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THE RELATIONSHIP BETWEEN THE AGE OF FIRST USE OF ALCOHOL AND THE AGE OF SEXUAL INITIATION IN RURAL ELEVENTH GRADE PUBLIC HIGH SCHOOL STUDENTS

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THE RELATIONSHIP BETWEEN THE AGE OF FIRST USE OF ALCOHOL AND THE AGE OF SEXUAL INITIATION IN RURAL ELEVENTH GRADE PUBLIC HIGH SCHOOL STUDENTS

By

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ABSTRACT

THE RELATIONSHIP BETWEEN THE AGE OF FIRST USE OF ALCOHOL AND THE AGE OF SEXUAL INITIATION IN RURAL ELEVENTH GRADE PUBLIC HIGH SCHOOL STUDENTS

By

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The period of adolescence is marked by rapid physical, emotional, cognitive and social change. It is a period for the development of attitudes and behaviors related to sexual practices and alcohol use. This is a secondary data analysis of a larger study with a target population of students attending eleventh grade in a rural high school. The purpose of this study is to examine if a relationship exists between the age of first use of alcohol and the age of sexual initiation in rural eleventh grade high school students.

The sample size consisted of 51 eleventh grade students enrolled in a rural northern Michigan high school. The Youth Risk Behavior Survey was utilized by the original researcher to obtain the data. The findings suggest that there is a correlation between the age of onset of alcohol consumption and the age of sexual initiation in rural eleventh grade students.

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INTRODUCTION

The period of adolescence is marked by rapid physical, emotional, cognitive and social change. It is a period for the development of attitudes and behaviors related to diet, exercise, sexual practices and alcohol use (Guthrie, Loveland-Cherry, Frey, & Dielman, 1994). Initiation of certain health behaviors during this time frame, may have consequences that will alter the rest of an adolescent's life. The opportunity for influencing future attitudes and behaviors during this developmental stage with its rapid transitions, has tremendous implications for the health care provider of adolescents. The providers of health care and the families of adolescents need to address health risk behaviors that may be related to one another and the consequences of those behaviors. Alcohol use and initiation of sexual intercourse are two behaviors that may be related to each other. The purpose of this study is to examine the relationship between first use of alcohol and initiation of sexual intercourse in a group of rural adolescent high school students.

Adolescent Alcohol Use

Parents often dismiss adolescent alcohol consumption as benign experimentation because alcohol is legal vs. marijuana use, which is illegal. Alcohol is socially acceptable and was readily available in the homes of 25% of 7th-12th grade students who responded to the National Longitudinal Study of Adolescent Health (ADD). Two-thousand

forty-two (17.9%) students report drinking alcohol more than monthly with 9.97% drinking at least daily. The ADD Health study is the first nationally representative data set including longitudinal data on the health status, risk behaviors, and social contexts of adolescents. A total of 12,118 adolescents in grades 7 through 12 were drawn from an initial national school survey of 90,118 adolescents from 80 high schools plus feeder middle schools (Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger, & Udry, 1997).

In 1993, The National Survey on Drug Use Among Secondary School Students revealed a large number of 8th graders already were using alcohol. Almost 70% of 8th graders, whose age averages 13 years, had tried alcohol, with 26% reporting having been drunk on at least one occasion and 14% confirming they had a heavy drinking episode within two weeks prior to the survey (Johnston, O'Malley, & Buchman, 1993). The average age of first alcohol use for male adolescents was 11.9 years and for female adolescents 12.7 years (Alexander, 1991).

Initiating alcohol use, with peers at such an early age can have far reaching physical, psychological and developmental consequences. Studies indicate that quite often the first drink is taken at home with or without parental permission. In fact, on many occasions the parents willingly supplied the alcohol (Vanenaar, 1993). Parental attitudes of ambivalence or lack of disapproval is part of the problem.

Sexual Initiation

There is also a continuing trend toward earlier age of sexual initiation. By 1988 over one quarter of Afro-American and Caucasian 15 year old females had experienced intercourse and by 19 years of age, over four fifths of both races were sexually active (Cates, 1991). In a study of 1,899 inner city junior high school students, 239 respondents had intercourse before 13 years of age (12.5%) and 113 respondents reported age of first intercourse between 13-14 years of age (5.9%) (Durbin, DiClemente, Siegel, Krasnovsky, Lazarus, & Camacho, 1993). Statistics indicate that Afro-American boys and girls become sexually active on the average two years before Caucasians. Although, racial risk factors are closely tied with socioeconomic levels, research has been unable to determine which plays a more important role in early initiation of intercourse. It is known that chronic disadvantage, bleak outlook, and hopelessness are associated with earlier pregnancy and childbearing (Davis, 1989). Approximately 646 (17%) of 7th and 8th graders and nearly half (3,754), of 7,614 9th through 12th graders indicated that they had sexual intercourse in the ADD Health longitudinal study (Resnick et al., 1997). As the literature indicates, there is a difference in the onset of intercourse depending on race and socioeconomic levels, however, the differences between rural vs. urban adolescents' sexual initiation could not be found in the literature (Davis, 1989).

