

PREDICTING ADOLESCENT SEXUAL ACTIVITY USING INDIVIDUAL,  
FAMILIAL, AND EXTRA-FAMILIAL VARIABLES

by

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## ABSTRACT

This study examined selected individual, familial, and extra-familial variables that predict adolescent sexual activity. This secondary data analysis used data gathered from a self-report survey, from 397 adolescents age 11 to 18 in three non-urban communities in the Pacific Northwestern United States. The study employed multiple hierarchical regression analyses to examine the strength of selected variables in predicting sexual activity. The final model accounted for 58% of the variance of sexual activity among youth. The best predictors of adolescent sexual activity were peer sexual activity, attitude about sexual intercourse, age, gender, mother's education, and youth college aspiration. These findings have implications for future research, practitioners and policymakers.

## CHAPTER 1

## INTRODUCTION

The U.S. Department of Health and Human Services regards sexual behavior as a salient public health issue, and has included responsible sexual behavior among the ten leading health indicators of the American population (USDHHS/Healthy People 2010, n.d.). In addition, the national Centers for Disease Control and Prevention cite sexual behaviors among the six critical health behaviors for adolescents (CDC, n.d.a). Choices surrounding sexual behavior can have life-long consequences including unintended pregnancy, sexually transmitted diseases, and HIV/AIDS. Given that the majority of young people—about 80% in the United States—become sexually experienced during their mid to late teens and approximately one in five adolescents report having sexual intercourse before their 15<sup>th</sup> birthday, understanding sexual behavior among adolescents is of critical concern (Albert, Brown, & Flanigan, 2003; Singh & Darroch, 1999).

Extensive effort has gone into predicting and reducing adolescent sexual risk taking over the past decade. Many studies have looked at individual factors that predict sexual activity such as gender, race, self-efficacy, educational aspirations, religiosity, intellectual ability, and drug use (Billy, Brewster, & Grady, 1994; Mott & Fondell, 1996; Nahom et al., 2001; Small & Luster, 1994; Thornberry, Smith, & Howard, 1997; Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998). Familial factors, including family structure, parent-child relationship, family income, and parental education have also been examined (Billy, Brewster, & Grady, 1994; Miller, 2002; Small & Luster, 1994; Thornberry, Smith, & Howard, 1997). Few studies, however, have examined extra-

familial variants such as peer influence and neighborhood monitoring (Kinsman, Romer, Furstenberg, & Schwartz, 1998; Small & Luster, 1994).

Moreover, few studies have attempted to incorporate multi-level factors into an integrated model to examine the adolescent's risk factors in a more holistic approach. An exception to this is Small and Luster's secondary data analysis (1994), where the researchers organized variables into ecological groups and tested whether a cumulative risk factor model was a useful approach to understanding adolescent sexual activity. The sample consisted of over 2,000 adolescents (primarily Caucasian (51%) and Hispanic (39%) youth) from a midsized Southwestern city.

Based on their analyses, Small and Luster (1994) found several risk factors related to sexual activity and that some of those risks varied by gender. For males, the strongest predictors of sexual activity were alcohol use, having a girlfriend, parental monitoring, parental values, and grade point average, followed by a history of sexual abuse, concern about future economic opportunities, and neighborhood monitoring. These significant predictors accounted for 32% of the variance in sexual activity among males. For females, the four strongest predictors were alcohol use, having a boyfriend, parental monitoring, and parental values. Other significant predictors included a history of sexual or physical abuse, grade point average, parental support, and school attachment. Parent's education level, concern about future economic opportunities, and neighborhood monitoring were additional weak, but significant, predictors. The significant predictors for females accounted for 38% of the variance in sexual activity.

The Small and Luster study (1994) also supported the concept of cumulative risk for predicting sexual activity. The researchers found a linear relationship between the

number of risk factors and the likelihood of being sexually active, where only 1% of females with no risk factors were sexually active compared to 80% with eight or more risk factors. Similarly, compared to males with no risk factors those with five or more risk factors were six times more likely to be sexually active. While this study's strength was its ecological approach, the study did not include many salient variables that may further explain adolescent sexual activity, including race, attitudes about sexual intercourse, college aspirations, family structure, or peer sexual activity. The Small and Luster study also examined sexual activity as a discrete variable rather than a continuous scale of activity, which may have limited its ability to account for more variance in sexual activity.

Another shortcoming in extant literature is the lack of focus on youth living in non-urban and rural locales. The majority of studies have investigated youth in urban or suburban neighborhoods. Youth residing in non-urban settings face different challenges than their urban counterparts. Non-urban communities typically lack public transportation and have fewer services available for families compared to urban areas (e.g. access to medical services, family counseling, drug treatment, and other social services). Communities may be located far from metropolitan centers (i.e., 2-3 hours drive) and may lack youth programming such as supervised after school activities. When youth services are available, transportation is often needed to access these services. Issues of confidentiality may further constrain youth from seeking information or assistance around the sensitive issue of sexuality as in small communities there is a strong likelihood that an acquaintance or friend of the family may be someone who provides assistance at local agencies.

In order to address existing shortcomings in the literature and shed light on adolescent sexual activity in non-urban settings, the present investigation conducted a secondary data analysis to examine adolescents living in three small communities in the Pacific Northwestern United States. This study employed Bronfenbrenner's (1979) ecological theory as a framework for examining factors related to adolescent sexual activity and included variables at the individual, familial, and extra-familial levels. By using the ecological framework, this study integrated multi-level factors to further our understanding of the complexities of non-urban adolescent sexual behavior. In addition, the current study examined sexual activity in three ways—using a dichotomous variable indicating whether or not the adolescent had engaged in sexual intercourse, using age at first sexual intercourse, and using a continuum of seven sexual behaviors ranging from kissing to intercourse. By examining sexual behaviors on a continuum, this study provides a more complex picture of adolescent sexual behavior. A deeper understanding of the multiple factors related to sexual activity among non-urban adolescents holds important implications for research, practice, and policy.

### Research Objectives

The purpose of this study was to examine how well selected individual, familial, and extra-familial variables account for the variance in adolescent sexual activity. At the individual level, variables included gender, age, race, self-esteem, attitude about sex, and college aspiration. At the familial level, variables included parent education and family structure. Peer sexual activity was the extra-familial level variable. More specifically,

this study examined the following research question: How well do selected individual, familial, and extra-familial factors predict adolescent sexual activity?

### Significance of the Study

In 2003, 47% of high school students reported having ever had sexual intercourse, 14% of high school students had four or more sex partners during their lifetime, and 37% of those sexually active youth did not use a condom at last sexual intercourse (CDC, 2003a). In addition, according to the National Campaign to Prevent Teen Pregnancy, 34% of girls become pregnant at least once before they are 20 years old (2004). Each year in the United States, approximately 19 million new sexually transmitted disease (STD) cases are reported and almost half of them are among youth ages 15 to 24 (Wienstock, Berman, & Cates, 2004). There are undoubtedly additional cases that go unreported and other cases (e.g., human papillomavirus infection or HPV) that go undetected; thus it is likely that current estimates of STDs among youth are low. Nonetheless, as evidenced by well-documented information, adolescent sexual activity and the negative consequences of that activity are prevalent in the United States today.

The consequences of adolescent sexual activity have been a persistent and durable problem for the health of individuals in the United States. According to Kirby (1999a), there was an increased national concern about teenage pregnancy and STD rates in the 1980s that has continued into the new millennium. The last decade has seen some changes in adolescent sexual activity. More specifically, the percentage of youth reporting that they have ever had sex or had more than four sex partners in their lifetime decreased from 1991 to 2003. This decrease appears to have leveled off after 2001

though, with no change seen between 2001 and 2003 (CDC, n.d.b). The rates of teen pregnancy and births in the United States have declined over the last decade as well, but the U.S. still leads the industrialized world in these areas. The U.S. rates are double that of Great Britain, at least four times those of France and Germany, and more than ten times that of Japan (Singh & Darroch, 2000). Each year the federal government spends about \$40 billion dollars to help families that began with a teenage birth (Flinn & Hauser, 1998). Teen pregnancy results in a collection of personal and societal problems that affect teen mothers, their children and society.

The consequences of adolescent sexual activity vary by age, race, gender, neighborhood, and socioeconomic status (Upchurch & Mason, 2002). Adolescent mothers are more likely to experience poor physical health than older mothers. Young adolescents (particularly those under age 15) encounter a maternal death rate 2.5 times greater than that of mothers aged 20-24 (Brown & Eisenberg, 1995). Common medical problems include poor weight gain, pregnancy-induced hypertension, anemia and sexually transmitted disease-related complications. Later in life, teen mothers tend to be at greater risk for obesity and hypertension than women who were not teenagers when they had their first child (Brown & Eisenberg, 1995).

Future prospects for teenagers decline if they have a baby as well. Adolescent mothers are likely to have low education level. Less than one-third of teens that begin their families before age 18 ever earn a high school diploma and only 1.5% earn a college degree by the age of 30 (Maynard, 1996). Teen pregnancy is also related to poverty and single parenthood. A 1990 study showed that almost half of all teenage mothers and over

three-quarters of unmarried mothers began receiving welfare within five years of the birth of their first child (National Campaign to Prevent Teen Pregnancy, 1997).

Compared to children of older mothers, the children of teen mothers are more likely to suffer from higher rates of low birth weight and related health problems. The ratio of babies with low birth weights born to teens is 21% higher than the rate for mothers aged 20-24 (Martin et al., 2002). Low birth weight raises the probabilities of infant death, blindness, deafness, chronic respiratory problems, mental retardation, mental illness, and cerebral palsy. Low birth weight also doubles the chances that a child will later be diagnosed as having dyslexia, hyperactivity, or another disability (Maynard, 1996).

Compared to other age groups, teens are more likely to have multiple sex partners, engage in unprotected sex, and choose higher-risk partners (CDC, 2000). This puts adolescents at a greater risk of contracting an STD. In addition, STDs disproportionately affect adolescent girls, with more girls than boys reporting STDs (Upchurch & Mason, 2002). The most commonly reported infectious diseases among sexually active adolescents are sexually transmitted diseases (MacKay, Fingerhut & Duran, 2000). Biologically, due to cervical ectopy, young women are at increased risk for STDs. Among women in 2002, 15-24 year-olds had the highest rates of gonorrhea compared to women in all other age categories (CDC, 2003b). Therefore, delaying the age of first intercourse may be an important preventative behavior (Aral, 2001).

Among the serious effects of STDs are impaired fertility, reproductive tract cancer, adverse pregnancy outcomes, and the transmission of HIV infection (Aral, 2001). The presence of an STD increases the susceptibility of uninfected individuals to HIV, and

the infectiousness of HIV-infected individuals (Aral, 2001). Ectopic pregnancy, another possible complication of an STD, is the leading cause of pregnancy-related death during the first trimester. Ectopic pregnancies were responsible for 9% of all pregnancy-related deaths in the United States in 1992 (Aral, 2001).

According to the National Institute of Allergy and Infectious Diseases (2001), 40,000 people in the United States are newly diagnosed with HIV every year, of which half are under the age of 25. In addition, the proportion of young people with a diagnosis of AIDS recently increased. In 1999, 3.9% of all persons with a diagnosis of AIDS were aged 13 to 24. In 2003, 4.7% were aged 13 to 24 (CDC, 2005). Also, in 2003 an estimated 7,081 young people had AIDS, a 37% increase since 1999, when 5,159 young people had AIDS (CDC, 2005). HIV can be treated but at this point there is no cure. HIV-related death has a significant impact on young and middle-aged adults in the United States. In 2003 alone, 237 people aged 13 to 24 with AIDS died (CDC, 2005). In 1999, HIV was the fifth leading cause of death for Americans between the ages of 25 and 44. Among African American men in this age group, HIV infection was the leading cause of death. Given information on HIV progression, many of these individuals were likely infected in their teens or twenties (CDC, 2002). In addition, according to recent CDC data (2005), African Americans were the largest group of young people affected by HIV. Through 2001, they accounted for 56% of all HIV infections ever reported among those aged 13 to 24.

Sexual behavior and its consequences also vary by community type. Those who live in larger, central cities have more risk behaviors for experiencing negative consequences of sexual activity, including more sexual partners and more casual partners,

than those living in more rural areas (Upchurch & Mason, 2002). In addition, youth who live in economically disadvantaged neighborhoods appear to be at higher risk for negative consequences of sexual activity than those who live in wealthier neighborhoods. It is possible that in these neighborhoods more high-risk behaviors take place among residents that may result in negative consequences. Again, these may include, but are not limited to, many sexual partners, more casual partners, and more drug use as compared to individuals living in higher socioeconomic areas (Upchurch & Mason, 2002).

According to Albert, Brown and Flanigan (2003), there appears to be additional concern for sexual experience at an early age. Early first sexual experience for girls is more likely to be unwanted, compared to girls who have sex at age 15 or older. Sexually experienced youth who are 14 and younger are more likely to use drugs and alcohol and to engage in other delinquent behavior than their peers who are not sexually active (Albert et al., 2003). In addition, girls who engage in sex at age 14 or younger are likely to have more sexual partners and an increased risk of teen pregnancy and/or contracting a sexually transmitted disease (Albert et al., 2003). While rates of sexual activity have declined over the last decade (CDC, n.d.b), consequences of sexual activity still appear to be a problem and will likely continue to be problematic in the future. Therefore, it is important that we further understand the correlates of adolescent sexual activity so that we are better able to predict sexual activity and increase healthy sexual behaviors among adolescents.

Given the significance of the problem of adolescent sexual activity and the lack of research examining multiple predictors of sexual activity across numerous ecological levels, this study examined individual, familial and extra-familial predictors of sexual

activity among non-urban youth. For the purpose of this study, relevant terms used throughout this effort are conceptually defined as follows:

### Definition of Terms

Sexual Activity was defined as a range of voluntary sexual behaviors culminating in sexual intercourse. Throughout the study sexual activity and sexual behavior are used interchangeably.

Bronfenbrenner's ecological model was defined as a contextual framework used to organize variables related to an individual's choice to become sexually active.

Individual factors were demographic factors and/or personal characteristics or attributes that may predict sexual activity. Individual-level variables occur within the individual (e.g. race, self-esteem).

Familial factors were family-level variables (e.g. parental education, family structure) that may predict sexual activity of youth. These factors or characteristics are external to the individual youth, yet likely have a direct influence on the youth's experience.

Extra-familial factors were factors that may predict sexual activity, yet occur outside of one's family system (e.g. sexual activity of peers). These factors may have a direct or an indirect effect on the youth's experience.

Gender was defined as either male or female.

Age was defined as how old a participant was in years at the time of the study.

Race was defined as either White or non-White. (For this study, non-White participants were primarily Native American.)

Self-esteem was defined as an individual's positive or negative attitude toward self.

Attitudes about sex included feelings or convictions about adolescent sexual activity, including engaging in sexual intercourse.

College aspirations referred to an individual's assessment of the likelihood that he or she would attain a college education in his/her lifetime.

