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HEALTH RISK BEHAVIORS AMONG ELEVENTH GRADE

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HEALTH RISK BEHAVIORS AMONG ELEVENTH GRADE STUDENTS ATTENDING A RURAL PUBLIC HIGH SCHOOL

By

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ABSTRACT

HEALTH RISK BEHAVIORS AMONG ELEVENTH GRADE STUDENTS ATTENDING A RURAL PUBLIC HIGH SCHOOL

By

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Adolescents face increasingly serious health threats that are primarily behavioral in origin. Sexual behaviors, tobacco, alcohol and drug use, suicide, and accidental injury place adolescents at risk for significant morbidity and mortality. This descriptive study examined health risk behaviors of rural adolescents and the relationship of gender to selected health risk behaviors using descriptive statistics and chi-square analysis.

The sample consisted of 51 adolescents enrolled in eleventh grade at a rural public high school in northern Michigan. The Youth Risk Behavior Survey was utilized to obtain data. The findings suggested that rural adolescents are engaging in health risk behaviors that may place them at risk for significant morbidity and mortality.

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Introduction

The health of adolescents is a topic of concern among health care professionals. The extent of the problem and the reasons for concern are well documented. Adolescents face increasingly serious health threats that are primarily behavioral in origin. Sexual behavior, tobacco, alcohol and drug use, suicide, and accidental injury place adolescents at risk for significant morbidity and mortality.

Lavin, Shapiro and Weill (1992) write that by age 15, approximately 27% of girls and 33% of boys engage in sexual intercourse. By age 17 the proportions rise to 50% of girls and 66% of boys. While the majority of the polled sexually active students indicate one partner, 19% report 4 or more lifetime partners, and 35% report 2 or more lifetime sex partners.

Data on adolescent childbearing in 1990 from Child Trends, Incorporated (1993) show that for the fourth consecutive year there has been an increase in both the teen pregnancy rate and the actual number of births. In 1990, 6% of females aged 15 to 19 had a birth and 68% of these births were outside of marriage. Teens accounted for 533,483 of the total 4,158,212 births in 1990 or 13% of all births. For first births, which are particularly important because they start a new family, teens accounted for 401,900 of the 1,689,118 births or 24% of all first births.

In addition to the problem of teenage pregnancy, early sexual behavior contributes to the problem of sexually transmitted disease including human

immunodeficiency virus (HIV) infection. Koble (1992) estimated that an average 3 million United States teenagers are infected with a sexually transmitted disease each year. Depending on the adolescent population studied, 8% to 25% of sexually active adolescent girls have endocervical infection with Chlamydia trachomatis, and 0.4% to 12% have endocervical infection with Neisseria gonorrhoea. Human papilloma virus (HPV) infection of the cervix is found in 15% to 38% of sexually active adolescent girls and has been associated with anogenital neoplasm.

Given the prevalence of sexually transmitted disease in adolescent females, the spread of HIV is of particular concern. Although less than 1% (3,058) of teens in the United States are infected with the HIV virus, the number has risen by 77% in the last 2 years (Hein, 1993). In this age group roughly half of the transmission of the virus occurs through heterosexual intercourse. It is estimated that 50% of all HIV infections have occurred in 15 to 24 year olds since the beginning of the epidemic (Hein, 1993). Acquired Immunodeficiency Disease Syndrome (AIDS) resulting from HIV infection is the sixth leading cause of death for 15 to 24 year olds (Morris, Warren, & Aral, 1993).

Gans, Blyth, Elster, & Gaveras (1990) report that more than 8.5 million adolescents (42%) between the ages of 12 and 17 have ever smoked cigarettes. Over 3 million (15%) 12 to 17 year olds have used smokeless tobacco, and 4% are current users. About 10% of 8th and 10th grade boys and 1% of 8th and 10th grade girls reported that they currently chew tobacco. Cigarette smoking is linked to cancer, emphysema, and heart disease and is the single most avoidable cause of death in the United States. Smoking accounts for nearly one third of all cancer deaths among

adults and can lead to health problems such as bronchitis, diminished athletic performance, stained teeth, and bad breath (Gans et al., 1990).

The prevalence of alcohol use remains high, and alcohol use begins at younger ages. According to Lavin et al. (1992) more than 77% of eighth grade students and 88% of ninth grade students report having consumed alcohol. Twenty six percent of eighth grade students and 38% of 10th grade students reported consuming more than 5 drinks on one occasion in the past 2 weeks. Among 15 to 17 year olds involved in fatal motor vehicles crashes in 1989, 19% had been using alcohol at the time of or shortly before the crash (Blanken, 1993).

According to Gans et al. (1990), marijuana is the most widely used illicit drug among adolescents. More than 3.5 million (17%) 12 to 17 year olds have tried marijuana and 6% are current users. Results from the National Adolescent Student Health Survey (1989) reveal that more than one out of every 20 students (6%) reported having used cocaine in their lifetime, and 3% reported cocaine use during the past month.

Data from the Centers for Disease Control published in the Morbidity and Mortality Weekly Report (1992) cite injuries as the leading cause of death among persons aged 15 to 19 years in the United States. Of all deaths in this age group, 42% were motor vehicle related, 13% were due to homicide, 13% to suicide, and 11% to other types of injuries. As recently as 1991, approximately half of all fatal crashes were alcohol related and 77% of persons killed in motor vehicle crashes were not wearing safety belts.

Suicide and suicidal behaviors have become an all too frequent occurrence among American youth. Suicide is the second leading cause of death among white

adolescents and occurs five times more frequently among boys than girls (Lamb & Pusker, 1991). Suicide among persons between the ages of 15 to 24 years has increased nearly 300% over the past three decades (Reynolds, 1991). Attempts among females greatly outnumber those by males (Grossman & Rivara, 1992).

Although many health threats potentially affect all adolescents, adolescent males are at greater risk than females for morbidity and mortality associated with health risk behaviors. Gans et al. (1990) report that by age 15, males are more than twice as likely as females to have had sexual intercourse. In general, male students use substances of all kinds more than female students (O'Malley, Johnston, & Bachman, 1995). Gans et al. (1990) note that adolescent females are 5 times more likely than males to attempt suicide, but adolescent males are 4 times more likely to actually commit suicide. Among 15 to 19 year olds, males are 4 times more likely than females to die of suicide, 3 times more likely to die of homicide, and 2.5 times more likely to die of motor vehicle injuries (Gans et al., 1990).

Statement of the Problem

The purpose of this study was to determine the frequency of health risk behaviors among 11th grade adolescents attending a public high school in rural northern Michigan and compare frequencies with available national averages. The author investigated the relationship between selected health risk behaviors and gender. The research questions to be answered were:

(1) What is the frequency of sexual behaviors that may put the adolescent at risk for sexually transmitted disease, human immunodeficiency virus infection, and pregnancy?

(2) What is the frequency of tobacco, alcohol, and other drug use?

(3) What is the frequency of suicidal ideation and attempted suicide?

(4) What is the frequency of behaviors that may result in unintentional injuries?

(5) What is the relationship between gender and health risk behaviors related to sexual intercourse, tobacco, alcohol, and illicit drug use, suicide ideation and suicide attempts, and behaviors that may result in unintentional injuries?

Conceptual Definition of the Variables

Health Risk Behaviors

During adolescence many health related behaviors are developed and initiated (Grunbaum & Basen-Engquist, 1993). Some behaviors enhance health while others compromise health status. Primary causes of morbidity and mortality during adolescence are behavioral in origin. Violence and injury produce nearly 75% of all adolescent deaths each year. Substance use and abuse among adolescents, including tobacco, alcohol, and other drugs, represents a serious concern because these substances can affect health both during adolescence and later in life.

Millstein, Irwin, Adler, Cohn, Kegeles, & Dolcini (1992) also examined health risk behaviors among young adolescents. They examined behaviors associated with adolescent morbidity and mortality including sexual behavior, substance use, and injury related behaviors. Preventable behaviors and social environmental conditions contribute substantially to morbidity among adolescents. These include injury and disability associated with the use of motor and recreational vehicles, consequences of sexual activity including unplanned pregnancy and sexually transmitted disease and substance abuse. Risk behavior was described as behavior that placed adolescents at risk for injury, disability, illness, or death.

Health risk behavior for the purpose of this study was defined as behavior that places adolescents at risk for injury, disability, illness, or death and includes sexual behaviors, tobacco, alcohol and illicit drug use, suicidal ideation and attempted suicide, and behaviors related to unintentional injury.

Adolescence

Gans et al. (1990) divide adolescence into different age groups reflecting different biopsychosocial stages of development. Early or young adolescent refers to people between the ages of 10 and 14 years of age. Older adolescent refers to 15 to 19 year olds, and young adult refers to those who are approximately 18 to 24 years of age. Hein (1993) defines adolescents as people 13 through 21 years old. The Centers for Disease Control and Prevention (CDC) defines them as 13 to 19 years of age.

Jarvis (1992) defines adolescence as a transition stage between childhood and adulthood which begins at puberty and extends through the teenage years. Adolescents are those youth between the ages of 12 or 13 to 19. Adolescence, according to Riggin (1993), is the period of life in which physical and emotional changes occur at a more accelerated rate than in any other developmental period. Adolescence is viewed as the developmental period between 12 to 21 years; physical changes that indicate the beginning of adolescence may begin as early as 7 years of age and may continue into the twenties. Adolescence, for the purpose of this study, was described as the period of life from puberty to maturity and included those youth enrolled in the 11th grade at the time of the study.

Gender

Hardy and Conway (1988) define gender as a central physical attribute of all persons, an attribute associated with species' procreation functions. The nature of gender is dichotomous. One is either male or female; one cannot be gender free. For the purpose of this proposal gender was described as the attribute associated with being male or female.

Theoretical Model

The theoretical model used in this study was the Health Belief Model. The Health Belief Model was developed in the early 1950's by Rosenstock, Kegeles, Leventhal, and Hochbaum to provide a framework for exploring personal health behaviors (Rosenstock, 1974). Rosenstock, Kegeles, Leventhal, and Hochbaum were social psychologists who were influenced by the orientation of Kurt Lewin (Rosenstock, 1974). Two assumptions underlying the health belief model have their roots in Lewin's field theory. The first assumption is that people behave on the basis of their perceptions of situations in which they find themselves. The second assumption is that an individual exists in a life space composed of regions, some of which are positively valued (positive valence), others of which are negatively valued (negative valence), and still others which are relatively neutral. Diseases would be regions of negative valence which could be expected to exert a force moving the person away from that region (Rosenstock, 1974).

The five major variables or concepts of the health belief model that are considered important in explaining and predicting health related behavior are perceived susceptibility, perceived seriousness or severity, perceived effectiveness or

benefits, perceived absence of barriers or impediments to taking action, and perceived cues to action (Rosenstock, 1974).

Perceived susceptibility is the individual's perception of his or her degree of risk for developing a specific illness. An individual falls somewhere on a continuum from high to low in estimating personal degree of risk for developing a specific illness or problem related to a behavior (Pender, 1987). Perceived seriousness is the person's perception of the severity of the problem as compared to other problems. Perceived seriousness or severity of a given health problem can be judged by the degree of emotional arousal created by the thought of the disease or by the difficulties that individuals believe a given health condition would create for them. Perceived seriousness may include the broad implications of the illness for work, family life, or social relationships and commitments (Pender, 1987). Perceived benefit is the individual's belief that the recommended course of action will be beneficial in preventing illness or complications. Perceived barriers include cost, fear of pain or discomfort, and reactions of significant others. Cues to action may be either external or internal. External cues include messages from mass media, reminder postcards from health care providers, or advice or encouragement of family and friends. Internal cues might include uncomfortable symptoms or recall of the condition of affected individuals (Pender, 1987).

Becker and colleagues have added "modifying and enabling" variables to the health belief model. These include demographic, sociopsychological, and structural factors. Demographic variables include gender, race, socioeconomic status, education, and age. Sociopsychological variables may include social or peer group

influence. Structural factors include prior contact with a health clinic and attitudes toward the health care provider (Janz & Becker, 1984).

As shown in Figure 1, modifying factors influence the individual's perception of susceptibility and seriousness, cues to action, and the benefit barrier equation. Cues to action may influence the individual's perception of susceptibility and seriousness and the individual's perception of benefits and barriers. The individual's perception of susceptibility and seriousness, the cues to action, and perceived benefits and barriers will all influence health behaviors.

Research questions for this project were directed at determining descriptive data relevant to prevalence of specific risk behaviors among adolescents attending 11th grade in a rural public high school in northern Michigan. An investigation of the relationship between health risk behaviors and gender was completed. Although this study did not examine all the variables in the health belief model that influence health behavior, it was a beginning point in understanding the prevalence of health risk behavior in adolescents attending 11th grade in a rural community.

