greater the knowledge concerning tobacco and its use. The control scores ranged from 11 to 26. Since t(68) = 4.718, p = .000, the researcher rejected the null hypothesis. Knowledge scores for students who attended the education program were significantly higher than scores by those who did not attend the program.

The second null hypothesis was as follows: There will be no difference in attitude scores on the Tupelo Tobacco Survey for students who attend and those who do not attend an education program. Hypothesis 2 was measured through 22 questions regarding students' attitudes. There was a high
range of scores reflective of an overall negative attitude toward tobacco use by these two groups. The range of scores for the experimental group was from 17 to 22, which was identical to the range of scores for the control group. Since there was no mean difference (M = .4275) data could not be analyzed using a t test or a ceiling effect occurred which prevented appropriate interpretation of responses by category of attitude toward smoking. Thus, the researchers failed to reject the second null hypothesis.

Additional data of interest to the researcher included statistics regarding those students admitting to ever having smoked (4.3%) or chewed tobacco (4.3%) and those who had ever been offered tobacco in their lifetime (22.9%). Pertinent data which other researchers have noted are the high incidence of tobacco use behavior among children, including exposure to use of tobacco by friends and family members, such as parents, grandparents, and siblings or anyone living within the same household. Interestingly, the only demographic question with statistical significance between the two groups was the question, Does your mother smoke? The experimental group responded with a positive 33.3%, and the control group was
positive at 13.3%, \( t(67) = 1.99, p = .05 \). The only questions on any surveys left blank were, Do you have a close friend who smokes? And does your mother-father smoke? (See Table 1).

Table 1

**Total Group Responses of Fourth Graders to the Tupelo Tobacco Survey by Frequency and Percentage**

<table>
<thead>
<tr>
<th>Response</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends that use tobacco</td>
<td>11</td>
<td>16.2</td>
</tr>
<tr>
<td>Dad who smoked</td>
<td>26</td>
<td>37.1</td>
</tr>
<tr>
<td>Mom who smoked</td>
<td>14</td>
<td>20.3</td>
</tr>
<tr>
<td>Grandparent who smoked</td>
<td>29</td>
<td>41.4</td>
</tr>
<tr>
<td>Household member who smoked</td>
<td>31</td>
<td>44.3</td>
</tr>
<tr>
<td>Knew someone their age who smoked</td>
<td>28</td>
<td>40.0</td>
</tr>
<tr>
<td>Have already been offered tobacco</td>
<td>16</td>
<td>22.9</td>
</tr>
</tbody>
</table>

\(^N = 70.\)

**Summary**

The purpose of the study was to determine if there was a difference in the knowledge and attitude scores of elementary school children exposed to a tobacco
intervention program compared to a control group of elementary school children who were not exposed to the intervention program. The Tupelo Tobacco Survey was the instrument developed for the study and used to obtain data. Descriptive statistics were used for data analysis. The data reported in Chapter IV will be discussed in Chapter V.
Chapter V

The Outcomes

Tobacco education in the school setting has long been considered the way to best combat the problem of tobacco use in the United States today. Each day 3,000 youth take up the habit of tobacco use. An estimated 1,000 of these tobacco-users will eventually die prematurely as a result of this practice. Therefore, prevention of the onset of tobacco use is critical to the process of living longer, healthier lives for vast numbers of today’s youth. Tobacco use has been declared the number one known preventable cause of morbidity and mortality in the United States. Health care educators in elementary schools have an avenue to reach a captive, youthful audience. Never before have funds been available in such a large quantity to offensively fight the tobacco industry for the next generation of tobacco users. For the first time, a tobacco-educated adult public, supported by the United States Government and backed by a major blow to the tobacco industry’s pocketbook, has an opportunity to
educate children against tobacco use for a healthier future. The purpose of this study was to determine if there was a difference in the knowledge and attitude scores of elementary school children exposed to a tobacco intervention program compared to a control group with similar demographics that was not exposed to an education program. The outcomes of the study are presented in this chapter.