Parent education referred to the highest level of education completed by an individual's mother and father.

Family structure described with whom an adolescent lived. Choices included two biological parents, one biological parent, and one biological parent and one stepparent, or another living situation.

Sexual experience of peer was defined as the perceived sexual behavior of an individual's best friend.

## CHAPTER 2

## REVIEW OF LITERATURE

Choices surrounding sexual behavior can have life-long consequences for youth, including unintended pregnancy, sexually transmitted disease and HIV/AIDS. The rates of teen pregnancy and births in the United States have declined over the last decade but the U.S. still leads the industrialized world in these areas (Singh & Darrock, 2000). Most girls 14 and younger are not sexually active so overall pregnancy rates are low for this age group; however, a careful look at pregnancy among sexually active girls tells a different story. Of girls that are sexually active at 14, one in seven report having been pregnant (Albert et al., 2003). Teen pregnancies result in a collection of personal and societal problems that affect mothers, children and society. In addition, 18% of reported abortions in the United States in 2000 were performed on teens (Elam-Evans et al., 2003).

Sexually active teens are at high risk for sexually transmitted diseases (STDs). The most commonly reported infectious diseases among sexually active adolescents are STDs (MacKay, Fingerhut, & Duran, 2000). Each year in the United States, 19 million new STD cases are reported; many of those cases are among adolescents (CDC, 2000). According to the National Institute of Allergy and Infectious Diseases (2001), 40,000 people in the U.S. are newly diagnosed with HIV every year, of which half are under the age of 25. Due to these risks of unintended pregnancy, STD, and HIV, it is important to understand the factors that influence an adolescent's decision to have sexual intercourse.

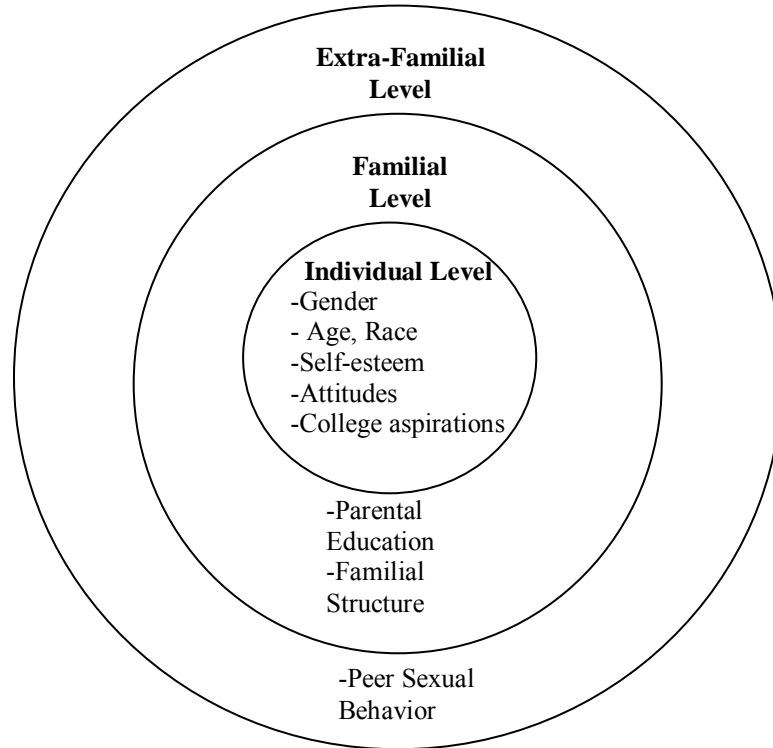
### Theoretical Framework

A conceptual framework that is particularly relevant to the study of adolescent sexual activity is the ecological model (Bronfenbrenner, 1979). This model examines how the individual and environments interrelate and how multiple settings and contexts influence behavior and development. According to this model, any given behavior, such as adolescent sexual activity, is influenced by multiple variables from multiple levels of influence (e.g., individual, familial, and extra-familial levels). Macro level influences such as economics and policies instituted at the national level are also important to consider; however, these influences are beyond the scope of this study.

The ecological theory emphasizes the reciprocal relationships among multiple systems of influence on one's behavior. For example, a familial factor such as income can affect an individual level factor such as self-esteem or an individual level factor such as a child's self-esteem could affect a familial factor such as parenting style. Moreover, an extra-familial factor such as the sexual activity of one's friends can affect individual level factors such as attitudes about sexual activity. In return, all of these factors can affect an adolescent's decision to engage in sexual activity. In this way, factors at all levels or ecologies are interrelated and likely affect one another.

According to this perspective, an accurate and complete understanding of adolescent sexual behavior must include information of individual, familial and extra-familial factors, which may contribute to a youth's decision to become sexually active. Figure 1 illustrates the ecological model of variables selected for this study that are likely related to adolescent sexual activity.

Figure 1. Ecological Model of Selected Variables



### Ecological Framework and Adolescent Sexual Behavior

Based on the ecological framework, there are numerous factors at multiple levels that are likely to affect youth sexual behaviors. For this study, gender, age, race, self-esteem, attitudes about sex, and college aspirations represented individual level variables. At the familial level, this study included parent education and family structure, and at the extra-familial level, peer sexual activity was examined. Other variables that may also be important to our understanding of youth sexual behavior (e.g., family income) were not available for inclusion in this study due to the limits of the secondary data source that was

utilized. Following is a review of extant literature for study variables, beginning with the individual-level factors.

### Individual Factors

Gender. An examination of the extant literature on adolescent sexual behavior revealed that there are several individual level factors relevant to a youth's decision to become sexually active. Numerous researchers have examined the influence of gender on sexual behavior and it appears that gender does play a part. It appears that at older ages, 16 to 17 years, boys and girls are equally likely to engage in sex (Gillmore, 2002; Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998). However, boys are more likely than girls to have sex at an early age (Leigh, 1994; Nahom et al., 2001; Upchurch et al., 1998). A recent study that reviewed information on the sexual behavior of adolescents 14 and younger also found that boys were more likely than girls to have sex at an early age (Albert et al., 2003). According to Albert and colleagues, at age 12, 2-4% of girls and 6-8% of boys were sexually experienced and at age 14, 14-20% of girls and 20-22% of boys were sexually active.

It also appears that different factors affect the likelihood for activity in boys and girls (Kowaleski-Jones & Mott, 1998; Small & Luster, 1994), and that boys have significantly more partners than girls, raising their risk for sexually transmitted diseases (Luster & Small, 1994; Tubman, Windle, & Windle, 1996). Boys are also more likely to intend to have sex before marriage, or in high school, than females (Nahom et al., 2001). In a risk-factor analysis, Small and Luster (1994) looked at 14 possible predictors of sexual experience. The researchers found that sexually experienced and sexually

inexperienced males differed on 8 of the 14 predictors while 12 of 14 variables were found to discriminate the sexual experience of females, indicating that boys and girls are affected by different factors.

Age. Researchers agree that age plays a role in adolescent sexual activity. Rates of sexual activity increase with age (Albert et al., 2003; Kann et al., 1998; South, Haynie, & Bose, 2005; Upchurch et al., 1998). Estimates of sexually active youth at age 18 or 19 currently approach 85% in the United States (Kann et al., 1998). That estimate decreases as age decreases. Albert et al. (2003) recently reviewed information from three national and three local data sets looking for information regarding the sexual activity of adolescents 14 and younger. This study found that 18-19% of adolescents are sexually active by age 14 and that this percentage decreased among younger adolescents. At 13, 10% of adolescents are sexually active, and at 12, 4-5% of youth reported being sexually active.

Mean or median age at first intercourse is most often reported in studies conducted with college students. Age at first intercourse varies widely among studies and ranges from 13.9 to 17.2. A 1995 study (Reinisch et al.) that examined high-risk sexual behavior at a Midwestern university reported a mean age at first vaginal intercourse of 17.2 for participants. A more recent study examining sexual activity among college women reported a mean age at first intercourse of 16.7. Upchurch et al. (1998) examined gender and ethnic differences in the age at first sex among 877 Los Angeles County youth. The total sample reported a median age of 16.9 years at first intercourse. The lowest median age at first intercourse observed by Upchurch and colleges was among Black males at 15.0 years. Jones, Smith and Ketring (2004) explored sexual coercion at

first sexual intercourse and reported a mean age of 13.9 years among youth who reported a consensual first intercourse experience.

Race. Race is another individual factor found to be associated with patterns of teen sexual activity (Kann et al., 1998; Kirby, 1999b; Thornberry, Smith, & Howard, 1997). Minority youth tend to report higher rates of sexual involvement at younger ages than Caucasian peers (Kann et al., 1998), and more teen fathers are African American and Hispanic than Caucasian (Thornberry, Smith, & Howard, 1997). Rates of teen pregnancy are also higher among Native Americans than Caucasians (Roosa, Tein, Reinhotlz, & Angelini, 1997). In 2002, the birth rate for Native American 15 to 19-year olds was 53.8 per 1,000, higher than the national rate of 43.0 per 1,000 (Martin et al., 2003). It may be difficult, however, to disentangle cultural effects and poverty as race is confounded with poverty. In other words, racial and ethnic minority groups are disproportionately likely to be poor (Garcia Coll et al., 1996).

Self-esteem. Researchers have found mixed results of the effects of self-esteem, or an individual's attitude towards him or her self, on sexual behavior. Some studies have found that self-esteem does not play a significant role in sexual behavior (Small & Luster, 1994), but the general consensus on self-esteem is that boys with higher self-esteem are more likely to initiate intercourse while girls with higher self-esteem were more likely to remain sexually inactive (Kowaleski-Jones & Mott, 1998; Spencer, Zimet, Aalsma, & Orr, 2002). Spencer et al. (2002) examined the role of self-esteem in predicting onset of intercourse in a longitudinal study. Results indicated that differences in self-esteem among virgins and non-virgins precede the initiation of intercourse in early adolescence. Girls in this study who scored low on the self-esteem measure were three

times more likely to initiate intercourse. On the other hand, boys who scored high on the self-esteem measure were 2.4 times more likely to initiate sexual activity (Spencer et al., 2002).

Attitude About Sex. In a review article of sexual antecedents, Kirby (1999b) states that more permissive attitudes toward premarital sex is a risk factor for initiation of sex. The theory of reasoned action states that attitude influences an individual's intention to perform a behavior and behavior is a function of intention (Fishbein, 1967). According to this theory, one's attitudes about sex will affect their intention to initiate sexual activity and give a fuller understanding of adolescent sexual activity. In a study that examined the utility of the theory of reasoned action for predicting sexual intercourse, Gillmore et al. (2002) found that sexual intercourse was associated with intentions to have sex. Intentions, in turn, were associated with a more positive attitude toward having sex.

College Aspirations. Less has been published specifically on the influence of college aspirations on sexual behavior. In a review of sexual antecedents, Kirby (1999b) did find that in general, youth at the greatest risk of initiation of sex have low expectations for their futures. Similarly, Small and Luster (1994) found that concern about future vocational opportunities was related to sexual experience, as was grade point average, suggesting that teens who are not succeeding at school and who perceive a dim future for themselves are less likely to postpone intercourse. In addition, in a study conducted with minority females younger than 19 years of age, White (2002) found that teenagers in segregated, poor communities with declining employment opportunities maintain low expectations of future school and work and this belief that life options were limited was connected to youth being more likely to engage in risky sexual behavior.

### Familial Factors

Parental Education. Familial level factors are likewise important to a full understanding of teen sexual behavior. Research on the affect of parent education on sexual behavior has produced mixed results. Some studies have shown no significant effect (Miller, Forehand, & Kotchick, 1999; Upchurch et al., 1998), while others have shown differing effects for boys and girls. Small and Luster (1994) found that sexually experienced females, but not males, were more likely to come from families with lower levels of education. In a review of sexual antecedents, Kirby (1999b) found that lower levels of parental education were a risk factor for initiation of sex in both males and females. In a study of teen fathers, Thornberry, Smith, and Howard (1997) found parent education to be a significant predictor for teen fathers. In fact, each additional year of parental education decreased the chance of teen fatherhood by .03 (Thornberry et al., 1997).

Family Structure. Family structure, that is, with whom the adolescent lives, appears to have an impact on adolescent sexual behavior as well. Kirby (1999b) found that living in a “nontraditional” family structure was a risk factor for initiation of sex. Nontraditional structures include families with parents who are divorced, separated, or were never married. Kirby also found a change in marital status to be a risk as well. In another study of the timing of first sexual intercourse, Upchurch et al. (1998) found that adolescents living with both of their biological parents reported later median age of first intercourse than youth living in any other family situation, including stepfamilies with two parents in the home.

### Extra-familial Factor

Peer Sexual Behavior. While multiple familial factors appear related to early sexual activity, certain extra-familial factors also seem salient. For this study we chose to examine peer sexual behavior. As teens struggle with their identity formation and as their peers become increasingly important, it makes sense that youth may perceive their peers to be increasingly like themselves or may try to act in ways similar to their peers. Therefore, it comes as no surprise that a risk factor for sexual activity is to have friends or peers who are sexually active (Kirby, 1999b; Miller et al., 2000; Romer et al., 1994). In addition to actual behavior, sexually experienced teens also perceived significantly more of their friends to have engaged in sexual intercourse than did their non-experienced counterparts (Nahom et al., 2001).

### Purpose

Given the lack of research examining multi-level factors— examining a combination of factors at the individual, familial, and extra-familial ecological levels—that may shed light on adolescent sexual activity, the purpose of this study was to examine selected individual (gender, age, race, self-esteem, attitude about sex, and college aspiration), familial (parent education and family structure), and extra-familial (sexual activity level of peer) variables likely to be predictive of adolescent sexual activity. This study was unique in that it examined adolescent behaviors within a non-urban context and examined sexual behavior along a continuum of activity. Based on the extant literature, this study first tested a number of bivariate hypotheses.

## Bivariate Hypotheses

### Individual Level Hypotheses

1. Boys will report having first sexual intercourse at an earlier age than girls.
2. As age increases, levels of sexual activity will increase.
3. Non-white adolescents will be more sexually active than White adolescents.
4. Sexual activity will differ as a function of gender and self-esteem. More specifically,
  - 4a. As self-esteem increases in boys, sexual activity will increase.
  - 4b. As self-esteem increases in girls, sexual activity will decrease.
5. As attitudes about sexual activity become more lenient, the level of sexual activity will increase.
6. As intention of attending college increases, sexual activity will decrease.

### Familial Level Hypotheses

7. As the level of parental education increases, sexual activity will decrease.
8. Individuals living with two biological parents will be less sexually active than those in any other living arrangement.

### Extra-familial Level Hypothesis

9. As sexual activity of an individual's best friend increases, the sexual activity of the individual will increase.

In addition to testing bivariate hypotheses, this study also conducted exploratory analyses (not stated as hypotheses) to further investigate sexual activity differences as a function of gender and family structure.

