A STUDY OF ADOLESCENT USE AND HEALTH KNOWLEDGE OF SMOKELESS TOBACCO

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A STUDY OF ADOLESCENT USE
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PREFACE

A study of adolescent use and health knowledge of smokeless tobacco in Tomball Independent School District was completed. This study required the cooperation of many individuals, students, teachers, principals and administrative personnel.

I am grateful to all the students who participated in the study and would like to express my gratitude to them.

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CHAPTER I

INTRODUCTION

In America, an estimated 22 million individuals use smokeless tobacco products (Harper, 1980). Sales related to chewing tobacco and snuff have increased 11 percent annually since 1974 (Christen, 1980a). Use of smokeless tobacco by young male athletes and adolescents is increasing, and this increase has prompted a number of related studies (Christen, McDaniel, Doran, 1979; Marty, McDermott, Williams, 1986; Millar, Van Rensburg, 1983; Newman, Duryea, 1981; Severson, Lichtenstein, 1983; and Bonaguro, Pugh, Bonaguro, 1986).

The re-emergence of the use of smokeless tobacco has raised many questions. Since 1971, cigarette commercials have been banned from the airways, but this did not touch smokeless tobacco advertising until recently. Legislation, as of February 1986, now also bans smokeless tobacco advertising from the airways. Tobacco companies have spent millions of dollars promoting their smokeless tobacco products with the aid of celebrities. Adolescents perceive the use of smokeless tobacco as a "safe" alternative to smoking, and in some parts of the country, there exist

smokeless tobacco clubs. As one tobacco executive stated, "In Texas today, a kid won't dare go to school, even if he doesn't use the product, without a can (of snuff) in his Levis" (Rosenthal, 1985).

Due to this recent surge of smokeless tobacco use, many doctors, dentists, and health educators are directing their attention to the health risks associated with its use. These health risks include teeth and gum problems, leukoplakia, and oral cancer. Further research needs to be conducted to better understand the reasons for smokeless tobacco's popularity among adolescents.

Statement of Problem

The purpose of this study was to survey selected grade levels in Tomball Independent School District, to identify smokeless tobacco use by adolescents, and to determine the health knowledge of students in the area of smokeless tobacco.

The subpurposes of this study were to identify the age of smokeless tobacco users at the time of their initial experience with snuff or chewing tobacco, to identify the intent to continue using smokeless tobacco, and to look more closely at the reasons why adolescents use smokeless tobacco products.

Pertinent Questions

1. Do adolescents in Tomball Independent School District use smokeless tobacco products?

2. Are students aware of the health risks associated with the use of smokeless tobacco?

3. How do answers to the questionnaire compare at the different grade levels (5th, 8th, 10th, and 12th)?

4. At what age did students begin using smokeless tobacco?

5. Do smokeless tobacco users plan to use smokeless tobacco in the future?

6. What are the reasons or issues surrounding the use of smokeless tobacco by adolescents?

Limitations

1. Tomball Independent School District consisted of six schools (three elementary, one junior high, one 9th grade campus, and one high school).

2. Tomball Independent School District consisted of approximately 4,000 students.

3. A computer answer sheet was used to record responses and did not allow for written answers to the questions.

4. The students were limited by their understanding of smokeless tobacco.

Delimitations

1. This study only included one school district in Texas.

2. This study only reported the responses of 396 students from the fifth, eighth, tenth, and twelfth grade levels.

3. The Tobacco Use Survey was reduced from 50 questions to 25 questions that only pertained to smokeless tobacco.

4. The study was of a descriptive nature and the results cannot be applied to any other school district.

Assumptions

The researcher made the following assumptions when conducting the research:

1. School district administrators would be receptive to the need for the study.

2. By the fifth grade, students would be familiar with the types of smokeless tobacco.

3. Students would answer the questions honestly and to the best of their ability.

Need and Importance of the Study

There are many pertinent questions associated with the increased popularity of smokeless tobacco among today's youth. These questions include ages of adolescents using

smokeless tobacco, percent of users, knowledge of health risks, pressures or influences, and circumstances surrounding the use of smokeless tobacco.

Teachers, health educators, and administrators need to recognize the problems associated with the use of smokeless tobacco by adolescents. Smokeless tobacco programs need to be developed and included in school curriculum.

Many studies reported the growing popularity of smokeless tobacco use. This study investigated issues associated with smokeless tobacco use in order to better understand how the students view smokeless tobacco and its health implications.

The research questions presented in this study were not only that of use, but also of the health misconceptions related to its use. In some parts of the country, the use of smokeless tobacco is viewed as a status symbol and a healthy alternative to smoking. Research needs to be conducted to better understand the issues surrounding the use of smokeless tobacco by adolescents.

Research Design

The research was a descriptive study to assess the use and health knowledge of smokeless tobacco among adolescents in Tomball Independent School District. The data was collected by the use of the Smokeless Tobacco Use Survey.

Definition of Terms

The researcher accepts the definitions presented by Tabers Cyclopedic Medical Dictionary, McGraw-Hill Nursing Dictionary, Glover, Christen, and Henderson (1981), Hoffman, et. al. (1976), Mintz (1986), or Merriam-Webster Dictionary.

Buccal - "pertaining to the mouth and hollow part of cheek" (Tabers).

Carcinoma - "an epithelial cell new growth or malignant tumor, enclosed in connective tissue and tending to infiltrate and give rise to cancer" (Tabers).

Chaw - "a golf ball size quid of leaf or plug tobacco" (Glover, Christen, Henderson).

Chewing tobacco- "leaf tobacco which comes in a pouch, is placed in the gingival buccal area near the inner cheek" (Glover, Christen, Henderson).

Epidermoid carcinoma - "a tumor on a surface such as the skin which is covered with stratified epithelium; usually of two types, one a wart-like growth, slow growing mildly malignant; the other a flat and rapidly infiltrating neoplasm" (Tabers).

Epithelium - "the layer of cells forming the epidermis of the skin and surface layer of mucous and serous membranes" (Tabers).

_____ - "a tissue composed of contiguous cells with a minimum of inter-cellular substance. It forms the epidermis

and lines the hollow organs and all passages respiratory, digestive, and genitourinary systems" (McGraw-Hill).

Erythema - "a redness of the skin occurring in patches of variable size and shape. It can have a variety of causes, such as heat, certain drugs, ultraviolet rays, and ionizing radiation" (McGraw-Hill).

Erythematous - "pertaining to or characterized by erythema" (McGraw-Hill).

Esophagus - "a musculomembranous canal extending from the pharynx to the stomach. Length about nine inches" (Tabers).

Leukoplakia - "abnormal thickening and whitening of the epithelium of a mucous membrane; it is considered to be pre-cancerous in some cases" (McGraw-Hill).

_____ - "formation of white spots or patches on the mucous membrane of the tongue and cheek. They are smooth, irregular in size and shape, and occasionally hard tissue. May become malignant" (Tabers).

Mucosa - "mucous membrane" (McGraw-Hill).

Mucous - "of or pertaining to mucus: secreting mucus, as a mucus gland" (Tabers).

Nitrosamines - "are carcinogens in animals" (Mintz).

NNN - nitrosonornicotine; carcinogen isolated from unburned tobacco, which has tumor-initiating properties in laboratory animals (Hoffman, et. al).

Plug tobacco - "tobacco in form of a buck" (Glover, Christen, Henderson).

Pulverized - "to reduce (as by crushing or grinding) or is reduced to very small particles" (Merriam-Webster).

Quid - "small portion of any smokeless tobacco which is placed in the mouth" (Glover, Christen, Henderson).

Smokeless tobacco - "snuff or chewing tobacco" (Glover, Christen, Henderson).

Snuff - "form of tobacco that is pulverized" (Merriam-Webster).

Snuff dipping - "act of placing a pinch of powered tobacco (Skoal, Copenhagen, Happy Days) between cheek and gum" (Glover, Christen, Henderson). Skoal, Copenhagen, and Happy Days are examples of brand names.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In recent years, the use of smokeless tobacco, snuff, and chewing tobacco among adolescents has increased (Connolly, et. al., 1986). Sales of smokeless tobacco products have increased 11% annually since 1974 (Christen, 1980a). Because of the re-emergence of the use of smokeless tobacco products, much literature has been written about its popularity and associated health risks.

This chapter presents advertising and role models, social acceptance and popularity, physiological problems, legal investigations and legislation, and studies related to snuff and chewing tobacco. The review presents summations of magazine and journal articles, legal documents, and studies related to smokeless tobacco.

Many dentists, health educators, congressmen, and parents have voiced their concern regarding the increased use of smokeless tobacco products, especially among today's youth (Connolly et al, 1986).

Christen (1980) lists five facts that dentists, physicians and health educators should be aware of in the area of smokeless tobacco:

1. Currently, smokeless tobacco is heavily advertised throughout the country by the mass media. These efforts are directed strongly toward youth;

2. Through careful manipulation of the public, the habits of tobacco chewing and dipping are gaining widespread social acceptance;

3. Use of smokeless tobacco is rapidly increasing, especially among male high school and college students and athletes;

4. Advertising implies that the smokeless tobacco products are "safe". They are not;

5. The dental and oral effects of smokeless tobacco are significant for both soft and hard tissues, especially for the long time user.

It is hoped that adolescents will learn and understand the health risks associated with the use of smokeless tobacco products. Unfortunately, for some youths it is already too late.

The following two episodes point out this tragedy. Sean Marsee, a high school student, used smokeless tobacco since the age of 12 (Reader's Digest, 1985). Sean was an excellent athlete who took pride in his accomplishments and in the care of his body. Sean started dipping snuff secretly after accepting a free sample at a local rodeo. At the age of eighteen, he developed a sore on his tongue. His mother was a nurse and had told him snuff could be dangerous, but Sean had not believed her. Sean thought that if athletes on television promoted smokeless tobacco and that if his coach did not restrict its use, then it must be okay.

The sore on Sean's tongue was malignant and after radiation therapy and three operations, Sean died. Before he

died, he wrote, "Don't dip snuff," something he wished he could have told everyone.

After Sean's story was published in the October 1985 edition of Reader's Digest, another story appeared from a seventeen year old boy who had read about Sean. Billy Miller also was an athlete who used snuff. Billy began dipping snuff at the age of eight, and like Sean, underwent surgery for a sore he had developed on his lower lip. Billy's oral cancer was removed with success. He believes that the Sean Marsee article saved his life.

Advertisements and Role Models

The term modeling refers to one individual imitating the behavior of another (Glover, 1978). Role models for youths include parents, teachers, friends, and celebrities. The tobacco industry used modeling in its cigarette campaigns and now is using modeling to promote its smokeless tobacco products.

Many young people today idolize celebrities, such as movie stars and music personalities. One brand of chewing tobacco is named after John Wayne and is called Big Duke (Harper, 1980). A professional musician who endorsed Skoal (a brand of snuff) smokeless tobacco is Charlie Daniels of the Charlie Daniels Band.

Familiar sports celebrities who have promoted snuff and chewing tobacco include Walt Garrison, Joe Namath, Catfish Hunter, Carlton Fisk, Tom Seaver, Earl Campbell, Ralph Houk,

Bobby Mercer, Terry Bradshaw, George Brett, and Sparky Lyle (Glover, Christen, Henderson, 1981). This type of advertising can be influential to young male students and athletes from grade school to college (Christen, 1980a).

Texas is a state where country music is very popular. The movie "Urban Cowboy" popularized the macho cowboy image and country western music. "Cowboys" or "kickers" are names given to young groups who use smokeless tobacco (Glover, Christen, Henderson, 1981).

Not only in Texas, but in many areas of the country, smokeless tobacco clubs have members as young as third grade (Lione, 1985). Some clubs include membership cards or t-shirts with "Don't spit on me" printed on them (Salomon, 1979). Accessories that can be bought through the tobacco industry include patches, frisbees, sweaters, caps, and shirts (Christen, 1980a). A club member must have the round worn can mark on the pocket of his jeans or jacket (Glover, Christen, Henderson, 1981). Some youths feel it is necessary to rub their jeans on the concrete with a can of snuff in their pocket, to create the distinctive ring. This ring can also be created by repeatedly washing the jeans with a can of snuff left in the pocket.

The popularity of smokeless tobacco has found its way into the promotion of other products or into the creation of new products. On store shelves, one can find chewing gum in wrappers exactly like chewing tobacco. Wrigley Company's subsidiary, Amurol Products Company, developed Big League

Chew bubble gum (Glover, Christen, Henderson, 1981). It resembles chewing tobacco by being shredded and sold in pouches. This approach is similar to that of the candy cigarette.

Another new product, Jerky Stuff, is available from King B. Jerky. The producers present their product packaging identical to a can of snuff. It even produces a salivary juice for spitting (Glover, Christen, Henderson, 1981).

Smokeless tobacco is popular among some athletic groups. It is ironic that athletes, who are models of physical fitness, not only use smokeless tobacco but also promote its use. Many ads are aired during athletic events, even during the olympics (Rosenthal, 1985). When athletes promote such products, they "promote the idea that snuff dipping is clean, healthy, and consistent with a lifestyle of rugged individualism" (Rosenthal, 1985). The U.S. Tobacco Company launched its new product, Skoal Bandits, during the winter olympics (Rhein, 1984).