Summary of Findings

The sample for the tobacco intervention program consisted of fourth-grade elementary youth exposed to tobacco education at an early age. The questionnaire determined demographic data as well as knowledge and attitude data of both the intervention group and a similar control group that had no access to the tobacco information. The first hypothesis stated there will be no difference in knowledge scores on the Tupelo Tobacco Survey for students who attend and those who do not attend an education program. The first null hypothesis was rejected \( p = .000 \), thereby demonstrating that the intervention program made a significant impact on these elementary school students. The second null hypothesis
stated there will be no difference in attitude scores on the Tupelo Tobacco Survey for students who attend and those who do not attend an education program. Since there was no mean difference (M = .4275), data could not be analyzed using a t test or a ceiling effect occurred which prevented appropriate interpretation of responses by category of attitude toward smoking. Out of a possible 22 points, both the experimental and the control groups' scores ranged from 17 to 22. There was no significant difference between groups, indicating these fourth-grade students as a group had negative attitudes toward tobacco. Thus, the researcher failed to reject the second null hypothesis.

The results from the data strongly suggest that the experimental group had a significantly higher knowledge base about tobacco and its effects. This study demonstrates that, even at the elementary school level, children are capable of understanding tobacco information. It has been demonstrated repeatedly, through years of tobacco education research, that knowledge regarding health consequences alone is not enough. Youthful minds have difficulty visualizing themselves with health problems known to be associated with tobacco use, problems
that do not affect the here and now. Researchers have shown that successful programs incorporate information that children at this developmental stage can relate, such as facts regarding their appearance and the way they smell to others. These phenomena involve peer and social interaction.

The results of this study support the researcher’s conclusions that 9- to 12-year-olds can effectively learn and retain tobacco information through a 9-month tobacco education program. Consequently, health educators should consider initiating a tobacco education program for even younger populations in the same setting. It is the viewpoint of this researcher that 5- to 9-year-olds will also be able to retain and apply important anti-tobacco information which will serve as a foundation for attitude development. This supposition is endorsed by the CDC (1999), which recommends beginning tobacco education in kindergarten and continuing the education through the 12th grade. An early introduction to tobacco education could help prepare children for the difficult choices ahead. A curriculum, such as Life Skills Training, where children are provided reasons for not using tobacco and given opportunities to role play in anti-tobacco stances with
their peers, has proven highly effective (CDC, 1999). Researchers have demonstrated that children at greatest risk for initiating tobacco use are those children who cannot give reasons for tobacco avoidance. It is known that knowledge acquisition alone is not always enough as a deterrent, yet it is the necessary and significant foundation upon which to build tobacco avoidance behavior (Goodstadt, 1978; Thompson, 1978).

With the failure to reject the null hypothesis in statement two, the researcher discovered that fourth-grade students already have developed negative attitudes toward tobacco use. No research was identified that either supports or refutes this finding. This researcher suggests that children are born with neutral attitudes regarding tobacco use. Culturally, by the time children reach late elementary school, they have been exposed to the current multi-organizational initiatives of anti-tobacco publicity campaigns. These campaigns are presented by numerous organizations, such as the American Lung Association, the American Cancer Society, and the United States Government. The children were aware that smoking is banned in many settings. Media efforts against tobacco use have been particularly prevalent since the time tobacco settlement
funds were made available for this purpose in each state. This researcher suggests these factors were contributors to the study results regarding the concurrent negative attitudes toward tobacco of both the control and experimental groups.

Researchers discovered that one of the greatest influences for tobacco use at this age was family and peer role modeling (Jackson et al., 1998; Young & Foulk, 1985). If a family member used tobacco products, children were much more likely to experiment, either due to availability of the products or lack of family member disapproval for the experimentation. On the other hand, the elementary age child also can be influenced by the modeling behavior for non-tobacco use. Teachers, nurse educators, and other adult role models should set an example with tobacco-free lifestyles. Curricula in tobacco education allow children to practice role-modeling behavior in order to prepare them for times when tobacco will be offered to them by parents, siblings, or peers. The researcher discovered that a surprisingly large percentage of students (22.9%) had already been offered tobacco products by the time they finished the fourth grade. Without tobacco avoidance rationale and skills to counter the peer pressure and
considering the highly effective advertising campaign techniques of the tobacco industry, children are not prepared to make decisions that will affect their health for the rest of their lives. Neuman’s (1982) Systems Theory supports efforts at the primary prevention level to provide students with knowledge and skills empowering them against the stressors that will threaten the balance and equilibrium that humans need for growth and health maintenance. Bandura’s Modeling Theory supports strategies in which health educators, through social learning curricula, can effectively provide the tools necessary to enable children to say no when offered tobacco products.