Initiation of sexual activity at a young age is a primary risk factor for unintended pregnancies. Approximately half of all first nonmarital pregnancies occur in the first six months following the initiation of sexual intercourse (Davis, 1989). Adolescent pregnancy and child bearing have lasting social, academic and economic disadvantages for mother, father and child. Studies indicate that the children of teenage mothers are at somewhat greater risk for cognitive and psychological deficits: the effect of both poor parenting and lower socioeconomic status (Davis, 1989). The problem of adolescent pregnancy is that a private event becomes public and costs society as well as individuals.

The increasing number of teenagers having sex at earlier ages also means they have a greater number of sexual partners on average. This puts adolescents at greater risk for obtaining sexually transmitted diseases (Cates, 1991). Contracting sexually transmitted diseases can have a number of consequences including infertility and cancer, and in some cases death, if HIV is contracted.

Alcohol Misuse and Sexual Initiation

It would be beneficial to investigate if there is a relationship between alcohol misuse and sexually initiation because adolescents are experimenting at earlier ages. Although the initiation of alcohol consumption during adolescent years is not viewed by some parents as alarming, perhaps the realization that this relatively "acceptable" risk behavior may be related to the initiation of other risk

behaviors, that have serious life altering consequences will alter parental views. Adolescents who reported misusing alcohol had 6.1 to 23 times higher odds of early onset sexual activity, multiple partners and unprotected intercourse than those of young people who did not misuse alcohol (Fergusson et al., 1996). More research is needed to investigate the relationship between the initiation of alcohol use and the initiation of sexual intercourse in all types of adolescents, regardless of their demographics.

The information obtained in the present research will be beneficial to the health care providers in rural communities, who are providing care to adolescents and their families. These data can be used to develop and initiate screening tools to identify adolescents at risk for engaging in unsafe health behaviors. If the two variables are positively correlated, then adolescents willing to take risks in one area may do so in another. Educational programs could be designed for parents of adolescents and for adolescents themselves that expounds on the information that the initiation of health risks behaviors are related and that encouraging the delay of one will have a domino effect on the others.

Statement of the Problem

The purpose of this study is to answer the question: Is there a relationship between the age of first use of alcohol and the age of sexual initiation in rural eleventh grade public high school students?

Conceptual Framework

Conceptual Definition of the Variables

The precise boundaries of adolescence are difficult to define. One way to understand it is to divide it into three psychosocial development phases; early, 11 to 14 years or junior high school; middle, 15 to 17 years or high school; and late, 18 to 21 years or college or work.

Each phase is characterized by certain behaviors. Within each developmental phase, adolescents deal with issues of autonomy, body image, peer group involvement and identity development.

Early adolescence (11 to 14 years), are not quite part of the adolescent subculture, yet they have moved away from the childhood culture. During this phase, adolescents become extremely conscious of their bodies as the onset of secondary sex characteristics develop. Time spent with peers increases and less time is spent with their families, sexual feeling emerge and varying degrees of sexual experimentation may begin.

Middle adolescence (15 to 17 years) is the essence of adolescents. They stand out as they develop their own dress code, code of conduct and communication style. This phase includes feelings of invulnerability, immortality and risk taking and behavioral experimentation intensifies. Physical urges precede emotional maturity and social pressure to experiment with sex is great.

Late adolescence (18 to 21 year) is a period when decisions are being made about how to contribute to society

as a responsible adult. Relationships with family members have been renegotiated to a more adult-adult basis. It is a time for more committed partner relationships based on individual preference vs. peer group values (Burns & Barber, 1996).

The actual ages of students answering the questions related to the present study were 16, 17 and 18 years old and they were in the eleventh grade. This places them in the period of middle adolescence. It is this time frame that established the boundaries of adolescents for this study.

First use of alcohol was defined as when an adolescent had their first drink of alcohol other than a few sips and sexual initiation was defined as the age when an adolescent first engaged in sexual intercourse.

Theoretical Model

The theoretical model used for this study was Bandura's Social Cognitive Theory (SCT). SCT is a model of interpersonal behavior that emphasizes the influence of social norms and social support. The SCT explains human behavior in terms of a dynamic, triadic, and reciprocal model in which behavior, personal factors and environmental influences interact (Goodson, Evans, Edmundson, 1997). The initiation of the two specific health risk behaviors in this study will be considered an interpersonal behavior which may be understood within the context of dynamic interactions among multiple and complex factors, therefore the SCT

appears to be an appropriate theoretical model for this analysis.