### Multivariate Research Question

This study also examined the following multivariate research question: How well do selected individual, familial, and extra-familial factors predict or explain adolescent sexual activity? As discussed, individual level variables included gender, age, race, self-esteem, attitude about sexual activity, and college aspirations. Familial factors included parental education and family structure and the extra-familial variable was peer sexual behavior.

## CHAPTER 3

## METHODS

Sample

This study used data collected for a larger study (with permission from the primary investigator), which evaluated an abstinence program funded by the Office of Adolescent Pregnancy Programs (OAPP). Data were gathered from 397 adolescents aged 11 to 18 residing in three non-urban communities in the Pacific Northwest. Staff of the Valley Boys and Girls Club recruited the convenience sample of adolescents. Participants included members of the Boys and Girls Club in addition to youth recruited specifically to participate in the abstinence education program.

Some non-member participants were recruited from local schools. During the school year, staff visited lunchrooms of local schools to speak directly with youth. The Valley Boys and Girls Club also recruited for the program from their significant walk-in traffic. Additional non-member participants were referred through local youth agencies. Staffs of local agencies were made aware of the program through presentations at hospital, social service, police department and juvenile justice staff meetings. The juvenile justice system in addition, mandated attendance for some youth.

The data were originally collected as part of an evaluation effort of the Valley Boys and Girls Club's "Teens with a Vision" program. The investigator of the current study was part of the original evaluation team and received permission from the original primary investigator to use the original data in the current study. The "Teens with a

Vision” program was an abstinence-only teen pregnancy prevention program, which ran from 1998 to 2003. The data used in this study represent three of those program years. Each year, several programs were offered to groups of 20-30 youth, with each program enlisting a new group of youth. Each program consisted of four sessions, each lasting three hours. Trained peer educators conducted sessions using a curriculum approved by OAPP. The program was offered at no cost to participants and participating youth were provided snacks during each session. The program used a peer education team, as well as professional staff role models to work with teens. It was modeled on many successful components of programs that have accomplished changes in teen behaviors (Howard & McCabe, 1990), including the use of peer educators. The primary purpose of the original survey was to evaluate the effectiveness of the “Teens with a Vision” program in changing attitudes and behaviors related to sexual activity.

Participants came from three separate communities. The largest of these communities had a population of 30,904, a median household income of \$36,606 and 12.0% of individuals living below the poverty level in 2000. The second community was considerably smaller with a population of 7,337, a median household income of \$25,907 and 21% of individuals living below the poverty level. The third and smallest community was located on a reservation, had a population of 1,134, a median household income of \$26,800 and 24% of individuals living below the poverty level. The majority of residents in this community (81%) were Native American (U.S. Census Bureau, 2000).

Participants in the study included 51% females and 48% males. They ranged in age from 11 to 18 with the majority aged 12 to 14 (66%). Among adolescent participants, 73% were White, 16% were Native American, 5% were Hispanic, 2% were African

American, and 0.3% were Asian. Over a third of participating youth (N=146, 37%) lived with both of their biological parents, 21% lived with their mother and stepfather, 3% lived with their father and stepmother, 23% lived with their mother only, 6% with their father only, and 11% reported having other living arrangements. Among participating youth, 29% reported that their mother had a college degree, while 24% reported that their father had graduated from college. See Table 1 for a description of sample characteristics.

### Procedure

A trained data collector administered a 44-item self-report questionnaire during the first evening of the “Teens with a Vision” program. Valley Boys and Girls Club staff obtained written parental consent for youth to complete the survey through a permission slip that had to be signed and returned to a staff member before youth could participate in the program or complete the survey. Assurances and rights were given to participating youth in writing and were reviewed by the trained data collector prior to beginning the survey. All participants were assured of the voluntary nature of the study and that they could stop participating at any time.

The evaluation team recognized the sensitive nature of the topic. The institutional review board at the University of Idaho approved this evaluation plan. Responses were kept confidential. Permission slips were not matched to surveys and a coding system was developed to identify participants’ later surveys, as the original evaluation collected follow-up data immediately following the program and at 6-month and 1-year intervals.

Table 1. Demographic Characteristics of Sample (N=397)

| Demographic Characteristic        | M (SD) or N (%) |
|-----------------------------------|-----------------|
| <b>Individual Characteristics</b> |                 |
| Gender                            |                 |
| Male                              | 191 (48.1%)     |
| Female                            | 203 (51.1%)     |
| Age in years                      |                 |
| 11-12                             | 128 (32.2%)     |
| 13-14                             | 186 (46.8%)     |
| 15-16                             | 72 (18.1%)      |
| 17-18                             | 4 (1.1%)        |
| Race                              |                 |
| White                             | 291 (73.3%)     |
| African American                  | 9 (2.3%)        |
| Native American                   | 63 (15.9%)      |
| Hispanic                          | 20 (5.0%)       |
| Asian                             | 1 (0.3%)        |
| Other                             | 13 (3.3%)       |
| <b>Familial Characteristics</b>   |                 |
| Family Structure                  |                 |
| Both biological parents           | 146 (36.8%)     |
| Mother and Stepfather             | 81 (20.4%)      |
| Father and Stepmother             | 11 (2.8%)       |
| Mother Only                       | 91 (22.9%)      |
| Father Only                       | 22 (5.5%)       |
| Other Living Arrangements         | 43 (10.8%)      |
| Mother's Education                |                 |
| Some High School                  | 42 (10.6%)      |
| High School Graduate              | 70 (17.6%)      |
| Some Post-secondary School        | 68 (17.1%)      |
| College Graduate                  | 115 (29.0%)     |
| Don't Know                        | 102 (25.7%)     |
| Father's Education                |                 |
| Some High School                  | 33 (8.3%)       |
| High School Graduate              | 78 (19.6%)      |
| Some Post-secondary School        | 52 (13.1%)      |
| College Graduate                  | 96 (24.2%)      |
| Don't Know                        | 138 (34.8%)     |

In this way, data could be linked from one test to another without the questionnaire being linked to a particular participant. Completed surveys were stored in the locked office of the principal evaluator and were assessable by the research team only. For the purpose of this study, only pretest data was analyzed.

The survey assessed a variety of attitudes and sexual behaviors as well as basic demographic information. Of interest to the present study were measures of adolescent sexual activity, age at first intercourse, gender, age, race, levels of self-esteem, attitude about sex, college aspirations, parent's level of education, family structure, and the perceived sexual experience of the participant's best friend.

### Measures

#### Dependent Variable

Sexual activity was assessed by three questions. One asked, "Have you ever had full, voluntary sexual intercourse?" Yes and no responses were available to be circled by respondents, where 1 = "yes, sexually experienced" and 0 = "no, not sexually experienced." The second question assessed age at first intercourse and asked "If you answered yes to question number eight, how old were you when you had full, voluntary sexual intercourse?" Space was then given for participants to write in the applicable age.

In addition, sexual activity was assessed through a 7-item scale that was a modified version of DeLamater and MacCorquodale's (1979) premarital sexual interaction measure. This 7-item Guttman scale assessed a progression of behaviors beginning with kissing and progressing to sexual intercourse. The modified version removed some questions to make the scale more appropriate for young teens, and

replicated the modifications implemented by Christopher and Roosa (1990) in working with younger teens. Other studies of teen sexual involvement indicated appropriate levels of reliability for this scale. Christopher and Roosa (1990) reported that for their samples of young teens, pretest and posttest lambdas were .90 to .91 for this scale. This scale has content validity and it does appear to measure sexual behavior in the usual progression. Response options for each of the 7 questions were 1 = yes and 0 = no. A total score was calculated by summing the 7 items, with scores ranging from 0 to 7. Internal consistency analyses for this scale revealed acceptable reliability with a Cronbach's alpha coefficient of .80.

### Independent Variables

Individual Factors. Gender, age and race were assessed through one item each that asked, "What is your sex?" followed by two choices, female or male; "What is your age?" followed by a space to write the appropriate number; and "Which of the following best describes your race?" Response options were Black, White, Native American, Hispanic, Asian and other. For the purpose of this study, race was recoded (1 = White and 0 = non-White).

Self-esteem was assessed by Rosenberg's (1965) global self-esteem measure. Scale items were summed and ranged from 10 to 40. Higher scores on this 10-item measure indicate more positive self-esteem. Per Rosenberg, some items were recoded for analyses. Sample items include, "I feel that I have a number of good qualities" and "I wish I could have more respect for myself." Response choices included 1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree. Rosenberg's self-esteem scale is

a highly valid and reliable scale, recognized by social science researchers as a valid measure of this construct. Rosenberg's self-esteem scale has been used with prevention programs designed for teens (Jorgenson, 1991), and appears to be a reliable measure of this concept for teens. Cronbach's alpha reliabilities for this scale have been reported to range from .67 to .78 for samples of teens (Jorgenson, 1991). In this study, the Cronbach's alpha was .80, verifying internal consistency.

Attitude about sex was assessed through one item used by Miller, McCoy, Olsen, and Wallace (1986), and replicated by Christopher and Roosa (1991). It asked, "How do you feel about teenagers having full sexual relations before marriage?" Responses ranged from 1 (always right) to 5 (always wrong). The direction of responses were recoded as follows: 1 = always wrong, 2 = sometimes wrong, 3 = neither right nor wrong, 4 = sometimes right, and 5 = always right. Asking about attitudes poses challenges to validity; we cannot be certain that we captured all the dimensions of attitudes. However, this scale has been used in a number of other studies and has acceptable face validity.

Educational aspirations were obtained through one item asking respondents "if you expect the event to happen in your life" in regards to attending college. Choices included 1 = "likely to occur" and 0 = "not likely to occur."

Family Factors. Parent education level was obtained through two questions asking, "Which of the following best describes your mother's (father's) highest level of education?" Responses ranged from 1 (6<sup>th</sup> grade or less) to 7 (college graduate). For the purpose of this study, responses were collapsed into four categories; 1 = some high school education, 2 = high school graduate, 3 = some post-secondary school, and 4 = college graduate. There were a significant number of youth who did not know their

parent's education level. As suggested by Tabachnick and Fidell (2001) the "don't know" category was recoded as a function of sexual activity (yes/no) and gender (male/female) such that the "don't know" responses were replaced by the mean scores of mother's and father's education for those four groups. This recoded score was used for the correlation and regression analyses to adjust for the missing data.

Family structure was assessed by asking, "Which of the following best describes your living arrangements?" Six choices were given including; 1 = I live with both biological parents, 2 = I live with my biological mother and stepfather, 3 = I live with my biological father and stepmother, 4 = I live with my mother only, 5 = I live with my father only, and 6 = I have other living arrangements. For the present study, the choices have been collapsed into 1= both biological parents, 2 = one biological parent and one stepparent, 3 = single parent, and 4 = other living arrangements. For the multivariate analyses, this variable was dummy coded such that 1 = both biological parents and 0 = all other living arrangements.

Extra-Familial Factor. Perceived sexual experience of the participant's best friend was assessed through a 7-item scale that was based on DeLamater and MacCorquodale's (1979) premarital sexual interaction measure described above (under youth sexual activity). The behaviors increased in intimacy from, "Do you think your best friend has experienced kissing?" to "Do you think your best friend has experienced full sexual intercourse?" Response options for each of the 7 questions were 1 = yes and 0 = no. A total score was calculated by summing all 7 items, yielding scores ranging from 0 to 7. The scale had acceptable internal consistency with a Cronbach's alpha of .79.

## CHAPTER 4

## RESULTS

Preliminary analyses were conducted to examine individual, familial, and extra-familial level variables by sexual activity (yes/no) and gender. These analyses were conducted to examine sexual activity and gender main effects, as well as possible gender by sexual activity interaction effects. These analyses were based on earlier sex by gender differences found by Small and Luster (1994). For discrete variables, chi-square analyses were conducted. For continuous variables, 2X2 analyses of variance (ANOVA) were conducted, with one exception. On the variable “age at first sexual intercourse,” an independent *t*-test was run, given that not all youth in this study had sexual intercourse. Throughout the Results section, hypothesis test outcomes are reported where appropriate.

Individual Variables by Sexual Intercourse and Gender

As can be seen in Table 2, there were few gender difference across the individual level variables. As stated in Hypothesis 1, it was predicted that males would be more likely to have first sexual intercourse at an earlier age than females. However, based on independent *t*-test results, there was no significant difference in age at first sexual intercourse between males and females ( $M = 12.7, SD = 1.93$  versus  $M = 13.2, SD = 1.89$ ) respectively,  $t(75) = -1.1, p = .28$ ). Thus, Hypothesis 1 was not supported.

Table 2. *Individual Variables by Sexual Intercourse and Gender*

|   | Had Sexual Intercourse |                  | Not Had Sexual Intercourse |                            |
|---|------------------------|------------------|----------------------------|----------------------------|
|   | Male<br>(N=42)         | Female<br>(N=36) | Male<br>(N=140)            | Female<br>(N=164)          |
|   | N (%) or M (SE)        |                  |                            |                            |
| Youth Sexual Activity (%Yes): Have you experienced... |                        |                  |                            |                            |
| Kissing   | 97.6%                  | 100.0%           | 72.9%                      | 75.3%                      |
| French kissing  | 92.9%                  | 97.3%            | 43.7%                      | 53.9%                      |
| Touching breasts                                      | 90.2%                  | 27.6%            | 28.9%                      | 13.0%                      |
| Touching female genitals                              | 85.4%                  | 16.7%            | 9.9%                       | 6.9%                       |
| Touching male genitals                                | 0.0%                   | 85.7%            | 4.2%                       | 13.5%                      |
| Genital to genital contact                            | 90.0%                  | 91.4%            | 2.9%                       | 6.8%                       |
| Sexual intercourse                                    | 92.9%                  | 97.3%            | 0.7%                       | 3.0%                       |
| Total Youth Sexual Activity Score                     | 4.8 (.54)              | 5.3 (.54)        | 1.7 (.28)                  | 1.2 (.26)*** <sup>a</sup>  |
| Age at first sexual intercourse                       | 12.7 (.30)             | 13.2 (.32)       |                            | NA                         |
| 7-8   | 1 (2.4%)               | 1 (2.9%)         |                            | NA                         |
| 9-10  | 5 (11.9%)              | 1 (2.9%)         |                            | NA                         |
| 11-12   | 15 (35.7%)             | 9 (25.8%)        |                            | NA                         |
| 13-14   | 12 (28.6%)             | 16 (45.7%)       |                            | NA                         |
| 15-16   | 9 (21.5%)              | 8 (22.8%)        |                            | NA                         |
| Age in years  | 14.3 (.21)             | 14.3 (.23)       | 12.9 (.12)                 | 13.0 (.11)*** <sup>a</sup> |
| 11-12   | 3 (7.2%)               | 3 (8.3%)         | 61 (43.6%)                 | 58 (35.3%)                 |
| 13-14   | 20 (47.6%)             | 20 (55.5%)       | 59 (42.1%)                 | 83 (50.6%)                 |
| 15-16   | 18 (42.8%)             | 10 (27.8%)       | 20 (14.3%)                 | 23 (14.0%)                 |
| 17-18   | 1 (2.4%)               | 3 (8.3%)         | 0 (0.0%)                   | 0 (0.0%)                   |