Exposed to a 9-month tobacco curriculum, fourth-grade children had an opportunity to process and retain information regarding tobacco use. There is minimal research support in the literature because historically tobacco education in the school setting has been initiated with older youth. Researchers supported the initiation of tobacco education in the early elementary years before children were exposed to stressors, such as advertising and peer pressure that potentially can push them toward a more pro-tobacco stance (CDC, 1999; Linerski et al., 1991).
As a result of this study, the researcher recommends using the Princeton Press Life Skills Training (Botvin, 1999) as a core curriculum that is effective in providing anti-tobacco information. In addition, the researcher recommends using other multi-sensory teaching tools, particularly appropriate to an elementary "show and tell" methodology, to maintain the interest of this youthful population. Because tobacco education is relatively new, particularly among the elementary age level, few materials are available for instruction. Through this study, Life Skills Training, Elementary 3 & 4 has been shown highly effective as a core curriculum in providing a knowledge base for tobacco abstinence.

Limitations of the Study

The researcher is aware there are limitations to this study, which are as follows:

1. Although the Tupelo Tobacco Survey was subjected to a pilot review, the researcher noted that two negatively stated questions caused confusion. Some subjects asked for clarification, so the results may have altered the knowledge results in either direction.
2. Because the Tupelo Tobacco Curriculum was already being taught when the study was initiated, the researcher was unable to get a pretest on the experimental group for knowledge and attitudes prior to the tobacco education intervention. Thus, the researcher was unable to make a comparison of knowledge and attitude scores between the two groups prior to the intervention or within the experimental group prior to and after the intervention.

Conclusions

With increasing public recognition that nicotine is a harmful substance, an increasing number of individuals in the younger population are acquiring negative attitudes toward tobacco use, as demonstrated by the ceiling effect in this study. Americans have an opportunity to rid themselves of tobacco-related disease and illness. A social learning approach to tobacco education in the schools was established as a solid knowledge foundation upon which to build strong attitudes in children. When given the opportunity to experiment with tobacco, children will have the knowledge to make a decision toward avoidance. This conclusion is based on research studies presented, which supported the belief that children who
are unable to give knowledgeable reasons for avoidance of tobacco were most at risk for experimentation and development of nicotine addictive habits (Young & Foulk, 1985).

**Implications for Nursing**

**Practice.** The nurse practitioner, in the role of health care educator, can support health care educators in the community, leading to a positive influence on knowledge in school-aged children. The knowledge may eventually determine whether children take up the practice of tobacco use and become addicted to nicotine or choose the avoidance of the detrimental side effects of both cigarette and smokeless tobacco use.

Health educators in schools and nurse practitioners in a primary care setting will have myriad opportunities to influence the youth they encounter if prepared with the most effective methods to prevent tobacco use or assist in tobacco use cessation. The nurse practitioner can prove to be an invaluable community resource in the fight against the number one preventable cause of morbidity and mortality in the United States.
Nurse practitioners play a vital role in health promotion. The importance of the nurse practitioner is critical in the role of tobacco education. The patient’s need for education concerning regular preventive habits for decreasing the development of disease and increasing the quality of life is critical. This research established that the fourth grade is indeed not too early to begin a tobacco education program. It suggested that 10-year-old children are able to acquire and retain health-related knowledge and have already developed a negative attitude about tobacco use at this early age.

This author determined that minimal research data are available regarding tobacco education at the elementary level. Further, numbers of fourth-grade youth report personal experimentation with tobacco and knowledge of similar behavior among peers. The nurse practitioner, as researcher, should continue to conduct studies that assess for the best tobacco education programs and methods available for all age groups.

Theory. Both Bandura’s modeling and the Neuman’s Systems Theory provided appropriate frameworks for the structure of the study. Bandura defined the behavioral steps necessary for learning new behavior such as tobacco
use. Peer pressure and parental and other significant role modeling have been shown to be two of the most important factors involved in the initiation of tobacco use. Through the use of Bandura's theory, health care educators can allow children to practice role modeling with their peers in a psychologically safe setting. Instructors can teach students skills to avoid tobacco use by practicing or modeling refusal behaviors. Students in a classroom setting can express reasons aloud through "acting out" or dramatizing reasons for avoiding tobacco in front of and in interaction with their peers.

Primary prevention strategies provide youth with defensive modeling invaluable against the stressors of peer pressure that Neuman (1982) maintains will inevitably occur. Both Bandura (1986) and Neuman (1982) have been helpful to this health educator in planning curriculum and providing theoretical rationale to support the work that has already been established as effective.