The advertising has paid off for the tobacco industry. From 1974 to 1984, the U.S. Tobacco Company saw an increase in the sale of cans of snuff more than double. In 1974, 190 million cans were sold, while in 1984, over 463.5 million cans were sold (Lione, 1985). Yearly earnings grew from $12 million in 1974 to $83.7 million in 1984 (Lione, 1985). Between 1972 and 1984, the U.S. Tobacco television budget for advertising increased from $800,000 to $4.6 million. In 1971, the company sold 13,275 pounds of snuff, compared to

31,300 pounds in 1983 (Rosenthal, 1985). Since 1978, U.S. Tobacco Company's sale of snuff is up sixty percent (Wallis, 1985).

A popular snuff product sold by U.S. Tobacco Company, Skoal Bandits, was estimated by the Health Research Group (a Washington based watch dog organization) to have spent $30 million on its advertising campaign. The U.S. Tobacco Company as of 1982, was stated to control 88.3 percent of snuff and fine-cut tobacco sales (Lione, 1985). In 1983, the retail sales of moist snuff reached an estimated $500 million. The U.S. Tobacco Company netted $383 million, with profits of $134 million (Rhein, 1984).

The U.S. Tobacco Company produces four brands of moist snuff: Copenhagen, Skoal, Skoal Bandits, and Happy Days. The company states that their aim in advertising is directed at males 18-49 years of age. The U.S. Tobacco Company is not the only tobacco manufacturer; others include R.J. Reynold Tobacco Company, Culbro Corporation, and Conwood Corporation. These four support the Smokeless Tobacco Research Council, begun in 1981 (Lione, 1985).

Social Acceptance and Popularity

The use of chewing tobacco grew from three pounds per person in 1880 to four and a quarter pounds per person in 1894 (Horn, 1968, p.13). In 1910, a decrease was indicated and continued down to a quarter of a pound per person in 1968. In its height of use, the spittoon could be found in

places such as banks, railway cars, and Congressional meeting halls (Horn, 1968, p.14). Snuff dipping was glamorized by the use of "snuff boxes, snuff spoons, special snuff handkerchiefs, and snuff carrying cans" (Pinto, 1961, p.55).

As with any issue, there exists two sides to the smokeless tobacco controversy. Horn (1968, p.13) reported that in 1883, the Boston Medical and Surgical Journal referred to chewers as "a national disgrace". The journal continued by stating: "As great as this evil still is, however, we believe that it has already lessened, and will continue to grow less as social refinement becomes more widespread" (Horn, 1968, p.14).

The anti-snuff movement was expressed in a statement in a British magazine in 1834: "The patient asks, 'Is it true doctor, that snuff destroys the olfactory nerves, clogs, and otherwise injures the brain?' 'It cannot be true,' the doctor replies, 'since those who have any brains never take the snuff at all'" (Pinto, 1961, p.60).

One reason the use of smokeless tobacco decreased in use was because of the health factors involved. Spitting was met with legal restrictions by a tuberculosis campaign.

> Public outcry against such unsanitary practices in our country caused tobacco spitting to become socially unacceptable behavior and even unlawful, especially in certain public places. For a number of years, smokeless tobacco went "underground", used by quaint, "backwoodsy", rural men and women in Southeastern and Southwestern States (Glover, Edwards, Christen, Finnicum, 1984).

The ugliness of its use -- brownish teeth, dirty spittoons, and large cheeks -- were not esthetically appealing.

In 1910, the cigarette was born. A new clean way to enjoy tobacco was receiving much attention. Little did anyone know that in the 1970's a new upsurge of smokeless tobacco users would emerge.

The literature in the past few years has included studies to show how popular smokeless tobacco has become among adolescents. The following are results of some studies across the nation and in Canada:

Oregon - 23% of all 10th graders in study dipped snuff (Rosenthal, 1985).

Louisiana - 30% of 14 and 15 year olds surveyed were regular snuff users (Rosenthal, 1985).

Oklahoma - 22% of the 11th graders in study reported using smokeless tobacco (Rhein, 1984).

Oklahoma, Oregon, Texas, and Massachusetts - between 20%-40% of high school boys dipped or chewed. Over half (55%) of the youths who dipped snuff, started before the age of 13 (Wallis, 1985).

Louisiana - (1983), 21% of 10 year olds in study dipped snuff (Newsweek, 1985).

Louisiana - (Bogalusa), 39% of 12-13 year olds in study used smokeless tobacco and about 25% of 8-9 year olds (Hunter, et. al., 1986).

Louisiana - (5 year study) white males' snuff dipping increased from 5% to 32% in 12-13 year olds over a 5 year period (Lione, 1985).

Missouri - 18% of 6th and 9th graders in study dipped snuff (Hosokawa, Roberts, 1981).

Nebraska - 7% of males 12-18 years of age used chewing tobacco (Newman, Duryea, 1981).

Nebraska - 8% of males 5-19 years of age used chewing tobacco (Newman, Duryea, 1982).

Canada - 13.60% of males 5-19 years of age used chewing tobacco. 14.04% of males 5-19 years of age used snuff (Miller, Van Rensburg, 1982).

Oregon - 14% of males 12-16 years of age reported using snuff (Severson, Lichtenstein, 1983).

Georgia - 11% of males 10-16 years of age used snuff, 15% used chewing tobacco, and 20% were overlap users of both (Offenbacher, Weathers, 1983).

Colorado - 11% of males 14-18 years of age reported using smokeless tobacco products (Greer, Poulson, 1983b)

The 1970's marked the beginning of the re-emergence of the use of smokeless tobacco. Snuff sales went from 23.7 million pounds in 1978 to 37.1 million pounds in 1984, an increase of 55 percent. Chewing tobacco went from 80 million pounds sold in 1978 to 87 million pounds in 1984 (Connolly, et al, 1986). In 1983, a new brand, Skoal Bandits was

introduced. The "tea-bag" snuff was developed to present a clean image for urban users.

The literature points out areas across the country where smokeless tobacco is popular. Connolly (1986) states that the most popular areas are the South and West, while Glover, Christen and Henderson (1981) state that the Southwest, Southeast and Midwest are popular markets for smokeless tobacco. Many have estimated the number of users of snuff and chewing tobacco, the highest being 22 million users (Harper, 1980; Christen, 1980a).

The average person using snuff or chewing tobacco is male and 18-30 years of age. The user can be from a wide range of occupations. An image once dominated by cowboys and rural populations has expanded to urban, young, and female populations. Individuals involved in sports have become another group of smokeless tobacco users. Almost a third of the boys involved in football or baseball in high school and college, in a Texas study, used snuff or chewing tobacco (Christen, McDaniel, Doran, 1979).

Houston, Texas does not yield normal patterns of smoking among adolescents. In one study it was realized that the low rate of cigarette smoking resulted from junior high students using snuff or chewing tobacco instead of cigarettes (Henderson, Hill, Evans, 1979). As Louis F. Bantly, Chairman and President of U.S. Tobacco Company, stated: "In Texas today, a kid won't dare go to school, even if he doesn't use the product, without a can (of snuff) in his Levis." (Rosenthal, 1985).

The use of smokeless tobacco causes another problem for schools. Janitors now have the job of cleaning water fountains, cafeteria walls, baseball fields, and classroom floors of tobacco residue and stains. In an article in American School Board Journal (1979), principals and superintendents from Maryland, Virginia, Texas, Tennessee, and Georgia aired their opinions concerning smokeless tobacco. Teachers complained about having to pick up empty coke cups the students use as their own spittoons. One parent called to complain about his son being spit upon. The child's new book bag had a "big, ugly reddish-brown stain all over the back". One administrator half-jokingly suggested that "part of the school budget should be allocated to purchase spittoons that would be placed outside of each classroom." It is a fact that many students have switched "from wads of Wrigley" to the use of "Redman" (American School Board Journal, 1979).

Physiological Problems

Seffrin and Grove (1982) list seven points of concern associated with smokeless tobacco use by the American Dental Association:

> 1. The habit of holding tobacco in one location when sucking on the quid can damage your oral tissues by the direct contact with tobacco and its juice. This practice often produces a white, leathery-appearing area in the mouth called "leukoplakia." Leukoplakia can look like either a smooth, white patch or a thick, hardened and wrinkled lesion. "Leukoplakia is considered to be pre-cancerous." Three to five percent of diagnosed

leukoplakias have the potential to become oral cancers.

2. Studies show that all forms of smokeless tobacco contain high concentrations of certain carcinogens (cancer-causing agents). Some of these carcinogens are formed during the curing and processing of tobacco. This information is supported by the recent Surgeon General's Report and extensive studies which conclude that smokeless tobacco is associated with an increased risk of cancer of the oral cavity, pharynx, larynx and esophagus.

3. Damage to the periodontal tissues (gum and bone which support and anchor your teeth in the jaw) has been observed at the place where tobacco is held in the mouth. This damage is associated with the repeated, direct and prolonged contact of the tissues with irritating tobacco juices. This irritation can cause gums to recede from teeth, exposing the roots and making the teeth more sensitive to heat and cold. The teeth could also lose their gum and bone support, thus increasing the damage by periodontal (gum) disease. In this condition, teeth can drift from position, loosen and eventually be lost.

4. Smokeless tobaccos contain high levels of abrasive grit and sand which are not completely removed during curing and processing. Due to the grit, tobacco chewers and dippers experience more tooth abrasion (wearing of the tooth's biting surfaces). This unnatural wear of the tooth's surface may require treatment if the degree of abrasion is severe.

5. Various amounts of sugar (especially sucrose and glucose) are added to smokeless tobaccos during the curing process to improve taste. High sugar consumption is strongly related to dental caries (tooth decay). When sugar mixes with the plaque on teeth, acids are formed which decay the tooth enamel. Therefore, the potential for caries does exist.

According to medical authorities, diabetic patients should also be aware that the use of highly sweetened chewing tobaccos could result in poor control of their diabetes.

6. In reference to overall health, all forms of cured tobacco contain nicotine.

Nicotine is a dependence-producing drug. There is a risk, therefore, that dependence for nicotine will develop in tobacco chewers.

Nicotine can also change a number of normal body functions. For example, it causes increases in heart rate and blood pressure and can lead to an irregular heart beat. Important blood vessels that move oxygen-rich blood to the entire body are constricted. Athletes should be aware that athletic performance may therefore be affected by the use of smokeless tobacco.

7. Like smokers, chewers and dippers also have socially unacceptable traits. Bad breath and discolored teeth and the constant need to spit can be offensive to others.

Nicotine and Addiction

Smokeless tobacco has received much attention because of its implications for addiction and disease. Dipping snuff and chewing tobacco are referred to many times in the literature as a habit, a habit that is increasing in popularity (Christen, 1980). "Once a kid's hooked, he doesn't leave," was a comment made by one tobacco company executive (Salamon, 1979). Smokeless tobacco, like cigarettes, contains nicotine, which is a habit forming agent (Glover, Christen, Henderson, 1981). When one dips or chews tobacco, he/she experiences a "high" because nicotine and other chemicals are absorbed by the oral and nasal mucous and the lungs (Knapp, Bliss, Wells, 1963).

The American Health Foundation has conducted research on tobacco products to test for nitrosamines, a cancer causing agent. It has been discovered that snuff contains almost ten times the amount of nitrosamines compared to chewing tobacco.

Periodontal Problems and Related Cancers

"Oral disease is clearly one of the most preventable human diseases, yet it constitutes our society's most frequent morbidity problem" (Seffrin, Grove, 1982). "Ninety-five percent of Americans are affected by tooth decay which costs the American public over two billion dollars annually" (Douglas, Day, 1979). Many dental problems are caused by the use of smokeless tobacco.

Dentists have been aware of the problems associated with the use of smokeless tobacco for many years. As a result of the constant contact of snuff or chewing tobacco to the inside of the oral cavity, its use has been linked to the development of leukoplakia. Leukoplakia are pre-cancerous soft tissue lesions that are white in color. "It has a malignant transformation rate of between 3% and 5%" (World Health Organization, 1978). The World Health Organization and recent studies (Silverman, Gorsky, Lozada, 1984) state that "1.8 and 17.5 percent of leukoplakias ultimately become malignant." Connolly and others (1986) reported that "white mucosal lesions (leukoplakia) are found in 18 to 64 percent of users, often at the sight where the tobacco is held." Carcinomas can develop in the gingiva and other soft tissue (mucosa area) in older males and females who have used snuff or chewing tobacco. Smokeless tobacco users have been known to keep a quid of tobacco in one location for 24 hours.

In 1979, the Surgeon General's Report stated that cancer

of the esophagus could be related to smokeless tobacco (U.S. Department of Health, 1979). "Nitrosonoronicotine (NNN), the first organic carcinogen isolated from unburned tobacco, is found in smoking tobacco, chewing tobacco, and snuff in high concentrations between 0.3 and 90 ug." (Hoffman, et. al., 1976). There are 29,000 new cases of oral cancer reported per year; 9,000 deaths, and tobacco is associated with 70 percent of the related causes (Reader's Digest, 1985).

Christen (1980a) lists a review of a study of oral, pharyngeal, or laryngeal cancers in 646 documented cases (Table I). The cases presented are believed to be directly related to the use of smokeless tobacco.

Smokeless tobacco users also experience more severe cases of abrasions on the surfaces of the teeth, due to the abrasive grit of the products. Gingival (gum) recession, tooth loss, deterioration of teeth and bone, discolored teeth, bad breath, and slow healing of cuts can also be associated with the use of smokeless tobacco products (Christen, 1980, Greer, Poulson, 1984).

Researchers have been studying the levels of sugars (sucrose and glucose) and fluoride in snuff and chewing tobacco (Sitzes, 1977; Shannon, Trodahl, 1978). Contradictory statements about dental caries (cavities) have resulted. Sitzes (1977) reported that a high rate of caries were found on patients who used sweetened tobacco. Shannon and Trodahl (1978) feel that the increased flow of saliva in smokeless tobacco users reduces the chances of developing dental caries.