Review of Literature

Many studies have been done on health risk behavior in adolescents. Some studies focused on a single risk behavior such as suicide (Adcock, Nagy, & Simpson, 1991; Felts, Chernier, & Barnes, 1992; Friedman, Asnis, Boeck, & DiFiore, 1987; Garrison, McKeown, Valois, & Vincent, 1993; Riggs, Alario, & McHorney, 1990), sexual risk taking (Cates, 1990; Sonenstein, Pleck, & Ku, 1991), anabolic steroid use (Buckley, Yesalis, Friedl, Anderson, Streit, & Wright, 1988), and substance use (Kipke, Montgomery, & MacKenzie, 1993). Other studies focused on multi health risk behaviors in specific populations such as high risk adolescents (Kulbok, Earls, &

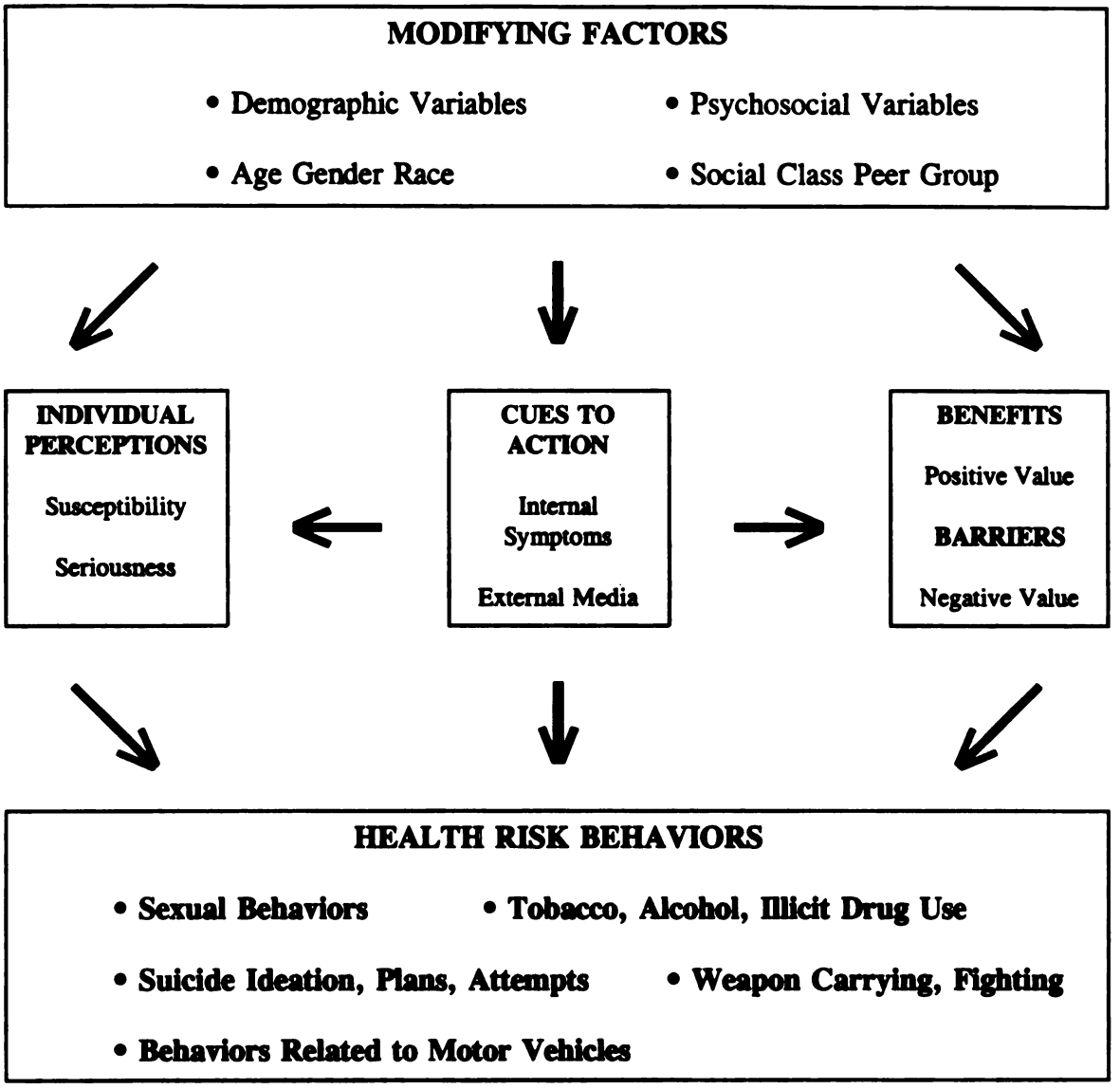

Figure 1. Conceptual Model Adapted From Health Belief Model (Rosenstock, Kegeles, Leventhal, and Hochbaum, 1974)

Montgomery, 1988), adolescents in a suburban population (Marks, Malizio, Hoch, Brody, & Fisher, 1983), among young adolescents (Millstein et al., 1992), in regular high school students compared with alternative education students (Grunbaum & Basen-Engquist, 1993), and among American Indian--Alaska Native Youth (Blum, Harmon, Harris, Bergeisen, & Resnick, 1992). Surveys tracking a broad range of risk behaviors have been done on a national level involving high school students (Kann, Warren, Collins, Ross, Collins, & Kolbe, 1993; National Adolescent Student Health Survey, 1989).

Sexual Risk Behaviors

Sonenstein et al. (1991) described levels of sexual activity among U.S. males from 15 to 19 years of age using data from the National Survey of Adolescent Males (NSAM). The survey included 1,880 never married American males, both in and out of school, who lived with their families or in other types of households. The overall response rate was 74%. The authors found that 60% of the sample had experienced sexual intercourse. About 5% reported heterosexual intercourse before age 13, 11% by age 14, and 21% by age 15. Approximately 38% had intercourse before they reached age 16 and 58% had intercourse before age 17. By age 19, about 79% had had intercourse. The sexually experienced young men reported an average of 5.1 sexual partners since their first sexual intercourse. The mean number of partners in the last year was 1.9. Because this survey was limited to males who lived in households, the data excluded men who may have been in high risk groups, such as homeless and runaway youth, those living in institutions, dormitories, and military barracks. No information was presented regarding reliability and validity of the survey instrument.

Kann et al. (1993) reported results from the national school based 1991 Youth Risk Behavior Survey. Of the schools that were asked to participate, 75% (137) agreed. Usable questionnaires were received from 90% (12,272) of the 13,568 eligible students in the participating schools. Students were distributed evenly among grades 9 through 12 and between genders. After weighting, white students were 70% of the sample, black students 14%, and Hispanic students 9% which mirrors the actual distribution of 9th through 12th grade students in the United States. This study found that among all students, 54.1% had participated in sexual intercourse with 18.7% having had four or more sex partners during their lifetime. Among students who engaged in sexual intercourse, 69.3% had done so during the 3 months preceding the survey. Black students were significantly more likely than white or Hispanic students to have had sexual intercourse and to have had four or more sex partners. The prevalence of having had sexual intercourse, having had four or more sex partners, and being currently sexually active increased significantly with increasing grade in school. Among currently sexually active students, 81.8% had used a contraceptive method (birth control pill, condom, or withdrawal) during their most recent sexual intercourse; 46.2 had used a condom on that occasion. Contraceptive use increased significantly from 9th to 12th grade. White students used a contraceptive method during their most recent sexual intercourse significantly more often than black students or Hispanic students.

Tobacco, Alcohol, Illicit Drug Use

The age at which a person begins to smoke cigarettes has been found to be related to the total number of years of subsequent smoking. Taioli & Wynder (1991) studied the relation between the age at which a person starts smoking and the number

of cigarettes smoked per day in adulthood. Among men who began to smoke at or before the age of 14 years, 19.6% smoked 41 or more cigarettes (about 2 packs) per day in adulthood, compared with 10.3% of those who started smoking at age 20 or older. Among women, 26.9% of those who started smoking at or before the age of 16, smoked 31 or more cigarettes (about 1 and a half packs) per day in adulthood, as compared with 15.4% of those who started at age 20 or older (Taioli & Wynder, 1991). The finding of an association between smoking at an early age and subsequent heavy cigarette consumption suggests that additional efforts should be made to postpone the beginning of smoking among young people. This study utilized a standardized questionnaire administered by trained interviewers to patients with cancer and matched control subjects to collect a history of smoking. No information was presented about the questionnaire. The cases and controls were grouped together for a total of 30,174 men and 11,828 women.

Kann et al. (1993) in the national Youth Risk Behavior Survey found that 70% of students had tried cigarette smoking and 27.5% were current smokers (had smoked cigarettes on one or more of the 30 days preceding the survey). Among students who had smoked a whole cigarette, the average age at first use was 12.6 years. Cigarette use did not vary by gender. Among all students, 10.5% had used chewing tobacco or snuff in the past 30 days.

In the 1993 national Youth Risk Behavior Survey, 82% of students had consumed alcohol during their lifetime, and 51% did so during the 30 days preceding the survey. Lifetime and current alcohol use did not vary by gender. Among students who had drunk alcohol, the average age at first use was 12.5 years. Among all students, 31% reported consuming 5 or more drinks of alcohol on at least one

occasion during the past 30 days and occurred significantly more often among male students (Kann et al., 1993).

Results from the national Youth Risk Behavior Survey indicate that 30% of students had used marijuana during their lifetime with 15% reporting use during the 30 days preceding the survey. Lifetime use was reported by 6% with 1.7% reporting use in the 30 days preceding the survey. Lifetime and current marijuana use did not vary by gender; lifetime and current cocaine use occurred significantly more often among male than female students. Among all students, 3% used steroids during their lifetime with male students significantly more likely than female students to have used steroids (Kann et al., 1993).

The National Adolescent Student Health Survey (NASHS) was administered in 1987 to 8th and 10th grade students from 217 different junior and senior high schools (American School Health Association, 1989). This survey was designed to assess students' health related knowledge, attitudes, and behaviors in eight areas including injury, suicide, violence, tobacco, drug and alcohol use, nutrition, consumer skills, and sexually transmitted disease. Completed questionnaires were obtained from 89% of the 8th grade students and 86% of the 10th grade students. Data from 12,067 students were analyzed. Of the sample, 69% were white, 17% black, and 9% Hispanic. Fifty one percent of the students were males and 49% females. Results from the National Adolescent Student Health Survey (NASHS) revealed that 57% of students had ever tried cigarettes and 12% of males and 1% of females used chewing tobacco or snuff during the last month. Eighty three percent of students reported at least one occasion in which they had an alcoholic beverage, 42% reported alcohol use in the past month, and 32% reported consuming five or more drinks on one occasion

in the past two weeks. Lifetime marijuana use was reported by 25% of the students with 10% reporting use in the past month. Lifetime cocaine use was reported by 6% with 3% reporting use in the past month.

Buckley et al. (1988) studied 12th grade male students in private and public high school to determine anabolic steroid use. The sample was drawn from 150 high schools across the nation that employed certified athletic trainers and schools that had participated in a sports epidemiology survey within the past 2 years. Of the 6,765 male senior students who were eligible, 3,403 voluntarily participated. Results indicated that 6.6% of 12th grade male students use or have used anabolic steroids and that over 66% of the user group initiated use when they were 16 years of age or younger. The authors believe that educational intervention strategies should begin as early as junior high school. This study was designed to help establish the prevalence of anabolic steroid use among the male portion of the general population. The authors did note that the 150 schools included in the survey did not represent a random sample of all high schools in the United States because only 10% of high schools employ a certified athletic trainer.

Millstein et al. (1992) examined the health concerns and behaviors of 563 adolescents aged 11 through 14 from a variety of social, racial, and ethnic backgrounds. Subjects were recruited from an inner city public middle school and attended grades 6 through 8. Subjects completed a modified version of the Teen Health Risk Appraisal, a 63 item questionnaire developed by the Centers for Disease Control. Results of this study showed that adolescents in this study were engaging in a variety of behaviors that placed them at risk of injury, disability, illness, or death. Experimentation with substance use was common; alcohol was the most common

substance followed by tobacco and marijuana. More than one half of the sample (56%) reported having smoked cigarettes on at least one occasion. Among these subjects, 16% identified themselves as current smokers. Seventy three percent had tried alcohol on at least one occasion with alcohol use beginning most frequently in the sixth grade. Marijuana use on at least one occasion was reported by 31% of the subjects. This study looked at a very specific age group from a specific location which provides useful information about health risk behaviors in subgroups of the general adolescent population.

Riggin (1993) reported statistics from the National High School Senior Drug Abuse Survey which indicated that 63% of adolescents have tried cigarettes, 18.5% reported daily use, and of daily users, 10.7% smoked at least one half pack per day. Of high school seniors, 88% have used alcohol at some time with 77.7% reporting use during the past 12 months, 54% used alcohol during the past month, and 3.6% reported daily use. Thirty percent of high school seniors reported consuming five drinks in a row during the past 2 weeks. The author did not present information regarding how the sample was recruited, breakdown of the sample by gender or race, or information about the questionnaire.

