Title

A Descriptive study of biopsychosocial correlates of adolescent female sexual activity in a multicultural population

Author

Coray, Georgiana Marie

Publication Date

1991

Peer reviewed|Thesis/dissertation

A DESCRIPTIVE STUDY OF BIOPSYCHOSOCIAL CORRELATES OF ADOLESCENT FEMALE SEXUAL ACTIVITY IN A MULTICULTURAL POPULATION

by

GEORGIANA MARIE CORAY

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF NURSING SCIENCE

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco

Date University Librarian

Degree Conferred: 6/16/91

ACKNOWLEDGEMENTS

The author wishes to express sincere appreciation to her dissertation committee members, Dr. Dorothy Oda, Dr. DeLois Weekes, and Dr. Claire Brindis, whose insightful input and constant support were crucial to the completion of this study. A very special thank you to my advisor and dissertation chairperson, Dr. Dorothy Oda, without whose encouragement and role modeling, there would be one less doctoral student. And to Stephen: I could not have completed this work without your love and understanding.

A DESCRIPTIVE STUDY OF BIOPSYCHOSOCIAL CORRELATES OF ADOLESCENT FEMALE SEXUAL ACTIVITY IN A MULTICULTURAL POPULATION

GEORGIANA MARIE CORAY

University of California, San Francisco, 1991

ABSTRACT

This study used a descriptive correlational design to test a model of biopsychosocial factors that were potentially correlated with adolescent female sexual activity. Data were obtained via a secondary analysis of an adolescent health risk survey designed by Doctors Charles Irwin, Shauna Millstein and Claire Brindis of the University of California at San Francisco's Department of Pediatrics, Division of Adolescent Medicine.

The sample consisted of 879 female students at two Northern California High Schools. The subjects were 62.8% Hispanic (primarily Mexican-American), 12.4% Anglo, 10.9% Asian, 7.3% Pacific Islander, and 6.6% from "Other" ethnic groups. These students completed the Adolescent Health Risk Survey originally designed to evaluate the effectiveness of School Based Clinics at the two schools.

There were differences between sexually active and abstinent females. Sexually active females were more likely to use alcohol, cigarettes, and illegal drugs, and to have experienced a larger number of life change events. They also were more likely to have thought about and attempted to harm themselves, to feel less hopeful, to receive lower school grades and have lower educational aspirations, and to have

parents who were divorced or separated.

There were also significant differences between younger and older sexually active females. Younger sexually active students were more likely to experience early menarche and to more often report feeling nervous, scared and bored. Older sexually active students were more likely to report feeling angry and depressed. Younger sexually active students reported feeling less good about themselves than abstinent students.

There were also differences between the ethnic groups. Anglo, "Other" and Pacific Islander females became sexually active earlier, and Anglo and "Other" students experienced earlier menarche. Asian students were the most likely to remain abstinent and to obtain higher school grades than the other groups.

Two new conceptual models were proposed which specified factors that appear to correlate with sexual activity in the younger adolescent female and in the middle to late adolescent. Suggestions were made for continuing research efforts that include replicating the descriptive study with adolescent males, the development of conceptual, prescriptive and practice models and eventually a longitudinal causal model.

Dorothy Oda, Chair	Georgiana M. Coray

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter I

Introduction

In the past ten years, the mortality rates for children ages 15 to 24 have dropped from a 1985 high of 115.4/100,000 to 95.9/100,000 in 1988 (National Center for Health Services Research [NCHSR], 1989). However, those statistics do not reflect real mortality changes that occur between early and late adolescence. The 1985 mortality rates for younger adolescents (defined as 10-14 year olds) was 34.9/ 100,000; while for older adolescents (ages 15-19) it was 114.7/100,000, which represents an increase of 300% in those two consecutive age groups (NCHSR, 1989). The three behaviors that often begin in early adolescence and contribute to both morbidity and mortality are substance abuse, motor/ recreational vehicle use, and sexual activity, (Irwin & Millstein, 1986). Most of the mortality increases are due to violence such as motor vehicle accidents, homicide, suicide, and unintentional injuries.

Morbidity statistics reveal major differences between early and late adolescence. Discharge rates from hospitals increase by 53% for males and 43% for females between early and late adolescence. The greatest increases in hospitalizations (excluding pregnancy) are due to trauma and substance abuse (Irwin & Millstein, 1986).

Early sexual activity contributes not only to morbidity statistics relating to sexually transmitted diseases, abortions and births, but is largely responsible for many of

the social problems faced by today's teens including school drop out, illegitimacy, and impoverished households comprised primarily of single mothers and their children.

The number of adolescents who become pregnant in the United States has not diminished despite increased availability of contraceptives for many teens. In 1983, there were more than one million teen pregnancies (an average of 3,000 new pregnancies each day), with 38.7% ending in abortion, 13.4% resulting in spontaneous abortion, and 47.9% delivering babies (Blum, 1987).