Table 2. Continued

|                                      | Had Sexual Intercourse |                  | Not Had Sexual Intercourse |                            |
|--------------------------------------|------------------------|------------------|----------------------------|----------------------------|
|                                      | Male<br>(N=42)         | Female<br>(N=36) | Male<br>(N=140)            | Female<br>(N=164)          |
|                                      | N (%) or M (SE)        |                  |                            |                            |
| Race                                 |                        |                  |                            |                            |
| White                                | 31 (73.8%)             | 24 (64.9%)       | 113 (78.5%)                | 119 (71.7%)                |
| Black/African American               | 3 (7.1%)               | 0 (0.0%)         | 3 (2.1%)                   | 3 (1.8%)                   |
| Native American                      | 6 (14.3%)              | 7 (18.9%)        | 18 (12.5%)                 | 31 (18.7%)                 |
| Hispanic                             | 2 (4.8%)               | 3 (8.1%)         | 8 (5.6%)                   | 6 (3.6%)                   |
| Asian                                | 0 (0.0%)               | 0 (0.0%)         | 0 (0.0%)                   | 0 (0.0%)                   |
| Other                                | 0 (0.0%)               | 3 (8.1%)         | 2 (1.4%)                   | 7 (4.2%)                   |
| Total Self Esteem                    | 29.7 (.81)             | 28.7 (.88)       | 32.1 (.44)                 | 30.6 (.41)*** <sup>a</sup> |
| Attitude about Intercourse           | 3.8 (.17)              | 3.8 (.18)        | 2.1 (.09)                  | 2.2 (.09)*** <sup>a</sup>  |
| College Aspiration                   |                        |                  |                            |                            |
| Yes, I expect to go to college       | 28 (75.7%)             | 25 (80.6%)       | 119 (92.2%)                | 143 (91.7%)                |
| No, I do not expect to go to college | 9 (24.3%)              | 6 (19.4%)        | 10 (7.8%)                  | 13 (8.3%)                  |

Note. <sup>a</sup>=sexual activity main effect

Although few gender differences were found in this sample, there were several significant sexual activity main effects. Not surprisingly, those participants who reported experiencing sexual intercourse had engaged in significantly more sexual behaviors ( $M = 5.13$ ,  $SE = .14$ ) than those who had not experienced full intercourse ( $M = 1.61$ ,  $SE = .07$ ;  $F(1,389) = 487.36$ ,  $p = .001$ ). There were also significant age differences as a function of sexual activity. Those adolescents who had sexual intercourse were found to be significantly older than their non-sexually active counterparts ( $M = 14.3$ ,  $SE = .16$  versus  $M = 13.0$ ,  $SE = .08$ , respectively,  $F(1,382) = 55.9$ ,  $p = .001$ ). In other words, as age increased, the likelihood of a participant reporting having experienced sexual intercourse also increased.

Based on 2x2 ANOVA results, an examination of self-esteem revealed that self-esteem is significantly higher among youth who have not had sex ( $M = 31.3$ ,  $SE = .30$ ) than among youth who have had sex ( $M = 29.2$ ,  $SE = .60$ ,  $F(1,387) = 10.08$ ,  $p = .002$ ). When controlling for sexual activity, males appear to have slightly higher levels of self-esteem ( $M = 30.9$ ) than females ( $M = 29.7$ ), however, this was only a trend in the data ( $F(1,387) = 3.55$ ,  $p = .06$ ).

In terms of attitudes about sexual intercourse, youth attitudes were significantly different between sexually active and non-sexually active youth. Youth who were sexually active had significantly more lenient attitudes about sexual intercourse ( $M = 3.8$ ,  $SE = .13$ ) than their non-active counterparts ( $M = 2.2$ ,  $SE = .06$ ,  $F(1, 367) = 128.546$ ,  $p = .001$ ). On a scale ranging from 1 “always wrong” to 5 “always right,” youth who had sexual intercourse reported that intercourse was “right” more often than youth who had not had sexual intercourse.

Finally, Table 2 presents college aspiration as a function of sexual activity and gender. There were no significant differences when sexual activity and gender were examined together. However, when the relationship between college aspiration and sexual activity was examined without gender in the analysis, results revealed that non-sexually active youth were more likely to aspire to go to college (92%) than their sexually active counterparts (78%) ( $\chi^2(1, N = 355) = 10.91, p = .001$ ).

#### Familial Variables by Sexual Intercourse and Gender

Next, familial level variables were examined as a function of sexual activity (yes/no) and gender (see Table 3). This study found significant sexual activity differences based on parent education level, such that sexually active participants had parents (both mothers and fathers) with significantly lower educational attainment than their non-sexually active counterparts (for mothers:  $M = 2.7, SE = .13$  versus  $M = 2.9, SE = .07, F(1, 293) = 4.00, p = .047$ ; for fathers:  $M = 2.6, SE = .14$  versus  $M = 2.9, SE = .07, F(1, 257) = 4.74, p = .03$ ). Significant parental education differences were also found between males and females. As the ANOVA results showed, boys reported that their parents (both mothers and fathers) had a higher education level than those of girls (for mothers:  $M = 3.0, SE = .11$  versus  $M = 2.6, SE = .10, F(1, 293) = 9.08, p = .003$ ; for fathers:  $M = 2.9, SE = .11$  versus  $M = 2.6, SE = .11, F(1, 257) = 5.44, p = .02$ ).

Chi-square analyses revealed no significant sexual activity by gender differences in youths' family structure. However, when family structure was examined by sexual activity alone, there were significant findings.

Table 3. *Familial Variables by Sexual Intercourse and Gender*

|                                     | Had Sexual Intercourse |                  | Not Had Sexual Intercourse |                   |
|-------------------------------------|------------------------|------------------|----------------------------|-------------------|
|                                     | Male<br>(N=42)         | Female<br>(N=36) | Male<br>(N=140)            | Female<br>(N=164) |
|                                     | N (%) or M (SE)        |                  |                            |                   |
| Mother's Highest Level of Education | 2.8 (.19)              | 2.5 (.18)        | 3.3 (.10)                  | 2.6 (.10)         |
| Some high school                    | 5 (11.9%)              | 9 (23.4%)        | 5 (3.5%)                   | 23 (13.9%)        |
| High school graduate                | 10 (23.8%)             | 6 (16.2%)        | 16 (11.1%)                 | 38 (22.9%)        |
| Some post-secondary                 | 4 (9.5%)               | 10 (27.0%)       | 32 (22.2%)                 | 22 (13.3%)        |
| College Graduate                    | 13 (31.0%)             | 8 (21.6%)        | 53 (36.8%)                 | 39 (23.5%)        |
| Don't Know                          | 10 (23.8%)             | 4 (10.8%)        | 38 (26.4%)                 | 44 (26.5%)        |
| Father's Highest Level of Education | 2.7 (.20)              | 2.4 (.19)        | 3.1 (.11)                  | 2.7 (.10)         |
| Some high school                    | 3 (7.1%)               | 6 (16.2%)        | 5 (3.5%)                   | 18 (10.8%)        |
| High school graduate                | 8 (19.0%)              | 11 (29.7%)       | 23 (16.0%)                 | 36 (21.7%)        |
| Some post-secondary                 | 10 (23.8%)             | 6 (16.2%)        | 22 (15.3%)                 | 14 (8.4%)         |
| College Graduate                    | 6 (14.3%)              | 6 (16.2%)        | 45 (31.3%)                 | 38 (22.9%)        |
| Don't Know                          | 15 (35.7%)             | 8 (21.6%)        | 49 (34.0%)                 | 60 (36.1%)        |
| Family Structure                    |                        |                  |                            |                   |
| Both biological parents             | 7 (16.7%)              | 9 (25.0%)        | 60 (42.3%)                 | 66 (39.8%)        |
| Biological Mother-Stepfather        | 12 (18.6%)             | 8 (22.2%)        | 31 (21.8%)                 | 30 (18.1%)        |
| Biological Father-Stepmother        | 3 (7.1%)               | 1 (2.8%)         | 4 (2.8%)                   | 2 (1.2%)          |
| Biological mother only              | 11 (26.2%)             | 9 (25.0%)        | 30 (21.1%)                 | 40 (24.1%)        |
| Biological father only              | 3 (7.1%)               | 3 (8.3%)         | 5 (3.5%)                   | 10 (6.0%)         |
| Other                               | 6 (14.3%)              | 6 (16.7%)        | 12 (8.5%)                  | 18 (10.8%)        |

Youth who lived with both biological parents reported abstaining from sexual intercourse more often (89%) than youth who lived with a step parent (77%), a single parent (74%), or in another family situation (70%) ( $\chi^2(3, N = 389) = 12.37, p = .006$ ).

### Sexual Attitudes and Behaviors by Family Structure

To further explore the salience of youths' family constellation, one-way ANOVAs were run to examine sexual attitudes and behaviors by family structure. Scheffe post hoc tests were employed to determine which group(s) differed from the others (See Table 4). Results revealed no significant difference between family structure and age at first sexual intercourse; however, significant differences were found between family structure and youth sexual behavior ( $F(3, 390) = 7.93, p = .001$ ), youth attitudes about intercourse ( $F(3, 367) = 7.01, p = .001$ ), and peer sexual behavior ( $F(3, 390) = 5.52, p = .001$ ). First, youth who reside with both biological parents report engaging in significantly fewer sexual behaviors than youth who reside with one biological parent and a stepparent ( $p = .004$ ), with a single parent ( $p = .002$ ), or in another living arrangement ( $p = .012$ ). Second, youth who live with both biological parents have significantly more conservative attitudes about sexual intercourse than youth who live with a single parent ( $p = .001$ ) or youth living in another arrangement ( $p = .025$ ). Finally, youth who reside with both biological parents report that their peers are engaged in significantly fewer sexual behaviors than youth who reside with a single parent ( $p = .006$ ) or in another arrangement ( $p = .034$ ).

Table 4. *Sexual Attitudes and Behaviors by Family Structure*

|                            | N   | M (SD)     | Post Hoc Results |
|----------------------------|-----|------------|------------------|
| Youth Sexual Behavior      |     |            | BP < SP,S,O      |
| BP                         | 146 | 1.7 (1.6)  |                  |
| SP                         | 92  | 2.6 (2.0)  |                  |
| S                          | 113 | 2.7 (1.9)  |                  |
| O                          | 43  | 2.8 (2.2)  |                  |
| Age at first intercourse   |     |            | NS               |
| BP                         | 16  | 13.9 (1.1) |                  |
| SP                         | 23  | 12.7 (2.1) |                  |
| S                          | 26  | 12.7 (1.7) |                  |
| O                          | 12  | 12.5 (2.5) |                  |
| Attitude About Intercourse |     |            | BP < S,O         |
| BP                         | 139 | 2.1 (1.2)  |                  |
| SP                         | 88  | 2.6 (1.3)  |                  |
| S                          | 105 | 2.8 (1.2)  |                  |
| O                          | 39  | 2.8 (1.3)  |                  |
| Peer Sexual Behavior       |     |            | BP < S,O         |
| BP                         | 146 | 2.3 (2.1)  |                  |
| SP                         | 92  | 2.9 (2.1)  |                  |
| S                          | 113 | 3.2 (2.1)  |                  |
| O                          | 43  | 3.4 (2.0)  |                  |

Note. BP= Both Biological Parents, SP= One Biological Parent and One Stepparent, S= Single Parent, O =Other Living Arrangements

#### Extra-Familial Variables by Sexual Intercourse and Gender

Next, the extra-familial variable of peer sexual activity (yes/no) was examined (see Table 5). This study found no significant differences in peer sexual behaviors based on reports made by males and females. However, the sexual behaviors of best friends were significantly different for sexually active versus non-sexually active youth.

Table 5. *Extra-Familial Variables by Sexual Intercourse and Gender*

|  | Had Sexual Intercourse |                  | Not Had Sexual Intercourse |                           |
|--|------------------------|------------------|----------------------------|---------------------------|
|  | Male<br>(N=42)         | Female<br>(N=36) | Male<br>(N=140)            | Female<br>(N=164)         |
|  | N (%) or M (SE)        |                  |                            |                           |
| Peer Sexual Activity (%Yes): Has your best friend experienced... |                        |                  |                            |                           |
| Kissing  | 88.1%                  | 97.3%            | 76.4%                      | 81.9%                     |
| French kissing   | 81.0%                  | 97.3%            | 47.2%                      | 65.7%                     |
| touching breasts   | 76.2%                  | 40.5%            | 30.6%                      | 20.5%                     |
| touching female genitals   | 66.7%                  | 29.7%            | 23.6%                      | 21.1%                     |
| touching male genitals   | 14.3%                  | 81.1%            | 4.9%                       | 23.5%                     |
| genital to genital contact                                       | 71.4%                  | 75.7%            | 13.9%                      | 22.9%                     |
| sexual intercourse   | 71.4%                  | 73.0%            | 13.2%                      | 19.3%                     |
| Total Peer Sexual Activity Score                                 | 4.7 (.28)              | 4.9 (.30)        | 2.1 (.15)                  | 2.5 (.14)*** <sup>a</sup> |

Note. <sup>a</sup>=sexual activity main effect

Not surprisingly, youth who have had sexual intercourse reported that their best friend was engaged in significantly higher levels of sexual behavior ( $M = 4.8, SE = .21$ ) than their non-active counterparts ( $M = 2.3, SE = .11, F(1, 389) = 115.39, p = .001$ ).

### Correlation Matrix of Dependent and Independent Variables

Correlation coefficients were run to examine the strength and magnitude of the relationships between the dependent variable (sexual behavior scale) and independent variables at the individual, familial, and extra-familial levels (see Table 6). These analyses were used to test Hypotheses 2 through 9.

Hypothesis 2 examined the independent variable age and stated that as age increased, levels of sexual activity would also increase. Based on correlation results, there was a significant, positive relationship between age and sexual behavior ( $r = .48, p = .001$ ). Thus, the hypothesis was supported. Age was also found to be significantly negatively correlated with race, such that non-White youth were significantly older than White youth ( $r = -.13, p = .012$ ) and positively correlated with “other” living arrangements, such that older youth were significantly more likely to experience a family structure other than living with at least one biological parent ( $r = .13, p = .012$ ). Further, age was significantly positively related to attitudes about sexual intercourse ( $r = .18, p = .001$ ) and peer sexual behavior ( $r = .48, p = .001$ ). Thus, as youth age, they were more likely to have more lenient attitudes about sexual intercourse and were more likely to perceive that their best friend was engaging in more sexual activities leading up to intercourse.