Depression, Suicide Ideation, and Suicide

Friedman et al. (1987) investigated prevalence of suicidal behaviors among 380 students attending an academically select public high school in New York. Students completed the Harkavy Asnis suicide survey demographic form, a questionnaire that ascertains basic demographic data, past psychiatric or counseling history, and specifics about their experience with their own suicidal behavior and that of their family and peers. The authors did not give information regarding validity and

reliability of this instrument. Of the 380 high school students, 38.4% stated that they had never thought about killing themselves (no suicide group), 52.9% stated that they had thought about killing themselves at least once (suicide ideator group), and 8.7% stated that they had tried to kill themselves at least once (suicide attempter group). The "no suicide" group consisted of more males than females, the "suicide ideators" had equal numbers of males and females, and the "suicide attempters" had significantly more females than males. The study was concerned primarily with adolescents attending an academically competitive high school and results may need to be replicated in other high school samples before conclusions about the frequency of suicidal behavior among high school students can be made.

Kann et al. (1993) found that 29% of the students in their sample had thought seriously about attempting suicide, 19% had made a specific plan to attempt suicide, 7% actually had attempted suicide and 1.7% made an attempt that resulted in a visit to a doctor or nurse. More females (37%) than males (21%) reported thinking seriously about committing suicide. Approximately twice as many females as males made actual suicide plans and more females (11%) than males (4%) made a suicide attempt.

Data from the NASHS revealed that 34% of the students reported that they have seriously thought about committing suicide with 14% having actually tried to commit suicide. More females (42%) than males (25%) reported serious thoughts about committing suicide and more females (18%) than males (11%) reported actual suicide attempts.

Garrison et al. (1993) utilized the Youth Risk Behavior Survey (YRBS) to analyze the frequency and correlates of suicidal behaviors in a sample of South

Carolina public high school students. A total of 3,764 students completed the survey. Eleven percent reported serious suicidal thoughts, 6% reported specific suicidal plans, 6% actually attempted suicide and 1.6% reported attempts requiring medical care. Each of these types of suicidal behaviors was reported one and a half to two times more frequently by females than by males.

Unintentional Injury

Kann et al. (1993) reported that 28% of students always used a seat belt when riding in a car or truck driven by someone else. Data regarding seat belt use when they themselves were driving was not presented. Among students who rode a motorcycle, 39% always wore a motorcycle helmet. During the 30 days preceding the survey, 26% of students had carried a weapon on at least 1 day. During the 12 months preceding the survey, 43% were in at least one physical fight.

Data from the NASHS showed that 41% of students reported wearing a seat belt the last time they rode in a car, truck, or van. While 60% reported riding on a motorcycle or minibike, 42% rarely or never wore a helmet. During the past month, 39% reported that they rode with a driver who had used drugs or alcohol. During the past year, 39% of students reported having been involved in at least one physical fight.

Summary

Specific health risk behaviors were widely covered in the literature. The studies that focused on one or two health risk behaviors provided in depth information about specific risk behaviors but did not provide information that might address the multiple, interrelated risk behaviors practiced by many youth. The studies that utilized survey instruments that addressed multiple risk behaviors were also plentiful,

and they provided valuable information on the specific adolescent groups studied. Studies that focused on national samples provided needed information on adolescent risk behavior on a national level. Some studies focused on specific age groups attending specific types of schools which provided information on health risk behaviors in specific populations. Information relating health risk behavior to gender and race was presented in some of the studies.

Despite the broad range of available literature related to health risk behaviors, there was no data that specifically addressed health risk behavior among predominantly white youth who live in a rural community such as Crawford County. There remains a need for studies to be done on the prevalence of health risk behaviors among these youth.

Crawford County is located in central northern Michigan. Data from the Michigan Information Center, Michigan Department of Management and Budget, from 1990 reveals that Crawford County had a total population of 12,260 of which 96.3% were white. There were 480 adolescents 16 to 18 years of age. Of these adolescents, 53.5% (257) were male and 46.5% (223) were female. According to 1990 census data, there were 1,688 persons living below 100% of poverty, 4,865 persons living below 200% of poverty, 1,300 uninsured persons, and 2,014 persons eligible for Medicaid. According to data from the public school administration office, 34% of students attending public school were eligible for free or reduced lunch.

Health care is provided by one part time pediatrician/internist, three family practice physicians, two general surgeons, four internists, and one obstetrician. In addition there is a four person orthopedic group, a walk in clinic, and the county health department. A rural health clinic, staffed by a physician assistant, was recently

opened. Patients covered by the Medicaid program have difficulty finding a primary care provider because many practitioners are refusing to see Medicaid clients. The school system does not employ a school nurse.

Data collected on a local level, in this case a predominantly white, rural area, will reflect health risk behaviors of adolescents residing in that local community. This information will be vital for family nurse practitioners and other health care providers who provide primary care to rural adolescents. These data will be useful to school officials, members of the Board of Education, and community members as plans of health curriculum are developed. Parents will be able to utilize this data as part of their discussions with adolescents when addressing health risk behaviors. Finally, adolescents themselves may find this data useful as they evaluate their own health risk behaviors.

Methods

Research Design

The research design for this project was a nonexperimental descriptive ex post facto design. According to Polit and Hungler (1991) the purpose of descriptive studies is to obtain information about the current status of phenomena of interest and to describe what exists in terms of frequency of occurrence or its presence versus absence. Nonexperimental ex post facto research is research that has been conducted after the variations in the independent variables have occurred in the natural course of events without any researcher intervention.

Sample

The target population was a convenience sample of all students attending 11th grade at a rural high school in northern Michigan. Students attending 11th grade

were chosen for this study because the majority of students have taken the required one semester health class in their sophomore year and theoretically have received health information necessary for making decisions regarding behaviors that may put them at risk for adverse health outcomes. This group of students is likely to be at least 16 years of age and most will have a driver's license. School district administration was supportive of using this particular age group. The sample consisted of all students attending school the day the survey was administered whose parents consented to their participation and who themselves consented to complete the survey.

Operational Definitions of the Variables

The principal dependent variable of interest to this study was health risk behavior. Frequency of sexual risk behaviors that may put the adolescent at risk for STD, HIV infection, and pregnancy was measured by questions 46 through 55 (Q46-55). Frequency of tobacco, alcohol and other drug use was measured by Q70-87. Feelings of depression, suicide ideation and suicide attempts were measured by Q40-45. Potential for unintentional injury was measured by Q56-69. The independent variable of gender was measured by Q2.

Instrumentation

Subjects completed the Youth Risk Behavior Survey (YRBS) developed by The Centers for Disease Control and Prevention (CDC). Individual items on the survey are designed to measure risk behaviors in 6 areas: (1) sexual behaviors; (2) tobacco, alcohol, and illicit drug use; (3) suicide ideation and suicide attempts; (4) behaviors related to unintentional injury; (5) dietary patterns; and (6) physical activity. Questions related to current health care utilization, desired health services, and

demographic data were added to the survey instrument and their numbers are indicated by bold print in the questionnaire included in Appendix A. The Centers for Disease Control allows the questionnaire to be copied, modified, or administered without permission (Public Health Reports, 1993).

The CDC began designing the YRBS in 1988 by reviewing the leading causes of morbidity and mortality among youth and adults. The review of the leading causes of morbidity and mortality among youth and among persons in all age groups combined showed that nearly all contributing behaviors could be categorized within six previously mentioned behavioral areas. The first version of the questionnaire was completed in October 1989 and was reviewed at a national conference by representatives of each State's department of education. The second version was completed in November 1989 and was used the following spring to generate data from national, state, and local samples of students in grades 9 through 12. That version of the questionnaire was sent to the Questionnaire Design Research Laboratory for four waves of laboratory and field testing with high school students. The field testing sought to identify survey conditions that could be expected to encourage honesty in answering survey questions. In October 1990, the core questionnaire was complete. The core questionnaire is self administered and has about a 7th grade reading level (Kann et al., 1993).

YRBS results are based on self reports that appear valid for estimating the prevalence of health behaviors within adolescent populations, however a respondent may underreport or overreport a behavior, depending on the perceived social stigma or support for that behavior and the perceived confidentiality of responses.

Establishing criterion related validity for responses to most of the questions on the questionnaire may be impractical, if not impossible (Kann et al., 1993).

The YRBS was chosen for this study because this instrument included the questions the author was interested in. The YRBS has been utilized in many national studies and allows for meaningful comparisons to be made between local findings and state and national data. Parents and school administration were also more likely to support a survey that has been developed by the Centers for Disease Control and Prevention (CDC), a nationally renowned organization. In addition, the CDC allows the survey to be used without charge and allows modifications to be made to reflect local needs.

Procedures

Permission to conduct the survey was obtained from the school district. Letters were mailed to parents of all eligible students. Eligible students were defined as those students enrolled in the 11th grade at the time of the survey and included 134 students. Parents were asked to provide written consent for their child's participation. Follow up phone calls were made to parents who didn't respond. Eleventh grade classroom teachers were notified of the survey date by the building principal. The researcher met with classroom teachers, the eleventh grade counselor, and the principal prior to that date to answer specific questions about the survey and to provide oral and written instructions on procedures. The researcher was available in person the day of the survey to answer questions that occurred during the survey process. The high school principal provided classroom teachers with a list of students who had received parental consent to participate in the survey. The students who had received parental consent were asked by their classroom teacher to report to the

library during third hour. Instructions were read by the eleventh grade counselor to the students from a prepared script. Students were instructed to not write their names or other identifying markers on the questionnaires and to place their answers directly on the survey instrument. When the student was finished with the survey, he/she placed the completed survey in a sealed "ballot type" box. Students who were absent the day the survey was administered were not included.

Data Analysis

Research questions that were answered included:

(1) What is the frequency of sexual risk behavior that may put the adolescent at risk for sexually transmitted disease (STD), human immunodeficiency virus (HIV) infection, and pregnancy?

(2) What is the frequency of tobacco, alcohol, and other drug use?

(3) What is the frequency of feelings of depression, suicidal ideation and attempted suicide?

(4) What is the frequency of behaviors that may result in unintentional injuries?

(5) What is the relationship of gender to selected health risk behaviors?

Descriptive statistical analysis including frequencies and percentages were used to answer research questions 1 through 4. Chi square analysis was used to test the relationship between gender and selected health risk behavior.

Procedure for Protection of Human Subjects

Prior to administering the survey, approval was obtained from Michigan State University Committee on Research Involving Human Subjects (UCRIHS) (see Appendix E) and from the school district (see Appendix D). A letter explaining the research proposal was sent home to parents of all 11th grade students eligible to

participate in the survey (see Appendix D). Parents were asked to provide written consent for their students' participation. Parents and students were assured that participation was voluntary. Parents and students had a right to refuse to participate without penalty of any kind. Students were also asked for their consent. They indicated voluntary agreement to participate by completing and returning the survey. Students whose parents did not provide written or oral consent and students who chose not to participate remained in their regular classroom and did not report to the high school library.

Research Assumptions

It is assumed that the researcher offered the opportunity for participation in the study to all eligible students equally. It is assumed that the survey questions correctly identified levels of risk behavior. It is also assumed that all the adolescents answering the survey understood the questions and that they answered them as honestly as possible.

Research Limitations

Only students who received parental consent were allowed to participate. It is not known how this group of students differed from the subjects whose parents did not provide consent. Dent, Galaif, Sussman, Stacy, Burtun, & Flay (1993) showed differences between youths who were recruited by active versus passive consent procedures. Active consent requires that parents provide written or verbal consent for their students to participate. This is referred to as active consent because the parent must take some action for their child to be included in the study (Dent et al., 1993). Passive consent requires no action by parents to allow their childrens' participation. In this approach, parents are informed that their non response implies permission for

their children to participate in a study (Dent et al., 1993). In studies requiring active consent there is a lower representation of minorities, children with less educated parents, children who receive poorer grades at school, and children who are cigarette or marijuana smokers (Dent et al., 1993).

Students who were absent the day the survey was administered did not have an opportunity to participate and may have had a different profile of risk behaviors than the participants. Turner, Irwin, Tschann, & Millstein (1993) found that absentees were more likely to report experience with sexual intercourse, getting into fights, and were less likely to live with both biological parents. Their conclusion was that students who are absent from school are at greater risk for participating in health damaging behaviors.

Another limitation of the study arises from the potential for distortion inherent in the use of self reports. Some students may misrepresent their actual behaviors and attitudes when responding to the survey. Distortions may involve both over and under representation of certain behaviors (Koble et al., 1993). Another limitation may be that the survey questions did not correctly identify levels of health risk behavior.

Results

Description of the Sample

Of the 134 students attending 11th grade, 56% (75) received parental consent to participate in the survey; 38% (51) of the students actually completed the survey. Of the 24 students who received parental consent but did not participate in the survey, 6 were participating in "out of building" activities and classes, 8 were absent, and 10 were non participants for unknown reasons.

Of the sample, 39.2% (20) were 16 years of age, 56.9% (29) were 17 years of age, and 3.9% (2) were 18 years of age. The mean age was 16.7 years with a SD of 0.56. The sample included 52.9% (27) females and 47.1% (24) males. The mean age for females was 16.4 years with a SD of 0.51. The mean age for males was 16.9 years with a SD of 0.54. As shown in Table 1, 56.9% (29) of the students had private health insurance such as Blue Cross Blue Shield, 13.7% (7) had a prepaid health plan such as an HMO, 5.9% (3) had Medicaid, 21.6% (11) didn't know their insurance and 2% (1) didn't answer the question. Approximately 57% (29) of the students lived with both parents, 21.6% (11) lived with one parent, 11.8% (6) lived with one parent and one step parent, and 9.8% (5) lived with "other adult".