TABLE I

CHRISTEN STUDY

Table ▪ Nineteen reported series of cases of cancer of the mouth, pharynx, or larynx directly related to snuff dipping, tobacco chewing, or both (North America, 1915 to 1972).*

Author and year of study	Study area	No. of cases	Snuff dippers (totals)	Chewers (totals)	Location in mouth†
Abbe (1915)[13]	New York	14	1	13	bm
Moore and others (1953)[16]	Minnesota	65	0	65	ll (39); oc (26)
Wilkins and Volger[17]	Georgia	35	23	12	ging
Moertel and Foss (1958)[18]	Minnesota	22	?	?	ml
Peacock and others (1960)[19]	North Carolina	25	?	?	oc
Sorger and Myrden (1960)[20]	Nova Scotia	4	0	4	bm
Vogler and others (1962)[22]	Georgia	115	56	59	ll (12); bm (88); ph - 1n (15)
Rosenfeld and Callaway (1963)[25]	Tennessee	143	143	0	bm
Vincent and Marchetta (1963)[23]	New York	14	14	0	oc (9); ph (3); 1n (2)
Stecker and others (1964)[26]	Minnesota	1	1	0	bm
Brown and others (1965)[27]	Georgia	103	78	25	oc
Tenzer and Gold (1970)[30]	New Jersey	1	1	0	ll
Shafer (1972)[12]	Indiana	5	3	2	bm, ging
Shafer's review of 6 other studies (1941-1969)[12]‡	Illinois, Missouri, Arkansas, Minnesota, Mississippi, Kentucky	99	28	71	bm, ging
Totals	12 states and Nova Scotia	646	348	251	...

*Figures are given only for North American studies. Because of differences in the type of tobacco chewed, the way it is used nutritional status and social habits, studies from India and elsewhere are not reported. For example, in India, betel nut may be mixed with tobacco leaf to make a chewing tobacco.

†Code for location in the mouth; bm, buccal mucosa; ging, gingiva or alveolar ridge; ll, lower lip; oc, oral cavity—position unspecified; ml, multiple lesions; ph, pharynx; and ln, larynx.

‡Studies reported: Friedell and Rosenthal (1941), Illinois, 8 cases[14]; Ackerman (1948), Missouri, 11 cases[15]; Landy and White (1961) Arkansas 25 cases[21]; Coethals and others (1963), Minnesota, 7 cases[24]; Kraus and Perez-Mesa (166), Mississippi, 39 cases[28]; and Fonts and others (1969), Kentucky, 9 cases.[29]

Shannon and Trodahl (1978) analyzed 23 different brands of chewing tobacco and eight brands of snuff for fluoride and sugars. The average found for sucrose, glucose and fluoride were:

	Sucrose	Glucose	Fluoride
13 brands of leaf tobacco	9.9%	9.4%	2.01 ppm
10 brands of plug tobacco	4.7%	5.0%	2.79 ppm
8 brands of snuff	.04%	1.5%	.91 ppm

Sodium, like sugar, is added to smokeless tobacco products during production for flavor. In one study, 16 brands of smokeless tobacco were tested for levels of sodium. The mean was 1.76% sodium by weight. This high amount of sodium can be seen when compared to a pickle -- 1.43% sodium or cured, fried bacon -- 1.09% sodium (Pennington, Church, 1980). High levels of sodium can be dangerous to the health of many users. Since many individuals need to reduce their intake of sodium, physicians should be aware and counsel patients about the amount of sodium in smokeless tobacco (Hampson, 1985, Christen, 1981).

Legal Investigations and Legislation

On November 13, 1984, Mrs. Betty Ann Marsee, mother of Sean Marsee (19 year old who died from oral cancer), filed a $37 million dollar law suit against the U. S. Tobacco Company (Rhein, 1984). According to two Oklahoma Newspapers (Oklahoman Times and Stillwater News Press), Mrs. Marsee filed a $147 million dollar law suit in Oklahoma's federal

district court, stating that U. S. Tobacco Company's Copenhagen brand snuff is "defective and unreasonably dangerous".

Mrs. Betty Marsee lost her lawsuit case on June 20th, 1986, but the question being asked is: "Did the tobacco executives tell the truth, the whole truth, and nothing but the truth?" (Mintz, 1986). Mintz stated in his article entitled "The Artful Dodgers" that many people wonder if Bantle, Manning, and Foley, U. S. Tobacco representatives, lied about their knowledge concerning "cancer, nitrosamines and NNN". Mintz referred to the trial as a:

> David and Goliath product liability suit that pitted Betty Marsee against United States Tobacco Company, the 47th largest industrial corporation in America.

Even though Mrs. Marsee lost her lawsuit, millions of Americans became familiar with her cause and her son's story on "60 Minutes," in Reader's Digest, and by trial publicity. Betty Marsee made her concerns known and as a result, others have felt her fears involving the health risks associated with smokeless tobacco (snuff) use.

> Shortly before his death, Sean Marsee told his mother there must be a reason God decided not to save him. "I think the reason is what we're doing right now," says Betty Marsee. "Keeping other kids from dying -- that's Sean's legacy" (Reader's Digest, 1985).

After the results of the trial became known, The Wall Street Journal (June 23, 1986) announced that all tobacco stock prices rose.

> In New York Stock Exchange composite trading, U. S. Tobacco jumped $4.25, to $40.25;

> R. J. R. Nabisco Inc. was up $2.50, to $51.50; Phillip Morris Cos. rose $2.50, to $69.875, and American Brands Inc. gained $1.25, to $88.875. Several tobacco analysts said they believe the stocks are still undervalued and will continue to rise.

The Public Citizen Health Research group petitioned the mandating of warning labels on snuff products (Rhein, 1984). Surgeon General Koop's reaction statement was, "I don't want to go overboard because of one case (Oklahoma)." Earlier Koop had stated, "We don't have the same cause and effect for smokeless tobacco that exists for cigarettes" (Rhein, 1984).

Federal Trade Commission Chairman James C. Miller, III asked the Surgeon General to review "the health effects of smokeless tobacco (chewing tobacco and snuff) ideally by appointing a panel of experts" resembling the 1964 panel on smoking and health (Business Week, 1985). In June 1985, the Surgeon General appointed an Advisory Committee on the Health Consequences of Using Smokeless Tobacco to study the issue. In addition the National Cancer Institute, the National Institute of Dental Research and the Office of Medical Applications of Research, and National Institutes of Health jointly sponsored a consensus development conference in January 1986 on the health implications of smokeless tobacco use.

The committee presented S.1574, which is an extension of P. L. 98-474, the Comprehensive Smoking Education Act of 1984. S.1574 included smokeless tobacco products. The committee findings in S.1574 were:

(1) scientific research has determined that -

(A) the use of smokeless tobacco is a cause of oral cancer and pharyngeal cancer, oral leukoplakia, gum disease and tooth loss, and

(B) smokeless tobacco contains nicotine and may be addictive,

(2) the use of smokeless tobacco by adolescents is increasing.

(3) widespread lack of knowledge among the general public of the health risks associated with the use of smokeless tobacco, and

(4) State and local efforts are insufficient to educate the public on the dangers of smokeless tobacco use.

Much research and legislation has resulted since 1984. One very significant and in depth piece of legislation that has emerged is the Comprehensive Smokeless Tobacco and Health Education Act of 1985. This document was presented at the meeting of the Ninety-ninth Congress, first session. The Act called for three main guidelines:

1. Programs to inform the public of the dangers of smokeless tobacco are to be established,

2. smokeless tobacco products will carry one of three warning labels,

3. the Federal Trade Commission must establish advertising guidelines for smokeless tobacco.

Important sections of the Comprehensive Smokeless Tobacco and Health Education Act of 1985 are:

Sec. 2 (a)(1) The Secretary of Health and Human Services shall establish and carry out a program to inform the public of any changes to human health resulting from the use of smokeless tobacco products. In carrying out such program, the Secretary shall --

(A) develop educational programs and materials and public service announcements

respecting the dangers to human health from the use of smokeless tobacco;

(B) make such programs, materials, and announcements available to States, local governments, school systems, and such other entities as the Secretary determines appropriate to further the purposes of this Act;

(C) conduct and support research on the effect of smokeless tobacco on human health; and

(D) collect, analyze, and disseminate information and studies on smokeless tobacco and health.

(2) In developing programs, materials, and announcements under paragraph (1), the Secretary shall consult with the Secretary of Education, medical and public health entities, consumer groups, representatives of manufacturers of smokeless tobacco products, and other appropriate entities.

(b) The Secretary may provide technical assistance to States to assist such States in the development of educational programs and materials and public service announcements respecting the dangers to human health from the use of smokeless tobacco.

Report on Smokeless Tobacco and Health

Sec. 3. The Secretary shall transmit a report to the Congress not later than January 1, 1987, and biennially thereafter, containing --

(1) a description of the effects of health education efforts on the use of smokeless tobacco products;

(2) a description of the use by the public of smokeless tobacco products;

(3) an evaluation of the health effects of smokeless tobacco products and an identification of areas appropriate for further research; and

(4) such recommendations for legislation and administrative action as the Secretary considers appropriate.

Smokeless Tobacco Products Packages

Sec. 4 (a) It shall be unlawful for any person to knowingly manufacture, package, or import for sale or distribution within the United States any smokeless tobacco product unless the package of the product bears, in accordance with the requirements of this Act, one of the following statements:

"WARNING: THIS PRODUCT MAY CAUSE MOUTH CANCER"

"WARNING: THIS PRODUCT MAY CAUSE A GUM DISEASE AND TOOTH LOSS"

"WARNING: THIS PRODUCT IS NOT A SAFE ALTERNATIVE TO CIGARETTES".

(b) One of the statements required by subsection (a) shall appear in a conspicuous and prominent location on any package of a smokeless tobacco product, and shall appear in a conspicuous format and in conspicuous and legible type in contrast with all other printed material on the package.

(c) The statements required by subsection (a) shall --

(1) be randomly displayed by a manufacturer, packager, or importer of a smokeless tobacco product in each twelve-month period in as equal a number of times as is possible; and

(2) be randomly distributed in all parts of the United States in which such product is marketed.

(d)(1) Each manufacturer, packager, or importer of a smokeless tobacco product shall submit a plan to the Federal Trade Commission which specifies the method such manufacturer, packager, or importer will use to display and distribute the statements required by subsection (a) in accordance with the requirements of subsections (b) and (c).

(2) The Federal Trade Commission shall approve a plan submitted by a manufacturer, packager, or importer of a smokeless tobacco product under paragraph (1) if such plan provides for the display and distribution on smokeless tobacco product packages of the statements

required by subsection (a) in a manner which complies with this Act and the guidelines promulgated under section 6.

(e) This section and section 5 do not apply to a distributor or a retailer of any smokeless tobacco product which does not manufacture, package, or import smokeless tobacco products for sale or distribution within the United States.

Advertising of Smokeless Tobacco Products

Sec. 5 (a) It shall be unlawful for any manufacturer, packager, or importer of a smokeless tobacco product to knowingly advertise or cause to be advertised in the United States such smokeless tobacco product unless such advertisement bears, in accordance with this section, one of the statements specified in section 4(a).

(b) Each statement specified in section 4(a) shall be rotated every four months by the manufacturer, packager, or importer of smokeless tobacco products in an alternating sequence in the advertisements for each brand of a smokeless tobacco product, in accordance with a method prescribed by the Federal Trade Commission.

(c) In the case of a printed advertisement of a smokeless tobacco product, one of the statements specified in section 4(a) shall appear on such advertisement in a conspicuous and prominent location and a conspicuous format approved by the Federal Trade Commission, and in conspicuous and legible type in contrast with all other printed material in the advertisement.

(2) In the case of a radio or television advertisement of a smokeless tobacco product, one of the statements specified in section 4(a) shall be read once during the advertisement.

(d)(1) Each manufacturer, packager, or importer of a smokeless tobacco product shall submit a plan to the Federal Trade Commission which specifies the method such manufacturer, packager, or importer will use to rotate, display, and distribute in accordance with this Act the statements specified by section 4(a) in advertisements of smokeless tobacco products.

> (2) The Federal Trade Commission shall approve a plan submitted by a manufacturer, packager, or importer of a smokeless tobacco product under paragraph (1) if such plan provides for the rotation, display, and distribution of the statements specified in section 4(a) on each advertisement of a smokeless tobacco product in a manner which complies with this Act and the guidelines promulgated under section 6.
>
> Regulations and Guidelines
>
> Sec. 6 (a) The Federal Trade Commission shall promulgate and periodically revise such regulations and guidelines as it may require to implement sections 4 and 5.
>
> (b) Within 180 days after the date of enactment of this Act, the Federal Trade Commission shall promulgate guidelines with respect to --
>
> (1) the display and distribution of the statements required by section 4(a) on packages of smokeless tobacco products; and
>
> (2) the rotation, display, and distribution of the statements specified in section 4(a) on each advertisement of a smokeless tobacco product.

Certain legislators have spoken out against smokeless tobacco. They include Henry Waxman, Democrat from California in the House of Representatives and Richard Lugar, Republican from Indiana in the Senate (Colford, 1985). Two versions of the smokeless tobacco bill existed. The Senate version only called for warning labels, while the House version also called for a ban on advertising.

The Smokeless Tobacco Institute and the advertising industry fought against both bills. The Association of National Advertisers believe they have the right to advertise

freely. It is against First Amendment rights, and they are scared of the ramifications to other "controversial" products. The Association of National Advertisers and the Smokeless Tobacco Institute claim "any restrictive measures are premature, at lease since no scientific evidence directly links chewing tobacco, snuff or dip to cancer or other diseases" (Colford, 1985).