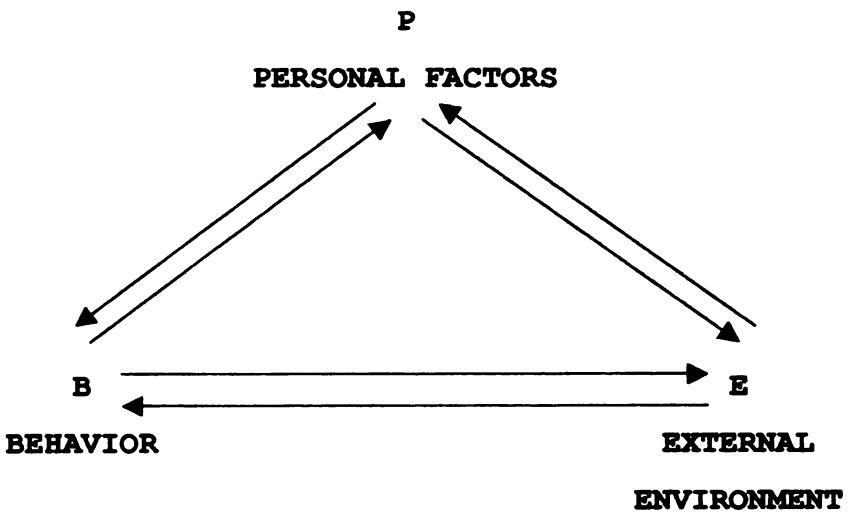
The SCT has twelve main constructs and they are as follows: Biological factors, Environment, Situation, Behavioral Capability, Expectations, Expectancies, Self Control, Observational Learning, Reinforcements, Self-Efficacy, Emotional Responses and Reciprocal Determinism (Bandura, 1986). Although all twelve constructs could be applied to this study, reciprocal determinism will be focused on.

In the social cognitive model of interactive agency, persons are neither autonomous agents nor mechanical conveyers of environmental forces. Rather they serve as a reciprocally contributing influence to their own motivation and behavior within a system of reciprocal determinism involving personal determinants, behavior and environmental factors. These determinants affect each other bidirectionally rather than unidirectionally (Bandura, 1986).

The influence exerted by the three interacting factors will vary for different activities, different individuals and different circumstances. When environmental conditions exercise powerful constraints on behavior, they emerge as overriding determinants. When environmental constraints are weak, personal factors serve as predominant influences in the regulatory system (Bandura, 1986).

The definition of the construct reciprocal determinism refers to the interaction that exists among the individual,

Figure 1.



Schematization of the relationship between the three classes of determinants in triadic reciprocal determinism.

Note : *B* signifies behavior; *P* the cognitive, biological, and other internal events that affect perceptions and action; *E* the external environment

(Bandura, 1986)

his/her behavior and his/her environment (Bandura, 1986). In the model of reciprocal determinism, which is summarized schematically in Figure 1, behavior, cognition and other personal factors and environmental influences all operate interactively as determinants of each other.

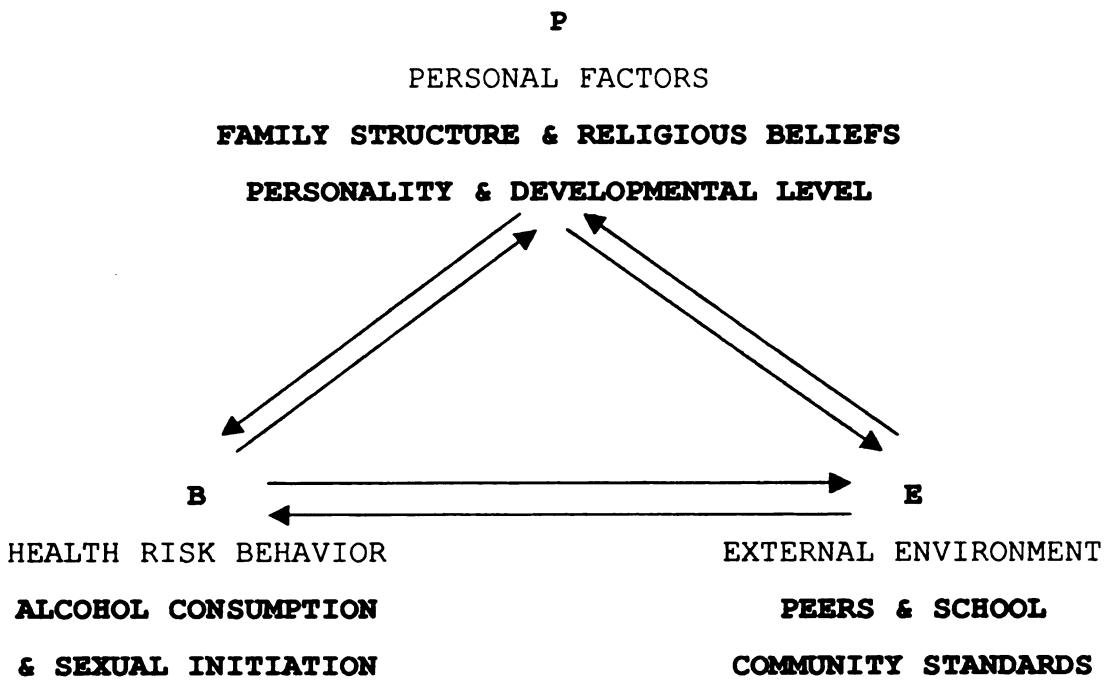
In figure 2, the operationalization of Bandura's model for this analysis includes; health behaviors such as alcohol consumption and sexual intercourse; personal factors such as family structure and religious beliefs; the external environment which includes peers and school involvement.