Table 1

Frequencies of Selected Demographic Variables

Demographic Variable		n	%
Age in Years	16	20	39.2
	17	29	56.9
	18	2	3.9
Gender	Female	27	52.9
	Male	24	47.1
Medical Insurance	Private	29	56.9
	HMO	7	13.7
	Medicaid	3	5.9
	Don't Know	11	21.6
	No Answer	1	2.0
Reside With	Both Parents	29	56.9
	One Parent	11	21.6
	Parent and Step	6	11.8
	Other Adult	5	9.8

Answers to Research Questions

Frequency of Sexual Risk Behaviors That May Put the Adolescent at Risk for Sexually Transmitted Disease (STD), Human Immunodeficiency Virus Infection (HIV), and Pregnancy

The frequency of sexual behaviors that may put the adolescent at risk for STD's, HIV, and pregnancy is reported in Table 2. While 31.4% (16) students never experienced sexual intercourse, 68.6% (35) students reported having had sexual intercourse. Of students who reported having sexual intercourse, the majority of students (57.1%, n=20) had their first experience between the ages of 14 and 15, while 34.3% (12) were 16 or older, and 8.6% (3) were 13 or younger. One lifetime partner was reported by 42.9% (15), 25.7% (9) had 2 to 3 lifetime partners, and 31.4% (11) had 4 or more lifetime partners. Approximately 51% (26) students reported sexual intercourse in the past 3 months and of these students, 73% (19) had 1 partner, 23% (6) had 2 to 3 partners, and 4% (1) had 4 or more partners. Alcohol or drug use with last intercourse was reported by 17.1% (6) students. Of students reporting sexual intercourse, 22.9% (8) used no contraception with last intercourse, 11.4% (4) used birth control pills, 54.3% (19) used condoms, and 11.4% (4) used withdrawal. Condoms with last intercourse were used by 57.1% (20) students. Only 1 (2%) student reported being pregnant or having gotten someone pregnant. Pressure to have sex was felt by 19.6% (10) students with 18.2% (2) students indicating that the pressure came from a boyfriend, 9.1% (1) indicating pressure from a girlfriend, 63.6% (7) reporting pressure from friends, and 9.1% (1) reporting pressure from

"other". Although 10 students reported pressure to have sex, 11 students responded to the question of where the pressure came from to engage in sexual intercourse.

Frequency of Tobacco Use

As shown in Table 3, 72.5% (37) students reported trying cigarette smoking, even one or two puffs. Of those who reported smoking a whole cigarette, 35.7% (10) were 10 or younger, 28.6% (8) were 11 to 13, 17.9% (5) were 14 to 15, and 17.9% (5) were 16 or older when they smoked a whole cigarette for the first time. Current tobacco use (had smoked cigarettes on one or more of the 30 days preceding the survey) was reported by 37.3% (19) students. For students reporting current tobacco use, 10.5% (2) smoked 1 day, 5.3% (1) smoked 2 to 5 days, 26.3% (5) smoked 6 to 10 days, and 57.9% (11) smoked 11 or more days in the month. As shown in Table 3, the majority (63.2%, n=12) smoked 2 to 5 cigarettes daily with only 10.5% (2) indicating more than one half pack daily. Approximately 33% (17) have tried to quit smoking and 7.9% (4) used snuff or chewing tobacco in the past 30 days.

Frequency of Alcohol Use

As shown in Table 4, 82.4% (42) students report having had a drink of alcohol. Of those students indicating alcohol use, the majority (45.2%, n=19) were 14 to 15 years of age when they had their first drink of alcohol; 21.4% (9) were 11 to 13 years, 19.1% (8) were 16 or older, and 14.3% (6) were 10 or younger. Current alcohol use (drank alcohol in the past 30 days) was reported by 56.8% (29) students. Of those students reporting current alcohol use, 31% (9) used alcohol 1 day, 27.6% (8) used 2 to 5 days, 24.1% (7) used 6 to 10 days, and 17.2% (5) used 11 or more days. Approximately 35.3% (18) had 5 or more drinks in a row on at least one day

in the past 30 days; 16.7% (3) reported 5 or more drinks in a row on 11 or more of the past 30 days.

Frequency of Other Drug Use

Marijuana use was reported by 47.1% (24) students. Although the majority (41.7%, n=10) were 16 or older with first marijuana use, 37.5% (9) indicated first use at 14 to 15 and 20.8% (5) were 11 to 13 years of age. Marijuana use in the past 30 days was reported by 21.6% (11) students with 5 of those students indicating use on 11 or more of the past 30 days. Cocaine use was reported by 7.8% (4) students who were all 16 years of age or older with first use; 5.9% (3) of these students used cocaine in the past 30 days. As shown in Table 5, 13.7% (7) students reported lifetime inhalant use, and 25.5% (13) students indicated other drug use such as LSD, PCP, ecstasy, mushrooms, speed, ice, or heroin. Only one student reported anabolic steroid use. Illegal drugs had been offered to 23.5% (12) students on school property. No students used injectable drugs.

Frequency of Feelings of Depression, Suicide Ideation, and Suicide Attempts

As shown in Table 6, 11.8% (6) students often felt that life was not worth living, 39.2% (20) sometimes felt that life was not worth living, and 49% (25) never felt that life was not worth living. Being depressed for long periods in the past six months was reported by 45.1% (23), 11.8% (6) were currently depressed while 54.9% (28) reported no depression. Suicide was considered by 15.7% (8) students, 11.8% (6) made a suicide plan, and 5.9% (3) made an actual attempt. Injury requiring a visit to a health care provider following an attempted suicide was reported by 3.9% (2) students.

Frequency of Behaviors That May Result in Unintentional Injuries

As reported in Table 7, 64.7% (33) students reported using seatbelts all or most of the time with 17.6% (9) indicating use sometimes, 11.8% (6) reporting rare use and 5.9% (3) never using seatbelts. Motorcycle use during the past 12 months was reported by 23.5% (12) students and 83.3% (10) of those students always wore a helmet. Snowmobile or other all terrain vehicle (ATV) use was reported by 51% (26) students and 73% (19) of these students always wore a helmet. Approximately 43% (22) students rode in a vehicle driven by someone who had been drinking alcohol one or more times in the past month and 23.5% (12) students drove a vehicle one or more times in the past month when they had been drinking alcohol.

During the past thirty days, 14% (7) students carried a weapon. As reported in Table 8, 15.7% (8) students had been threatened or injured with a weapon and 37.3% (19) had been the victim of theft or property damage in the past 12 months. In the past 12 months, 41.2% (21) participated in a physical fight; one students required treatment by a doctor or nurse as a result of a fight. No student reported missing school due to fear.

Risk Behavior and Gender

Sexual risk behavior.

As shown in Table 9, significantly more males (83.3%, n=20) than females (55.6%, n=15) have ever had sexual intercourse. More males (62.5%, n=15) than females (40.7%, n=11) reported sexual intercourse in the past 3 months. However, both groups reported a similar number of lifetime partners. Contraceptive use with last intercourse was higher for females (44.4%, n=12) than males (62.5%, n=15).

Table 2

Sexual Health Risk Behaviors

Variable		n	%
Intercourse Ever	Yes	35	68.6
	No	16	31.4
Age First Intercourse	13 or Younger	3	8.6
	14 to 15 Years	20	57.1
	16 or Older	12	34.3
Lifetime Partners	1 Partner	15	42.9
	2 to 3 Partners	9	25.7
	4 or More Partners	11	31.4
Partners Past Three Months	1 Partner	19	73.0
	2 to 3 Partners	6	23.0
	4 or More Partners	1	4.0
Alcohol/Drug Use Last Intercourse	Yes	6	17.1
	No	29	82.9
Contraceptive Use Last Intercourse	None	8	22.9
	BCP	4	11.4
	Condoms	19	54.3
	Withdrawal	4	11.4
Condoms Use Last Intercourse	Yes	20	57.1
	No	15	42.9

Table 3

Tobacco Use Health Risk Behavior

Variable		n	%
Smoking Ever (Even 1 or 2 Puffs)	Yes	37	72.5
	No	14	27.5
Age First Whole Cigarette	10 or Younger	10	35.7
	11 to 13 Years	8	28.6
	14 to 15 Years	5	17.9
	16 or Older	5	17.9
Tobacco Use Past Thirty Days	1 Day	2	10.5
	2 to 5 Days	1	5.3
	6 to 10 Days	5	26.3
	11 or More Days	11	57.9
Cigarettes/Day Past Thirty Days	1 Cigarette	2	10.5
	2 to 5 Cigarettes	12	63.2
	6 to 10 Cigarettes	3	15.8
	11 to 20 Cigarettes	2	10.5

Table 4

Alcohol Related Health Risk Behavior

Variable		n	%
Alcohol Use Ever	Yes	42	82.4
	No	9	17.6
Age First Alcohol	10 or Younger	6	14.3
	11 to 13 Years	9	21.4
	14 to 15 Years	19	45.2
	16 or Older	8	19.1
Alcohol Use Past Thirty Days	1 Day	9	31.0
	2 to 5 Days	8	27.6
	6 to 10 Days	7	24.1
	11 or More Days	5	17.2
Five or More Drinks Past Thirty Days	1 Day	3	16.7
	2 to 5 Days	7	38.9
	6 to 10 Days	5	27.8
	11 or More Days	3	16.7

Table 5

Illicit Drug Related Health Risk Behavior

Variable		n	%
Marijuana Use Ever	Yes	24	47.1
	No	27	52.9
Age First Marijuana Use	11 to 13 Years	5	20.8
	14 to 15 Years	9	37.5
	16 or Older	10	41.7
Marijuana Use Past Thirty Days	2 to 5 Days	5	45.5
	6 to 10 Days	1	9.0
	11 or More Days	5	45.5
Age First Cocaine Use	Never	47	92.2
	16 or Older	4	7.8
Cocaine Use Past Thirty Days	0 Days	48	94.1
	1 Day	1	2.0
	2 to 5 Days	2	3.9
Lifetime Inhalant Use	Never	44	86.3
	1 or 2 Times	5	9.8
	20 or More Times	2	3.9
Other Illicit Drug Use	Never	38	74.5
	1 to 2 Times	7	13.7
	3 to 9 Times	2	3.9
	10 to 19 Times	3	5.9
	20 or More	1	2.0
Lifetime Steroid Use	Never	50	98.0
	1 to 2 Times	1	2.0
Offered Drugs At School	Yes	12	23.5
	No	39	76.5

Table 6

Depression, Suicide Ideation, Suicide Attempts

Variable		n	%
Felt Life Not Worth Living	Often	6	11.8
	Sometimes	20	39.2
	Never	25	49.0
Depression Past Six Months	Yes, Not Now	17	33.3
	Yes, Now	6	11.8
	No	28	54.9
Consider Suicide Past Year	Yes	8	15.7
	No	43	87.3
Suicide Plan	Yes	6	11.8
	No	45	88.2
Suicide Attempt	No	47	92.2
	1 Time	3	5.9
	No Answer	1	2.0

Table 7

Unintentional Injuries Related to Motor Vehicle Use

Variable		n	%
Seat Belt Use	Never	3	5.9
	Rarely	6	11.8
	Sometimes	9	17.6
	Most Times	18	35.3
	Always	15	29.4
Motorcycle Use Past Year	0 Times	39	76.5
	1 to 10 Times	9	17.6
	21 to 39 Times	2	3.9
	40 or More Times	1	2.0
Helmet Use With Motorcycle	Never	1	8.3
	Most of the Time	1	8.3
	Always	10	83.3
Snowmobile/ATV Use Past Year	0 Times	25	49.0
	1 to 10 Times	15	29.4
	11 to 20 Times	4	7.8
	21 to 39 Times	2	3.9
	40 or More Times	5	9.8
Helmet Use With Snowmobile/ATV Use	Never	1	3.8
	Sometimes	1	3.8
	Most of the Time	5	19.2
	Always	19	73.0
Ridden With Alcohol Use Past Thirty Days	0 Times	29	56.9
	1 Time	7	13.7
	2 to 3 Times	9	17.6
	4 to 5 Times	2	3.9
	6 or More Times	4	7.8
Driven With Alcohol Use Past Thirty Days	0 Times	39	76.5
	1 Time	1	2.0
	2 to 3 Times	7	13.7
	6 or More Times	4	7.8

Table 8

Unintentional Injuries Related to Weapons, Fighting

Variable		n	%
Carry Weapon Past Thirty Days	0 Days	44	86.3
	2 to 3 Days	2	3.9
	4 to 5 Days	1	2.0
	6 or More Days	4	7.8
Threatened/Injured With Weapon	0 Times	43	84.3
	1 Time	4	7.8
	2 to 3 Times	3	5.9
	6 or More Times	1	2.0
Victim Theft/Damage Past Year	0 Times	32	62.7
	1 Time	8	15.7
	2 to 3 Times	10	19.6
	6 or More Times	1	2.0
Participate In Fight Past Year	0 Times	30	58.8
	1 Time	11	21.6
	2 to 3 Times	7	13.7
	4 to 5 Times	3	5.9
Fight Needing Treatment	0 Times	50	98.0
	2 to 3 Times	1	2.0

Tobacco use.