The Association of National Advertisers and Smokeless Tobacco Institute were influential in getting Lugar to change one of the warning labels from "This product contains nicotine and may be addictive" to "This product is not a safe alternative to cigarettes." The other two warning labels refer to the products' possible link to tooth loss, gum disease, and oral cancer.

The Senate bill also required that a yearly report summarizing the "current practices and methods of smokeless tobacco product advertising and promotion" be presented (Colford, 1985). The House bill asked that a study be presented every other year regarding "the effects of health education, use of the products and health effects, but not on any aspect of advertising or promotion practices" (Colford 1985).

In November 1985, the Senate Committee unanimously voted to back legislation to place health warning labels on smokeless tobacco. The questions being asked were:

> . . . if Congress takes action against ads for chewing tobacco, snuff, and other smokeless products, can the $700 million dollar industry live with graphic health warnings labels in TV and

> radio ads? or will they retreat from broadcast media and content themselves with print, outdoor, and other advertising avenues? (Colford, 1985).

The Association of National Advertisers and the American Advertising Federation are against the 1985 bill. If the bill would have been passed earlier, the companies would have lost 31.8 million dollars, which was the budget for 1984.

In February 1986, there was talk of the smokeless tobacco industry challenging Congress in court over the ban on smokeless tobacco advertising (Advertising Age, 1986). The National Association of Broadcasters oppose such banning and believe it will filter into categories such as wine and beer commercials. The American Advertising Federation stated that they also would fight the ban issue out in court.

During the week of February 17th, 1986, the House passed the bill banning the advertisement of smokeless tobacco products from radio and television (Business Week, 1986). President Reagan approved legislation on February 27, 1986, that would require that warning labels be placed on smokeless tobacco products and that would ban broadcast advertising of the products beginning August 28, 1986.

How will this legislation affect the huge industry? In 1985, the U. S. Tobacco Company had revenues of $480 million, with profits from that being $93.5 million (Harris, Hoppe, 1986). The industry has already seen a change in its stock. Due to pending legislation, law suits (including the Sean Marsee case), and bad publicity, the last quarter of 1985 showed that smokeless tobacco sales slipped two percent and its stock was off 1-1/2 since January (Harris, Hoppe, 1986).

February 9-13, 1987, was declared "The Great American Spit-out" week, similar to the "Great American Smoke-out" program. February 27th, 1987, warning labels were required to be placed on smokeless tobacco products, one year after President Reagan signed smokeless tobacco legislation.

Related Studies

The studies related to smokeless tobacco included many areas of investigation. Many research studies were medical in nature and very technical. Some studies investigated smokeless tobacco's relationship to oral cancer (Winn, et. al., 1981; Christen, 1980). Other researchers have studied the physiological changes that take place in the bodies of smokeless tobacco users. Studies included the effect of smokeless tobacco on heart rate, blood pressure, muscle reflexes, (Glover, et. at., 1984) and leukoplakia and mouth problems (Christen, Armstrong, McDaniel, 1979; Bouquot, Gorlin, 1986; Squier, 1986). Some studies probed into areas of smokeless tobacco use among specific populations, such as pre-service teachers (Marty, McDermott, 1984), kindergarten students (Young, Williams, 1985), native American adolescents (Schinke, et. al., 1986), and college athletes (Christen, McDaniel, Doran, 1979).

Many magazine articles that mentioned adolescent studies in different parts of the country did not cite references or submit bibliographies. The studies found to be similar to this study involving adolescents were

conducted by Bonaguro, Pugh, and Bonaguro (1986); Marty, McDermott, and Williams (1986); and Guggenheimer, Zullo, Kruper and Verbin (1986).

The researcher presents brief summarizations of studies that were medical in nature and studies that involved specific populations. The researcher presents in more detail studies that involved adolescents, similar to this study.

Medical Studies

Cancer

Oral cancer among southern women was conducted in North Carolina, involving 255 women with oral cancer (Winn, et. al., 1981). There existed a high mortality rate due to the chronic use of snuff. The results of this study stated,

> . . . among chronic (snuff) users the risk approached 50-fold for cancers of the gum and buccal mucosa - tissues that come in direct contact with the tobacco powder. The carcinogenic hazard of oral snuff is of special concern in view of the recent upswing in consumption of smokeless tobacco in the United States (Winn, et. al., 1981).

Smith and others (1970) agreed that many women in the Southeastern states were snuff dippers. The researchers stated that, "In a 20 year study of 15,500 snuff dippers in this area of the country, 75% were women with an average age of 55."

Heart Rate and Reaction Time

Glover and others (1984) researched the bodily changes in heart rate and reaction time of students who used smokeless tobacco during perceptual motor testing. Thirty college age males were divided into three groups consisting of ten each. Each group was given a different perceptual motor task (Reaction Time/Movement Time, Pursuit Rotor Apparatus, and Purdue Peg Board Test). Five students in each group acted as the experimental group and were given smokeless tobacco. The remaining five students in each group acted as the control group. During the testing, blood pressure and heart rate were monitored.

Uncertain results appeared in all three tasks. For the Reaction Time/Movement Time and Pursuit Rotor Task, the experimental group showed a slight improvement but "no substantial differences existed".

Glover and others (1984) concluded that:

> the acute effects of smokeless tobacco indigestion include increased heart rate and blood pressure; do not include decreased time to react to a visual stimulus; do not include increased motor response during ocular pursuit; and do not include increased manual dexterity.

Many athletes state that they experience improved reaction time when they use smokeless tobacco. Glover and others (1984) stated:

> The chemical substrates in smokeless tobacco which induce the heart rate and blood pressure changes may also increase the overall arousal within the body and therefore create the effect of increased concentration and attention to the task at hand.

Blood Pressure

Schroeder and Cheng (1985) conducted a study in Ohio that involved 1663 volunteers (923 females and 740 males) that compared blood pressure readings of users of smokeless tobacco and non-users. Sixty-nine males (9.7%) reported that they had used smokeless tobacco in the past. Female subjects (less than one percent) reported that they used smokeless tobacco.

The results showed that the blood pressure readings of male smokeless tobacco users from 18 to 25 years of age (19 males) had a mean reading of 143.7/80.7, while in the same age range, non-smokeless tobacco users had a mean reading of 131.6/72.8. Smokeless tobacco users had an average length of use of the product for 5.5 years.

The difference between users and nonusers diastolic pressure was 7.9 mm Hg. Schroeder and Cheng (1985) concluded:

> thus, along with addictive characteristics of nicotine and its etiological role in cancer, smokeless tobacco use appears to be associated with higher blood pressure levels in young adults. This may hold true in the pre-adolescent and adolescent population, in which its use is of growing magnitude.

Specific Populations

Pre-service Teachers

As presented earlier, role models include parents, celebrities, and teachers. Marty and McDermott (1986) stated:

> Since teachers may be the most important adult role models other than parents with whom children come into contact, their knowledge, attitudes, and behaviors with respect to smokeless tobacco may influence the success of future deterrent educational programs aimed at youth.

The study was conducted at a southern university and utilized a 26 item survey which included,

1) prevalence/frequency of the behavior;
2) initiation and reinforcement factors regarding smokeless tobacco use;
3) prevalence of cigarette smoking among smokeless tobacco users;
4) attitudes about smokeless tobacco use;
5) knowledge of health related outcomes of smokeless tobacco use; and,
6) selected demographic variables

One hundred and seventy four answer sheets were analyzed and showed that the subjects consisted of 86 males (49.4%) and 88 females (50.6%). Twenty males (23.3%) reported using smokeless tobacco and no females reported using smokeless tobacco. Half the male users expressed the desire to stop using smokeless tobacco.

Some findings reported by Marty and McDermott (1986) included that in the same sample, television's "macho" image of the smokeless tobacco user, was not an important factor in its initial use. Friends appeared to be the

> most important factor influencing new users of smokeless tobacco as the data suggests for this specialized sample, health professionals may need to consider appropriate interventions that combat the interest in the age group most vulnerable for invitation of dipping or chewing. This age group has not been defined with certainty as of yet, but some previous investigations have identified that this "proneness" maybe just prior to high school years.

In conclusion, pre-service teachers were unable to identify the health effects associated with smokeless tobacco. Teachers are not adequately informed about the health risks associated with smokeless tobacco, "making it difficult for them to guide the young people with whom they come in contact."

Kindergarten Study

Young and Williams (1985) studied the use and expected use of smokeless tobacco among 112 kindergarten age students in Arkansas. Each student was interviewed for approximately 15 minutes. The questions included, (a) smokeless tobacco product recognition, (b) whether the student knew friends, parents or neighbors who used smokeless tobacco, (c) whether the student used smokeless tobacco, (d) expected to use smokeless tobacco, and (e) reasons for use or expected use.

Forty students stated that they expected to use the product for a number of different reasons including modeling ("Dad does" - 8 students), aesthetic reasons ("I like the way it tastes" - 12 students) and for unknown reasons (20 students).

Results of the Young and Williams (1985) study showed that "81.25% of the students interviewed recognized this type of product (Skoal), 68.75% knew someone who used smokeless tobacco, 21.43% had used the product themselves, and 35.17% expected to use it in the future". The 40

students who planned to use smokeless tobacco were all male.

Native American Adolescents

Native Americans have also noticed the growing popularity of the use of snuff and chewing tobacco. In the state of Washington, 135 females and 119 males (mean age 13.8 years) were randomly selected from one city and three reservations. Ninety eight percent of the students completed a questionnaire.

The results showed that 43.7 percent of the students had used smokeless tobacco 1 to 25 times, while 42.9 percent used smokeless tobacco more than 25 times. Included in this category (25 or more) there existed 64 females (47.4%) and 45 males (37.8%) who used snuff or chewing tobacco. "Sex was not a statistically significant variable." Schinke and others (1986) suggested that:

> Clinicians who serve Native American populations, at least in Washington State, should be alert for regular use of snuff and chewing tobacco among adolescents. Adolescents ought to be advised about hazards of using snuff, chewing tobacco and related products.

Texas College Athletes

Christen, McDaniel and Doran (1979) conducted a study at a small Texas college involving 14 athlete volunteers (age 18-22) who used smokeless tobacco. The study included an interview and oral 2"x2" picture of the gingival cavity of each subject.

Three athletes started chewing in elementary school between 10-12 years of age. Six athletes started in high school and five athletes started in college. Peer pressure was given as the major factor in starting smokeless tobacco use.

The results of the pictorial exam detected that eight athletes had gingival recession, where the tobacco was held that affected both the gums and teeth; nine athletes had signs of intra-oral leukoplakia; and 11 had erythematous soft tissue changes (Christen, McDaniel, Doran, 1979).

Adolescent Studies

Guggenheimer, Zullo, Kreeper, and Verbin (1986) conducted a study that included 609 students from the eighth, ninth and tenth grades in Pittsburgh, Pennsylvania. The students completed a tobacco survey. Of the 609 students, 262 were males, 276 were females, and 71 did not answer the question.

The results showed that 187 students (31%) used one or more types of tobacco. Of the 187 students, 102 smoked cigarettes, 98 used smokeless tobacco, 15 were combination users and two pipe/cigar smokers. No females used smokeless tobacco, but were predominantly cigarette smokers. Sixty one student cigarette smokers were female while only 15 male students smoked cigarettes.

Among the male smokeless tobacco users, 17 students (6%) only dipped, 22 students (10%) only chewed, and 44

students (19%) used both. Sixty five percent of the users believed smokeless tobacco is less harmful than smoking.

The primary influence to use smokeless tobacco was peer pressure (63%) followed by friends or relatives (24%) and advertising (4%).

Marty, McDermott, and Williams (1986) conducted a study that involved 901 high school students. The sample consisted of 439 males and 462 females. The study was conducted in two Arkansas communities where there existed 1,160 eligible 10th-12th graders. Nine hundred and one students agreed to answer a survey that consisted of 26 questions.

The survey was accepted at face validity by three health educators. Test/retest reliability after a 12-day time span resulted in item agreement of 73 percent to 100 percent with 43 subjects.

The results showed that 161 males (36.7%) and 10 females (2.2%) used smokeless tobacco products. Most users indicated that their use was daily. "About 46.9 percent of the users had been active for a period of two to five years. Just over 1.5 percent reported use longer than five years."

Peer pressure (52.1%) was the most frequently marked response that influenced the student to start using smokeless tobacco, followed by relative other than parent (12.6%), teacher (6.6%), coach (6.0%), parent (5.4%), television athlete (2.4%), advertisements (.6%) and other factors (14.4%).

The primary reason for continuing to use smokeless tobacco were relaxation (38.4%), enjoyment (17.1%), and good taste (15.8%). Of the 163 users, 46 (28.2%) wished to quit using smokeless tobacco. Forty eight of 170 students (28.2%) were cigarette users.

Bonaguro, Pugh, and Bonaguro (1986) recently conducted a study with 1,055 adolescents in grades fourth through twelfth in Southeastern Ohio. The mean age was 13.2 years with the sample consisting of 48.6 percent females and 51.4 percent males. The results of the study indicated that 32 percent of the male students were users of chewing tobacco and 37 percent were users of snuff. Of the females questioned, 1.4 percent stated that they used chewing tobacco and 2.8 percent used snuff. The average age of initial use was 9.5 years for chewing tobacco and 10 years for snuff.