People's cognitions about themselves and the nature of things are developed and verified through four different processes: direct experience of the effects produced by their actions, vicarious experience of the effects produced by somebody else's actions, judgments voiced by others, and derivation of further knowledge from what they already know by using rules of inference (Bandura, 1986).

Cognitions govern behavior, the conceptions themselves are partly fashioned from direct or socially mediated transactions with the environment. The personal factors and environment factors convey norms about under age alcohol consumption and sexual behavior and about what is permissible and what exceeds socially acceptable boundaries.

In this study, one environmental variable (E) could be delinquent peers. In SCT this environmental influence may have a strong effect on an individual or depending on the specific individual and their beliefs (B) and depending on personal factors (P), may have little effect. This study

Figure 2.



Determinism Model

Note: *B* signifies the individual behavior including health behaviors of alcohol consumption and sexual intercourse; *P* signifies the personal factors such as family structure and religious beliefs, maturation, cognition

E signifies the external environment, including peers and school involvement

only looks at two variables and their possible relationship to each other, however if the variables are related, other aspects to explore would be family structure, religious beliefs and school connectedness of the student.

Review of Literature

Much has been written on adolescents and health risk behaviors. Many researchers have attempted to determine the ages at which people initiate alcohol use, cigarette smoking and sexual intercourse (Jessor, Costa, Jessor, & Donovan, 1983; Loda, Speizer, Martin, Skatrud, & Bennett, 1997; Warren, Kann, Small, Santelli, Collins, & Kolbe, 1997). Researchers are beginning to look at variables, such as influence of family, school connectedness and peer factors and if they relate to the age of initiation of risk behaviors (Fergusson & Lynskey, 1996; Resnick et al., 1997). This literature review will examine the present research on: 1) Alcohol misuse in adolescents; 2) Sexual initiation in adolescents.

Alcohol Initiation in Adolescents

A nationally representative sample drawn from more that 50,000 students in more than 400 schools showed almost 70% of eighth graders, whose age averaged 13 years, had tried alcohol, 26% reported having been drunk on at least one occasion (Alexander & Gwyther, 1995). This survey focused on drug use and did not incorporate other risk behaviors. Morrison, Rogers, and Thomas (1995), found the average age of first alcohol use for males was 11.9 years and for females 12.7 years. Warren et al. (1997) reported the

median age of first alcohol use for males was 13.9 years and for females 14.4 years in both 1991 and 1993.

Little research has been done on the health risk behaviors of rural adolescents. Loda et al. (1997) reported that rural youth are having sexual intercourse, getting pregnant, having babies and experiencing negative birth outcomes at rates comparable to their urban peers. Rural youth were found to start drinking at earlier ages, with approximately one-half of rural boys and close to one-third of urban boys reporting they had their first drink at 6-8 years old. This article does not state how these statistics were obtained, however the thrust of this article is to suggest strategies for future programs addressing rural adolescent's needs for pregnancy prevention in the southeastern portion of the United States. In a study of 51 Michigan rural adolescents 17.6% never used alcohol, 11.8% were 10 or younger, 17.6% were 11-13 years old, 37.3% were 14-15 years old, 15.7% were 16 years old or older when they had their first drink (Rosi, 1995).