As reported in Table 10, significantly more males (91.7%, n=22) than females (55.6%, n=15) reported ever trying a cigarette. In the past 30 days, males (41.7%, n=10) had slightly higher cigarette use than females (33.3%, n=9). Significantly more males (16.7%, n=4) than females (0 %, n=0) reported use of chewing tobacco or snuff.

Alcohol use.

A higher percentage of males (87.5%, n=21) than females (77.7%, n=21) report ever consuming alcohol in their lifetime and more males (62.5%, n=15) than females (51.9%, n=14) report use of alcohol in the past month. As shown in Table 10, consumption of 5 or more drinks on one occasion was reported by 41.7% (10) males compared to 29.6% (8) females. There were no significant gender differences in alcohol use.

Illicit drug use.

As shown in Table 11, more males (58.3%, n=14) than females (37%, n=10) reported lifetime marijuana use and more males (25%, n=6) than females (18.5%, =5) indicated current marijuana use (marijuana use in the past 30 days). Lifetime cocaine use was reported by 12.5% (3) males compared to 3.7% (1) females; current cocaine use was indicated by 8.3% (2) males and 3.7% (1) females. Other illicit drug use was similar for males and females. One female and no males reported anabolic steroid use. More males (25%, n=6) than females (3.7%, n=1) reported lifetime inhalant use. The only significant difference by gender was inhalant use.

Intentional injury related to depression, suicide ideation, suicide attempts.

More females (22.2%, n=6) than males (8.3%, n=2) considered attempting suicide in the past 12 months (suicide ideation). As indicated in Table 12, 18.5% (5) females compared to 4.2% (1) males had made a suicide plan, and 7.4% (2) females compared to 4.2% (1) males made an actual suicide attempt.

Unintentional injury related to motor vehicle use, weapons, and fighting.

As noted in Table 12, no female reported never wearing a seat belt compared to 12.5% (3) males who reported never wearing a seat belt. More males (50%, n=12) than females (37%, n=10) rode in a vehicle the past month driven by someone who had been drinking alcohol and more males (29.2%, n=7) than females (18.5%, n=5) drove a vehicle the past month when they had been drinking alcohol.

More males (20.8%, n=5) than females (7.4%, n=2) carried a weapon in the past 30 days. As shown in Table 12, more males (25%, n=6) than females (7.4%, n=2) had been threatened or injured with a weapon. Significantly more males (54.2%, n=13) than females (22.2%, n=6) had been the victim of theft or damage. Males (58.3%, n=14) were significantly more likely than females (25.9%, n=7) to have been in a fight in the past 12 months.

Discussion

Interpretation of Results

Survey results among these rural adolescent youth were compared with national averages. In many cases, results from this survey closely mirror those found in other national studies which might indicate that rural youth are at equal risk for participating in health risk behaviors. In some instances results from this study were

Table 9

Cross Tabulations and Chi-Square Analysis of Sexual Health Risk Behavior and Gender

Variable	Female % (n=27)	Male % (n=24)	x^2
Intercourse Ever	55.6 (15)	83.3 (20)	(1, N=51)=4.554*
Four or More Lifetime Partners	18.5 (5)	25.0 (6)	(2, N=35)=0.453
Intercourse Past Three Months	40.7 (11)	62.5 (15)	(1, N=35)=0.012
Contraception Use Last Intercourse	44.4 (12)	62.5 (15)	(1, N=35)=0.122

Table 10

Cross Tabulations and Chi-Square Analysis of Tobacco and Alcohol Use and Gender

Variable	Female % (n=27)	Male % (n=24)	x^2
Cigarette Use Ever	55.6 (15)	91.7 (22)	(1, N=51)=8.319**
Cigarette Use Past Thirty Days	33.3 (9)	41.7 (10)	(3, N=19)=3.575
Chewing Tobacco/Snuff	00.0 (0)	16.7 (4)	(1, N=51)=4.883*
Alcohol Use Ever	77.7 (21)	87.5 (21)	(1, N=51)=0.826
Alcohol Use Past Thirty Days	51.9 (14)	62.5 (15)	(3, N=29)=0.921
Five or More Drinks	29.6 (8)	41.7 (10)	(3, N=18)=0.797

*$p < .05$; ** $p < .01$

Table 11

Cross Tabulations and Chi-Square Analysis of Illicit Drug Use and Gender

Variable	Female % (n=27)	Male % (n=24)	x^2
Lifetime Marijuana Use	37.0 (10)	58.3 (14)	(1, N=51)=2.313
Marijuana Use Past Thirty Days	18.5 (5)	25.0 (6)	(2, N=11)=4.547
Lifetime Cocaine Use	3.7 (1)	12.5 (3)	(1, N=51)=1.360
Cocaine Use Past Thirty Days	3.7 (1)	8.3 (2)	(1, N=3)=0.750
Other Illicit Drug Use	22.2 (6)	29.2 (7)	(1, N=51)=0.323
Lifetime Anabolic Steroid Use	3.7 (1)	0.0 (0)	(1, N=51)=0.907
Lifetime Inhalant Use	3.7 (1)	25.0 (6)	(1, N=51)=4.866*

*$p < .05$

Table 12

Cross Tabulations and Chi-Square Analysis of Intentional and Unintentional Injury and Gender

Variable	Female % (n=27)	Male % (n=24)	x^2
Suicide Ideation	22.2 (6)	8.3 (2)	(1, N=51)=1.853
Suicide Plan	18.5 (5)	4.2 (1)	(1, N=51)=2.521
Suicide Attempt	7.4 (2)	4.2 (1)	(2, N=51)=1.182
Never Wear Seat Belt	0.0 (0)	12.5 (3)	(1, N=51)=3.586
Rode Vehicle With Someone Drinking	37.0 (10)	50.0 (12)	(1, N=51)=0.870
Driven Vehicle While Drinking	18.5 (5)	29.2 (7)	(1, N=51)=0.801
Carried Weapon	7.4 (2)	20.8 (5)	(1, N=51)=1.934
Threatened/Injured With Weapon	7.4 (2)	25.0 (6)	(1, N=51)=2.973
Victim Theft/Damage	22.2 (6)	54.2 (13)	(1, N=51)=5.547*
Been In Fight	25.9 (7)	58.3 (14)	(1, N=51)=5.509*

*$p < .05$

slightly higher or lower than those found in national averages. These deviations could be due to the relatively small sample size or the ages of the adolescents in this sample. Adolescents in this study were in the 11th grade whereas Kann et al. (1993) included adolescents in the 9th through 12th grade. Students in 11th grade may have had greater opportunities and a longer period of time to initiate and participate in health risk behaviors. In some cases such as slightly lower contraceptive use, the fact that adolescents live in a rural area may influence access to agencies or clinics that provide these services. Suicide ideation and suicide attempts were lower among these rural youth. This possibly could be due to living in what some people consider a less stressful environment. The higher use of helmets when riding motorcycles may be directly related to the helmet law in Michigan. One might speculate that reports of health risk behavior among this group of rural adolescents might have been higher if passive consent had been utilized and if absentees had been allowed to take part. Some studies indicate that students whose parents failed to respond to the consent procedure and absentees have higher reports of health risk behavior (Turner et al., 1993; Dent et al., 1993). In addition, follow up phone calls were made to parents who did not return the consent form. According to 1990 census data, there were 424 households in Crawford County without telephones. Students who lived in households without telephones may not have had an opportunity to participate. It is not known how this group of students differed from the students whose parents were contacted by telephone and who provided consent. Overall, results from this study confirm the fact that many rural youth are participating in health risk behaviors that place them at significant risk for morbidity and mortality.

Sexual Behaviors

The results in this study indicate that rural adolescents are engaging in sexual behaviors that place them at risk for unintended pregnancy, sexually transmitted disease including HIV infection. Approximately 69% of the students in this survey reported sexual intercourse and 31.4% had 4 or more lifetime partners. Kann et al. (1993) found that 54% of students had participated in sexual intercourse and 19% had 4 or more lifetime partners. In this study, approximately 51% had sexual intercourse in the three months preceding the survey compared to 69% reported by Kann et al., (1993).

Birth control pills, condoms, or withdrawal were used by approximately 77% of students in this survey while Kann et al., (1993) reported 82% of students using one of these contraceptive methods. The use of birth control pills and condoms by 66% of these students is encouraging, however approximately 23% used no method of birth control and 11% used withdrawal placing these adolescents at high risk for unintended pregnancy. The 43% of students who did not use condoms with last intercourse are placed at risk for sexually transmitted disease including HIV. Lack of contraceptive and condom use might be due to a myriad of factors. These students may not perceive themselves as susceptible or vulnerable to pregnancy, sexually transmitted disease, or HIV, or perhaps they do not recognize the potential serious consequences of their behaviors. They may perceive barriers to condom or contraceptive use such as lack of confidence in how to use the method or lack of partner acceptance. The student may lack the finances to fund contraceptive and condom use and may lack the knowledge that contraceptives and condoms are

available at the local health department through Title X regardless of ability to pay. Transportation to clinics may be problematic or clinic hours may be inconvenient. Students may not want parents to know they are sexually active and may not realize that according to Michigan law family planning services are obtainable without parental consent. Many adolescents tend to have spontaneous rather than premeditated sex (Cates, 1990), and without a prior acknowledgment that intercourse may occur, preventive actions are hindered. Many teenagers are awkward when communicating about sexuality, whether with the opposite sex or with their health care provider.

Tobacco Use

These data show that youth in this study are participating in health risk behaviors involving smoking cigarettes at a rate slightly above rates reported in other studies and the use of chewing tobacco and snuff was slightly lower. In this survey, 73% reported trying cigarette smoking, 37.3% were current smokers (had smoked cigarettes on one or more days of the 30 days preceding the survey), and 8% had used snuff or chewing tobacco during the past 30 days. Kann et al. (1993) found that 70% of students had tried cigarette smoking, 27.5% were current smokers, and 11% had used chewing tobacco or snuff in the past 30 days. Data from this survey indicated that only 3.9% (2) students were smoking 11 to 20 cigarettes per day which might indicate that these adolescents are not heavy smokers. It is also encouraging that 33.3% (17) students tried to quit. This may indicate that students are aware of the adverse consequences of tobacco use and may be ready for smoking cessation intervention. Even though these adolescents were not heavy smokers, tobacco use of any magnitude is alarming.

Alcohol Use

Results related to alcohol use were very similar to those reported by Kann et al., (1993), Millstein et al., (1992), and Riggs (1994). In this study 82% of students had a drink of alcohol, 57% reported alcohol use in the past 30 days, and 35% percent had 5 or more drinks in a row during the past 30 days. These data may reflect an overall societal acceptance of alcohol use. Even though alcohol use is prohibited by Michigan law until the age of 21, these students clearly have access to alcoholic drinks. Students having 5 drinks in a row on more than 1 occasion in the past 30 days may indicate binge type drinking. Approximately 16% had 5 or more drinks on 6 or more days in the past 30 which indicates alcohol use is occurring on more than just weekends. Teenagers who engage in binge drinking or who frequently use alcohol have been shown to be more likely to smoke or chew tobacco, use illicit drugs, have unprotected sex, and exhibit antisocial behaviors (Morrison, Rogers, & Thomas, 1995). Accidental injury is the leading cause of mortality and morbidity among adolescents and young adults. Motor vehicle accidents account for up to 75% of these deaths with a large percentage being alcohol related (Morrison et al., 1995). Alcohol is also related to a large percentage of the nonvehicle related injury deaths, suicides, and homicides (Morrison et al., 1995).

Illicit Drug Use

Marijuana use, both lifetime and current, was higher among students in this study than results reported by Kann et al., (1993). Lifetime and current cocaine use was similar to results found in other studies. In this study, 47% of students reported marijuana use with 22% using marijuana in the past 30 days. Cocaine use was reported by 8% of students and 6% used cocaine in the past 30 days. Other illicit

drugs such as LSD, PCP, ecstasy, mushrooms, speed, ice, or heroin were used by 25.5% (13) students. Kann et al. (1993) reported that 30% of students reported marijuana use, 15% used marijuana in the past 30 days, 6% reported cocaine use and 1.7% used cocaine in the past 30 days. Four percent of students in this study reported lifetime steroid use compared to 3% of students reported by Kann et al., (1993). The use of marijuana and cocaine by these students indicates that although these substances are illegal, they are available in this rural community. More students (47%) used marijuana than cocaine (6%) which may indicate that marijuana is more available or that marijuana is perceived as more "socially acceptable" to use. Legal consequences and personal consequences of using marijuana compared to cocaine may be perceived as less severe. It is also important to note that 25.5% (13) of the students used other illegal drugs such as LSD, PCP, ecstasy, mushrooms, speed, ice, or heroin which indicates that these drugs are also available in this rural community. The question regarding other illegal drug use was worded so that the researcher does not know which of the listed drugs the student used.