Use of smokeless tobacco was related to "peer pressure, parental approval, gender, and age". A multiple regression analysis revealed that "peer usage accounted for 35.1 percent and 38.5 percent of the variance in chewing tobacco and snuff usage. "When parental approval was added, the variance for chewing tobacco use was 41 percent and 43.6 percent for snuff."

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to survey selected grade levels in Tomball Independent School District, to identify smokeless tobacco use by adolescents and to determine the health knowledge of students in the area of smokeless tobacco.

The subpurposes of this study were to identify the age that smokeless tobacco users at the time of their initial experience with snuff or chewing tobacco, to identify the intent to continue using smokeless tobacco, and to look more closely at the reasons why adolescents use smokeless tobacco products.

This chapter will discuss the preliminary procedures, population and sample, research design, instrument, method of obtaining permission of school district, selection of subjects, and statistical treatment of data of this study.

Population and Sample

The population for this study consisted of students from Tomball Independent School District. The city of

Tomball is located 30 miles northwest of Houston, Texas. It is a middle class, diversified economic community. The Tomball School District enrolls approximately 4,000 students. The mean I. Q. level is 107.

The grade levels chosen were the fifth, eighth, tenth, and twelfth. The total population in the four grade levels in Tomball Independent School District were 295 students in the fifth grade, 333 students in the eighth grade, 405 students in the tenth grade, and 282 students in the twelfth grade. Approximately one hundred students per grade were needed for the study. The sample totaled 397 students. From Decker Prairie Elementary's fifth grade level, 110 students participated in the study. From Beckendorf Junior High's eighth grader level, 100 students participated in the study, while Tomball High School had 100 tenth graders and 87 twelfth grade students who took part in the research.

Research Design

The study was designed to yield descriptive data concerning adolescent use and health knowledge of smokeless tobacco. Many research studies are descriptive in nature (Gay, 1981, p. 153). A questionnaire is only one way to collect descriptive data. In this study, it was not feasible to use the observation method, and because of the number of subjects in the study, the interview method was not applicable.

The following are the percentages of subjects in the study to the total student enrollment at the selected grade levels in Tomball Independent School District: 110/295 or 37.3% at the fifth grade, 100/333 or 33.3% at the eighth grade, 100/405 or 40.5% at the tenth grade, and 87/282 or 30.8% at the twelfth grade.

The researcher felt that the fifth grade was the lowest appropriate grade level to survey students on the subject of smokeless tobacco. Studies have interviewed subjects as young as kindergarten (Young and Williamson, 1985), but the researcher felt that the request to conduct research would be denied if such a young level was asked to participate in the study.

Instrument

The questions on the Smokeless Tobacco Use Survey were taken directly from the Tobacco Use Survey. The fifty-item Tobacco Use Survey was utilized to gather data for a study conducted in Oklahoma. Only those questions pertaining to smokeless tobacco (chewing tobacco and snuff) were used for the Smokeless Tobacco Use Survey.

The Smokeless Tobacco Use Survey contained twenty-five questions pertaining to sex and grade, use or non-use by the individual or parents, use or non-use by siblings or friends, health knowledge of smokeless tobacco, influences upon adolescents to use smokeless tobacco, and age of initial use of smokeless tobacco products (Appendix A).

The questionnaire was duplicated on legal size paper to allow for all the questions to be contained on one sheet of paper. This was done to ensure that all the questions were visible to the subject and would result in all the questions being answered.

Obtained from Oklahoma State University's Bureau of Tests and Measurements were four hundred general purpose NCS computer answer sheets, which the subjects used for their responses.

Validity

The questions taken from the Tobacco Use Survey were accepted at content validity. The questions chosen were associated with issues surrounding smokeless tobacco products and their use. The questions referred to sex, grade, students' use, parental and sibling use, peer use, amount of use, initial age of use, health risks, advertisement influence, reasons for use, place of purchase, and a legal issue.

Reliability

Studies utilizing a questionnaire similar to the Smokeless Tobacco Use Survey have had results (test-retest) of 73-100 percent.

Test-retest was the only appropriate reliability method for such a questionnaire. No studies, found by the researcher, discussed other methods such as equivalent forms, split-half, or rationale equivalence.

Obtaining Permission to Conduct Research

The Spring Independent School District was first selected for the study by the researcher because the researcher resides and has two sons enrolled in the district. The researcher had also worked in the school district and felt that if any school would approve the research, it would be Spring Independent School District.

Dr. Robert G. Smith, Assistant Superintendent for Curriculum and Instructional Services was contacted by telephone and the proposed research was discussed. Dr. Smith stated that he was aware of the use of snuff and chewing tobacco by the students and stated that he would mail a Request to Conduct Research form to the researcher (Appendix B).

Dr. Smith denied the request to conduct research in the Spring Independent School District. Dr. Smith's reason for the denial was that the study was too time consuming. Due to the type of questions asked, Dr. Smith felt that the students' parents would have to be contacted prior to the study to receive parental permission (Appendix C).

The researcher contacted by telephone five school districts in the north Houston area to obtain the names and addresses of the assistant superintendents for curriculum and instructional services in each district.

The personnel at the five school districts were: Mr. M. B. Donaldson, Aldine Independent School District; Ms.

Deanna Swenke, Cypress-Fairbanks Independent School District; Dr. Richard D. Slater, Klein Independent School District; Mr. Long, New Caney Independent School District; and Dr. Carolyn Bluis and Mr. Earl Oldham, Tomball Independent School District. A short letter informing them about the study and asking if they would agree to allow their students participate in the study, a proposal, and a questionnaire were sent to each administrator (Appendix D).

Tomball Independent School District was the first to respond, marking an interest in being involved in the study.

New Caney Independent School District also sent a positive response and a note to contact Mr. Don Ford at the high school

Klein, Cypress-Fairbanks, and Aldine Independent School Districts replied with a negative response (Appendix E).

Tomball Independent School District was contacted and the researcher arranged meetings with Mr. Oldham and Dr. Bluis to discuss the study. Mr. Oldham is the coordinator for kindergarten through sixth grade, while Dr. Bluis is the coordinator for the junior high and high school levels.

After speaking with Dr. Bluis and Mr. Oldham, the researcher informed New Caney of her decision to use Tomball Independent School District for the research (Appendix F).

Selection of Subjects

At the meeting with Dr. Bluis, it was realized that the use of physical education classes for the study would not be feasible because the eighth and seventh grades are combined. The researcher was only requesting the use of eighth graders for the study. Dr. Bluis recommended that the researcher use classes such as English or History, where only one grade level is in the class. After Dr. Bluis contacted the principals at Beckendorf Junior High and Tomball High School, the following cluster samples were chosen from the eighth, tenth and twelfth grades:

8th grade -	K. Jacobi	50 boys 50 girls
10th grade -	S. Blount	25 boys 25 girls
	D. McKeown	25 boys 25 girls
12th grade -	J. Bridges	50 boys 50 girls

The classes were chosen because of their size and closeness to the number of subjects needed (100 students) for the sample at each grade level.

At the meeting with Mr. Oldham, he suggested that the fifth grade level at Decker Prairie Elementary be used for the study. Decker Prairie Elementary's fifth grade level met the required 100 students necessary for the study. The researcher contacted the school and arranged a meeting with Miss June Pokorski, the physical education teacher, during her planning period.

During the meeting with Miss Pokorski, the researcher asked if she thought it would be beneficial to the students to show them samples of snuff and chewing tobacco. Miss Pokorski stated that she felt many of the students were familiar with smokeless tobacco products, but it would be helpful to show the products to the classes.

Data Collection and Analysis

The researcher delivered 300 questionnaires and answer sheets to Tomball Independent School District. Dr. Bluis had stated at the prior meeting that each student should have a number two pencil and that it was not necessary for the researcher to supply them. A thank you letter was sent to the participating teachers from the researcher (Appendix G).

The administering of the questionnaire at the fifth grade was completed by the researcher. Miss Pokorski was sick on the day of the research, but her assistant teacher, aide, and substitute were helpful. Two sections of approximately 55 students participated in the study. At the beginning of each section's participation, the researcher introduced herself and explained her study. Some students wanted to know if it was a test. The researcher explained that it was a questionnaire and that she would appreciate their honest answers. They were told not to place names on the answer sheet. A questionnaire, answer sheet, and number two pencil were given to each

student. The students were instructed to stay seated until their classmates were finished. All answer sheets, questionnaires, and pencils were collected.

After the answer sheets were returned from Dr. Bluis, the researcher began analyzing the data. The answer sheets of individuals who responded that they had used smokeless tobacco products were studied. A tally sheet was used to tabulate answer sheet responses. The answer sheets were then sent to Oklahoma State University's Bureau of Tests and Measurements to be tabulated by their main frame computer. The SPSS-X 2.1 system was utilized for the data analysis. The responses to the questionnaire were computed by total group (396 students) and by grade levels (5th, 8th, 10th, and 12th).

The researcher contacted the Harris County Sheriffs' Department and a 7-Eleven store to inquire about any laws prohibiting the sale of smokeless tobacco to minors. Both stated that in Texas, buyers have to be 16 years of age. A 7-Eleven employee stated that if an individual drives up, then the employee assumes he/she is of age. The employee did mention that his son, who is 12 years old, can buy smokeless tobacco almost anywhere, and that the law is rarely enforced. A mother told the researcher that when her son was 12 years old, he could purchase smokeless tobacco at the local Circle K store; all the son had to say was that it was for his father.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

This chapter will present the results of the Smokeless Tobacco Use Survey, which was completed by fifth, eighth, tenth, and twelfth grade students in Tomball Independent School District.

The results are presented by total sample and by class. The final results are the responses of those students in each class who used smokeless tobacco.

Answers to Pertinent Questions

Total Sample Responses

The total number of subjects, who participated in the survey, consisted of 397 students from Tomball Independent School District. Only 396 questionnaires were analyzed by the computer, due to one student's improper use of the computer answer sheet. The results of the total sample's responses to the questionnaire are found in Table II.

By looking at the responses to the questionnaire by the total sample, the researcher was able to answer two pertinent questions.

TABLE II

RESPONSES TO SMOKELESS TOBACCO USE SURVEY BY TOTAL SAMPLE

VARIABLE		RESPONSES	
1.	Sex	Male	48.0%
		Female	51.8%
		Missing	.3%
2.	Grade	5th	27.8%
		8th	25.3%
		10th	25.0%
		12th	22.0%
3.	Use or do not use smokeless tobacco	Yes	8.6%
		No	91.4%
4.	Father/male guardian dips or chews tobacco	Yes	16.7%
		No	83.3%
5.	Mother/female guardian dips or chews tobacco	Yes	1.5%
		No	98.5%
6.	Brother dips or chews tobacco	Yes	12.6%
		No	87.1%
		Missing	.3%
7.	Sister dips or or chews tobacco	Yes	1.0%
		No	99.0%
8.	Plan to dip or chew in the future	Yes	5.6%
		No	85.1%
		I Don't Know	8.6%
		Missing	.8%
9.	How many friends dip or chew tobacco?	None	46.0%
		Few	37.6%
		Several	11.1%
		Most	4.3%
		All	1.0%
10.	Number of cans or pouches a week	Less than one	1.8%
		1	3.3%
		2-3	2.3%
		4 or more	2.3%
		Don't dip/chew	90.2%
		Missing	.3%
11.	Age of initial use of smokeless tobacco	Less than 10	3.8%
		10-12	5.1%
		13-15	2.3%
		16 or older	.8%
		Don't dip/chew	87.9%
12.	Allowed in school	Yes	1.0%
		No	97.7%
		Missing	1.3%
13.	How harmful is dipping or chewing to a person's health?	Very Harmful	53.8%
		Somewhat Harmful	32.3%
		Slightly Harmful	11.1%
		Not Harmful	2.0%
		Missing	.8%

TABLE II (Continued)

VARIABLE	RESPONSES	
14. Compared to smoking, dipping or chewing tobacco is _____ to a person's health	More Harmful	14.4%
	Equally Harmful	52.5%
	Less Harmful	31.1%
	Neither is Harmful	1.3%
	Missing	.8%
15. Dipping or chewing helps relax a person	Yes	12.1%
	No	20.5%
	I Don't Know	66.4%
	Missing	1.1%
16. Dipping or chewing can slow down muscle reflexes	Yes	22.0%
	No	8.6%
	I Don't Know	68.4%
	Missing	1.1%
17. Dipping or chewing can harm your teeth, gums or mouth	Yes	89.9%
	No	1.8%
	I Don't Know	7.6%
	Missing	.8%
18. Dipping or chewing can cause cancer	Yes	79.5%
	No	3.8%
	I Don't Know	15.7%
	Missing	1.1%
19. Reason people your age dip or chew tobacco	Look grown up	26.0%
	Because of friends	14.4%
	They like it	30.8%
	It's a habit	17.9%
	Missing	10.9%
20. Advertisements influence young people to start dipping or chewing tobacco	Yes	41.9%
	No	19.2%
	I Don't Know	35.1%
	Missing	1.8%
21. Advertisements influenced me to start dipping or chewing tobacco	Yes	4.3%
	No	30.6%
	I Don't Dip/Chew	63.1%
	Missing	2.1%
22. Where do you usually get your tobacco?	7-Eleven	13.4%
	Supermarket	5.8%
	Friends	2.5%
	Parents	1.0%
	Don't Use Tobacco	74.7%
	Missing	2.5%
23. Participate in sports	Yes	33.6%
	No	64.4%
	Missing	2.1%
24. Participate in rodeos or FFA	Yes	13.4%
	No	83.8%
	Missing	2.9%
25. Against the law for you to buy smokeless tobacco	Yes	24.2%
	No	69.7%
	Missing	6.1%

Question #1 asked: "Do adolescents in Tomball Independent School District use smokeless tobacco products?" The results showed that 34 students used smokeless tobacco.