Sexual Initiation in Adolescents

Jessor et al. (1983) designed a longitudinal study that involved collecting waves of data over a 10 year period: 1969-1979. The average age for first time intercourse in this sample was 18 years for males and 17.7 years for females. Questions regarding alcohol use were also addressed, however a correlation between the initiation of theses variables was not noted.

Warren et al. (1997) used data from the 1991 and 1993 YRBS with a sample size of 12,272 in 1991, 16,296 in 1993 and an overall response rate of 68% in 1991 and 70% in 1993. This study indicated the median age of first sexual intercourse in 1991 and in 1993 for females was 16.6 years and for males 16.3 years. In comparing these two studies, the age of sexual initiation had decreased by 1.7 years for males and 1.1 years for females over a twenty year period.

Davis (1989) reported approximately 45% of young women 15-19 years old were sexually active and 36% of them became pregnant within two years of their initial sexual experience. More recent research could not be found to see if that statistic has changed over time.

Approximately 17% (646/3,788) of 7th and 8th graders and nearly half (3,754/7,614) of 9th through 12th graders indicated that they had ever had sexual intercourse in the National Longitudinal Study on Adolescent Health (Resnick et al., 1997). In a study of 51 rural adolescents 31.4% never had sexual intercourse, 5.9% were 13 years old or younger, 39.2% were 14-15 years old and 23.5% were 16 years old or older when they had first time intercourse (Rosi, 1995). As one compares the data, the age of initiating sexual intercourse is becoming younger over time.

Summary

More research is needed in comparing the risk behaviors to each other. The questions unanswered are: Are they related to each other? Which ones are related? Are urban and rural youth at the same risk levels? Warren et al.

(1997) found a common pattern for both female and male students: Alcohol use started first, followed 17 or 18 months later by cigarette smoking, then followed by first sexual intercourse about 10-11 months later. For both male and female students first alcohol use preceded first sexual intercourse by more than 2 years. More studies comparing health risk behaviors and their age of onset are needed so that prevention programs can be developed, along with parental education programs.

There is also little data in the literature that relates specifically to rural youth and their health risk behaviors. The present study will examine two health risk behaviors that youth in a rural community in northern Michigan have demonstrated and examine if age of first alcohol use and age of first intercourse are related.

Methods

Research Design

This is a secondary data analysis of a larger study (Rosi, 1995) with a target population of all students attending 11th grade at a rural high school in northern Michigan. The original study was a nonexperimental descriptive ex-post facto design. This secondary data analysis also will use a nonexperimental retrospective descriptive design.

Sample

The original researcher describes Crawford County in 1995 as a medically undeserved county located in central northern Michigan with a total population of 12,260, which

included 3,201 children under 18. In 1990, 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. Thirty-four percent of students attending public school are eligible for free or reduced lunch (Rosi, 1995).

The target population was a convenience sample of all students attending the 11th grade at a rural public high school in northern Michigan. One hundred and thirty-four students were eligible to participate. Thirty-eight percent (51) of the 134 eligible students completed the survey. The original researcher made an attempt to analyze why 24 of the students who received parental consent did not participate in the survey. Six students were absent from the building participating in "out of building" activities, 8 were absent from school the day the survey was administered, and 10 did not participate for unknown reasons (Rosi, 1995). The ages of the students ranged from 16-18 years of age and 27 were females and 24 were males. The original researcher chose 11th grade students because the majority of students had taken a required semester health class in their sophomore year and theoretically had received health instructions necessary for making decisions regarding behaviors that may put them at risk for adverse health outcomes.

Operational Definitions of Variables

One variable in this study is the age of initiation of alcohol consumption. It is measured by question number 76 in the Youth Risk Behavior Study (YRBS). Question number 76

on the YRBS measures this variable by asking: "How old were you when you had your first drink of alcohol other than 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) 14-15 years old (E) 16 years old or older."

The second variable is the age of initiation of sexual intercourse, which is measured by questions 46 and 47 in the YRBS. Question 46 asks "Have you ever had sexual intercourse? (A) yes (B) No. Question 47 asks "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."

Instrumentation

Subjects completed the Youth Risk Behavior Survey (YRBS) (See Appendix A). In 1988 the Center for Disease Control (CDC), created a division of adolescent and school health, with the goal to identify health risks among youth; monitor prevalence of these risks, support and implement national programs to prevent these risks; and evaluate the impact of national programs (Kolb, 1992). To assess the status of the nation's adolescents, the CDC began designing the YRBS in 1988. The first version of the questionnaire was completed in October 1989. 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 9-12. The second version of the YRBS was sent to the Questionnaire Design Research Laboratory for four waves of laboratory field testing with high school

students. The goal of the field testing was 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 seventh grade reading level. Establishing criterion related validity for response to most of the questions may be impractical, if not impossible (Kann, Warren, Collins, & Kolbe, 1993). The survey consists of items measuring risk behaviors in six areas: (1) sexual behaviors (2) tobacco, alcohol & illicit drug use (3) suicidal ideation & suicide attempts (4) behaviors related to unintentional injury (5) dietary patterns and (6) physical activity. The original researcher added questions related to current health care utilization, desired health care services and demographic data. The Center for Disease Control allows the questionnaire to be copied, modified or administered without permission or cost (Kolbe, Kann, & Collins, 1993).