Suicidal Ideation and Suicide Attempts

Data from this study show that students attending this rural public high school were less likely to think seriously about committing suicide, were less likely to make a specific plan, and were less likely to make an attempt than youth polled from other national studies. In this study, 16% of the subjects thought seriously about attempting suicide, while 12% made a specific plan, and 6% actually attempted suicide. Kann et al. (1993) reported that 29% of students had seriously thought about attempting suicide, 18.6% had made a specific plan, and 7% actually attempted suicide. Suicidal ideation, plans, and attempts may be lower in this population because students feel

less stress. The majority lived with both parents which might indicate a stable home life and the students may feel they have someone to turn to in times of stress.

Unintentional Injuries Related to Motor Vehicle Use

Data from this study indicated that seat belt and motorcycle use was similar to results from other studies, and that helmet use was higher in this study. In this study, 29% of students always wore a seatbelt. Kann et al. (1993) reported seat belt use in 28% of the students. In this study 24% of students rode a motorcycle and 83% of those students always wore a helmet. Kann reported motorcycle use among 28% of students with 39% always wearing a helmet. In this study 49% rode a snowmobile or ATV the past year with 73% always wearing a helmet. Approximately 43% of students reported riding with someone who had been drinking alcohol and 23.5% drove while using alcohol. National data were not available for comparison.

Although seat belt use by drivers and front seat passengers is mandated by Michigan law, back seat passengers over the age of 16 are not required by law to do so. This may account for the fact that only 29% of students always wore a seatbelt. The high rate of helmet use with motorcycle and ATV use may be directly related to a mandatory helmet law in Michigan. Since helmet use is also very visible, students may fear the legal consequences of getting "caught."

Students riding in a vehicle with someone who has been drinking or driving while they themselves have been drinking may be due to a variety of reasons. Students may not perceive themselves as vulnerable to injury or may not recognize the serious consequences of such behavior. Although the legal consequences of drinking and driving are severe, adolescents may feel, "It can't happen to me" or that alcohol will not impair their driving ability.

Unintentional Injury Related to Weapons and Fighting

Data from this study show that adolescents in this rural community did not carry a weapon as often as reported in other studies, but the incidence of physical fighting was similar to other nationally reported results. In this study 14% of students carried a weapon and 41% participated in a fight. Kann et al. (1993) reported that 26% of students carried a weapon and 43% were in at least one fight during the 12 months preceding the survey. Weapon carrying may not be as prevalent in this rural community because the students feel less need to protect themselves. The school district has a very strict policy banning weapons from school premises and this policy is strictly enforced. Students caught with weapons or weapon "look alikes" are expelled from school.

Risk Behaviors and Gender

As shown in Tables 9, 10, 11, and 12 gender was a significant variable in a number of health risk behaviors. Males were significantly more likely to ever have experienced sexual intercourse, ever use cigarettes, to use chewing tobacco or snuff, to use inhalants in their lifetime, to have been in fight, or have been the victim of theft or damage. Reasons for greater male participation in these behaviors may be due to the fact that they see themselves as less susceptible to consequences of these behaviors or they may not perceive the consequences as severe. Males perhaps do not have the fear of pregnancy because they do not actually have to be pregnant. They may see abortion as a solution to a potential pregnancy. The consequences of sexually transmitted disease may be perceived as not as severe for the male as for the female. Males may find greater peer acceptance for some of these behaviors such as fighting and chewing tobacco or snuff use. In addition, the males in this study were

significantly older than the females. This could possibly be a contributory factor to some of the above findings.

Sexual risk behavior.

In this study males were statistically significantly more likely to report ever having had sexual intercourse. There was no significant gender difference in number of lifetime partners, current sexual activity, or contraceptive use with last intercourse. Kann et al. (1993) found that female students were significantly more likely to be currently sexually active (had intercourse in past 3 months) than male students, and that male students were significantly more likely to have had four or more sex partners than female students. Contraceptive use did not vary significantly by gender among currently sexually active students.

Tobacco use.

Results from this study indicate that males were statistically significantly more likely than females to ever use tobacco and to use chewing tobacco or snuff. There was no significant gender difference in current tobacco use. Kann et al. (1993) found that cigarette use did not vary by gender.

Alcohol use.

Results from this study found no statistically significant difference between gender in lifetime alcohol use, current alcohol use or likelihood of consuming 5 or more drinks on one occasion. Kann et al. (1993) found that lifetime and current alcohol use did not vary by gender, but that males were significantly more likely to have 5 or more drinks on at least one occasion.

Illicit drug use.

In this study no statistically significant gender difference was found for lifetime or current marijuana use, lifetime or current cocaine use, other illicit drug use, or lifetime anabolic steroid use. Males were statistically significantly more likely to report lifetime inhalant use. Kann et al. (1993) found that lifetime and current marijuana use did not vary by gender; lifetime and current cocaine use occurred significantly more often among male than female students and males were significantly more likely to use anabolic steroids than female students.

Suicide ideation, suicide attempts.

Statistically no significant difference was found between males and females in suicidal thoughts, plans, or attempts. Kann et al. (1993) and data from the NASHS (American School Health Association, 1989) indicated that females were more likely to have thought about committing suicide, were more likely to have made a suicide plan, and were more likely to have attempted suicide than male students.

Unintentional injury related to motor vehicle use.

In this study no statistically significant difference was found between male and female safety belt use. There was no statistically significant gender difference in reports of riding with someone who had used alcohol or drugs or driving after using alcohol or drugs. Kann et al. (1993) found that safety belt use did not vary by gender.

Unintentional injury related to weapons and fighting.

In this study males were statistically significantly more likely to be the victim of a theft or property damage and were more likely to have been involved in a physical

fight. There was no statistically significant difference in likelihood of carrying a weapon or of being threatened or injured with a weapon. Kann et al. (1993) reported that male students were significantly more likely to have been in a physical fight during the preceding 12 months than female students. Male students were significantly more likely to have carried a weapon than female students.

Discussion of Results With the Conceptual Model

The primary focus of this study was to gather descriptive data relevant to prevalence of specific risk behaviors among adolescents attending eleventh grade at a rural public high school in northern Michigan. An analysis of gender differences and specific risk behaviors was completed. This study did not examine any other variables in the health belief model that influence health risk behavior. Study of other modifying factors that influence health risk behaviors such as peer group influence and social class might be useful in order to target students who may be at greatest risk for participation in health risk behaviors. Determining the students' perceptions of susceptibility and their knowledge regarding potential serious consequences of health risk behaviors may be necessary to better understand which interventions may be useful in reducing health risk behavior. There is a need to understand how the adolescent views benefits and barriers associated with individual behaviors to better implement strategies aimed at reducing health risk behavior. In addition, there remains a need to identify which cues to action adolescents are most likely to respond to, so that these may be employed when targeting the adolescent population.

Discussion of Methodological Assumptions and Limitations

This study was designed to investigate health risk behaviors in students attending eleventh grade at a rural public high school. Ideally, the sample would have included all of the eligible adolescents. Of the 134 eligible students, 75 (56%) received consent to participate and 51 (38%) students completed the survey. Several reasons contributed to the small sample size: (a) Active consent was required from the parents; (b) Follow up telephone calls were made to parents who had not received the consent form and parents who did not have telephones could not be contacted; (c) The survey was given during regular classroom time and students may not have wanted to miss material that was being presented that day; and (d) Absentees were not included in the survey.

Implications for Advanced Nursing Practice in Primary Care

The Family Nurse Practitioner (FNP) in primary care is in a front line position to reduce health risk behavior among adolescents. In order to reduce health risk behaviors, a thorough assessment for health risk behaviors must be part of every primary care visit. The most important screening tool FNP's have at their disposal in assessing adolescents for risk behaviors is a thorough intake history which should include questions about sexual behaviors, questions about tobacco, alcohol, and illicit drug use, and questions about behaviors that may lead to unintentional injury. Questions about depression and suicide ideation should also be asked. The physical examination is also important; deviations in pupil size, nystagmic eye movements, periorbital edema, conjunctivitis, rhinorrhea, nasal septum erythematosis, and malnutrition would alert the nurse practitioner to possible drug and alcohol use (Riggs, 1994). Genital lesions or genital discharge can indicate sexual risk behaviors.

The FNP will need to utilize her/his teaching role to increase the adolescent's knowledge about the adverse affects of health risk behaviors and their susceptibility to such effects. Of the adolescents who reported sexual intercourse, approximately 23% used no contraception with last intercourse which puts them at risk for unintentional pregnancy. Students need to know that adolescents who become parents risk lifelong social and economic disadvantages. Adolescent parents are less likely to complete their educations, to be employed, and if employed to have lower incomes. Adolescent parents are also more likely to have larger families, more marital disruptions, and greater need for welfare assistance (Morris, Warren, & Aral, 1993). Children of adolescent mothers often grow up in families with limited financial resources and few opportunities for upward mobility (Alexander & Guyer, 1993).

Approximately 43% of adolescents in this study did not use a condom at last intercourse which places them at significant risk for sexually transmitted disease. Adolescents need to know that they are at higher risk physically for sexually transmitted disease than persons in other age groups for two reasons. During adolescence, columnar epithelia is more apparent on the cervix than during adulthood; both chlamydia and gonorrhea have a predilection for this tissue. Second, adolescents often have a relatively unchallenged immune system, since they are less likely than older persons to have been exposed to STD (Morris et al., 1993). They need to understand that sexually transmitted disease such as chlamydia and gonorrhea may progress to pelvic inflammatory disease (PID) which places female adolescents at risk for chronic pelvic pain, infertility, and ectopic pregnancy (Morris et al., 1993). Sexually active adolescents who have genital ulcers associated with syphilis or genital herpes may be at greater risk for acquiring HIV as genital ulcers facilitate

transmission of the virus (Hein, 1993). In addition, adolescents need knowledge about signs and symptoms of sexually transmitted diseases so they can recognize a potential infection, as well as knowledge that prompt treatment of some diseases can lead to cure.

Of the adolescents in this study, 82% reported having drunk alcohol and 47% reported marijuana use. Cocaine and other drug use was also reported although to a much lesser extent. Adolescents need to understand that alcohol and other drug use behaviors established during youth may extend into adulthood (Blanken, 1993). The use of these substances jeopardizes physical, mental, and social development during a person's formative years, thereby endangering successful transitions from adolescent to adult roles (Blanken, 1993). Alcohol use is a factor in approximately half of all deaths from motor vehicle crashes and intentional injuries (Gans et al., 1990). Alcohol and drug use contribute directly and indirectly to the epidemic of sexually transmitted disease, HIV, and pregnancy due to impairment of judgment and reduced inhibitions (Blanken, 1993). Recognition of the impact and prevalence of alcohol and other drug use among adolescents can be used to increase awareness of the problem and may be important in helping adolescents reduce risk behaviors in this area.

Approximately 73% of the students in this study reported cigarette use. Adolescents need to know that nicotine addiction does occur during adolescence and that adolescent tobacco users are likely to become adult tobacco users (Morbidity and Mortality Weekly Report, 1994). The age at which a person begins to smoke cigarettes has been found to be related to the total number of years of subsequent smoking and the number of cigarettes smoked per day in adulthood (Taioli & Wynder, 1991). Health problems associated with smoking are associated with

duration (years) of tobacco use and intensity (amount) of use (Morbidity and Mortality Weekly, 1994). Preventing tobacco use among adolescents is therefore likely to affect both duration and intensity of tobacco use which potentially will reduce long term health consequences.

Adolescents need knowledge and reinforcement that most injuries are preventable. Some behaviors that are risk factors for unintentional injuries are initiated during adolescence and may persist into adulthood (Waxweiler, Harel, and O'Carroll, 1993). In 1990, 77% of persons killed in motor vehicle crashes were not wearing safety belts. Fatal head injuries among motorcyclists, snowmobilers, and ATV users are another problem. Each year, motorcyclists account for about 12% of all deaths from injuries sustained in motor vehicle crashes, and slightly more than half of these injuries involve head injury (Waxweiler et al., 1993). Risk reduction for unintentional injuries calls for the increased use of safety belts and helmets. Among front seat motor vehicle occupants, use of safety belts reduces the risk for fatal injury by 40 to 50 percent (Waxweiler et al., 1993). Helmet use reduces the risks for death from motorcycle crashes 28 to 73 percent (Waxweiler et al., 1993).

Weapon carrying may significantly increase the risk that a violent argument will result in death, disability, or other serious injury. The immediate accessibility of a weapon may be the factor that turns a violent altercation into a lethal event (O'Carroll, Harel, and Waxweiler, 1993). Physical fighting among adolescents is a prominent cause of injuries and homicides in this age group (O'Carroll et al., 1993). Even adolescents who are not directly involved with interpersonal violence are affected by the threat of such violence. Interventions designed to reduce the prevalence of physical fighting and weapon carrying may help prevent such injuries.

Although the percentages of students who reported that they have seriously thought about committing suicide and who have actually tried to commit suicide were not high, suicide prevention efforts are necessary. Screening students for depression, suicidal thoughts, suicidal plans, and past suicide attempts may be as important as other screening procedures. The most important antecedent behavior associated with adolescent suicide is a history of a previous suicide attempt. Although less than 10% of attemptors eventually complete suicide, they are still 20 to 50 times more likely to complete suicide than peers who have not attempted suicide (Grossman & Rivera, 1992). Suicidal behavior in adolescents has also been linked to depression (Lamb & Pusker, 1991). Forty five percent of students in this study reported depression in the past 6 months. Questions relating to depression and suicide should be part of every assessment.