Question #2 asked: "Are students aware of the health risks associated with the use of smokeless tobacco?" There were six questions on the survey that referred to health risks or bodily changes related to the use of smokeless tobacco.

When asked how harmful dipping or chewing tobacco is to a person's health, 213 students (53.8%) responded that it was very harmful, 128 students (32.3%) responded that it was somewhat harmful, 44 students (11.1%) responded that it was slightly harmful, while eight students (2.0%) responded that it was not harmful. Three students (.8%) did not answer the question.

When asked to compare smoking with dipping or chewing, 57 students (14.4%) believed smokeless tobacco was more harmful, 208 students (52.5%) believed smokeless tobacco was equally harmful, 123 students (31.1%) believed smokeless tobacco was less harmful, five students (1.3%) believed neither was harmful, while three students (.8%) did not answer the question.

When asked if dipping or chewing helps relax a person, 48 students (12.1%) answered yes, 81 students (20.5%) answered no, 263 students (66.4%) did not know, while four students (1.1%) did not answer the question.

When asked if dipping or chewing can slow down muscle reflexes, 87 students (22.0%) answered yes, 34 students (8.6%) answered no, 271 students (68.4%) did not know, while four students (1.1%) did not answer the question.

When asked if dipping or chewing can harm your teeth, gums, or mouth, 356 students (89.9%) responded yes, seven students (1.8%) responded no, 30 students (7.6%) did not know, while three did not answer the question.

When asked if dipping or chewing can cause cancer, 315 students (79.5%) responded yes, 15 students (3.8%) responded no, 62 students (15.7%) did not know, while four students (1.1%) did not answer the question.

When the total sample responses were deducted to responses by grade levels, the issues surrounding smokeless tobacco were more interesting. Responses by grade level are presented in Table III.

Grade Level Responses

Question #3 asked: "How do answers to the questionnaire compare at the different grade levels (5th, 8th, 10th, and 12th)?"

It was stated earlier that role models include parents. At the fifth grade level 18.2 percent of the students had fathers who used smokeless tobacco, compared to 13.8 percent at the twelfth grade level.

Fifth grade students (70.9%) responded that dipping or chewing is very harmful to a person's health. Twelfth

TABLE III

RESPONSES TO SMOKELESS TOBACCO USE
SURVEY BY GRADE LEVEL

VARIABLE	RESPONSES	5TH	8TH	10TH	12TH
Sex	Male	50.9%	48.0%	50.5%	41.4%
	Female	49.1%	52.0%	49.5%	57.5%
	Missing	-	-	-	1.1%
Dip or chew	Yes	1.8%	11.0%	10.1%	12.6%
	No	98.2%	89.0%	89.9%	87.4%
Father/male guardian dips or chews tobacco	Yes	18.2%	17.0%	17.2%	13.8%
	No	81.8%	83.0%	82.8%	86.2%
Mother/female guardian dips or chews tobacco	Yes	.9%	.3%	1.0%	1.1%
	No	99.1%	97.0%	99.0%	98.9%
Brother dips or chews tobacco	Yes	5.5%	14.0%	18.2%	13.8%
	No	93.6%	86.0%	81.8%	86.2%
	Missing	.9%	-	-	-
Sister dips or chews tobacco	Yes	-	3.0%	1.0%	-
	No	100.0%	97.0%	99.0%	100.0%
Plan to dip or chew in the future	Yes	1.8%	11.0%	6.1%	3.4%
	No	83.6%	80.0%	88.9%	88.5%
	Don't Know	11.8%	9.0%	5.1%	8.0%
	Missing	2.7%	-	-	-
How many friends dip or chew tobacco?	None	85.5%	38.0%	35.4%	17.2%
	Few	14.5%	46.0%	42.4%	51.7%
	Several	-	5.0%	16.2%	26.4%
	Most	-	8.0%	5.1%	4.6%
	All	-	3.0%	1.0%	-
Number of cans or pouches a week	Less than one	-	3.0%	2.0%	2.3%
	1	1.8%	4.0%	4.0%	3.4%
	2-3	-	4.0%	4.0%	1.1%
	4 or more	.9%	2.0%	2.0%	4.6%
	Don't dip/chew	96.4%	87.0%	87.9%	88.5%
	Missing	.9%	-	-	-
Age of initial use of smokeless tobacco	Less than 10	3.6%	3.0%	5.1%	3.4%
	10-12	.9%	10.0%	5.1%	4.6%
	13-15	.9%	1.0%	4.0%	3.4%
	16 or older	-	-	-	3.4%
	Don't dip/chew	93.6%	86.0%	85.9%	85.1%
	Missing	.9%	-	-	-
Allowed in school	Yes	.9%	2.0%	1.0%	-
	No	96.4%	97.0%	99.0%	98.9%
	Missing	2.7%	1.0%	-	1.1%
How harmful is dipping or chewing to a person's health?	Very Harmful	70.9%	51.0%	46.5%	43.7%
	Somewhat Harmful	15.5%	37.0%	35.4%	44.8%
	Slightly Harmful	8.2%	8.0%	18.2%	10.3%
	Not Harmful	2.7%	4.0%	-	1.1%
	Missing	2.7%	-	-	-

TABLE III (Continued)

VARIABLE	RESPONSES	5TH	8TH	10TH	12TH
Compared to smoking, dipping or chewing tobacco is to a person's health	More Harmful	27.3%	13.0%	8.1%	6.9%
	Equally Harmful	44.5%	56.0%	52.5%	58.6%
	Less Harmful	24.5%	28.0%	38.4%	34.5%
	Neither-Harmful	.9%	3.0%	1.0%	-
	Missing	2.7%	-	-	-
Dipping or chewing helps relax a person	Yes	2.7%	14.0%	11.1%	23.0%
	No	35.5%	19.0%	16.2%	8.0%
	I Don't Know	60.9%	66.0%	72.7%	66.7%
	Missing	.9%	1.0%	-	2.3%
Dipping or chewing can slow down muscle reflexes	Yes	36.4%	24.0%	12.1%	12.6%
	No	5.5%	7.0%	13.1%	9.2%
	I Don't Know	57.3%	68.1%	74.7%	75.9%
	Missing	.9%	1.0%	-	2.2%
Dipping or chewing can harm your teeth, gums or mouth	Yes	82.7%	90.0%	92.9%	95.4%
	No	1.8%	4.0%	1.0%	3.4%
	I Don't Know	13.6%	6.0%	6.0%	1.1%
	Missing	1.8%	-	-	-
Dipping or chewing can cause cancer	Yes	67.3%	82.0%	85.9%	85.1%
	No	5.5%	4.0%	4.0%	1.1%
	I Don't Know	25.5%	14.0%	10.1%	11.5%
	Missing	1.8%	-	-	2.2%
Reason people your age dip or chew tobacco	Look grown up	47.3%	28.0%	17.2%	6.9%
	Friends	7.3%	22.0%	19.2%	9.2%
	They like it	7.3%	34.0%	43.4%	42.5%
	It's a habit	4.5%	13.0%	18.2%	40.2%
	Missing	33.6%	3.0%	2.0%	1.1%
Ads influence young people to dip or chew tobacco	Yes	50.9%	42.0%	35.4%	37.9%
	No	10.0%	19.0%	26.3%	23.0%
	I Don't Know	37.3%	37.0%	37.4%	36.8%
	Missing	1.8%	2.0%	1.0%	2.2%
Ads influenced me to start dipping or chewing tobacco	Yes	.9%	7.0%	5.1%	4.6%
	No	33.6%	25.0%	31.3%	32.2%
	I Don't Dip/Chew	62.7%	66.0%	61.6%	62.1%
	Missing	2.7%	2.0%	2.0%	1.1%
Where do you usually get your tobacco?	7-Eleven	4.5%	10.0%	19.2%	21.8%
	Supermarket	5.5%	8.0%	5.1%	4.6%
	Friends	-	6.0%	4.0%	-
	Parents	-	2.0%	-	2.3%
	Don't Use	88.2%	71.0%	71.7%	67.8%
	Missing	1.8%	3.0%	2.0%	3.4%
Participate in sports	Yes	29.1%	49.0%	29.3%	26.4%
	No	68.2%	49.0%	69.7%	71.3%
	Missing	2.7%	2.0%	1.0%	2.2%
Participate in rodeos or FFA	Yes	13.6%	10.0%	12.1%	18.4%
	No	81.8%	87.0%	85.9%	80.5%
	Missing	4.5%	3.0%	2.0%	1.1%
Against the law for you to buy smokeless tobacco	Yes	28.2%	44.0%	19.2%	2.3%
	No	60.9%	52.0%	77.8%	92.0%
	Missing	10.9%	4.0%	3.0%	5.7%

grade students (43.7%) responded that it is very harmful, while 44.8 percent responded that it is somewhat harmful.

Many students at all four grade levels appeared to be unsure of the answers to the questions concerning relaxation and muscle reflexes.

Many students were aware of the health risks associated with smokeless tobacco use. They knew that smokeless tobacco use can harm teeth, mouth, and gums, and that it can cause cancer.

When asked the reason people their age dipped or chewed tobacco, the fifth grade students (47.3%) responded that it was to look grown up, only 4.5 percent responded that it was a habit. The twelfth grade responses showed that 6.9 percent responded that it was to look grown up, while 40.2 percent responded that it was a habit.

At the fifth grade level (60.9%) and the eighth grade level (52.0%), students did not know that it was against the law to buy smokeless tobacco.

Users' Responses

Responses by smokeless tobacco users are presented in Table IV. Answers to three pertinent questions are found in the users' responses to the questionnaire. Question #4 asked: "At what age did students begin using smokeless tobacco?"

Of the 34 students who use smokeless tobacco, 11 students (32.3%) started using snuff or chewing tobacco

TABLE IV

SMOKELESS TOBACCO USERS RESPONSES
TO SURVEY BY GRADE LEVEL

VARIABLE	RESPONSES	5TH	8TH	10TH	12TH
Sex	Males	2	10	9	11
	Female	-	1	1	-
Father/Male guardian dips or chews tobacco	Yes	-	6	5	1
	No	2	5	5	10
Mother/Female guardian dips or chews tobacco	Yes	-	2	1	-
	No	2	9	9	11
Brother who dips or chews tobacco	Yes	-	8	5	4
	No	2	3	5	7
Sister who dips or chews tobacco	Yes	-	2	1	-
	No	2	9	9	11
Plan to dip or chew tobacco in the future	Yes	1	8	6	2
	No	-	-	1	4
	I don't know	1	3	3	5
How many friends dip or chew tobacco?	None	-	-	1	-
	Few	1	5	2	3
	Several	-	-	2	5
	Most	1	5	4	3
	All	-	1	1	-
Number of cans or pouches dipped or chewed per week	Less than 1	1	3	1	2
	1	-	2	4	3
	2-3	-	4	3	1
	4 or more	1	2	2	4
	I don't know	-	-	-	1
Age of initial use of smokeless tobacco	Less than 10	2	3	4	2
	10-12 years	-	7	3	4
	13-15 years	-	1	3	3
	16 or older	-	-	-	2
Allowed in school	Yes	-	1	-	-
	No	2	10	10	11
How harmful is dipping or chewing to a person's health?	Very harmful	1	1	1	2
	Somewhat harmful	1	6	5	6
	Slightly harmful	-	2	4	3
	Not harmful	-	2	-	-
Compared to smoking, dipping or chewing tobacco is _____ to a person's health	More harmful	1	1	-	1
	Equally harmful	1	2	3	5
	Less harmful	-	7	7	5
	Neither	-	1	-	-

TABLE IV (Continued)

VARIABLE	RESPONSES	5TH	8TH	10TH	12TH
Dipping or chewing helps relax a person	Yes	1	6	7	8
	No	-	-	-	1
	I don't know	1	5	2	2
Dipping or chewing can slow down muscle reflexes	Yes	1	3	1	2
	No	-	5	7	5
	I don't know	1	3	2	4
Dipping or chewing can harm teeth, gums, or mouth	Yes	2	9	9	11
	No	-	2	1	-
Dipping or chewing can cause cancer	Yes	2	9	8	9
	No	-	2	2	1
	I don't know	-	-	-	1
Reason people your age dip or chew tobacco	Grown up	1	-	-	-
	Friends	-	-	-	1
	Like it	1	9	10	3
	It's a habit	-	3	-	8
Ads influence many young people to start dipping or chewing tobacco	Yes	-	7	2	2
	No	2	4	5	7
	I don't know	-	-	3	2
Ads influenced me to start dipping or chewing tobacco	Yes	-	3	-	1
	No	2	7	10	10
Where do you usually get your tobacco?	The 7-Eleven	-	7	8	8
	Supermarket	1	4	3	5
	Friends	-	-	-	2
	Parents	-	1	-	2
	Missing	1	-	-	-
Participate in sports	Yes	1	9	4	4
	No	-	2	6	7
	Missing	1	-	-	-
Participate in rodeos or FFA	Yes	1	4	5	3
	No	-	7	5	8
	Missing	1	-	-	-
Against the law for you to smokeless tobacco	Yes	1	2	1	-
	No	-	9	9	9
	Missing	1	-	-	2

before the age of 10, 14 students (14.1%) started between the ages of 10-12, seven students (20.5%) started between 13-15, and two students (5.8%) started at 16 or older. Students may not purchase smokeless tobacco until they reach 16 years old, yet in this study, 93.9 percent of the students began using smokeless tobacco before the age of 16.