The questions were either yes or no responses, such as "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. The questionnaire also offered the subject options, such as "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. The YRBS was chosen for this study because the instrument included questions that the original researcher was interested in. Parents and school

administration were also more likely to support a survey that had been developed by the Center for Disease Control, a nationally renowned organization.

Procedures

The original researcher met with classroom teachers prior to the survey being administered, to answer questions about the survey and to provide oral and written instructions on procedure. Students were required to obtain written parental consent prior to the survey. Students who received parental consent reported to the library at a specific hour on a specific day. Instructions were read to the students from a prepared script and the students were instructed not to write their names or other identifying marks on the questionnaire (See Appendix C). The students were to place their answers directly on the questionnaire. When the survey was completed, the students placed the survey in a sealed "ballot type" box.

For this secondary data analysis, permission was obtained from both researchers of the original study, to look at the specific research question of this proposal.

Data Analysis

Correlational analysis was used to determine if there was a significant relationship between the ages of first use of alcohol and sexual initiation in rural eleventh grade public high school students and to examine the direction of the relationship.

Procedures for the Protection of Human Subjects

The original researcher obtained approval from the University Committee on Research Involving Human Subjects (UCRIHS) and from the school district (See Appendix D). Parents were asked for their consent after they received information explaining the research proposal and explaining the participation was voluntary (See Appendix B). Students gave their consent by completing and returning the survey.

For the purposes of this study, the researcher received the data on a computer disk with no identifying information and approval was received from UCRIHS (See Appendix E).

Assumptions

The original researcher assumed that the opportunity for participation in the study was offered equally to all eligible students. It was assumed that the adolescents answered the survey understanding the questions and answered them as honestly as possible. It was also assumed that the survey correctly identifies levels of risk behavior. For this secondary data analysis, the assumptions were unchanged.

Limitations

When certain behaviors can not be directly observed self-report is an appropriate method for data collection. Self report instruments can gather retrospective data or gather projections about behaviors in which subjects plan to engage. Many times self report yields information that may be difficult to obtain by any other means (Polit, 1995).

Self report has a serious limitation regarding the validity of the self report. It is difficult to be sure that the respondents have answered truthfully. This limitation must be realized and the distortion may involve both under and over representation of certain behaviors (Kolbe et al., 1993).

Another limitation of this study design is that parental consent is required when studying adolescents. Several studies have shown differences between youths who were recruited by active versus passive consent procedures. Active consent requires that parents provide written or verbal consent for their student to participate. This is referred to as active consent because the parent must take some action for their child to be part of the study. Passive consent requires no action taken by the parents. In this approach parents are informed that their nonresponse implies consent for their children to participate (Dent, Galaif, Sussman, Stacy, Burtun, & Flay, 1993). In studies requiring active consent there is lower participation of minorities, children with less educated parents, children who receive poorer grades in school and relatively more children who are cigarette or marijuana smokers than those requiring passive consent (Dent et al., 1993). It would be tempting for a researcher to use passive consent when engaging in research concerning adolescents and their health risk behaviors, because it is most likely this very group who are at greater risk for participating in health damaging behaviors. The drawback in attempting to collect data via

passive consent would be the strong objections from parents and school officials, due to the sensitive nature of the questions.

Due to the small sample size; 51 respondents (38%) out of a possible 134 eligible students, the results of this survey can not be applied to the behavior of all adolescents.

Results

Description of the Sample

Seventy-five of the 134 eligible students attending 11th grade received parental consent to participate in the survey, however only 51 students completed the survey (Rosi, 1995).

Thirty-nine percent of the sample were 16 years of age, 57% were 17 years of age, and 4% were 18 years of age (see Table 1).

Data Analysis

The research question addressed was "Is there a relationship between the age of first use of alcohol and the age of sexual initiation in rural eleventh grade high school students?"

Spearman Correlation Coefficient and descriptive statistics were used to examine the data.

Age of First Intercourse

Sixty-nine percent of the students reported having had sexual intercourse. Six percent had first intercourse at 13 or younger, 39% at 14-15 years old, and 24% were 16 years of age or older (see Table 2).