Table 6. Correlation Matrix of Dependent and Independent Variables

|                                | 1  | 2    | 3     | 4     | 5     | 6     | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     |
|--------------------------------|----|------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DEPENDENT VARIABLE             |    |      |       |       |       |       |        |        |        |        |        |        |        |        |        |
| 1. SB                          | -- | -.06 | .48** | --    | -.11* | -.12* | .55**  | -.19** | -.11*  | -.15** | -.24** | .09    | .11*   | .09    | .62**  |
| INDEPENDENT VARIABLES          |    |      |       |       |       |       |        |        |        |        |        |        |        |        |        |
| Individual                     |    |      |       |       |       |       |        |        |        |        |        |        |        |        |        |
| 2. Gender                      |    | --   | .01   | .13   | -.07  | -.13* | -.02   | .03    | -.29** | -.23** | -.00   | -.01   | .05    | .04    | .07    |
| 3. Age                         |    |      | --    | .61** | -.13* | .06   | .18**  | -.00   | -.08   | -.05   | -.02   | -.05   | -.02   | .13*   | .48**  |
| 4. Age at first intercourse    |    |      |       | --    | .06   | .25*  | -.26*  | .05    | -.17   | .00    | .26*   | -.07   | -.08   | -.09   | .16    |
| 5. Race                        |    |      |       |       | --    | .06   | -.10   | .03    | .01    | .03    | .14**  | .02    | -.01   | -.21** | -.17** |
| 6. Total Self Esteem           |    |      |       |       |       | --    | -.19** | .12*   | .17**  | .09    | -.12*  | .01    | -.10*  | -.03   | -.09   |
| 7. Total Attitude              |    |      |       |       |       |       | --     | -.20** | .02    | -.09   | -.23** | .03    | .15**  | .09    | .41**  |
| 8. College Aspiration          |    |      |       |       |       |       |        | --     | .01    | .07    | .11*   | -.04   | -.07   | .00    | -.09   |
| Familial                       |    |      |       |       |       |       |        |        |        |        |        |        |        |        |        |
| 9. Mother Education            |    |      |       |       |       |       |        |        | --     | .40**  | .15**  | -.07   | -.16** | .07    | -.08   |
| 10. Father Education           |    |      |       |       |       |       |        |        |        | --     | .14**  | -.10*  | -.10   | .04    | -.15** |
| 11. Biological Parents         |    |      |       |       |       |       |        |        |        |        | --     | -.42** | -.48** | -.27** | -.19** |
| 12. Stepparent                 |    |      |       |       |       |       |        |        |        |        |        | --     | -.35** | -.19** | .01    |
| 13. Single Parent              |    |      |       |       |       |       |        |        |        |        |        |        | --     | -.22** | .12*   |
| 14. Other Family Structure     |    |      |       |       |       |       |        |        |        |        |        |        |        | --     | .09    |
| Extra-familial                 |    |      |       |       |       |       |        |        |        |        |        |        |        |        |        |
| 15. Total Peer Sexual Behavior |    |      |       |       |       |       |        |        |        |        |        |        |        |        | --     |

\*p<.05. \*\*p<.01.

Note. SB = Youth Sexual Behavior Scale

In terms of racial/ethnic differences in sexual activity, Hypothesis 3 predicted that non-White adolescents would be more sexually active than their White counterparts. This study found a significant but weak correlation between race and sexual behaviors, such that non-White youth were more likely to have engaged in more behaviors than their White peers ( $r = .11, p = .036$ ). This hypothesis was supported; however, it should be noted that non-White youth were also significantly older than White youth, so age may be confounded with race. Non-White adolescents in this study were also less likely to live with both biological parents ( $r = .14, p = .005$ ) and more likely to live in an “other” living situation ( $r = -.21, p = .001$ ) than their White counterparts. Finally, in terms of race/ethnicity, non-White adolescents reported that their best friend was engaging in significantly more sexual activities than White adolescents ( $r = -.17, p = .001$ ), but again, age may be a factor here as well.

Hypothesis 4 predicted that self-esteem would vary by sexual activity and gender. For boys, as self-esteem increased, sexual activity would increase (Hypothesis 4a). Conversely, for girls, as self-esteem increased, sexual activity would decrease (Hypothesis 4b). However, these hypotheses were not supported by the data. Separate correlation coefficients were run for boys and girls. These analyses revealed that, for boys, there was no statistically significant relationship between self-esteem and total sexual behavior ( $r = -.11, p = .12$ ). However, an examination of boys who had sexual intercourse compared to boys who had not, revealed that active boys had significantly lower self-esteem scores ( $M = 29.7, SD = 5.2$ ) than non-active boys ( $M = 32.1, SD = 5.0, t(183) = 2.70, p = .008$ ), which ran in the opposite direction of the relationship predicted. For girls, there was a trend suggesting that self-esteem was negatively related to total

sexual behavior ( $r = -.14, p = .055$ ). Similar to boys, girls who had sexual intercourse reported lower self-esteem scores ( $M = 28.7, SD = 6.0$ ) than their non-sexually active counterparts ( $M = 30.6, SD = 5.3, t(200) = 1.85, p = .066$ ); however, these findings were not statistically significant. Taken as a whole, examining the relationship between self-esteem and sexual behavior (regardless of gender) revealed a significant negative correlation, where youth who were engaged in more sexual activities scored significantly lower on the self-esteem inventory than their less active counterparts ( $r = -.12, p = .02$ ).

Self-esteem was also significantly correlated to age at first sexual intercourse, such that those who postponed age at first sexual intercourse scored higher on self-esteem than those who initiated their sexual experiences at an earlier age ( $r = .25, p = .032$ ). Moreover, those youth who scored higher on self-esteem had significantly more conservative attitudes about sexual intercourse ( $r = -.19, p = .001$ ) and were more likely to aspire to go to college ( $r = .12, p = .023$ ) than youth with lower self-esteem scores. Interestingly, self-esteem was also significantly related to youths' living situations, such that those youth living with both biological parents had higher esteem scores ( $r = .12, p = .022$ ) than their counterparts and, conversely, those youth living with a single parent had lower self-esteem scores ( $r = -.10, p = .048$ ) than their counterparts.

Next, Hypothesis 5 was examined. This hypothesis stated that youth who held more lenient attitudes about sexual intercourse would be more sexually active than their more conservative peers. Hypothesis 5 was supported by the data ( $r = .55, p = .001$ ). Attitudes about sex were also significantly related to age at first sexual intercourse, college aspiration, living situation, and peer sexual behaviors. In general, as compared to more conservative youth, youth who held more lenient attitudes about sexual intercourse

were more likely to engage in sexual intercourse at an earlier age ( $r = -.26, p = .026$ ), were less likely to aspire to go to college ( $r = -.20, p = .001$ ), were less likely to reside with both biological parents ( $r = -.23, p = .001$ ; single parent:  $r = .15, p = .005$ ), and were more likely to report that their best friends were engaging in more sexual behaviors ( $r = .41, p = .001$ ).

Hypothesis 6 tested the relationship between college aspiration and sexual activity. It was predicted that youth who aspired to go to college would be less sexually active than their non-college aspiring peers. This hypothesis was supported by the data ( $r = -.19, p = .001$ ). College aspirations were also related to youths' living situation, such that those youth who resided with both biological parents were more likely to aspire to go to college than their peers who lived in another family configuration ( $r = .11, p = .038$ ).

At the familial level, this study examined the relationship between parental education and sexual activity. Hypothesis 7 predicted that as the level of parental education increased, the level of sexual activity would decrease. This hypothesis was supported by the data. Regardless of which parent's education was examined, mother's and father's educational advancement was significantly negatively correlated with their youth's total sexual behaviors (for mothers' education:  $r = -.11, p = .024$ ; for fathers' education:  $r = -.15, p = .003$ ). Mother's education was significantly correlated with self-esteem, such that youth with more educated mothers scored higher on the self-esteem inventory than youth with less educated mothers ( $r = .17, p = .001$ ). Regarding father's education, youth with more educated fathers reported that their peers were less likely to engage in sexual activities than youth with less educated fathers ( $r = -.15, p = .003$ ).

Hypothesis 8 predicted that there would be a significant relationship between youths' living situation and their sexual activity levels. It was hypothesized that youth living with both biological parents would be less sexually active than those living in other family structures. Hypothesis 8 was supported by the data ( $r = -.24, p = .001$ ). Living with both biological parents was also significantly positively correlated to youths' age at first sexual intercourse, such that youth who lived with both biological parents delayed the age at which they became sexually active longer than youth who lived in another family configuration. As mentioned previously, youths' living situation (both biological parents = 1, all others = 0) was also significantly negatively related to their attitudes about sexual intercourse and their peers sexual activity levels.

And finally, this study tested the relationship between youth sexual activity and peer sexual activity. Hypothesis 9 stated that as sexual activity of a youth's best friend increased, the sexual activity of the youth would likewise increase. This hypothesis was supported by the data ( $r = .62, p = .001$ ).

#### Correlations by Sex Activity

To further examine the differences between sexually active and non-sexually active youth, correlation coefficients were run separately for each group. Table 7 presents a matrix depicting the strength and magnitude of relationships between independent variables for those youth who have had sexual intercourse (above diagonal) versus those youth who have not (below diagonal).

Table 7. *Correlations by Sex Activity (yes/no)*

|                                | 1      | 2      | 3     | 4      | 5     | 6      | 7    | 8     | 9     | 10     | 11    |
|--------------------------------|--------|--------|-------|--------|-------|--------|------|-------|-------|--------|-------|
| <b>Individual</b>              |        |        |       |        |       |        |      |       |       |        |       |
| 1. Gender                      | --     | -.00   | .13   | -.10   | -.09  | .01    | .06  | -.13  | -.17  | .10    | .08   |
| 2. Age                         | .05    | --     | .61** | .03    | .24*  | -.11   | .07  | -.25* | -.03  | .09    | .36** |
| 3. Age at first intercourse    | --     | --     | --    | .06    | .25*  | -.26*  | .05  | -.17  | .00   | .26*   | .16   |
| 4. Race                        | -.08   | -.15** | --    | --     | -.03  | -.06   | -.08 | -.02  | -.11  | .07    | -.00  |
| 5. Total Self Esteem           | -.15*  | .08    | --    | .08    | --    | -.14   | .07  | .05   | -.04  | -.04   | .11   |
| 6. Total Attitude              | .03    | .04    | --    | -.09   | -.13* | --     | -.13 | .14   | -.06  | -.08   | .05   |
| 7. College Aspiration          | -.01   | .06    | --    | .07    | .12*  | -.13*  | --   | -.14  | .14   | .00    | -.03  |
| <b>Familial</b>                |        |        |       |        |       |        |      |       |       |        |       |
| 8. Mother Education            | -.34** | .01    | --    | .01    | .18** | .07    | .04  | --    | .30** | .01    | -.08  |
| 9. Father Education            | -.26** | .01    | --    | .05    | .09   | -.00   | .02  | .41** | --    | -.16   | -.21  |
| 10. Family Structure           | -.02   | .03    | --    | .15**  | .11*  | -.18** | .12* | .16** | .17** | --     | .01   |
| <b>Extra-Familial</b>          |        |        |       |        |       |        |      |       |       |        |       |
| 11. Total Peer Sexual Behavior | .12*   | .38**  | --    | -.18** | -.05  | .26**  | -.01 | -.03  | -.07  | -.15** | --    |

\*p<.05. \*\*p<.01.

Note. Family Structure, 1=Biological Parents, 0=All Other Family Configurations. Above diagonal (YES, had sex); below diagonal (NO, not had sex)

### Multiple Hierarchical Regression

Table 8 displays summary results of the hierarchical regression analysis predicting sexual activity (using the total sexual behavior scale, with scores ranging from 0 to 7) among adolescents. Nine variables were entered into three blocks. Block 1 contained the individual level variables (gender, age, race (White = 1, non-White = 0), self-esteem, attitude, and college aspiration (yes = 1, no = 0)). Moving from the individual to the familial level, family structure (living with both biological parents: yes = 1, no = 0) and parental education were entered next in Block 2. Because mother's and father's education level are highly correlated, we ran separate models—one with father's education and the other with mother's education. The final model presented includes mother's education because that model explained the most variance in youth sexual behavior. At the extra-familial level (Block 3), peer sexual activity was entered. Within each model, the magnitude of the standardized Beta coefficients can assess the relative importance of the predictor variables (Pedhazur, 1982). Thus, within each model, the predictor variables are discussed by relative importance.

The three hierarchical regression models were significant at each of the three levels. Model 1 revealed that the strongest predictor of sexual activity was age such that increases in age were related to increases in sexual activity ( $p = .001$ ). Attitudes about sexual intercourse was also significant, where more lenient attitudes were associated with higher levels of sexual activity ( $p = .001$ ).

Table 8. *Multiple Hierarchical Regression*

| Variables                              | Model 1  |     |         | Model 2 |     |         | Model 3  |     |         |
|--|----------|-----|---------|---------|-----|---------|----------|-----|---------|
|  | B        | SE  | $\beta$ | B       | SE  | $\beta$ | B        | SE  | $\beta$ |
| <b>Individual Level</b>                |          |     |         |         |     |         |          |     |         |
| Gender                                 | -.31     | .15 | -.08*   | -.43    | .16 | -.11**  | -.51     | .15 | -.14*** |
| Age                                    | .56      | .05 | .44***  | .54     | .05 | .42***  | .35      | .05 | .27***  |
| Race                                   | -.08     | .18 | .02     | -.02    | .17 | -.01    | .08      | .16 | .02     |
| Total Self Esteem                      | -.01     | .02 | -.03    | -.00    | .02 | -.01    | .00      | .01 | .01     |
| Total Attitude                         | .65      | .06 | .43***  | .64     | .06 | .42***  | .50      | .06 | .33***  |
| College Aspiration                     | -.61     | .25 | -.10*   | -.57    | .25 | -.09*   | -.49     | .23 | -.08*   |
| <b>Familial Level</b>                  |          |     |         |         |     |         |          |     |         |
| Mother's Education                     |          |     |         | -.21    | .08 | -.12*   | -.21     | .08 | -.12**  |
| Family Structure<br>(BioPar=1, Else=0) |          |     |         | -.38    | .16 | -.10*   | -.24     | .15 | -.06    |
| <b>Extra-Familial Level</b>            |          |     |         |         |     |         |          |     |         |
| Total Peer Sexual Activity             |          |     |         |         |     |         | .32      | .04 | .35***  |
| Model $R^2$                            | .48      |     |         | .50     |     |         | .58      |     |         |
| Model $F$                              | 50.06*** |     |         | 6.99**  |     |         | 63.63*** |     |         |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Aspirations about college attendance was the third strongest predictor of sexual behavior. Youth who did not expect to attend college were more sexually active than those youth aspiring to go to college ( $p = .015$ ). And finally, gender was a significant predictor where being male was predictive of increased sexual activity ( $p = .042$ ). Taken together, the predictors in this model accounted for 48% of the variance in sexual activity.

When familial level variables (family structure and mother's education) were added in Model 2, 50% of the variance in sexual activity was accounted for, thus slightly increasing the model's explanatory power. In this model, the significant individual level predictor variables remained significant, but mother's education was a more important predictor than college aspiration. As mother's education decreased, levels of youth sexual activity increased ( $p = .013$ ). In terms of family structure, youth who lived with both biological parents were less sexually active than youth who live in another family configuration ( $p = .022$ ). However, youths' family structure was one of the least important significant predictor variable in this model.