This research identified that education creates a knowledgeable youth population regarding tobacco use at the elementary school level. The researcher supported the idea that youth at an early age can be educated to retain information regarding healthy life practices. Further
follow-up, tracking these children through the intermediate and middle school years, would provide additional data regarding the long-term effects of an early education toward tobacco avoidance in the years when most experimentation takes place.

Recommendations

Based on the findings of this study, the following recommendations are made:

Research.

1. Replication of the study using a modified instrument by correcting questions that may have changed reliability of the tool (the restructuring of three questions to avoid use of "not" in the question).

2. Refinement of instrument to avoid ceiling-effect of attitude study to answer questions regarding effectiveness of curriculum on attitudes of students.

3. Replication of the study testing an even younger elementary youth sample for effectiveness of tobacco education (at least level 3).

4. Implementation of a longitudinal study with students through intermediate and middle school years for
evidence of long-term effectiveness of a tobacco education program.

5. Conduction of research using both a pretest and posttest with this educational intervention in order to determine effectiveness.

Practice.

1. Instruction in anti-tobacco education for nurse practitioners and nurse practitioner students, including familiarity with cessation methods and programs.

2. Incorporation of a tobacco use portion in the history survey in clinical practice for useful data regarding tobacco use and desire to cease using tobacco.

3. Development of the nurse practitioner role in the school system as the primary source for anti-tobacco education.

Summary

The importance of tobacco education on the youth of our culture cannot be overemphasized. The effectiveness of such education can have a dramatic impact on the American health care scene for years to come. Empowering children to make positive decisions for a healthy lifestyle was a focus of this research. The author believes the impact of
smoking behaviors on youth can be addressed through life skills education and reinforcement throughout a child’s entire education in school. Because minimal research existed on how fourth-grade students responded to education, this research sought to determine if there was a difference in the knowledge and attitude scores of this population to a tobacco intervention program. While the knowledge level of the experimental group improved, there was no significant difference in the attitude score. Therefore, the fourth-grade students are capable of learning from a tobacco education intervention.
References

wars: National Children’s Tobacco Education Program.
Aurora, CO: Author.

Bandura, A. (1986). Social foundations of thought and
action: A social cognitive theory. Englewood Cliffs, NJ:
Prentice-Hall.

and personality development. New York: Holt, Rinehart and
Winston.


Cayne, B. et al. (1992). New Webster’s dictionary and
thesaurus of the English literature (2nd ed.). Danbury, CT:
Lexicon.

Centers for Disease Control and Prevention. (1994). Guidelines for school health programs to prevent tobacco
use and addiction. Morbidity and Mortality Weekly Report,
43(RR-2), 1-18.


Centers for Disease Control and Prevention. (1999,
August). Best practices for comprehensive tobacco control
programs. Atlanta, GA: National Center for Chronic Disease
Prevention and Health Promotion, Division of Adolescent
and School Health.

Elder, J., Perry, C., Stone E., Johnson, C., Yang,
M., Edmundson, E., Smythe, M., Galati, T., Feldman, H.,
Cribb, P., & Parcel, G. (1996). Tobacco use measurement,
prediction, and intervention in elementary schools in four


APPENDIX A

TUPELO TOBACCO SURVEY
Part 1. Your Self and Your Family

Directions: Tell us about yourself and your family by answering the questions below:

1. I am a
   □ Boy
   □ Girl

2. I am
   □ African-American
   □ Caucasian
   □ Hispanic-Latino
   □ Asian-American
   □ Other

3. My birthday is
   □ January
   □ February
   □ March
   □ April
   □ May
   □ June
   □ July
   □ August
   □ September
   □ October
   □ November
   □ December

4. I am ________ years old.

5. Have you ever smoked a cigarette or even part of a cigarette . . .
   Ever in your life? □ Yes □ No
   In the past year? □ Yes □ No
   In the past month? □ Yes □ No
6. Have you tried chewing tobacco or snuff . . .
   Ever in your life?  □ Yes  □ No
   In the past year?  □ Yes  □ No
   In the past month?  □ Yes  □ No