Table 1.

Age

	Age	Frequency	Percent	Cum Percent
	16	20	39.2	39.2
	17	29	56.9	96.1
	18	2	3.9	100.0
Total		51	100.0	100.0

Table 2.

Age of First Intercourse

	Frequency	Percent	Cum Percent
Never	16	31.4	31.4
13 or younger	3	5.9	37.3
14-15	20	39.2	76.5
16 or older	12	23.5	100.0
Total	51	100	

First use of Alcohol

Eighty-two percent of students report having had a drink of alcohol. Of those students indicating alcohol use, 12% were 10 or younger, 18% were 11 to 13, 37% were 14 to 15, and 16% were 16 or older when they had their first drink. Thus by 16 years of age, 82% of the students had their first drink of alcohol (see Table 3).

Table 3.

Age of First Alcohol

	Frequency	Percent	Cum Percent
Never used	9	17.6	17.6
10 or younger	6	11.8	29.4
11-13	9	17.6	47.1
14-15	19	37.3	84.3
16 or older	8	15.7	100.0
Total	51	100.0	100.0

Out of 51 students 16 (31.4%) never had intercourse and 9 (17.6%) never drank alcohol. Three (5.9%) had intercourse at the age of 13 or younger and 15 (29.5%) students had used alcohol in this age group. An increase in both health risk behaviors occurred in the next age group. In the age group of 14-15 year old, 20 (39.2%) students had first intercourse

and 19 (37.3%) had their first drink. Up to this point 23 (45.1%) students 15 and younger had intercourse and 34 (66.7%) drank alcohol. The final category was 16 and older. Twelve (23.5%) students had first intercourse and 8 (15.7%) had alcohol for the first time. By the age of 16 years a total of 78.6% had first intercourse and 82% had alcohol for the first time.

An analysis of the above data reveals that approximately 50% of the adolescents who responded to this survey, and who were 15 years old were engaging in one or both of the of specific health risk behaviors that are being examined in this study.

Relationship of Sexual Initiation and First Alcohol Use

To answer the research question a Spearman correlation co-efficient was used. The Spearman correlation coefficient is a commonly used measure of correlation between two ordinal variables. For most variables of a social or psychological nature, the correlation's are typically in the .10 to .40 range (Polit, 1995). For the purpose of this study a .05 level of significance was used.

Spearman Correlation Coefficient

The correlation between age of first alcohol use and the age of sexual initiation was .35 with a significance of $p \leq .01$. This indicates that there is a positive relationship between the age of first alcohol use and the age of sexual initiation in rural eleventh grade public high school students.

Discussion

Discussion of Results With the Theoretical Model

The focus of this study was to determine if there was a relationship between the age of onset between the two health risk behaviors of first alcohol use and sexual initiation. In the Social Cognitive Theory, which emphasizes the influence of social norms and support, the two health risk behaviors are considered interpersonal behaviors. The results of the study indicate that there is a positive relationship between the age of onset of the two health risk behaviors. The younger the adolescent is when they start drinking, the younger they will be when they initiate sexual intercourse. Bandura's model of reciprocal determinism indicates that behavior, cognitive (personal) and environmental factors operate interactively. The question then becomes: Can the personal factors or the environmental factors influence the age of first alcohol consumption?

The literature indicates that personal factors do play a role in variety of aspects in an adolescent's life. Some of the personal factors that are related to this study are family structure and religious beliefs and external factors such as school and peers. The conclusion of the ADD Health design study states that family and school, as well as individual characteristics are associated with health and risk behaviors in adolescents (Resnick et al., 1997). In the Christchurch Health and Development Study common risks that predisposed adolescents to engaging in health risk behaviors were: affiliation with delinquent peers, familial

factors and novelty seeking (Fergusson & Lynskey, 1996). In applying this to the Social Cognitive Theory all aspects, personal, environment and the individual, interact to determine the behavior of an individual.

Discussion of Results in the Literature

The National Longitudinal Study on Adolescent Health (Resnick et al., 1997) indicates that 17% of 13 year olds or younger had engaged in sexual intercourse versus the 5.9% of adolescents who responded in this study. The percentages for initiating sexual activity in the adolescents in high school are closer in range, approximately 50% nationally and 63% in this study.

In a different national study 70% of eighth graders (13 year olds) had tried alcohol compared to the 30% of the adolescents who responded to the survey for this research.

The differences in the national percentages versus the percentage obtained from this study may be explained by the small sample size for this study, and the students for this study were from a specific demographic area. The small size does not capture enough variance and being specific to a certain area the percentages may be different because of variety of influences, such as family involvement, religious ties and school involvement.