Finally, Model 3, which added peer sexual behavior, significantly improved the explanatory power of the model, increasing the  $R^2$  from .50 to .58. In other words, this model accounted for 58% of the variance in youth sexual activity and peer sexual activity emerged as the best predictor of youth sexual activity ( $p = .001$ ). As sexual activity of a youths' best friend increased, the sexual activity of the individual increased. Other salient predictors in this model included (in order of Beta magnitude): attitudes about sex ( $p = .001$ ), age ( $p = .001$ ), gender ( $p = .001$ ), mother's educational attainment ( $p = .006$ ), and college aspiration ( $p = .030$ ).

Summary of Results Compared with Original Hypotheses

Table 9 compares the original hypotheses for the present study with the observed results. Using an alpha level of  $p = .05$ , with the exception of Hypotheses 1 and 4, all other hypotheses were supported by the data.

Table 9. *Summary of Results Compared with Original Hypotheses*

| Hypotheses   | Results        |
|--|----------------|
| <u>Individual Level</u>  |                |
| 1. Boys will be more likely to have first sexual intercourse at an earlier age than their female counterparts.             | Rejected       |
| 2. As age increases, levels of sexual activity will increase.  | Supported      |
| 3. Non-white adolescents will be more sexually active than White adolescents.  | Supported      |
| 4a. As self-esteem increases in boys, sexual activity will increase  | Rejected       |
| 4b. As self-esteem increases in girls, sexual activity will decrease.  | Trend, $p=.06$ |
| 5. As attitudes about sexual activity become more lenient, the level of sexual activity will increase.                     | Supported      |
| 6. As intention of attending college increases, sexual activity will decrease.   | Supported      |
| <u>Familial Level</u>  |                |
| 7. As the level of parental education increases, sexual activity will decrease.  | Supported      |
| 8. Individuals living with two biological parents will be less sexually active than those in any other living arrangement. | Supported      |
| <u>Extra-familial Level</u>  |                |
| 9. As sexual activity of an individual's best friend increases, the sexual activity of the individual will increase.       | Supported      |

## CHAPTER 5

## DISCUSSION

Using an ecological framework, this study examined the ability of selected variables at the individual, familial, and extra-familial levels to predict sexual activity among youth in non-urban settings. To date, the majority of studies investigating youth sexual activity and risky sexual behaviors have focused on urban (and to a lesser extent suburban) youth (Gillmore et al., 2002; Kinsman et al., 1998; Small & Luster, 1994; Thornberry et al., 1997; Upchurch et al., 1998). This study makes a unique contribution to the literature by focusing on youth who live in non-urban and rural locales in the northwest United States. It appears that non-urban youth are different from urban youth. For example, this study found a significantly younger age at first intercourse than previous studies. It could be that non-urban youth become sexually active at a younger age than urban youth. It also possible that the non-urban youth sampled for this study were at higher risk of sexual activity at younger ages. Clearly, more research is needed to understand how sexual activity might differ by geographic location and other related factors, such as youth opportunities to engage in extracurricular activities and employment or proximity to large cities. Understanding the complex factors related to non-urban youth sexual behaviors may serve to facilitate program and policy development and implementation, which aims to promote adolescent sexual health specific to this population.

Although extant research has examined an array of variables related to adolescent sexual risk taking (Small & Luster, 1994), this study was also unique in that it examined

sexual activity in a more complex manner. Rather than simply comparing those youth who have had sexual intercourse to those youth who have not engaged in such sexual activity, this study utilized a range of sexual behaviors on a continuum from kissing to intercourse. By measuring sexual activity on a continuum, this study was able to examine youth activities in a more complex fashion. This approach recognizes that risky sexual behavior involves more actions than sexual intercourse alone. In addition, while this study examined fewer variables than Small and Luster (1994), the current effort was more successful in accounting for the variance in sexual activity. This study accounted for 58% of the variance in non-urban youth sexual activity as compared to 32% (for males) and 38% (for females) of the variance accounted for by Small and Luster. Following is a discussion of the individual, familial, and extra-familial level variables as they relate to adolescent sexual activity in this study.

### Individual Variables and Sexual Activity

#### Gender

Extant literature suggests fairly consistently that gender matters in relation to age at first intercourse. Research suggests that boys have first sexual intercourse at earlier ages than their female counterparts (Albert et al., 2003). However, this study's findings did not concur with extant research in this regard. Boys and girls in the present study reported nearly identical mean ages for first intercourse. In addition, youth in this study reported a median age of first intercourse of 13.0 and a mean age at first intercourse of 12.9. This is quite different from other studies examining age at first intercourse, which report a median age of 16.9 (Upchurch et al., 1998) and mean ages of 17.2 (Reinisch et

al., 1995), 16.7 (Anderson & Newton, 2004), and even 13.9 (Jones et al., 2004). As mentioned, it is plausible that youth who participated in the current study were more at-risk than samples used in other studies, given that the Boys and Girls Club services at-risk youth and that additional participants were mandated by the juvenile justice system to attend the abstinence-only program. Therefore, the reported young age at first intercourse and the fact that boys and girls reported first sex at roughly the same age may be attributed to the sample of this study being comprised particularly of at-risk youth. Because it is also possible that non-urban boys and girls (versus urban boys and girls)—regardless of “at-risk” status—are engaging in sexual activity at similar ages, future research is needed to clarify how gender may be operating differently across different populations of youth.

This study also had a younger sample than other studies. For example, many studies use data from national databases such as the Youth Risk Behavior Survey (YRBS). Data from these reports are collected from high school-aged youth (CDC, 2004). Given gendered stereotypes and attitudes about sexual activity, it may be that when older youth (16-18 year olds) are asked about sexual activity, males tend to exaggerate a younger age at first intercourse while females temper their answer and report an older age. When approached at a younger age, girls who report having had sexual intercourse may be less likely or able to “temper” that age and may therefore report a younger age at first intercourse. It is also possible that this study’s sample of young people living in non-urban areas is qualitatively different from previously studied groups of adolescents. Clearly, disclosing age at first intercourse is a sensitive topic and one that needs additional study.

### Age

Consistent with the findings of South et al. (2005) and other studies (Albert et al., 2003; Kann et al., 1998; Upchurch et al., 1998), this study found that the likelihood of engaging in sexual activity increased with age. Moreover, the level of youths' sexual behaviors also increased with age. At older ages, even youth who were abstaining from intercourse were engaging in more progressive sexual behaviors, such as touching another's breasts or genitalia. The finding of increased sexual activity with advancing age is somewhat intuitive as well as biologically based. As adolescents enter puberty and experience hormonal changes, they also experience their sexuality and sexual urges in more intense ways. Today's youth are also bombarded with sexually explicit messages and images in the media that likely sensitize them to adolescent, or more likely, adult sexuality (AAP, 2001). For many youth in the U.S., increases in age also increases the likelihood of boys and girls dating and engaging in other "coupling" behaviors that could provide opportunities for sexual activity. In addition, as this study found, attitudes about sexual intercourse become more lenient with age. As youth get older, they begin to believe that sex before marriage is more "right." It is unclear if and when societal messages about the "rightness" of sex before marriage shift as youth get older; however, such shifts could also help to explain the changes in youth sexual behavior as they age.

### Race

Regarding racial/ethnic differences in sexual behavior, this study's findings were consistent with previous research findings (Kann et al., 1998) in that non-White adolescents were more likely to engage in more progressive sexual behaviors than their

White counterparts. It may be that youth of different races/ethnicities have different cultural norms or different life experiences that lead them to engage in more sexual behaviors. On the other hand, race is a social construct and a complicated variable that is confounded with many other adolescent sexual risk factors such as poverty and single parenthood (Garcia Coll et al., 1996; Furstenberg, 1987). Thus, it is difficult to attribute an increase in sexual activity to race alone.

Unfortunately, this study was not able to examine the income levels of study participants and their families. Therefore, it is impossible to determine if the increase in sexual activity among non-White youth can be attributed in part to their socioeconomic status. Non-White youth in this study were more likely to reside with single parents or in other living arrangements, however, and extant research suggests that single parenthood (or the lack of adult supervision) puts youth at increased risk of engaging in early sexual behaviors as compared to youth residing in two-parent homes (Kirby, 1999b). It is believed that two-parent families serve as a protective factor for youth, perhaps because two parents are better able to monitor their child's behavior, whereabouts, and who the child associates with during out-of-school time. It is interesting to note further that minority participants in this study were also significantly older than White youth. Older youth, regardless of race, were more sexually active than younger adolescents. Thus, it is possible that race was confounded with age.

And finally, the majority of non-White participants in this study were Native American youth residing on a reservation. Given the cultural differences between Native American and non-Native experiences, caution should be used when discussing these interracial/ethnic differences. Because the initial study's intent was not specifically

focused on experiences unique to the cultures of Native American youth, this study is limited in its ability to delve into race/ethnic experiences, particularly regarding such a sensitive topic as adolescent sexuality.

### Self-esteem

In terms of self-esteem, earlier studies have produced inconsistent results, with some studies finding that self-esteem did not play a significant role in sexual behavior at all (Small & Luster, 1994). However, the general consensus of studies suggests that self-esteem varies as a function of gender and sexual activity (Kowaleski-Jones & Mott, 1998; Spencer et al, 2002). Thus, this study predicted that as self-esteem increased in boys, sexual activity would increase. Conversely, for girls, as self-esteem increased, sexual activity would decrease. These hypotheses were not supported by the data. Sexually active males reported significantly lower levels of self-esteem than non-sexually active males. For girls, the predicted direction of the relationship between self-esteem and sexual activity was supported (i.e., a negative relationship), but the significance test results suggested only a trend in the data. Interestingly, when gender was not controlled, sexually active youth had significantly lower self-esteem than youth who were not sexually active.

The self-esteem measure in this study was placed at the end of the survey used with participants, after youth were asked to contemplate and disclose information regarding sexual activity. In this regard, self-esteem was placed in the context of sexual activity. With the negative connotation placed on youth sexual activity in our society, it may be speculated that sexually active youth internalized the negative messaging and felt

poorly about their behaviors and consequently their esteem of self. In other words, the conflict between their biological urges to engage in sexual activity and the social message to abstain may produce internal conflict, which may lead to decreased self-esteem.

Furthermore, it is important to note that correlational findings cannot ascertain causality. Thus, it could also be that youth with lower levels of self-esteem may engage in more sexual behaviors. Adolescents with low self-esteem may use sexual activity as a way to attempt to feel better about themselves or boost self-esteem by connecting with another human being in an intimate way or perhaps by using sex as a conquest or trophy. In this study, self-esteem was also related to age at first sexual intercourse such that youth with more positive feelings about self were delaying sexual intercourse. This could support the thought that youth with low self-esteem are using sexual activities to boost esteem. Youth who already have high self-esteem may not feel the need to engage in sexual activity to boost esteem and therefore postpone activity. It could also be speculated, as stated previously, that societal messages become less judgmental as youth get older. Therefore youth who are engaging in sexual behaviors at older ages may not feel the same guilt and drop in esteem as younger, sexually active adolescents.

Findings also revealed that self-esteem was related to living situation. Youth who lived with both biological parents reported significantly higher self-esteem than youth living in all other situations. In addition, youth living with a single parent reported significantly lower self-esteem than all other youth. This finding suggests that living with both biological parents somehow fosters more positive self-esteem in youth. It is possible that youth who have contact with both parents and perceive both their parents to be available to them feel better about themselves. However, this is a complex issue. It is also

possible that youth—like all members of US society—are bombarded with messages that two-parent families are best and single-parent families (as a result of divorce or never marrying) are inferior or deficient in some way. High self-esteem in youth living with both biological parents and low esteem in youth living with single parents may represent an internalization of that message by adolescents. Societal judgment of worth placed on a particular family structure may adversely affect the self-esteem of individuals in the “deficient” family structures.

### Attitude About Sex

Based on extant literature this study hypothesized that as attitudes about sexual activity became more lenient, the level of sexual activity would increase (Kirby, 1999b). Findings support that hypothesis. Youth who were engaged in more sexual behaviors had more lenient attitudes about teens having sexual intercourse before marriage than their less sexually-active peers. In other words more active youth believed adolescent sex before marriage was more “right” than their less sexually active peers. This could support the progression between attitudes and behaviors offered by the theory of reasoned action (Fishbein, 1967). Youth who believe sex is “right” are more likely to engage in sexual activities. Another possibility is that youth who are sexually active may truly feel that sexual activity between youth is wrong but report that it is right in an attempt to justify their behavior.

### College Aspirations

While previous research specifically about college aspirations and youth sexual activity is somewhat sparse, studies have found that future expectations and opportunities

were important in decisions about sexual activity (Kirby, 1999b; White, 2002). The findings of this study support the prediction that as intention of attending college increased, sexual activity would decrease. It appears that youth make a connection between attending college and sexual activity. It could be that youth who expect to attend college consciously decide to postpone sexual activity as the consequences of that activity could delay or eliminate the opportunity of college attendance. College aspiration was also correlated with self-esteem. Youth with higher levels of self-esteem were more likely to say they expected to attend college than youth with lower levels of self-esteem. It could also be that youth who are more sexually active have experienced a drop in self-esteem and no longer feel they are capable of attending college. In addition, this finding may represent a difference in values between sexually active and non-sexually active youth. Youth who abstain from sexual activity may value education more than their sexually active peers.

### Familial Variables and Sexual Activity

#### Parental Education

Consistent with previous research findings (Kirby, 1999b; Small & Luster, 1994), this study found a significant relationship between youth sexual activity and the educational attainment of their parents. Youth who reported high levels of parental education were less likely to engage in sexual behaviors than youth whose parents had attained lower levels of education. It is possible that with an increase in education comes an increased understanding of human sexuality and with increased understanding comes parental willingness to discuss such topics. Parents with more education may see

discussing sexual activity with their child as more important and may have more skills to do so than less educated parents.

It could also be that parents with higher levels of education postponed parenthood to a later age. They could in turn be instilling values in their children to pursue higher education and postpone their own sexual activity and/or parenthood. Additionally, as with other variables (e.g., family structure), increased levels of education could serve as a proxy for family income. Earnings typically increase as education level increases. It could be that youth who have highly educated parents have more resources available to them than youth whose parents have lower levels of education. High income levels may protect youth against sexual activity by, for example, affording youth opportunities to engage in extra-curricular activities.

### Family Structure

As previously mentioned, family structure appears to be related to youth sexual activity, such that youth living with both biological parents are less likely to engage in sexual activity as compared to youth living in other family constellations (Kirby, 1999b). This study found similar patterns. Youth who reported living with both biological parents were more likely than comparison youth to abstain from sexual activity and to delay first sexual intercourse, indicating that living with both biological parents may be a protective factor.