7. Do you have any friends who smoke cigarettes or chew tobacco?
   □ Yes
   □ No

8. Do you have an older brother or sister who smokes cigarettes or chews tobacco?
   □ Yes
   □ No

9. Does your father smoke cigarettes or chew tobacco?
   □ Yes
   □ No

10. Does your mother smoke cigarettes or chew tobacco?
    □ Yes
    □ No

11. Does your grandmother or grandfather smoke cigarettes or chew tobacco?
    □ Yes
    □ No

12. Does anyone you stay or live with smoke or chew tobacco?
    □ Yes
    □ No

13. Someone has offered me a cigarette or chewing tobacco.
    □ Yes
    □ No
Part 2.
Your Attitudes about Smoking/Chewing tobacco

1. Smoking cigarettes makes you look cool.
   □ Yes □ No

2. Chewing tobacco makes you look cool.
   □ Yes □ No

3. Kids who smoke have more friends.
   □ Yes □ No

4. Kids who chew tobacco have more friends.
   □ Yes □ No

   □ Yes □ No

   □ Yes □ No

7. Smoking cigarettes lets you have more fun.
   □ Yes □ No

8. Chewing tobacco lets you have more fun.
   □ Yes □ No

9. Kids who smoke are show-offs.
   □ Yes □ No

10. Kids who chew tobacco are show-offs.
    □ Yes □ No

11. Kids who smoke cigarettes are more grown-up.
    □ Yes □ No

12. Kids who chew tobacco are more grown-up.
    □ Yes □ No

13. If my best friend smoked I would smoke.
    □ Yes □ No
    □ Yes  □ No

15. Do you think you will smoke cigarettes any time next year?
    □ Yes  □ No

16. Do you think you will chew tobacco anytime next year?
    □ Yes  □ No

17. My parents would be mad if I smoked.
    □ Yes  □ No

18. My parents would be mad if I chewed tobacco.
    □ Yes  □ No

19. My friends would still like me if I smoked.
    □ Yes  □ No

20. No one my age smokes cigarettes or chews tobacco.
    □ Yes  □ No

21. Only a few people my age smoke cigarettes or chew tobacco.
    □ Yes  □ No

22. Most people my age smoke cigarettes or chew tobacco.
    □ Yes  □ No

23. It is okay for me to buy cigarettes for an adult if an adult tells me to.
    □ Yes  □ No
Part 3. Your Health Knowledge

1. Most teenagers smoke cigarettes.
   □ Yes □ No

2. Most teenagers chew tobacco.
   □ Yes □ No

3. Most adults smoke cigarettes.
   □ Yes □ No

4. Most adults chew tobacco.
   □ Yes □ No

5. Cigarette smoking does not have any immediate effect on the body.
   □ Yes □ No

6. Chewing tobacco does not have any immediate effect on the body.
   □ Yes □ No

7. Cigarette smoking causes your heart to beat slower.
   □ Yes □ No

8. Chewing tobacco causes your heart to beat slower.
   □ Yes □ No

9. Nicotine is a drug found in cigarettes.
   □ Yes □ No

10. Nicotine is a drug found in chewing tobacco.
    □ Yes □ No

11. People who smoke cigarettes can usually stop anytime they want.
    □ Yes □ No

12. People who chew tobacco can usually stop anytime they want.
    □ Yes □ No
13. Cigarette smoking is addictive.
   □ Yes □ No

14. Chewing tobacco is addictive.
   □ Yes □ No

15. A good way to make decisions is the STOP-THINK-GO method.
   □ Yes □ No

16. Advertisements always tell the truth.
   □ Yes □ No

17. Some ads try to trick you into buying things you don’t want.
   □ Yes □ No

18. Peer pressure is the main reason teenagers start smoking cigarettes.
   □ Yes □ No

19. Peer pressure is the main reason teenagers start chewing tobacco.
   □ Yes □ No

20. Learning refusal skills can help you deal with people who want you to smoke or chew tobacco.
   □ Yes □ No

21. Cigarette smoking causes your teeth to turn yellow.
   □ Yes □ No

22. Chewing tobacco is a safer choice than cigarettes.
   □ Yes □ No

23. Chewing tobacco cannot cause cancer like cigarettes can.
   □ Yes □ No

24. Your lungs can clean themselves out if you stop smoking before you get sick.
   □ Yes □ No
25. There are many poisons in tobacco including rat poison.
   □ Yes □ No