Question #5 asked: "Do smokeless tobacco users plan to use smokeless tobacco in the future?"

Half the students (50.0%) plan to use smokeless tobacco in the future, five students (14.7%) do not plan to use the products, and 12 students (35.2%) do not know if they will use smokeless tobacco.

Question #6 asked: "What are the reasons or issues surrounding the use of smokeless tobacco by adolescents?"

This question can best be answered by presenting a smokeless tobacco users' profile.

Twelve students (35.2%), who use smokeless tobacco, had fathers who chewed or dipped tobacco. Three students (8.8%) had mothers, eighteen students (52.9%) had brothers, and three students (8.8%) had sisters who used smokeless tobacco. Twenty-five students (73.4%) started using tobacco at 12 years of age or younger. Seventeen students (50.0%) plan to use smokeless tobacco in the future. Twenty-three students (67.6%) stated that smokeless tobacco is very or somewhat harmful to a person's health. Nineteen students (55.8%) believed that smokeless tobacco is less

harmful than cigarette smoking. Students were aware of health risks associated with smokeless tobacco use. Thirty-one students (91.1%) knew that smokeless tobacco can harm teeth, gums, and mouth, and 28 students (82.3%) knew that smokeless tobacco can cause cancer. Advertisements influenced four students (11.7%) to use smokeless tobacco.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to survey selected grade levels in Tomball Independent School District, to identify smokeless tobacco use by adolescents and to determine the health knowledge of students in the area of smokeless tobacco.

The subpurposes of this study were to identify the age of smokeless tobacco users at the time of their initial experience with snuff or chewing tobacco, to identify the intent to continue using smokeless tobacco, and to look more closely at the reasons why adolescents use smokeless tobacco.

The researcher conducted a descriptive study with the use of the Smokeless Tobacco Use Survey. The results were presented by total sample, grade levels, and smokeless tobacco users by grade level.

Conclusions

Use By Adolescents

The study revealed that 32 males and two females used

smokeless tobacco. By males, this resulted in a mean of 16.8 percent with a range of 3.5 percent at the fifth grade level to 30.5 percent at the twelfth grade level. Other studies have had similar results (Bonaguro, Pugh, Bonaguro, 1986; Marty, McDermott, Williams, 1986, Guggenheimer, et. al., 1986; Lichtenstein, et. al. 1985).

Bonaguro, Pugh, and Bonaguro (1986) stated that in their study that "approximately 32 percent of the males were users of chewing tobacco and 37 percent were users of snuff." Marty, McDermott, and Williams (1986) reported that 36.7 percent of the males used smokeless tobacco. Guggenheimer and others (1986) reported that 98 students used smokeless tobacco of which 83 were males. Lichtenstein and others (1985) also reported that smokeless tobacco use is "strongly sex-linked." Chewing tobacco used by males ranged from 8.8 percent to 23.1 percent in grade levels seventh, ninth, and tenth. A kindergarten study, conducted by Young and Williams (1985), found that expected use was predominately indicated by males and that 24 male students (30.9%) had tried snuff.

Knowledge of Health Risks

Many studies have stated that adolescent male use of smokeless tobacco is increasing, but only a few studies found by the researcher inquired about the health risks associated with its use (Lichtenstein, et. al., 1986).

Lichtenstein and others (1986) reported that "85

percent of students believe that there is a health risk from chewing tobacco." In a study consisting of pre-service teachers (Marty, McDermott, 1984), it was reported that neither users or nonusers "could consistantly identify the health risks associated with smokeless tobacco."

In this study, 88.5 percent of the total sample felt that smokeless tobacco use was very or somewhat harmful to one's health. The majority of students (58.6%) believed that the use of smokeless tobacco is equally as harmful as cigarette smoking. Most students agreed that smokeless tobacco can harm teeth, gums, and mouth of the users (95.4%) and can cause cancer (81.1%).

Fifty-three percent of smokeless tobacco users perceived it to be somewhat harmful, followed by slightly harmful (26.4%), very harmful (14.7%), and not harmful (5.8%).

Again, the majority responded that they knew smokeless tobacco can harm users' teeth, mouth, and gums (91.1%) and that it can cause cancer (82.3%).

Initial Age

Two studies have identified the age of students at the time they began using smokeless tobacco (Marty, McDermott, Williams, 1986; Bonaguro, Pugh, Bonaguro, 1986).

In this study, eleven students (32.3%) started using smokeless tobacco before the age of ten, 14 students (41.1%) began between the ages of 10-12, and seven students

(20.5%) between the ages of 13-15. The results of this study are similar to findings by Marty, McDermott, and Williams (1986) in a high school study: "About 46.9 percent of users had been active for a period of two to five years. Just over 15 percent reported longer than five years."

In a study conducted by Bonaguro, Pugh, and Bonaguro (1986), they reported that "the mean age of initiation for chewing tobacco was 9.5 years (stddev 3.0) 10.0 years (stddev 2.9) for snuff."

Background

Peer pressure appears to play an important role in influencing adolescents to use smokeless tobacco (Bonaguro, Pugh, Bonaguro, 1986; Marty, McDermott, Williams, 1986; Guggenheimer, et. al., 1986). This study suggests that peers, parents, and siblings may be strong influences. Twelve smokeless tobacco users (35.2%) had fathers who chewed or dipped tobacco, while eighteen smokeless tobacco users (52.9%) had brothers who used the products.

Advertising was not a major influence in this study. Only four students (11.7%) stated that advertising influenced their initial use of smokeless tobacco products. Guggenheimer and others (1986) found that students first learned about smokeless tobacco by the media (4%), compared to peers (63%) and friends or relatives (24%).

The ban on smokeless tobacco advertising and the

requiring of warning labels were designed to avoid media influence and inform users and potential users of the health risks associated with its use. According to student users, advertisements was a minor influence. Yet, some people may feel that if one student starts using the products, because of advertising, it is one too many. Also, the students were aware of health risks associated with its use.

The students' knowledge of health risks associated with smokeless tobacco use may be a direct result of subject material presented in the Tomball Independent School System at the junior high level. Coach McFadden, at Beckendorf Junior High, stated that science classes include a health education unit.

The researcher, after reviewing related literature, realized the need for smokeless tobacco education in the health curriculum. Many high schools offer health education, at the sophomore level, opposite drivers' education, when the student is approximately 16 years old. This research showed that many students began using snuff or chewing tobacco before the age of 16. Therefore, a smokeless tobacco education unit should be presented at the junior high level or in fifth or sixth grade.

If health education courses are offered, smokeless tobacco education should be included. It should stress issues such as addiction and physiological effects. Students should also be informed that purchasing smokeless tobacco before the age of 16 is prohibited in Texas.

Recommendations

This study was limited by the researcher to only one school district in the North Houston area. Houston and surrounding areas consists of many ethnic groups and diversified economic classes. A comparative study would reflect how different groups perceive smokeless tobacco.

Many studies have shown that smokeless tobacco use was influenced by peer pressure and that smokeless tobacco use among adolescents is increasing. As of February 27, 1987, smokeless tobacco packaging must carry one of three warning labels. Further studies may identify any changes in use due to this legislation; possibly similar to the effect of warning labels on cigarette packages.

Longitudinal studies may indicate changes in smokeless tobacco use over time. If health education programs are introduced, a comparative study would be beneficial to identify changes in attitude, knowledge, and expected use of smokeless tobacco, before and after the program.

In future studies, if the Smokeless Tobacco Use Survey is chosen for the research instrument, it should be expanded to include questions related to nicotine, addiction, blood pressure, heart rate, and experimental use of smokeless tobacco.

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APPENDIXES

APPENDIX A

SMOKELESS TOBACCO USE SURVEY

SMOKELESS TOBACCO USE SURVEY

Directions: Answer each question by marking the appropriate space on the answer sheet. Use soft pencil.

1. Sex: A. Male B. Female

2. Grade: A. 5TH B. 8TH C. 10TH D. 12TH

3. I dip or chew tobacco?
   A. Yes B. No

4. My father/male guardian dips or chews tobacco?
   A. Yes B. No

5. My mother/female guardian dips or chews tobacco?
   A. Yes B. No

6. I have a brother who dips or chews tobacco?
   A. Yes B. No

7. I have a sister who dips or chews tobacco?
   A. Yes B. No

8. Do you plan to dip or chew tobacco in the future?
   A. Yes B. No C. I don't know

9. How many of your friends dip or chew tobacco?
   A. None B. A Few C. Several D. Most E. All

10. How many pouches or cans of tobacco do you dip or chew a week?
    A. Less than 1 B. 1 C. 2-3 D. 4 or more E. Don't dip or chew

11. How old were you when you started dipping and chewing tobacco?
    A. Less than 10 B.10-12 C. 13-15 D. 16 or older E. Don't dip or chew

12. Is dipping and chewing allowed in your school?
    A. Yes B. No

13. How harmful is dipping/chewing to a person's health?
    A. Very harmful B. Somewhat harmful C. Slightly harmful D. Not harmful

14. Compared to smoking, dipping or chewing tobacco is _____ to a person's health?
    A. More harmful B. Equally harmful C. Less harmful D. Neither is harmful

15. Dipping or chewing helps relax a person?
    A. Yes B. No C. Don't know

16. Dipping or chewing can slow down muscle reflexes?
    A. Yes B. No C. Don't know

17. Dipping or chewing can harm your teeth, gums or mouth?
    A. Yes B. No C. Don't know

18. Dipping or chewing can cause cancer?
    A. Yes B. No C. Don't know

19. Why do people your age dip or chew tobacco?
    A. To look grown-up B. Because of friends C. They like it D. It is a habit

20. Advertisements influence many young people to start dipping/chewing?
A. Yes B. No C. Don't know

21. Advertisements influenced me to start dipping, chewing, or smoking?
A. Yes B. No C. Don't dip, chew, or smoke

22. Where do you usually get your tobacco or cigarettes?
A. The 7 Eleven B. Super Market C. Friends D. Parents
E. Don't use any tobacco

23. Do you play football, baseball or basketball on a school or city league team?
A. Yes B. No

24. Do you participate in Rodeos or the Future Farmers of America (FFA)?
A. Yes B. No

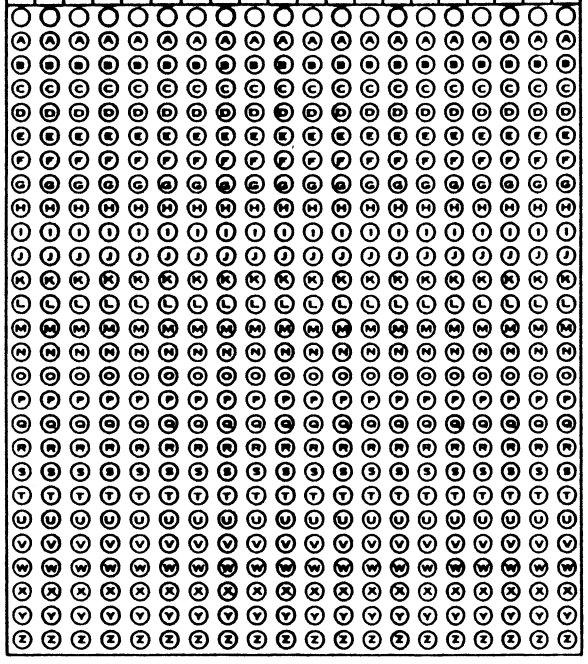
25. Is it against the law for you to buy chewing/dipping tobacco?
A. Yes B. No

SIDE 1

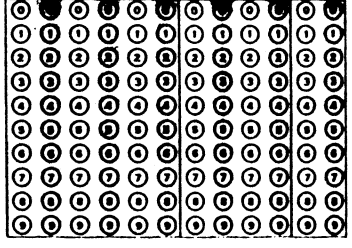
GENERAL PURPOSE - NCS® - ANSWER SHEET

FOR USE WITH ALL NCS SENTRY OPTICAL MARK READING SYSTEMS
SEE IMPORTANT MARKING INSTRUCTIONS ON SIDE 2

LAST NAME (Space) FIRST NAME (Space) M.I.



STUDENT ID	COURSE NUMBER	SEC.