Knowledge alone will not be effective in reducing health risk behavior. In addition to being an educator, the FNP needs to actively involve the adolescent in plans to reduce risk behaviors and to decrease negative consequences of risk behaviors. She/he may need to help the adolescent acquire the skills necessary to change or reduce health risk behaviors. Use of role playing may help the adolescent say no to health risk behaviors. The FNP may need to refer some adolescents to other professionals with more expertise in dealing with certain problems such as alcohol abuse, substance abuse, depression, suicide ideation, and suicide attempts.

The FNP may serve as a consultant to the school system, teachers, and parents. The school health curriculum needs to address the health risk behaviors that impact the lives of adolescents. Health educators need to know when specific health risk behaviors are initiated so that educational material can be presented before the

majority of students initiate those behaviors. Students need knowledge so they can make fully informed choices regarding behaviors that may impact their health for a lifetime, but educational programs also need to teach students skills such as how to say no in spite of peer pressure. Categorical programs that focus on only one behavior, such as substance abuse, are important, but these programs need to be linked together in a planned sequential curriculum. The FNP may serve as a consultant to classroom teachers as they plan specific lesson plans. She/he may be called upon to be a guest lecturer to present specific programs to students and parents. Parents as well as students need knowledge about the prevalence, signs and symptoms, treatment, and prevention of sexually transmitted disease. The FNP may act as consultant for further research projects that address health risk behaviors among adolescents.

The FNP may need to be a leader in organizing a "task force" that will bring together all local groups that have an interest in adolescent health. Meetings involving the public health agency, social services, mental health, local law enforcement, the juvenile justice system, the religious community and the school system need to be coordinated on a regular basis to plan strategies to reduce adolescent risk behaviors. No single agency or group is capable of providing the range of services needed by adolescents at risk. The FNP may serve as a catalyst to develop focus groups of youth, parents, and grandparents to help identify potential strategies for dealing with health risk behaviors.

The FNP may also need to be proactive in the political arena. She/he will need to work with the state legislators to advocate for allocation of funds to establish school based health clinics. School based health clinics throughout the country have

shown a decrease in health risk behaviors, an increase in compliance with treatment protocols for sexually transmitted disease, a decrease in the pregnancy and birth rate, delays in the initiation of sexual activity, and earlier detection of health problems (Lear, Gleicher, St. Germaine, and Porter, 1991).

Recommendations for Further Research

This study found that rural youth are engaging in health risk behaviors related to sexual behaviors, tobacco, alcohol and drug use, and intentional and unintentional injury. Suggestions for further research include the following:

(a) Repeat this study utilizing a cross sectional design to help identify when risk behaviors are initiated and how risk behaviors change with grade level and age. This information will be necessary to determine when health education materials need to be introduced.

(b) Execute a longitudinal study of several grade levels to follow particular age groups over a period of time to determine how risk behaviors change over time.

(c) Target intervention strategies such as utilization of peer group educators using experimental studies to determine whether intervention strategies impact risk behaviors.

(d) Target adolescents who currently are in non traditional school settings such as those who are attending Alternative Education Classes in the evening and those youth who have dropped out of school. These adolescents may have a significantly different level of health risk behaviors from students attending traditional school.

(e) Expand investigation efforts aimed at identifying the influence of other variables in the health belief model that may influence health risk behaviors. The individual's perceptions of seriousness and susceptibility, the cues to action, the benefits and

barriers, and the modifying factors such as social class, peer group, and race may help to identify which adolescents are at greatest risk.

(f) Repeat this study utilizing a larger sample size in other rural school districts to determine whether health risk behaviors are similar to results found in this study.

Summary

This study examined health risk behaviors of rural adolescents and the relationship of gender to selected health risk behaviors using descriptive statistics and chi square analysis. The findings, though limited by a relatively small sample size, suggest that these rural youth are engaging in health risk behaviors that place them at risk for morbidity and mortality related to sexual behaviors, tobacco, alcohol, and drug use, and intentional and unintentional injury. The study contributes useful health information for Family Nurse Practitioners in primary care.

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APPENDICES

APPENDIX A

YOUTH RISK BEHAVIOR SURVEY

1995

YOUTH RISK BEHAVIOR SURVEY

This survey is about health behavior. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to develop better health education for young people like yourself.

DO NOT write your name on this survey. The answers you give will be kept private. No one will know what you write. Answer the questions based on what you really do.

Completing the survey is voluntary. You indicate your voluntary agreement to participate by completing and returning this survey.

The questions that ask about your background will only be used to describe the types of students completing this survey. The information will not be used to find out your name. No names will ever be reported.

Try to answer every question. When you are finished, follow the instructions of the person giving you the survey.

Thank You Very Much For Your Help.

YOUTH RISK BEHAVIOR SURVEY

1. How old are you?

   (a) 15 (b) 16 (c) 17 (d) 18

2. Sex: (a) Female (b) Male

3. How important is your health?

   (a) very important (b) somewhat important (c) not important

4. How healthy are you?

   (a) excellent health
   (b) good health
   (c) fair health
   (d) poor health

5. How often do you worry about your personal health?

   (a) a lot (b) sometimes (c) hardly ever

6. How often do you worry about getting sick?

   (a) a lot (b) sometimes (c) hardly ever

7. When you are sick, how much do you worry about it?

   (a) a lot (b) some (c) little to none

8. How much responsibility do you feel for your health?

   (a) a lot (b) some (c) little to none

9. How often do you do things not good for your health?

   (a) a lot (b) sometimes (c) hardly ever

10. How many days are you absent from school in a typical month?

    (a) almost never
    (b) 1-2 days a month
    (c) 3-5 days a month
    (d) 6 or more days a month

11. When did you last go to a doctor or nurse for a HEALTH check-up or physical when you were NOT sick?

    (a) during last 12 months
    (b) 1-2 years ago
    (c) more than 2 years ago
    (d) never

12. How often do you go to a doctor, nurse, or Emergency Room?

(a) never
(b) 1-2 times per year
(c) 3-5 times per year
(d) more that 5 times per year

13. When you are sick, where do you go?

(a) Private doctor's office
(b) Walk-In Clinic (Quick Care)
(c) Emergency Room
(d) Health Department
(e) Other - Where _____

14. When you are sick or hurt do you always get medical care when you feel you need it?

(a) Yes (Go to question 26)
(b) No (Go to question 15)

15. My parent(s) didn't think I needed to see a doctor . . . . . (a) yes (b) no
16. It cost too much money . . . . . (a) yes (b) no
17. I didn't know where to go . . . . . (a) yes (b) no
18. I didn't have a way to get there . . . . . (a) yes (b) no
19. I could not go during office hours . . . . . (a) yes (b) no
20. I had to wait too long to get an appointment . . . . . (a) yes (b) no
21. I did not want to miss school . . . . . (a) yes (b) no
22. My mother/father could not take time off work . . . . . (a) yes (b) no
23. I was afraid/embarrassed . . . . . (a) yes (b) no
24. My visit would not be secret . . . . . (a) yes (b) no
25. Other _____ (a) yes (b) no

26. What kind of health insurance does your family have?

(a) Private (Blue Cross/Blue Shield, AETNA, etc.)
(b) Prepaid health maintenance plan, (Blue Care Network, HMO, Health Plus, etc.)
(c) Medicaid
(d) My family pays because we have no insurance
(e) I do not know

HAVE YOU BEEN CHECKED FOR THE FOLLOWING IN THE LAST 2 YEARS?

27. blood iron (anemia) . . . . . (a) yes (b) no (c) don't know
28. height and weight . . . . . (a) yes (b) no (c) don't know
29. blood pressure . . . . . (a) yes (b) no (c) don't know
30. pregnancy . . . . . (a) yes (b) no (c) don't know
31. pap smear . . . . . (a) yes (b) no (c) don't know
32. sexually transmitted disease (STD) . . . . . (a) yes (b) no (c) don't know
33. scoliosis (curved back) . . . . . (a) yes (b) no (c) don't know
34. hearing and vision . . . . . (a) yes (b) no (c) don't know

35. How do **you** describe your weight?

(a) Very underweight
(b) Slightly underweight
(c) About the right weight
(c) Slightly overweight
(d) Very overweight

36. How do you feel about your weight:

(a) I'm trying to lose weight
(b) I'm trying to gain weight
(c) I want to stay the same
(d) It doesn't matter to me

37. Have you ever done any of the following shortly after eating (Mark only one)?

(a) made yourself throw up
(b) used remedies such as laxatives
(c) both of the above
(d) neither of the above

38. During the past 30 days, did you **vomit or take laxatives** to lose weight or to keep from gaining weight?

(a) Yes
(b) No

39. How many days a week do you usually eat breakfast?

(a) almost never
(b) 1-2 times a week
(c) 3-4 times a week
(d) 5-7 times a week
(e) every day

40. In the past **six** months, have you had the feeling that life wasn't worth living?

(a) Yes, often (b) sometimes (c) never

41. In the past **six** months, have you been depressed for long periods of time?

(a) yes, but not right now
(b) yes, and I'm having real problems right now
(c) no

42. During the past **12** months, did you ever seriously consider attempting suicide?

(a) Yes
(b) no

43. During the past **12** months, did you make a plan about how you would attempt suicide?

(a) Yes
(b) no

44. During the past **12** months, how many times did you actually attempt suicide?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

45. **If you attempted suicide** during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?

(a) I did not attempt suicide during the past 12 months
(b) Yes
(c) No

46. Have you ever had sexual intercourse?

(a) Yes
(b) No

47. How old were you when you had sexual intercourse for the first time?

(a) I have never had sexual intercourse
(b) 13 years or younger
(c) 14 or 15 years old
(d) 16 years old or older

48. During your life, with how many people have you had sexual intercourse?

(a) I have never had sexual intercourse
(b) 1 person
(c) 2 or 3 people
(d) 4 or more people

49. During the past 3 months, with how many people did you have sexual intercourse?

(a) I have never had sexual intercourse
(b) I have had sexual intercourse, but not during the past 3 months
(c) 1 person
(d) 2 or 3 people
(e) 4 or more people

50. Did you drink alcohol or use drugs before you had sexual intercourse the **last time**?

(a) I have never had sexual intercourse
(b) Yes
(c) No

51. The **last time** you had sexual intercourse, did you or your partner use a condom?

(a) I have never had sexual intercourse
(b) Yes
(c) No

52. The **last time** you had sexual intercourse, what **one** method did you or your partner use to **prevent pregnancy**? (Select only one response.)

(a) I have never had sexual intercourse
(b) No method was used to prevent pregnancy
(c) Birth control pills
(d) Condoms
(e) Withdrawal
(f) Some other method

53. How many times have you been pregnant or gotten someone pregnant?

(a) 0 times
(b) 1 times
(c) 2 or more times
(d) Not sure

54. Do you feel pressure to have sex?

(a) Yes (b) No

55. If you answered YES to question 54 where does the pressure come from?

(a) boyfriend
(b) girlfriend
(c) friend(s)
(d) adult
(e) other

56. How often do you wear a seat belt when riding in a motor vehicle?

(a) Never
(b) Rarely
(c) Sometimes
(d) Most of the time
(e) Always

57. During the past 12 months, how many times did you ride a motorcycle?

(a) 0 times
(b) 1 to 10 times
(c) 11-20 times
(d) 21 to 39 times
(e) 40 or more times

58. When you rode a motorcycle during the past 12 months, how often did you wear a helmet?

(a) I did not ride a motorcycle during the past 12 months
(b) Never wore a helmet
(c) Rarely wore a helmet
(d) Sometimes wore a helmet
(e) Most of the time wore a helmet
(f) Always wore a helmet

59. During the past 12 months, how many times did you ride a snowmobile or ATV?

(a) 0 times
(b) 1 to 10 times
(c) 11-20 times
(d) 21 to 39 times
(e) 40 or more times

60. When you rode a snowmobile or ATV during the past 12 months, how often did you wear a helmet?

(a) I did not ride a snowmobile or ATV during the past 12 months
(b) Never wore a helmet
(c) Rarely wore a helmet
(d) Sometimes wore a helmet
(e) Most of the time wore a helmet
(f) Always wore a helmet

61. During the past 30 days, how many times did you **ride** in a car or other vehicle driven by someone who had been drinking alcohol?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

62. During the past 30 days, how many times did you **drive** a car or other vehicle when you had been drinking alcohol?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

63. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?