26. Smoking makes your skin wrinkle.
   □ Yes □ No

27. Children are not hurt by breathing other people’s smoke, but only if they smoke themselves.
   □ Yes □ No

28. It is illegal for me to buy tobacco.
   □ Yes □ No

29. It is illegal for me to smoke cigarettes or chew tobacco.
   □ Yes □ No

30. More than 400,000 people die each year from tobacco-related illness.
   □ Yes □ No

31. Most adults who smoke wish they had never started and want to quit.
   □ Yes □ No
Part 4. More About You

1. I enjoy taking risks.
   □ Yes □ No

2. I like going fast in a car.
   □ Yes □ No

3. I would do almost anything on a dare.
   □ Yes □ No

4. I like doing things that are dangerous.
   □ Yes □ No

5. I like doing things people tell me not to do.
   □ Yes □ No

6. I usually get away with doing things I’m not suppose to do.
   □ Yes □ No

7. If I smoke or chew tobacco, I can stop before I get addicted.
   □ Yes □ No

8. If I smoke or chew tobacco, I can always stop smoking or chewing before I get sick from it.
   □ Yes □ No

9. I don’t believe that smoking or chewing tobacco will hurt me.
   □ Yes □ No

10. I am responsible for the decisions I make.
    □ Yes □ No

11. I can control someone else’s behavior.
    □ Yes □ No

THAT’S IT. YOU’RE FINISHED. THANKS FOR YOUR HELP!
<table>
<thead>
<tr>
<th>LESSON TOPIC</th>
<th>CONCEPTS DISCUSSED</th>
<th>MEDIA USED</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Esteem</td>
<td>High vs. Low Self-Esteem  Things I Can Do</td>
<td>Unit 1  Self-Esteem  pp 4-8 workbook  Read book Smoking Stinks  “Heart Power” Video  (American Heart Ass )</td>
<td>2 (30 min.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unit 2  Decision-Making  pp 9-1 Discuss  1) Responsibility  2) Choices  3) Three Steps in Decision-Making  Letter home to parents</td>
<td>2 (30 min.)</td>
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<td></td>
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<td>2 (30 min.)</td>
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<tr>
<td>Decision-Making</td>
<td>STOP-THINK-GO  Decision Making Model</td>
<td></td>
<td>2 (30 min.)</td>
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<td>4 (30 min)</td>
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<td>4 (30 min)</td>
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<tr>
<td>Advertising</td>
<td>“Tricky Techniques”  Create a Counter – Advertisement</td>
<td></td>
<td>4 (30 min)</td>
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<td>4 (30 min)</td>
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<tr>
<td>Stress</td>
<td>Physical Changes Caused By Stress  Relaxation Techniques  (Stretching and Deep Breathing)</td>
<td>Unit 5  pp 20-25  “Dangerous Game” Video  (National Cancer Institute)  “Mr. Gross Mouth” Demo.</td>
<td>2 (30 min)</td>
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<tr>
<td>Communication Skills</td>
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<td>Social Skills</td>
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<td>Assertiveness</td>
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<td>2 (30 min)</td>
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</tbody>
</table>
APPENDIX C

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN’S COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION
April 26, 2000

Ms. Dianne Gove Pittman
P. O. Box W-910
Campus

Dear Ms. Pittman:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted.

I wish you much success in your research.

Sincerely,

Sheila V. Adams, Ed.D.
Interim Vice President
for Academic Affairs

SA: wr

cc: Mr. Jim Davidson
     Dr. Mary Pat Curtis
APPENDIX D

PERMISSION TO CONDUCT STUDY
8 Parc Monceau West  
Tupelo, MS 38804  
April 1, 2000

Dr. Mike Vinson, Superintendent  
Tupelo Public Schools  
201 South Green Street  
Tupelo, MS 38801

Dear Dr. Vinson,

I would appreciate very much your consideration of a special request regarding my masters thesis requirement for my degree as a family nurse practitioner. As you are aware, I have had the opportunity to set up a tobacco education curriculum for the kindergarten through fourth-grade students as the nurse educator at Joyner Elementary. Because very few programs in tobacco education have been taught at the elementary school level, little research data have been gathered regarding the most effective means to teach your children about tobacco’s hazards.

As a graduate student in nursing at Mississippi University for Women, I would like to survey the fourth-grade students I have taught as well as a control group from another comparable city school without a tobacco curriculum. My study will focus on the effects of an early tobacco education on the knowledge and attitudes of this vulnerable population. Since very little research has been done on this age level to date, the Mississippi State Department of Health and Princeton Press, who published the core curriculum I have taught, are interested in the results of this study.