Two parents may have more resources to spend on their children to engage them in extra-curricular activities, like sports or artistic pursuits. Families headed by two biological parents may be more financially stable than families that have undergone

transition (such as a divorce) or are headed by a single earner. As noted earlier, two parents may also be better able to supervise their children and monitor their activities or peer group affiliation than single parents or other adults responsible for the care of adolescents. It is also possible that a parent living with the other biological parent of their child may be more emotionally available than a parent in a family that has been through a transition such as a divorce or remarriage. Therefore, that parent may be more emotionally available to communicate about topics such as sexual activity with their child.

This study also found that youth who lived with both biological parents reported that their best friend was less sexually active than youth living with a single parent or in another living situation. This could possibly be explained by availability as well. Parents in a two-parent household may be more aware of their child's friends and those friend's behaviors than parents in other situations. Likewise, similarly structured families may be more likely to associate with each other, creating a community where youth are receiving similar levels of supervised care and similar parent-based messages about appropriate youth sexual behaviors.

Finally, this study found that youth who live with both biological parents report more conservative attitudes about sexual intercourse than their counterparts who live in other family configurations. It could be that biological parents that live together hold more traditional values about marriage and sex. They may instill similar values in their children, leading their children to have more strict attitudes about sex, which manifests in little sexual activity. Families who have experienced transitions resulting in single parent or stepparent configurations may have had to shift their thinking about family life as well as expectations about family and youth behavior. It is also possible that families who do

not comprise the traditional nuclear mold simply hold more liberal values about family and sexuality. These liberal leanings may translate into youth's more lenient attitudes about sexual intercourse and more exploratory sexual behaviors.

### Extra-Familial Variables and Sexual Activity

#### Peer Sexual Activity

The prediction that as sexual activity of an individual's best friend increased, the sexual activity of the individual would increase was supported by findings of this study. Youth who perceived their best friend to be engaged in sexual activities were also engaged in sexual activities. Consistent with extant literature (Nahom et al., 2001), in this study, youth perception of peer behavior appeared important to their own decision-making about sexual activity. It is possible that a youth whose best friend is sexually active may become sexually active in order to fit in or be like their peer. It is also possible that hearing about their best friend's sexual experiences may alleviate anxiety the individual has around experimenting sexually him or herself. Youth may also observe that their best friend is not experiencing any negative consequences related to their sexual behavior and infer that it is safe to engage in those behaviors. In the same regard, sexually non-active peers may have had similar influences on their best friend—encouraging, for example, abstinence or limited sexual activities.

In sum, it is clear that there are a number of individual, familial, and extra-familial variables that appear important to our understanding of youth sexual behavior. The next step in this study was to examine the study variables together in one multivariate analysis, thereby investigating which variables were most salient to

predicting or explaining youth sexual behavior. By examining the variables together, we were able to uncover the relative importance of each variable while controlling all of the other variables in the model (Pedhazur, 1982).

### Predictors of Youth Sexual Activity

The best predictors of adolescent sexual activity (in order of magnitude) were perceived peer sexual behavior, attitudes about sexual intercourse, age, gender, mother's education level, college aspirations, and to a lesser degree, family structure. The number of salient variables that predict sexual activity speaks to the complexity of this issue. In other words, the decision of youth to engage in sexual behaviors is affected by multiple variables at multiple ecological levels.

The strongest predictor of adolescent sexual activity was peer sexual activity. Youth who believe their best friend is engaged in sexual activity are more likely to be sexually active themselves. Of the variables examined, peers were the most salient to adolescents, which speaks to the importance youth place on their peers. Only slightly less important was attitude about sexual intercourse. Youth who believe it is "right" for teenagers to have sexual intercourse before marriage are more likely to be sexually active.

Another salient predictor of sexual activity was age. Older youth are more likely to be sexually active. In interpreting this finding, we must remember that the sample of this study was relatively young, with the majority of youth aged 12 to 14. "Older" in this sample does not represent 18 year olds, but perhaps 15 year olds. The next significant predictor of sexual activity was gender. Throughout the analyses, gender differences were

not significant. However, when all the individual level variables were entered into the model, gender became an important predictor of sexual behavior, such that males were more likely to engage in more sexual behaviors than their female counterparts. Gender held as a significant predictor, even when familial and extra-familial level variables were entered into the model.

With slightly less predictive power, mother's education was a significant variable in the model as well. Youth whose mother had a lower educational attainment level were more likely to be sexually active than youth with more educated mothers. Weaker still was the predictive power of college aspirations. Youth who did not expect to go to college were more likely to be sexually active than their college-aspiring peers. An expectation to attend college is important in predicting sexual activity but not as important as peers or attitudes about sex. The weakest predictor variable was family structure. Youth who did not live with their biological parents were more likely to be sexually active than their peers living in other family configurations; however, this predictor was not statistically significant, and only revealed a trend in the data. Thus, family structure appeared to be important when considering family structure and sexual activity alone (i.e., in bivariate analyses), but was relatively unimportant in the final analyses when compared to peer sexual activity, attitudes about sex, gender, age, mother's education and even college aspirations.

The findings of this study add to extent literature predicting adolescent sexual activity. As compared to similar studies (e.g., Small & Luster, 1994), this study used an array of individual, familial, and extra-familial variables that accounted for a large proportion of the variance (58%) in youth sexual activity. The most salient variables in

the current study (peer sexual activity and attitudes about sexual intercourse) were not examined in Small and Luster's study. The variables of age and gender were examined by Small and Luster, but were not used as predictive variables in the manner that they were used in this study. Small and Luster did find that mother's education level was a significant predictor variable for female's sexual activity, which was similar to the findings of this study. They also found that "concern about future economic opportunities" was a significant predictor. Although the current study did not include the same variable about future economic opportunities, this study did examine college aspiration, and found it to be a significant predictor. It is likely that college aspiration and future economic opportunities are inter-related variables.

While this study examined some of the same variables as the Small and Luster study, by adding peer sexual activity and attitudes about intercourse, the current effort was able to explain more of the variance than previous analyses. For example, Small and Luster's analyses accounted for approximately 35% of the variance in youth behaviors. Thus, future research should consider examining a complex array of ecological factors when investigating youth sexual activity. By including variables at multiple levels that are meaningful to the sexual experiences of youth, future studies will likely increase our understanding of youth activities and will allow practitioners and policymakers to better tailor their efforts to thwart the early onset of sexual activity among young people.

#### Study Limitations and Implications for Future Research

This study shed light on selected individual, familial and extra-familial variables that predict adolescent sexual activity among non-urban youth; however, it is not without

limitations. This study used self-reported data from adolescents on a sensitive topic. As a limitation we have to consider the possibility that youth did not respond to questions truthfully, did not fully understand questions asked or vocabulary used, or simply did not know how to answer certain questions. Prior to completing the surveys, youth were assured of their privacy and the confidentiality of their responses; however, some youth still may not have felt comfortable being completely truthful. During the administration of the survey, a trained research assistant was present to explain unclear or confusing vocabulary to participants. Nevertheless, several participants in this study contradicted themselves when on one question stated that they had engaged in sexual intercourse, and then on another, stated that they had not.

In addition, the original study did not pilot the survey prior to its implementation, but used established measures that had been tested with other youth. Many youth did not know their parent's income level or level of educational attainment. Such limitations pose problems for researchers studying adolescent population and may be ameliorated by piloting measures to ensure that youth can adequately answer all study questions. Future researchers should continue to devise methodologies that will yield the most accurate and truthful data, and should consider collecting data from multiple sources, such as parents/caregivers and siblings, to generate a complete picture of the youth's family life.

Cross-cultural researchers should be sensitive to the cultural nuances that exist between and among minority and majority peoples. In this study, the minority respondents may or may not have felt that the study measures were relevant to their life experience. Christopher, Christopher, and Dunnagan (2000) state that the developments of measures dealing with health are shaped on the whole by Western concepts of

individualism. Cultures that are more collective by nature may not conceptualize constructs such as self-esteem or family structure in the same way that an individualist culture would. This study was not developed specifically with minority groups in mind and the same program was delivered to majority and minority youth; therefore, future researchers should consider conducting research specifically developed for minority youth. Future research is warranted to better understand the circumstances facing minority youth in non-urban communities.

This study was also limited by the data set available to assess study aims. As with any secondary data analysis, this study was limited by the methods of the original study, including sampling strategies, recruitment of participants, and measures selected for the original evaluation effort. The original study evaluated the utility of an abstinence-only program being administered to youth at a Boys and Girls Club in the northwest United States. Thus, the current study was limited in the selection of variables used to examine the relationships between individual, familial, extra-familial factors and youth sexual activity. Moreover, this study cannot determine the number of youth or parents who declined to participate in the evaluation effort. Future researchers should consider additional variables that might further explain sexual activity among adolescents, such as family income, and youths' academic achievement and extra-curricular or community engagement. Future researchers should also track basic demographic information about youth/parents who decline participation in studies of sexual activities so that we have a better understanding of who is willing to discuss such sensitive topics and who is unwilling.

Finally, due to the use of a convenience sample, this study is limited in its ability to generalize its findings broadly. In other words, caution should be used when generalizing study findings beyond the participants studied. Although this study revealed several interesting relationships, the sample of youth in this study reported a very young age at first sexual intercourse when compared to national averages. It is possible that the participants in this study were at high risk for youth sexual behaviors. More research is needed to better understand youth initiation of sexual intercourse, and whether this study has revealed a new trend toward younger ages in sexual onset. Although this study was limited methodologically, it nevertheless holds important implications for practitioners and policymakers seeking to promote adolescent sexual health.

#### Implications for Practitioners Working with Youth and their Families

Findings from this study have many implications for practitioners. This study provides evidence that adolescent sexual activity is a complex issue and that youth's decision-making regarding sexual activities is affected by many variables that exist across multiple layers of an ecological framework. Adolescent sexual activity can have devastating consequences for adolescents (such as unintended pregnancy, STDs, and HIV/AIDS) but this devastation can be reduced or eliminated by giving youth the skills they need to make healthy sexual decisions. Practitioners in effective programs have the power to give youth these skills.

The median age of first sexual intercourse among adolescents in this study was 13.0 and the mean age was 12.9. Many in-depth sexuality education programs take place with youth enrolled in high schools (and aged 14 to 18 years). For many youth, 14 is too

late to begin discussing sexual health. As revealed in this study, youth may already be engaging in sexual activity. Previous research tells us that there are numerous increased risks for youth who engage in sexual activity before age 14 (Albert et al., 2003). The need for programs that reach younger students is imperative. Based on study findings, factual information and open discussions about sexuality should be introduced to middle school aged students so that these youth can make informed and careful decisions about their sexual practices. Of course, such programming should be developmentally appropriate and sensitive to the complex nature of the issue. Practitioners should also consult with parents and other caregivers to address their concerns and work to generate community buy-in and support for the need for such a program.

Beyond age at first sexual intercourse, this study highlighted the importance of peers among adolescents. Sexual activity of a best friend is an important factor in an individual's decision-making about sexual behavior. This speaks to the need for all youth in our communities to receive sexuality education. A youth program that changes the attitude of a participant may not be as successful as it could be if the participant's best friend does not attend the program. The best way to alleviate this problem is by offering programs in places that reach the most youth, such as schools. It is important for school districts to incorporate sexuality education into their curriculum and to have a district-wide policy and/or curriculum so that a similar message is being given to all students.

Another programmatic issue that appears important to youth sexual health is that of youths' attitudes about sexual intercourse. The variable "attitudes about sexual intercourse" was one of the strongest predictors of youth sexual activity, where lenient youth were more likely to engage in sexual behaviors than more conservative youth.

Programs that work to change attitudes about sex may be highly successful in reducing sexual activity among teens. Caution must be taken in how those attitudes are changed, however. Attitudes must be changed in a manner that is respectful to youth across cultures and in a way that fosters self-esteem and decision-making skills in youth. The use of scare tactics or tactics that foster guilt, shame, or intolerance likely will not produce the desired positive changes in youth attitudes. In addition, practitioners must realize that Americans are now postponing marriage longer than ever before and rates of cohabitation are increasing (Ellwood & Jencks, 2004). Instructing youth to abstain from sex until marriage may be presenting an unrealistic option to many adolescents. An option of abstaining from sex until adulthood may be a more realistic message for young people in the 21<sup>st</sup> century.

Another important predictor of youth sexual behavior was college aspiration. Those youth who aspired to go to college were less likely to engage in sexual behaviors than their non-college bound peers. This finding can have important implications for programs as well. For example, there may be an increased need for programs that not only encourage the goal of college attendance but also give youth the knowledge and tools to reach that goal. Such programs should be sensitive to the variety of needs and experiences that exists across youth, especially youth from under-resourced families or whose families do not have a history of college attendance.

The findings of this study speak to a great need for programs that inform and educate parents. The two most significant predictors of sexual activity in this study were peer sexual behavior and youth's attitude about sexual intercourse. Previous research has linked the importance of parents with teen social norms (e.g., what does my best

friend/parent think I should do?) and attitudes about sexual intercourse (Gillmore et al., 2002). Gillmore et al. found that what parents think and tell their adolescents about sex affect teen's social norms as well as their attitudes and this effect may even be greater than that of the teen's peers. While this study did not specifically ask youth about their parents influence on their attitudes or how that influence compared to the influence of their peers, previous research findings suggest that parents matter when it comes to youth attitudes about sexual activity and can alter their child's attitudes in significant ways.

Parents may have a great impact on youth's sexual decision-making because they have the unique opportunity to engage their children in conversations about sexual behavior and its consequences that are ongoing and timely (CDC, 2005). The National Campaign to Prevent Teen Pregnancy recently presented data from a nationally representative opinion poll and reported that teens, particularly young teens, say that parents are the most influential factor in their decisions about sex (n.d.). Parents must be made aware of the importance of their child's attitude about sex and how they can influence that attitude. The same public opinion poll from the National Campaign to Prevent Teen Pregnancy reported that 4 in 10 young teens say they have not had a single conversation about sex with their parents. Obviously parents either 1) are unaware that they need to start speaking with their child about sexual activity at a young age, or 2) lack the knowledge and/or skills to have such a conversation with their children. Practitioners could play an important role in disseminating sexual knowledge appropriate for youth to parents. In addition, parents need to be aware of the importance of their child's best friend, know who their child's friends are, and be encouraged to get to know their child's

friends. Parental monitoring has been found to be salient in adolescent sexual activity (Luster & Small, 1994; Small & Luster, 1994).