1 A B C D E	11 A B C D E	21 A B C D E	31 A B C D E	41 A B C D E
2 A B C D E	12 A B C D E	22 A B C D E	32 A B C D E	42 A B C D E
3 A B C D E	13 A B C D E	23 A B C D E	33 A B C D E	43 A B C D E
4 A B C D E	14 A B C D E	24 A B C D E	34 A B C D E	44 A B C D E
5 A B C D E	15 A B C D E	25 A B C D E	35 A B C D E	45 A B C D E
6 A B C D E	16 A B C D E	26 A B C D E	36 A B C D E	46 A B C D E
7 A B C D E	17 A B C D E	27 A B C D E	37 A B C D E	47 A B C D E
8 A B C D E	18 A B C D E	28 A B C D E	38 A B C D E	48 A B C D E
9 A B C D E	19 A B C D E	29 A B C D E	39 A B C D E	49 A B C D E
10 A B C D E	20 A B C D E	30 A B C D E	40 A B C D E	50 A B C D E

51 A B C D E	61 A B C D E	71 A B C D E	81 A B C D E	91 A B C D E
52 A B C D E	62 A B C D E	72 A B C D E	82 A B C D E	92 A B C D E
53 A B C D E	63 A B C D E	73 A B C D E	83 A B C D E	93 A B C D E
54 A B C D E	64 A B C D E	74 A B C D E	84 A B C D E	94 A B C D E
55 A B C D E	65 A B C D E	75 A B C D E	85 A B C D E	95 A B C D E
56 A B C D E	66 A B C D E	76 A B C D E	86 A B C D E	96 A B C D E
57 A B C D E	67 A B C D E	77 A B C D E	87 A B C D E	97 A B C D E
58 A B C D E	68 A B C D E	78 A B C D E	88 A B C D E	98 A B C D E
59 A B C D E	69 A B C D E	79 A B C D E	89 A B C D E	99 A B C D E
60 A B C D E	70 A B C D E	80 A B C D E	90 A B C D E	100 A B C D E

APPENDIX B

REQUEST TO CONDUCT RESEARCH FORM

EXHIBIT A

Spring Independent School District

16717 Ella Boulevard • Houston, Texas 77090 • (713) 444-1050

APPLICATION TO CONDUCT RESEARCH

Name:

Address:

Phone Number:

Affiliation:

Abstract (purpose, rationale, sample design and procedures, data collection procedures, analysis procedures, use of results):

(use reverse side of sheet if necessary)

Instrumentation (attach):

If you are conducting research as part of a graduate program please indicate:

Degree on which working (circle one): MASTERS DOCTORATE

Approval of Professor or Committee (circle one) YES NO

Name, address and phone number of supervising professor or advisor:

_____

_____

_____

Signature of Applicant _____

MANAGEMENT GUIDELINE

SPRING INDEPENDENT SCHOOL DISTRICT

Code MG _____
Effective Date _____
Page 1 of 4

Subject: RESEARCH IN THE SCHOOLS: CRITERIA AND PROCESSES

This guideline addresses the issues of criteria to be applied in approving research in the schools and the procedures by which research will be approved.

I. Criteria to be Applied to Approving Research in the Schools

A. Approval will be given to the following types of research projects in order of priority.

1. Studies of Spring ISD programs, practices or students likely to be of immediate benefit to the District.
2. Studies of general programs, practices or students pertinent to Spring ISD.
3. Studies of theoretical issues or questions.

B. Approval will be given to research conducted by the following agents in order of priority.

1. Employees of Spring ISD.
2. Others.

C. The following additional criteria will be considered in the approval process.

1. Priority of the type of study.
2. Importance of the study to Spring ISD goals and objectives.
3. Degree to which the study interrupts the regular educational process.
4. Degree to which the proposal conforms to the canons of valid educational research including:
   a. Validity and reliability of data collection procedures (including instrumentation) and analysis.
   b. Degree to which human subjects are protected.
   c. Degree to which rights of privacy are protected.
5. Approval of professor or committee (for graduate students only).
6. Agreement to provide the Director of Planning and Evaluation a copy of the completed study.

II. Approval Procedure

A. All persons conducting research in the schools, other than those conducting school district research efforts, must complete an Application to Conduct Research (Exhibit A). School district research will be conducted in conformance with the Standard Process for Program Evaluation.

B. Research proposed in one school by a member(s) of the faculty may be approved by the principal who will send a copy of the approved application to the Director of Planning and Evaluation. The principal may consult with the Director of Planning and Evaluation or choose to refer the application to the Research Committee.

C. Survey forms sent to individuals to complete, as part of a study, may be completed at their discretion.

D. Survey forms sent to administrators to distribute for completion by others (students or employees) must be approved by the Research Committee.

E. Research proposed in more than one school or in one school by a person(s) other than a member of the school faculty must be submitted to the Director of Planning and Evaluation and approved by the Spring ISD Research Committee.

1. Committee composition - appointed annually by the Assistant Superintendent for Curriculum and Instructional Services.

   a. Director of Planning and Evaluation
   b. Program director
   c. Principal
   d. Two teachers

2. Committee process.

   a. The committee will meet periodically (no more than monthly) to consider Applications to Conduct Research.
   b. Applicants may be asked to meet with the committee or with the Director of Planning and Evaluation.
   c. Applying the criteria outlined in Section I, the committee may decide to:

      (1) Approve the application.
      (2) Approve the application with revisions.
      (3) Not approve the application.

   d. The applicant will be informed of the committee's decision, along with revisions or reasons, by the Director of Planning and Evaluation.

MANAGEMENT GUIDELINE

SPRING INDEPENDENT SCHOOL DISTRICT

Code MG _____
Effective Date _____
Page 3 of 4

Subject: RESEARCH IN THE SCHOOLS: CRITERIA AND PROCESSES

III. Results of the Research: One copy of the completed study and an abstract must be delivered to the Director of Planning and Evaluation.

APPENDIX C

DR. SMITH'S RESPONSE LETTER

Spring Independent School District
16717 Ella Boulevard • Houston, Texas 77090 • (713) 586-1100

November 4, 1986

Ms. Kathleen Oberle
25303 Sugar Valley
Spring, TX 77373

Dear Ms. Oberle:

Your application to conduct research in the Spring Independent School District has been received and reviewed. After careful consideration, I must deny your application.

Our primary concern with your study involves time. Due to the personal nature of the survey questions, we feel parent permission would be needed prior to student participation. We view the time for administration of the survey and the student and professional time needed to collect parent permission to be excessive.

Thank you for your interest in working with Spring I.S.D. I regret that we are unable to assist you at this time.

Sincerely,

Robert G. Smith
Assistant Superintendent for
Curriculum and Instructional Services

RGS/at

cc: Elaine Say

DOC LOC
GENII
Oberle Letter
11/4/86

APPENDIX D

LETTER TO SCHOOL DISTRICTS

RECEIVED NOV 17 1986

November 14, 1986

Tomball Independent School District,

My name is Kathy Oberle and I am currently a graduate student in Health Education, working on my masters thesis. I am requesting permission to administer a questionaire in your school district, involving fifth, eighth, tenth and twelfth grade students. I would like to conduct the study with 100 students from each level.

Enclosed is a questionaire and my approved proposal. I would appreciate you taking time to read over this material. I have highlighted items that may be of interest to you.

I would like to inform you about The Comprehensive Smokeless Tobacco and Health Education Act of 1985, which calls for:
1) smokeless tobacco education programs,
2) warning labels to be placed on chewing tobacco and snuff.
3) the Federal Trade Commission to place restriction on smokeless tobacco products.
As a health educator, I feel it is important to obtain information concerning adolescent smokeless tobacco use and health knowledge.

If your school district chooses to participate in this study, a copy of the final paper will be sent to you. As a follow-up to the questionaire, I will explain the health risks associated with smokeless tobacco to the students, if you feel it will be beneficial to them.

Thank you very much for your time.

Sincerely,
Mrs. Kathy Oberle
Mrs. Kathy Oberle

Please fill out the bottom and return it in the enclosed envelope.

Please mark the appropriate box and supply the necessary information.

☑ Yes, students from our school district may take part in this study. - in grades 8, 10, 12. Mr. E. Oldham will respond for grade 5. Please send info for grades 8-12 to me and I will forward to principals. Thank you C B.

☐ No, students from our school district may not take part in this study. Reason:

cc: Mr. E. Oldham

APPENDIX E

DR. SLATER'S LETTER

KLEIN INDEPENDENT SCHOOL DISTRICT
7200 Spring-Cypress Road • Klein, Texas 77379-3299
713/376-4180

DR. RICHARD D. SLATER
Assistant Superintendent
Instruction

December 5, 1986

Ms. Kathy Oberle
25303 Sugar Valley
Spring, Texas 77373

Dear Ms. Oberle:

Your letter of November 14, addressed to the Klein Independent School District requesting permission to conduct a study of adolescent use and health knowledge of smokeless tobacco at the 5th, 8th, 10th, and 12th grade levels as partial fulfillment of the requirement for a Master's degree at Oklahoma State University was received in my office on November 17, 1986.

The Klein Independent School District's proximity to so many colleges and universities causes us to receive numerous requests to conduct research in our district utilizing our students and/or faculties.

As a result of these requests over the years, we have developed an administrative directive dealing with research proposals. A copy of this directive, I - 48, RESEARCH PROPOSALS, is attached for your information.

Please note that Item 2., a. through f., includes some of the criterion for approving or disapproving requests to conduct research. With respect to your proposal, we believe that it does not fall under criterion 2. b., c., d., and f.

We sincerely appreciate your offering the opportunity for us to participate in this project, and wish you continuing success as you pursue your advanced degree.

Sincerely,

Richard D. Slater

Richard D. Slater

RDS:mb

cc: Dr. Robert LeBlanc

RESEARCH PROPOSALS

In the analysis of research proposals and any similar requests received by the district, the following guidelines will be utilized in determining their acceptability:

1. All curriculum-related research proposals must be in writing and directed to the assistant superintendent for instruction. All non-instructional proposals should be sent to the superintendent of schools.

2. Criteria for participation will include but not be limited to the following items:

   a. Is the proposal educationally/managerially sound?
   b. Can we reasonably predict the research results in advance?
   c. Will the study provide us information that will offset the time and/or potential disruption that might occur?
   d. Will the study provide us with information that we would want to gather by our own staff members?
   e. Do the documents/questionnaires meet generally accepted standards for quality research?
   f. Is the researcher employed by the Klein Independent School District?

3. Written authorization by the principal is required if students and/or teachers are to be utilized.

4. If students are utilized, written permission of the parents must be obtained.

5. No infringement on teachers' 45-minute planning time will be allowed.

6. The Klein ISD cannot be identified by name in the final report.

7. A copy of the approval granted by the KISD must be transmitted to the superintendent.

8. The Klein district must receive a copy of the final research document.

Effective: October 20, 1972
Revised: February 26, 1982

Cross reference(s): B — 48
D — 50
I — 15

APPENDIX F

LETTER TO NEW CANEY

New Caney Independent School District,

I am writing to you in regard to a letter I sent to you in November, concerning conducting a smokeless tobacco survey in your school district.

In October, my sons' school district denied me permission to conduct the study in the Spring Independent School District. I then applied to five other school districts, hoping that at least one would accept the study. Both Tomball and New Caney responded that they were interested in taking part in the study.

At this time I am working with Tomball Independent School District. Due to the time limit I have to complete my thesis by April, I am limiting the study to only one school district.

I thank you for your interest in the study. I am pleased to see that school administrators are aware and interested in this health issue.

Sincerely,

Kathy McVoy Oberle

cc: Mr. Ford

APPENDIX G

LETTER TO TEACHERS

Dear Teachers,

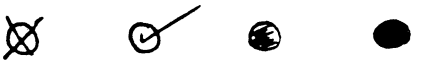
Thank you for your help with the administering of this questionnaire. Please have your students:

1) use only a #2 pencil

2) not place their name on the questionnaire

3) answer the questionnaire to the best of their ability

4) mark their answers by filling the appropriate circle for questions 1-25 on side one.



no no no yes

Thank you again,

Mrs. Kathy Oberle

Mrs. Kathy Oberle

Health Educator

M E M O R A N D U M

DATE: December 12, 1986

TO: S. Blount
D. McKeown
J. Bridges

FROM: Mary Hansen MH

TOPIC: Smokeless Tobacco Use Survey

Please administer this survey to your students. Explain this is for a research paper for a Health Educator, not from our district, and the information is for research on smokeless tobacco use and cancer. Ask students to fill it out honestly. NO NAMES are to be put on the form.

Would appreciate it if it could be done before Christmas vacation.

THANK YOU

S. Blount - Soph. - 25 girls & 25 boys
D. McKeown - Soph. - 25 girls & 25 boys
J. Bridges - Srs. - 50 girls & 50 boys

VITA

Kathleen McVoy-Oberle

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF ADOLESCENT USE AND HEALTH KNOWLEDGE OF SMOKELESS TOBACCO

Major Field: Health, Physical Education, and Recreation

Biographical:

Personal Data: Born in Garfield Heights, Ohio, November 27, 1954, the daughter of James P. and Shirley Jean Koerner McVoy. Married to George Douglas Oberle on July 30, 1977. Have two children: Bryan Douglas and Jason Russell.

Education: Graduated from Glenbard West High School, Glen Ellyn, Illinois, in June, 1972; attended University of Illinois, Fall, 1972; received Bachelor of Science Degree in Physical Education from Eastern Illinois University in May, 1976, and received Health Certification in December, 1976; attended Oklahoma State University, September, 1978 to May, 1979; attended Sam Houston State University for additional graduate studies and requirements for Texas Teacher Certification, from January, 1985 to August, 1987; completed requirements for Master of Science Degree in Health, Physical Education, and Recreation from Oklahoma State University in May, 1987.

Professional Experience: Substitute teacher, Stillwater Schools, Stillwater, Oklahoma, 1977 to 1978; Graduate Teaching Assistant, Department of Health, Physical Education, and Leisure Science, Oklahoma State University, Stillwater, Oklahoma, August, 1978 to May, 1979; Gymnastics Coach, Colorado Springs School District, Colorado Springs, Colorado, Fall, 1980 to Spring, 1981. Substitute teacher, Spring Independent School

District, Fall, 1985 to Spring, 1986; Volunteer Physical Education Instructor, Winship Elementary, Fall, 1984 to Spring 1986.

Honorary Achievements and Professional Organizations: (Undergraduate) Dean's List - Scholastic Achievement, University of Illinois; Phi Alpha Eta - Scholastic Honorary, Eastern Illinois University; Phi Epsilon Kappa - Honorary Physical Education Fraternity, Eastern Illinois University; American Alliance for Health Physical Education, and Recreation; Illinois Association of Health, Physical Education and Recreation. (Graduate) Eta Sigma Gamma - Honorary Health Fraternity, Sam Houston State University; American Alliance for Health Physical Education, Recreation, and Dance; Phi Kappa Phi - Honorary Scholastic Society, Oklahoma State University.