I would appreciate your approval for the survey to be taken in April 2000 during the regularly scheduled health/P.E. class times at Joyner. I would survey the control group at their principal’s discretion. At this time the Joyner children will have completed 9 months—or one academic year of the tobacco curriculum. The study will involve approximately 100 children whose parental permission will also be obtained prior to the survey. I will also request permission from the Tupelo School Board, the principals and teachers involved at both schools, and the Institutional Review board at MUW.

Individual results of the survey will be kept confidential and only children who agree to participate will be questioned. The final study will be published at Mississippi University for Women, Columbus, Mississippi, in the summer of 2000.

I continue to appreciate your enthusiastic support of our program at Joyner. Your prompt consideration of this matter will also be appreciated.

Sincerely,

Dianne G. Pittman, RN, BSN  
Tobacco-Free Mississippi Nurse Educator  
Joyner Elementary School Nurse
Mrs. Polly Bailey, Chairman
Tupelo City School Board
Parkway Drive
Tupelo, MS 38801

Dear Mrs. Bailey,

I would very much appreciate the School Board’s consideration of a special request regarding my masters thesis requirement for a degree as a family nurse practitioner. As the school nurse educator at Joyner Elementary, I have had the opportunity to set up a tobacco education curriculum for the kindergarten through fourth-grade students. I began to teach this curriculum last winter. Because very few programs in tobacco education have been taught at the elementary school level, little research data have been gathered regarding the most effective means to teach our children about tobacco’s hazards.

As a graduate student in nursing at Mississippi University for Women, I would like to survey the fourth-grade students I have taught as well as a control group from another comparable city school without a tobacco curriculum. My study will focus on the effects of an early tobacco education on the knowledge and attitudes of this vulnerable population. Since very little research has been done on this age level to date, the Mississippi State Department of Health and Princeton Health Press, who published the core curriculum I have taught, are interested in the results of this study.

I would appreciate your approval for the survey to be taken in April 2000 during the regularly scheduled health/P.E. class times at Joyner. I would survey the control group at their principal’s discretion. At this time the Joyner children will have completed 9 months, or one academic year of the tobacco curriculum. The study will involve approximately 100 children whose parental permission will also be obtained prior to the survey. I will also request permission from Dr. Vinson, the principals and teachers involved at both schools, and the Institutional Review Board at MUW.

Individual results of the survey will be kept confidential and only children who agree to participate will be questioned. The final study will be published at Mississippi University for Women, Columbus, Mississippi, in the summer of 2000.

Your prompt consideration of this matter will be greatly appreciated.

Sincerely,

Dianne G. Pittman, RN, BSN
Tobacco-Free Mississippi Nurse Educator
Joyner Elementary School Nurse
Dear Mrs. Eatmon,

I would very much appreciate your consideration of a special request regarding my masters thesis requirement for my degree as a family nurse practitioner. As you are aware, I have had the opportunity to set up a tobacco education curriculum for the kindergarten through fourth-grade students here at Joyner Elementary as the tobacco nurse educator. Because very few programs in tobacco education have been taught at the elementary school level, little research data have been gathered regarding the most effective means to teach your children about tobacco's hazards.

As a graduate student in nursing at Mississippi University for Women, I would like to survey the fourth-grade students to determine the effects of an early tobacco education on the knowledge and attitudes of this vulnerable population. Since very little research has been done on this age level to date, the Mississippi State Department of Health and Princeton Health Press, publisher of the core curriculum I have taught, are interested in the results of this study.

I would appreciate your approval for the survey to be taken in early May 2000 during the regularly scheduled health/P.E. class times at Joyner. At this time the Joyner children will have completed 9 months, or one academic year of the curriculum. The study will involve approximately 50 children whose parental permission will also be obtained prior to the survey. I will also request permission from the Tupelo School Board, Dr. Mike Vinson, and the Institutional Review Board at MUW.

Individual results of the survey will be kept confidential and only children who agree to participate will be questioned. The final study will be published at Mississippi University for Women, Columbus, Mississippi, in the summer of 2000.

I continue to appreciate your enthusiastic support of our program at Joyner. Your prompt consideration of this matter will also be appreciated.