The final implication for programs from this study stems from the finding that 20% of youth in this study had engaged in sexual intercourse. Youth are sexually active and sexual activity is a normal biological function. In addition to encouraging adolescents to postpone sexual activity, programs must also give youth factual information on ways to prevent negative consequences of sexual activity when they do choose to have sexual intercourse. This notion has been supported by numerous studies that have evaluated programs aimed at reducing unprotected sex, pregnancy, and age at first intercourse. Studies have found that programs that promote abstinence and consistent contraceptive use can delay first sex, reduce unprotected sex and teen pregnancy and are also appropriate messages for younger teens (Kirby, 2002; Manlove, Franzetta, McKinney, Papillo & Terry-Humen, 2004; Manlove, Papillio & Ikramullah, 2004). The Centers for Disease Control and Prevention also promotes education of preventative behaviors such as the use of latex condoms in addition to abstinence education in their “Guidelines for Effective School Health Education to Prevent the Spread of AIDS” (n.d.c.). By only promoting abstinence we are doing youth a great disservice. Teens are becoming pregnant and contracting sexually transmitted diseases, including HIV, and yet practitioners are restricted or restrict information about condom use. Youth may lack the knowledge that condom use can prevent these consequences or they may lack the skills to use a condom properly. Programs must become more comprehensive in their sexuality education if we hope to increase adolescent sexual health and well-being.

### Implications for Policymakers

Beyond programmatic implications, the findings of this study also hold implications for policymaking. First, given the salience of peer relationships in a young person's life and the influence of peers on youth decision-making about sexual behavior, it is imperative that policymakers consider ways to support positive youth development. Providing adequate funding for after-school programming, Boys and Girls Clubs, and extra-curricular activities (sports programs, arts programs, among many others) would go far to ensure that youth had plenty of opportunities to engage in activities that promote their development and well-being. These activities may also be important to shaping youths' expectation to attend college such that youth who have many opportunities may be more likely to have positive expectations for their future.

Next, policymakers should consider adopting legislation that promotes parental functioning, regardless of one's family structure. Currently, federal and state governments are spending millions of dollars to promote marriage in family life. While an admirable goal, not all individuals in society are marriageable or will choose marriage. Moreover, with divorce rates hovering at about 50%, many children in the United States will encounter periods of single parent headed households and stepparent families (Sabatelli & Ripoll, 2004). Thus, policymakers should implement policies that support family functioning, regardless of family structure. Previous research has found that parental monitoring and availability are salient issues in adolescent sexual activity (Luster & Small, 1994; Small & Luster, 1994). Policies that support parental functioning in particular, such as reduced work hours and paid family leave, will likely facilitate

parents' ability to supervise and monitor their children's activities, including monitoring the children's peer relationships (Gornick & Meyers, 2003). Given the salience of peer sexual behavior as the best predictor of youth sexual behavior, parents must be given the time and resources to ensure that their children and their children's peers are engaging in positive behaviors.

Policymakers can also help decrease youth sexual activity by supporting policies that increase the likelihood of youth attending college. Student loans, grants, and other forms of financial aid may give low-income youth hope of attending college, which may promote delayed sexual activity among at-risk youth. Policymakers should also consider ways in which to foster continued parent education, given this study's finding that parents with more education were more likely to have youth who were abstaining from sexual activities than their less educated counterparts.

Currently there are three streams of funding for abstinence-only-until-marriage programs, providing nearly \$170 million to such programs in 2004-2005. However, there are no funding streams for a comprehensive approach to sexuality education (SIECUS, 2005). Policymakers must work to fund programs that give youth factual information on ways to prevent negative consequences of sexual activity in addition to encouraging adolescents to postpone sexual activity. Programs that will be most beneficial to the sexual health of all youth—those who choose to abstain and those who choose to engage in sexual activity—must be funded, as it appears likely that not all youth will be successful at abstaining from sexual activity.

Thus, this study supports legislation such as the Responsible Education About Life (REAL) Act that encourages a funding stream for comprehensive sexuality

education (109<sup>th</sup> Congress, 2005). In order to truly improve the health of youth and decrease the negative consequences of sexual intercourse, policymakers must broaden their scope to reach out to youth who are abstaining from intercourse and youth who are choosing to engage in intercourse. Again, abstinence-until-marriage is not a realistic message for all youth. Policymakers must broaden funding to include programs that can speak to all youth.

There does not appear to be one definitive way to help ensure adolescent sexual health. Due to the complex nature of adolescent sexual activity, there must be numerous avenues of support that address the complex issues that arise at multiple ecological levels. Despite urgent messages of abstinence-until-marriage, some youth are still choosing to be sexually active before marriage. It is time for researchers, practitioners and policymakers to work together to create comprehensive programs that will lead to the promotion of adolescent sexual health for all.

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APPENDICES

APPENDIX A

MEMORANDUM FROM HUMAN SUBJECTS ADMINISTRATOR



## INSTITUTIONAL REVIEW BOARD

### For the Protection of Human Subjects

960 Technology Blvd. Room 127  
 c/o Veterinary Molecular Biology  
 Montana State University  
 Bozeman, MT 59718  
 Telephone: 406-994-6783  
 FAX: 406-994-4303  
 E-mail: cherylj@montana.edu

*Chair:* Mark Quinn  
 406-994-5721  
 mquinn@montana.edu  
*Administrator:*  
 Cheryl Johnson  
 406-994-6783  
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#### MEMORANDUM

TO: Julie Keller

FROM: Mark Quinn, Ph.D. Chair *Mark Quinn*  
 Institutional Review Board for the Protection of Human Subjects

DATE: June 15, 2005

SUBJECT: *Predicting Adolescent Sexual Activity Using Individual, Familial, and Extra-Familial Variables*

The above research, described in your submission of June 15, 2005, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal Regulations, Part 46, section 101. The specific paragraph which applies to your research is:

- (b)(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
- (b)(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.
- (b)(3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
- (b)(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that the subjects cannot be identified, directly or through identifiers linked to the subjects.
- (b)(5) Research and demonstration projects, which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.
- (b)(6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed, or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA, or approved by the EPA, or the Food Safety and Inspection Service of the USDA.

Although review by the Institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit 3 copies of the usual application form and it will be processed by expedited review.

APPENDIX B

HUMAN PARTICIPANTS PROTECTIONS EDUCATION FOR RESEARCH

COMPLETION CERTIFICATE



## Completion Certificate

This is to certify that

**Julie Keller**

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 10/01/2003.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

National Institutes of Health  
<http://www.nih.gov>

APPENDIX C  
SURVEY

**TEENS WITH A VISION  
SURVEY**

**PRE-TEST**

## HELLO AND WELCOME TO "TEENS WITH A VISION"!

We are pleased to have you as a part of this important program and because "Teens with a Vision" is also a research study, we want to let you know more about the program and the importance of the survey you are about to fill out.

The Valley Boys and Girls Club received money from our federal government to provide a program that will help young people build skills to resist sexual activity. One of the things that the club said it would do in order to receive this money, was to have all of you participants, answer some questions right **before** the program, six months **after** the program and then again in **another** six months. The surveys will help us to understand how you are thinking and behaving now and whether or not your thoughts and actions have changed after the program. We ask that you commit to staying in touch with club staff in order to fill out all three surveys. The results of the research study will be shared with the federal government and with other organizations throughout our country who are interested in running a similar program. You are going to be a part of something that might be shared around the country!

Many of the questions the survey asks are very personal. We want you to know that we have received permission from your parents to ask these questions, and we have set up a coding system that prevents **anyone** from knowing how you answered your questions. This means that none of the staff, peer educators, evaluators, nor your parents will **ever** be able to tell which survey answers are yours.

You can understand how important it is that you fill these surveys out as honestly and fully as possible. If your answers are not truthful, it might mean that the research study will not be valid and the program might be regarded as ineffective. Please be assured that the surveys will be anonymous and your confidentiality protected. We also would like you to understand that questions regarding sexual relations refer to **voluntary** sexual relations.

## THE FOLLOWING ASSURANCES ARE FOR YOU!

- \* This study has been reviewed by the University of Idaho's Human Assurances Committee in order to ensure you that your private answers and information will be kept strictly confidential.
- \* You will be receiving services under a federally funded program; and as such, the program will not teach or promote religion.
- \* You may withdraw from the program at any time.
- \* You may come to the program staff with questions or contact:

The Office of Adolescent Pregnancy Programs  
4350 East West Highway, Suite 200  
Bethesda, MD 20814  
(301) 594-4006

TURN TO THE NEXT PAGE FOR INSTRUCTIONS ON HOW TO CREATE YOUR CODE!

## INSTRUCTIONS FOR CODING

The following page has eight boxes that you will fill in with your own personal, private code. Please do not write anything else on your code page. The following instructions will help you create your code. Read and follow them carefully. Thank you!

1. In the first box on the following page, put the first initial of your first name.
2. In the second box, put an **M** for "male" or an **F** for "female".
3. In the third box, put your racial/ethnic background. Use the following choices:
  - A** for African-American
  - C** for Caucasian (white)
  - H** for Hispanic
  - P** for Asian and Pacific Islander
  - N** for Native American
4. In the fourth box, put your eye color.
  - B** for blue eyes
  - R** for brown eyes
  - G** for green eyes
5. In the fifth and sixth boxes, put the month of your birthday like this:
  - 1 2 = December
  - 0 2 = February
6. In the 7th and 8th boxes, put the day of your birthday

**AFTER YOUR CODE IS COMPLETE, YOU MAY BEGIN TO ANSWER THE SURVEY!**

# Individual Code:

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

## "TEENS WITH A VISION" PARTICIPANT SURVEY

If a question does not apply to you because of your gender, leave it blank. Remember, these questions apply to **voluntary** sexual behaviors.

Please circle the number that best describes your answer.

1. How do you feel about teenagers having full sexual relations before marriage?
  - 1 ALWAYS RIGHT
  - 2 SOMETIMES RIGHT
  - 3 NEITHER RIGHT NOR WRONG
  - 4 SOMETIMES WRONG
  - 5 ALWAYS WRONG
2. What is the best age to have sex for the first time? \_\_\_\_
3. What is the best age to marry? \_\_\_\_\_
4. How old do you expect to be when you have sex for the first time? \_\_\_\_\_

Which of the following behaviors have you experienced? Also, which of the behaviors do you think your best friend has experienced? Please circle the number preceding your response.

1. Have you experienced kissing?
 

|       |      |
|-------|------|
| 1 YES | 2 NO |
|-------|------|
2. Do you think your best friend has experienced kissing?
 

|       |      |
|-------|------|
| 1 YES | 2 NO |
|-------|------|
3. Have you experienced French kissing?
 

|       |      |
|-------|------|
| 1 YES | 2 NO |
|-------|------|
4. Do you think your best friend has experienced French kissing?
 

|       |      |
|-------|------|
| 1 YES | 2 NO |
|-------|------|
5. Have you experienced touching breasts?
 

|       |      |
|-------|------|
| 1 YES | 2 NO |
|-------|------|

6. Do you think your best friend has experienced touching breasts?
- 1 YES                      2 NO
7. If you are a male, have you experienced touching female genitals?
- 1 YES                      2 NO
8. If your best friend is a male, do you think he has experienced touching female genitals?
- 1 YES                      2 NO
9. If you are a female, have you experienced touching male genitals?
- 1 YES                      2 NO
10. If your best friend is female, do you think she has experienced touching male genitals?
- 1 YES                      2 NO
11. Have you experienced genital to genital contact?
- 1 YES                      2 NO
12. Do you think your best friend has experienced genital to genital contact?
- 1 YES                      2 NO
13. Have you experienced full sexual intercourse?
- 1 YES                      2 NO
14. Do you think your best friend has experienced full sexual intercourse?
- 1 YES                      2 NO

Of the following, please indicate if you expect the event to happen in your life and at what age you think the event will occur. Circle:

|                   | 1 | LIKELY TO OCCUR | 2 | NOT LIKELY TO OCCUR |
|-------------------|---|-----------------|---|---------------------|
| Marriage          | 1 |                 | 2 | What age? _____     |
| Childbearing      | 1 |                 | 2 | What age? _____     |
| High school educ. | 1 |                 | 2 | What age? _____     |
| College education | 1 |                 | 2 | What age? _____     |
| Technical school  | 1 |                 | 2 | What age? _____     |
| Employment        | 1 |                 | 2 | What age? _____     |
| Own a home        | 1 |                 | 2 | What age? _____     |

Please circle the number or provide the information that best represents you.

1. What is your sex?

- 1 FEMALE
- 2 MALE

2. What is your age? \_\_\_\_\_

3. Which of the following best describes your race?

- 1 BLACK
- 2 WHITE
- 3 NATIVE AMERICAN
- 4 HISPANIC
- 5 ASIAN
- 6 OTHER

4. Which of the following best describes your living arrangements?

- 1 I LIVE WITH BOTH NATURAL PARENTS
- 2 I LIVE WITH MY MOTHER AND STEPFATHER
- 3 I LIVE WITH MY FATHER AND STEPMOTHER
- 4 I LIVE WITH MY MOTHER ONLY
- 5 I LIVE WITH MY FATHER ONLY
- 6 I HAVE OTHER LIVING ARRANGEMENTS

5. Which of the following best describes your family's yearly income?
- 1 LESS THAN \$5,000
  - 2 \$5,000 TO \$15,000
  - 3 \$15,000 TO \$25,000
  - 4 \$25,000 TO \$35,000
  - 5 MORE THAN \$35,000
  - 6 DON'T KNOW
6. Which of the following best describes your mother's highest level of education?
- 1 6TH GRADE OR LESS
  - 2 SOME HIGH SCHOOL
  - 3 HIGH SCHOOL GRADUATE
  - 4 SOME TECHNICAL SCHOOL
  - 5 TECHNICAL SCHOOL GRADUATE
  - 6 SOME COLLEGE
  - 7 COLLEGE GRADUATE
  - 8 DON'T KNOW
7. Which of the following best describes your father's highest level of education?
- 1 6TH GRADE OR LESS
  - 2 SOME HIGH SCHOOL
  - 3 HIGH SCHOOL GRADUATE
  - 4 SOME TECHNICAL SCHOOL
  - 5 TECHNICAL SCHOOL GRADUATE
  - 6 SOME COLLEGE
  - 7 COLLEGE GRADUATE
  - 8 DON'T KNOW
8. Have you ever had full, voluntary sexual intercourse?
- 1 YES
  - 2 NO
9. If you answered yes to question number eight, how old were you when you had full, voluntary sexual intercourse?
- AGE? \_\_\_\_\_

Please circle the letter that best represents how you feel.

- A     **STRONGLY AGREE**  
 B     **AGREE**  
 C     **DISAGREE**  
 D     **STRONGLY DISAGREE**

1. I feel that I'm a person of worth, at least on an equal level with others.  
           A                            B                            C                            D
2. I feel that I have a number of good qualities.  
           A                            B                            C                            D
3. All in all, I am inclined to feel that I am a failure.  
           A                            B                            C                            D
4. I am able to do things as well as most other people.  
           A                            B                            C                            D
5. I feel I do not have as much to be proud of as others.  
           A                            B                            C                            D
6. I have a positive attitude about myself.  
           A                            B                            C                            D
7. On the whole, I am satisfied with myself.  
           A                            B                            C                            D
8. I wish I could have more respect for myself.  
           A                            B                            C                            D
9. I certainly feel useless at times.  
           A                            B                            C                            D
10. At times, I think I am no good at all.  
           A                            B                            C                            D