(a) 0 days
(b) 1 day
(c) 2 or 3 days
(d) 4 or 5 days
(e) 6 or more days

64. During the past 30 days, how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?

(a) 0 days
(b) 1 day
(c) 2 or 3 days
(d) 4 or 5 days
(e) 6 or more days

65. During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

66. During the past 12 months, how many times has someone stolen or deliberately damaged your property such as your car, clothing, or books?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

67. During the past 12 months, how many times were you in a physical fight?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

68. During the past 12 months, how many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?

(a) 0 times
(b) 1 time
(c) 2 or 3 times
(d) 4 or 5 times
(e) 6 or more times

69. The last time you were in a physical fight, with whom did you fight?

(a) I have never been in a physical fight
(b) A total stranger
(c) A friend or someone I know
(d) A boyfriend, girlfriend, or date
(e) A parent, brother, sister, or other family member
(f) Someone not listed above
(7) More than one of the persons listed above

70. Have you ever tried cigarette smoking, even one or two puffs?

a. Yes
b. No

71. How old were you when you smoked a whole cigarette for the first time?

(a) I have never smoked a whole cigarette
(b) 10 years old or younger
(c) 11-13 years old
(d) 14 or 15 years old
(e) 16 years old or older

72. During the past 30 days, on how many days did you smoke cigarettes?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

73. During the past 30 days, on the days you smoked, how many cigarettes did you smoke **per day**?

(a) I did not smoke cigarettes during the past 30 days
(b) 1 cigarette per day
(c) 2 to 5 cigarettes per day
(d) 6 to 10 cigarettes per day
(e) 11 to 20 cigarettes per day
(f) More than 20 cigarettes per day

74. Have you ever tried to quit smoking cigarettes?

(a) Yes
(b) No

75. During the past 30 days, on how many days did you use chewing tobacco or snuff, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

76. How old were you when you had your first drink of alcohol other that a few sips?

(a) I have never had a drink of alcohol other than a few sips
(b) 10 years old or younger
(c) 11-13 years old
(d) 14 or 15 years old
(e) 16 years old or older

77. During the past 30 days, on how many days did you have at least one drink of alcohol?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

78. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

79. How old were you when you tried marijuana for the first time?

(a) I have never tried marijuana
(b) 10 years old or younger
(c) 11-13 years old
(d) 14 or 15 years old
(e) 16 years old or older

80. During the past 30 days, how many times did you use marijuana?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

81. How old were you when you tried **any** form of cocaine, including powder, crack, or freebase, for the first time?

(a) I have never tried cocaine
(b) 10 years old or younger
(c) 11-13 years old
(d) 14 or 15 years old
(e) 16 years old or older

82. During the past 30 days, how many times did you use **any** form of cocaine, including powder, crack, or freebase?

(a) 0 days
(b) 1 day
(c) 2 to 5 days
(d) 6 to 10 days
(e) 11 or more

83. During your life, how many times have you sniffed glue, or breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high?

(a) 0 times
(b) 1 or 2 times
(c) 3 to 9 times
(d) 10 to 19 times
(e) 20 or more times

84. During your life, how many times have you taken **steroid pills or shots** without a doctor's prescription?

(a) 0 times
(b) 1 or 2 times
(c) 3 to 9 times
(d) 10 to 19 times
(e) 20 or more times

85. During your life, how many times have you used any other type of **illegal** drug, such as LSD, PCP, ecstacy, mushrooms, speed, ice, or heroin?

(a) 0 times
(b) 1 or 2 times
(c) 3 to 9 times
(d) 10 to 19 times
(e) 20 or more times

86. During your life, how many times have you used a needle to inject any illegal drug into your body?

(a) 0 times (b) 1 time (c) 2 or more times

87. During the past 12 months, has anyone offered, sold, or given you an illegal drug **on school property**?

(a) Yes (b) No

88. When did you last go to the dentist?

(a) during last 12 months
(b) 1-2 years ago
(c) more than 2 years ago
(d) never

89. How often do you brush your teeth?

(a) I never brush my teeth
(b) less than 6 times a week
(c) daily
(d) 2 or more times daily

90. How often do you floss your teeth?

(a) I never floss my teeth
(b) less than 6 times a week
(c) daily
(d) 2 or more times daily

91. Who do you live with now?

(a) both parents
(b) 1 parent only
(c) 1 parent and 1 step parent
(d) other guardian/adults
(e) no adult

WHAT HELP WOULD YOU WANT FROM YOUR DOCTOR OR OTHER HEALTH CARE PROVIDER?

92. Health check-up . . . . . (a) yes (b) no
93. Sports physical . . . . . (a) yes (b) no
94. A place to go when I'm sick . . . . . (a) yes (b) no
95. Birth control . . . . . (a) yes (b) no
96. Counseling for my problem . . . . . (a) yes (b) no
97. Dental care . . . . . (a) yes (b) no
98. Skin care . . . . . (a) yes (b) no
99. Pregnancy test . . . . . (a) yes (b) no
100. Care during pregnancy . . . . . (a) yes (b) no
101. AIDS information . . . . . (a) yes (b) no
102. Sexually transmitted disease (STD) information . . . . . (a) yes (b) no

APPENDIX B

FACT SHEET FOR PARENTS

Fact Sheet for Parents

How will education agencies and schools benefit from conducting this survey?

Results from this survey can be used to (1) monitor how health behaviors among high school students increase, decrease, or remain the same over time; (2) evaluate the impact of national, state, and local efforts to prevent health risk behaviors; and (3) monitor progress in achieving relevant national health objectives and National Education goals. Results can be used to help focus programs and policies for HIV prevention education and school health education on the behaviors that contribute to the leading causes or mortality and morbidity.

What is the focus of the Youth Risk Behavior Survey?

This survey focuses on health behaviors established during youth that result in the most significant mortality and morbidity during youth and adulthood. These include: (1) behaviors that result in unintentional and intentional injuries; (2) Tobacco use; (3) alcohol and other drug use; (4) sexual behaviors that result in HIV infection and other sexually transmitted diseases (STDs), and unintended pregnancies; (5) dietary behaviors; and (6) physical activity.

Why were these behaviors selected?

Among persons aged 5 to 24 years, approximately 72% of all deaths are due to only four causes: motor vehicle crashes (30%), other unintentional injuries (12%), homicide (19%), and suicide (11%). In addition, each year an estimated 1 million teenaged girls become pregnant and 86% of all STD cases occur among 15 to 29 year olds. One out of every five persons diagnosed with AIDS in the United States is 20 to 29 years old; and many of these may have become infected as adolescents.

Among adults aged 25 and over in the U.S., 67% of deaths are due to only three causes: heart disease (35%), cancer (25%), and stroke (7%). A number of behaviors, often established during youth, contribute to these health problems. These behaviors include the use of tobacco, excessive consumption of fat, and insufficient physical activity.

Who developed the questionnaire?

The questionnaire was developed by representatives from all state education agencies, 16 local education agencies, and 19 federal agencies including the U.S. Department of Education, and by the foremost scientists in each categorical area. These representatives were asked to focus questions on the leading causes of mortality, morbidity, and social problems nationwide. Additional questions were added to the

Centers for Disease Control survey to reflect local patterns of health utilization.

Will this survey cause students to initiate or increase risk behaviors?

Students are exposed regularly to information about tobacco, alcohol, and other drug use; violence; and sexuality through the television, friends, and magazines. Exposure to a small number of questions on any one topic is not likely to cause a significant change in behavior--either good or bad.

How long does it take to fill out the questionnaire? Is there some sort of physical test?

One class period is needed for administration of the questionnaire. It will take approximately 10 minutes to distribute survey materials and read directions to the students. It will then take approximately 35 minutes for students to record their responses. No physical test or exam is involved.

Is student participation anonymous? How is student privacy protected?

Survey administration procedures are designed to protect student privacy and allow for anonymous participation. Students submit a completed questionnaire containing no names or personal identifiers.

Are students tracked over time to see how their behavior changes?

No. Students who participate cannot be tracked because no identifying information is collected.

What is the reading level of the questionnaire

The reading level is approximately 7th grade.

Will students be able to answer these questions?

Yes. Questions have been selected that have been used successfully in other school based surveys of high school students. Evidence indicates that high school students can understand and appropriately respond to the questions.

Do students answer the questions truthfully?

Research indicates data of this nature may be gathered as reliably from adolescents as from adults. To obtain truthful answers, students must perceive the survey as important and know that their privacy and confidentiality is assured.

Do Youth Risk Behavior Surveys have broad national support?

Yes. The survey is supported by many major national organizations. The American Association of School Administrators, American Medical Association, American School Health Association, Association for the Advancement of Health Education, Association of State and Territorial Directors of Health Promotion and Public Health Education, Association of State and Territorial Health Officials, Council of Chief State School Officers, National Association of State Boards of Education, National Education Association, National Education Goals Panel, National PTA, National School Boards Association, National School health Education Coalition, and the Society of State Directors of Health, Physical Education and Recreation have provided letters of support.

This material is adapted from the Centers for Disease Control Fact Sheet.

APPENDIX C

SURVEY ADMINISTRATION GUIDELINES

Survey Administration Guidelines

Administrating the Survey

In a study of this kind, it is important to have a standardized format so that procedures are consistent across the study. Therefore, where oral instructions are given below, try to give them as written.

Introductory Procedure

As quickly as possible after the class period begins, bring the class to attention. Students need approximately 30 to 45 minutes to take the survey, plus another 5 minutes for directions.

Homeroom Teacher Script

"Our school is involved in a very important study on student health behaviors, health needs, and health care utilization. The purpose of this study is to help our school better understand the health issues and problems students face. By taking this survey seriously, and by being as honest as you can, you will help to improve our school's programs.

It is very important that you know that your survey will be anonymous. Since your name will not be on the survey, no one will know which survey you completed.

I will now give each of you a survey form. Please do not open the survey until I tell you to do so. Remember: The survey is not a test."

After distributing the materials, ask the students to follow along as you read the paragraphs on the front page of the survey. When done reading the paragraphs, continue..

"When you have finished the survey, raise your hand. I will come to your desk, and you will place your survey form in this sealed box. No one in this school will open the box or look at the surveys. They will be sent for processing to Michigan State University graduate students. Again, no one here at this school will ever see your survey forms. So, please answer the questions honestly.

If you have any questions during the survey, raise your hand, and I will try to answer them. You have 45 minutes to do the survey. Make sure you read and answer each question. When you are done, raise you hand, and I will have you put your survey in this box. If you finish early, remain in your seat and use your time to study.

You may begin."

Concluding Procedure

Announce when there are five minutes remaining. Do not make special arrangements for students to finish later, or on their own. The hard and fast rule is to collect all forms by the end of the period.

At the end of the session say, *"Thank you very much for your participation. You may return to your classes now."*

Additional Directives

If a student comes in late, let him or her do the survey if at least 20 minutes remain.

Should they ask, assure the students that having a sip of an alcoholic beverage (communion wine included) does not constitute drinking.

Do not include in the sealed box any unused surveys. Return them separately to the survey coordinator.

APPENDIX D

CONSENT FORMS

March 1995

Dear Parents:

Next month graduate students from Michigan State University College of Nursing will be conducting a very important study of the health needs, health behaviors, and health care utilization of students in grade 11. The Youth Risk Behavior Survey developed by the Centers for Disease Control will be used for the study. It will take students approximately 40 minutes to complete the survey. A copy of the survey, as well as information on it, is available in the main office at Grayling High School for your review.

This survey is voluntary. Parents and students have a right to refuse to participate without penalty of any kind. All information will be collected anonymously with no names or other identifying marks on the surveys. Michigan State University College of Nursing graduate students will be coordinating the survey and analyzing the data. The study will be conducted in a scientific manner guided by detailed administrative guidelines. The final data analysis will be made available to school officials and the Board of Education.

Please fill out the form below and return it in the enclosed, pre-addressed and stamped envelope by March __, 1995. If you have any questions about the study, please contact Mr. Joel Raddatz, the high school principal.

Sincerely,

Mr. Joel Raddatz
High School Principal

.....

I hereby give my permission for _____ (name of student/s) to participate in the Health Survey.

_____ _____
Signature of Parent/Guardian Date

Crawford AuSable School District
403 Michigan Avenue
Grayling, MI 49738
Phone (517) 348-7641
FAX (517) 348-6822

Kent S. Reynolds, Superintendent
Paul B. Lerg, Assistant Superintendent

February 23, 1995

To Whom It May Concern:

The Crawford AuSable School District gives permission for Marilyn Rosi, BSN, RN, to conduct a research project in cooperation with Michigan State University. The project will involve a survey of the health behaviors and health care utilization of Grayling High School eleventh grade students. Participation in the survey is strictly voluntary and individual responses will be anonymous. The district is beginning a review of health and science curriculum and the information Ms. Rosi will gather is invaluable to our district team assigned to health and science curriculum improvement.

We will administer the survey instrument according to her design and use her analysis in our curricular improvement effort.

Sincerely,

Kent S. Reynolds
Superintendent

APPENDIX E

UCRIHS

MICHIGAN STATE
UNIVERSITY

March 27, 1995

TO: Marilyn L. Rosi
P.O. Box 411
Grayling MI. 49738

RE: IRB#: 95-101
TITLE: HEALTH RISK BEHAVIORS AMONG ELEVENTH GRADE STUDENTS ATTENDING A RURAL PUBLIC HIGH SCHOOL
REVISION REQUESTED: N/A
CATEGORY: 1-C
APPROVAL DATE: 03/26/95

The University Committee on Research Involving Human Subjects'(UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm

cc: Carla L. Barnes

OFFICE OF
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AND
GRADUATE
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