Sincerely,

Dianne G. Pittman, RN, BSN
Joyner Elementary School
Dear Principal,

I am a school nurse educator at Joyner Elementary School in Tupelo where I have been since November of 1998. The principal, Hazel Eatmon, and two of Joyner's teachers wrote a grant requesting a school nurse from the Mississippi State Department of Health. I was placed at Joyner through tobacco settlement monies appropriated by the Legislature. As one of the 50 school "tobacco nurses" placed across the state, I have had the opportunity to set up and teach an anti-tobacco curriculum to elementary school children. Traditionally, tobacco education has targeted older middle school youth. From my experiences with K-4, we are "missing the boat" with younger children who are already experimenting with tobacco or making decisions about future tobacco use.

To fulfill part of my masters degree program requirements in nursing at Mississippi University for Women, I would like to survey the fourth-grade students I have taught at Joyner Elementary for the effects of a tobacco education on this early, vulnerable age. I want to see if there will be a difference in the knowledge level and attitudes of children toward tobacco use who were presented the curriculum and those children who were not. Because your school and Joyner are of similar size and demographics, I would like to survey your fourth graders as a control group of children who have not received the tobacco curriculum I have taught.

Because very few programs in tobacco education have been taught at the elementary school level, little research data have been gathered regarding the most effective means to teach young children about tobacco's hazards. Since there are little data to date, both the Mississippi State Department of Health and Princeton Health Press, publisher of the core curriculum I have taught, are interested in the results of this study.

I would very much appreciate your approval for the survey to be taken of your fourth-grade students. This would be done in April 2000. I would anticipate the survey taking approximately 30 minutes of class time. Parental permission will be obtained prior to the survey. I will also request permission from the school superintendent, the Tupelo City School Board, the Institutional Review Board at MUW, as well as permission from the students and their parents.

Individual results of the survey will be kept confidential and only children who agree to participate will be questioned. The final study will be published at MUW, Columbus, Mississippi in the summer of 2000. Your prompt consideration of this matter will be appreciated.

Sincerely,

Dianne G. Pittman, RN, BSN
Joyner Elementary School
APPENDIX E

CONSENT OF PARENT AND STUDENT
Dear Parent,

My name is Dianne Pittman and I am a registered nurse currently working as an elementary school nurse. I am also a graduate student at Mississippi University for Women in Columbus, Mississippi. I am conducting a research study on knowledge and attitudes of fourth-grade students about tobacco use. This research will help health educators in evaluating current teaching programs about tobacco-use prevention for elementary children.

I am requesting permission for your son/daughter to participate in this study. Participation in this study involves completing a questionnaire that will assess your child's knowledge and attitudes about the use of tobacco products. This questionnaire will take about 20 minutes to complete and will be taken during P.E. class. All information given in this survey will be anonymous and kept strictly confidential. Students will not put their names on the questionnaire to ensure confidentiality. Participation is entirely voluntary and your son/daughter may withdraw from the study at any time. Your child's participation or nonparticipation will not have any impact on school grades or status at school.

Sincerely,

Dianne Pittman, RN

I have read the above letter. I understand the purpose of the study and the conditions of my child's participation. Please return the form to school by Wednesday, May 10, regardless of participation choice.

Name of student_________________________ Date__________

Parent/guardian signature______________________________________

(Check one)

My child may participate__________

My child may NOT participate______
Dear Student,

My name is Dianne Pittman. I am an elementary school nurse. I am also a college student at Mississippi University for Women in Columbus, Mississippi. I am studying about how much children in the fourth grade know and understand about using tobacco. I also want to know what fourth graders think about using tobacco. (This is called “research” and sort of like homework that I have to do for my school.) What I learn from the questions I ask you will help teachers, nurses, and other people who write workbooks and plan lessons for children. We will have a better understanding of how children think and learn, especially about cigarettes and chewing tobacco.

I would like to ask you to be part of my study. This means that if you decide to be part of my study, you will answer questions from a sheet I will hand out and it will take about 20 minutes during your P.E. class time.

The questions are NOT a test and will not be part of your school grade. Your answers will not be graded, only looked at. The answers will be counted for each group of students. No one will know how you answered the questions. Your name will be top secret. There are no right or wrong answers. Any answer you give will be okay. You will not put your name on the answer sheet. There will be no way for me or anyone else to find out your name. I will not know what your answers are and neither will your parents or teachers. You can tell the truth and not get in trouble.

You do not have to be part of my study unless you want. You can even change your mind and stop in the middle of answering the questions. This is for volunteers. No one will make you do this.

Sincerely,

Dianne Pittman

I have read the letter and understand what it is about. I understand what I am supposed to do to be part of the study. I want to answer the questions.

_____________________________  ______________________________
Date                          Signature of Student