Implication for Advanced Nursing Practice in Primary Care

The Family Nurse Practitioner in a primary care setting can be influential and impact the health of adolescents. By using the concept of reciprocal determinism the FNP can educate the families and communities in the following ways:

1. Utilize the teaching role to increase the adolescent's knowledge regarding the correlation between health risk behaviors and their consequences.
2. Educating parents that a strong family structure and family involvement in their adolescents life does influence their adolescents behavior and choices, even if adolescents deny that.
3. Facilitate communication between the parent and their adolescent, as good communication, as well as active listening and mutual respect play an role in an adolescents decision making process.
4. Encourage adolescents to participate in extracurricular activities at school or church. School connectedness and church ties also influence an adolescent's decision making.
5. Provide a comprehensive history taking that examines various social, individual and familial factors that may contribute to the individual's susceptibility to early onset of health risk behaviors.
6. Become involved politically to educate the lawmakers regarding the influences on adolescents' health and to encourage them to support family legislation, in order to strengthen the family as a unit.

Recommendation for Further Research

Some suggestions for further research are to repeat this study obtaining a larger sample size and using a sample of students attending grades 6 through 12. This may identify when risk behaviors are initiated and examine if

there a consistent time interval between one risk behavior and the next. Also comparing urban vs rural students and their time of initiation of specific health risk behaviors.

Another recommendation would be to design a study using a sample of families of elementary school children and provide them with information regarding the association of health risk behaviors and the influence they can have as a family on those behaviors. The intervention could be on-going support groups between parents. The study could follow the children of the parents who participated in the support groups from middle school through high school to assess their age of initiation of specific health risk behaviors.

Recommendation for Formal Education of Nurses

A recommendation for the formal education of undergraduate and graduate nurses would be in course work that supports and places an emphasis on parent and family involvement in childrens' lives. The literature reviews are beginning to look at family, religion and community and the strength they have on the formation of choices made by adolescents. Education on this subject would allow nurses to apply this to the children and families they encounter in any type of practice setting. A segment of the clinical rotations should be in the community speaking to parents in groups, supporting strong family ties and sharing the information obtained in this research project and in the literature.

In the clinical settings Nurse Practitioners can use questionnaires and assessment tools that identify adolescents at risk for initiating risky health behaviors. Adolescents should be assessed at every office visit, acute or well, because they do not appear often to their health care providers office during this age span.

Summary

The purpose of this study was to determine if there was a correlation between the age of onset of alcohol consumption and the age of sexual initiation in rural 11th grade students. This study had a relatively small sample size and it was specific to rural youth. The statistical data does show that there is a significant correlation between theses two variables. This information is useful to FNP's practicing in a rural area in a school setting, clinic or private office. This data can be applied to the youth and their families that the FNP will provide care for by assessing for early initiation of alcohol use and then by providing education about the risk behaviors that are linked to it.

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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 63 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 cause 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 Center for Disease Control survey to reflect local patterns of health utilization.

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

Student 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 Center for Disease Control Fact Sheet.

APPENDIX C
SURVEY ADMINISTRATION GUIDELINES

Survey Administration Guidelines

Administering the Survey

In a study of this kind, it is important to have a standardization 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 and pencil. 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 envelope. After all the surveys are enclosed, I will seal it. Neither I nor anyone else in this school will open the envelope 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 every 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 try to answer each question. When you are done, raise your hand, and I will have you put your survey in this envelope. 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. "Thank you very much for your participation. You may return to your classes now."

If there is high absenteeism, note it (percentage absent) and its cause on the envelope. Do not use names.

Additional Directives

If a student does not want to participate, that is his or her right. Try to encourage participation, but do not mandate it. Students who do not wish to participate will be sent to the library.

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

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

APPENDIX D
CONSENT FORMS

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

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 Center 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

APPENDIX E
UCRIHS APPROVAL LETTER

MICHIGAN STATE
UNIVERSITY

May 14, 1998

TO: Linda Spence
A230 Life Sciences

RE: IRB#: 98-316
TITLE: THE RELATIONSHIP BETWEEN THE FIRST USE OF ALCOHOL AND SEXUAL INITIATION IN RURAL ELEVENTH GRADE PUBLIC HIGH SCHOOL STUDENTS
REVISION REQUESTED: N/A
CATEGORY: 1-E
APPROVAL DATE: 05/12/98

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 and any revisions 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)432-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:bed

cc: Marguerite I. Michels

OFFICE OF
RESEARCH AND GRADUATE STUDIES

sity Committee on lesearch Involving Human Subjects (UCRIHS)

iigan State University
ministration Building
st Lansing, Michigan
48824-1046

517/355-2180
FAX: 517/432-1171