Because of the prevalence of adolescent sexual activity, and the potential for long lasting implications, this study will describe a group of culturally diverse adolescents who have initiated sexual activity at an early age (14 or younger) as opposed to those who either abstain or wait until a later age to begin sexual activity.

More than any other professionals except teachers, nurses are in positions in schools, clinics, offices, and agencies where they are in contact with adolescents and have an opportunity to impact on the problem of adolescent pregnancy. In order for nurses to have an effect, it is necessary for them to be able to identify those most at risk for the consequences of premature sexual activity. In an era where health resources, including nurses, are becoming increasingly scarce, it is even more important that health interventions are targeted to those most in need. Nurses can and should be at the forefront of both the development and

delivery of programs that identify those who are at risk, assist students in postponing sexual activity and for those who are sexually active, to avoid the negative consequences of an unwanted pregnancy and sexually transmitted diseases.

Health policy formation must be made according to scientific data. Current policies are still very limited because they often fail to recognize the major differences between and within groups of adolescents. Descriptive data are imperative in order to document and define these differences. Unless the specific at risk populations are known, policies, when they exist, will continue to be vague and non-specific and target groups will not be clearly identified. It is important to recognize both the differences and similarities in these target groups.

Statement of the Problem

The problem to be addressed in this investigation is the generally minimal knowledge of the characteristics of female adolescents (especially those who are Hispanic and Asian) who become sexually active at an early age; those who become sexually active later; and those in each group who chose to abstain. Each year in the United States, over one million adolescents become pregnant; almost half of these teens give birth each year. Many more millions of teens are sexually active, with only a small percentage using effective contraception. In this study, specific biological, psychological, and social variables will be analyzed to describe specific characteristics in a group of ethnically

mixed, 9th through 12th grade females in two Northern California high schools. This investigation was a secondary analysis of data that were collected in 1988 in a study with a survey research design.

The original research project was part of the evaluation of two Northern California school based clinics conducted by Dr. Claire Brindis at the University of California, San Francisco's Institute for Health Policy Studies. The student bodies at both high schools participated in a pre-opening, baseline survey in 1986, and in a second survey in 1988 after the clinics had been operating for two years. The original purpose of the project was to measure the overall impact of the clinics on the students. The data being used in the proposed analysis are all from the 1988 surveys.

The original analyses of the follow-up survey compared demographic differences in clinic users and non-users, and differences in users and non-users in planned level of education, father's education, general health and utilization behavior, overall incidence of risk behaviors, and incidence of those at multiple risk. Specific analyses examined changes in risk behaviors over the two-year period of the school based clinic's existence. No analyses were done at the time of the survey to compare the characteristics of those who did or did not engage in any specific risk activities.

Purpose of Study

The major purpose of this research was to describe biopsychosocial differences between adolescent females who become sexually active early or late and those who delay or abstain from sexual intercourse at those same ages. Additional attention was given to the characteristics of the early and late initiators who were contraceptors.

Potential implications of the results include the identification of female students who are at greatest risk of becoming sexually active during early adolescence. This identification could then facilitate formation of an intervention model that will help adolescents delay the initiation of sexual activity or, if they are sexually active, to be responsible contraceptors.

Specific Aims and Hypotheses

The aim of this study was to identify major biopsychosocial differences between adolescent females who become sexually active earlier or later or those who chose to abstain in each of those age groups. The descriptive model determined the factors that were studied in order to facilitate identification of those at risk. To investigate the relationship between the biopsychosocial factors and adolescent sexual behavior the study proposed to:

1. Describe selected demographic variables of the study group including age, socioeconomic status, ethnicity, composition of family group, educational level of subjects and parents,

2. Describe biopsychosocial traits as measured during a Health Risk Survey conducted in 1988, and
3. Analyze the following five groups of adolescents for each of the biopsychosocial factors described;
    a. females ages 14 and under who are sexually active;
    b. females ages 14 and under who are not sexually active;
    c. females ages 15 to 18 who became sexually active between ages 15 and 18;
    d. females ages 15 to 18 who are not sexually active;
    e. females ages 15 to 18 who became sexually active at 14 or earlier.

There were nine study hypotheses with H1 and H2, being the major hypotheses and the rest being treated as secondary hypotheses.

Hypothesis I

There will be measurable differences between sexually active females ages 12 to 14, and those of the same age who are abstinent, on selected biological, psychological, and social measures.

Hypothesis II

There will be measurable differences between sexually active females ages 15 to 18 and those who are abstinent, on selected biological, psychological, and social measures.

Hypothesis III

Students who are sexually active, will be more likely to have experienced early menarche than other girls their age, who are not sexually active.

Hypothesis IV

Female students who are sexually active, will more often report negative emotional feelings, feel less perceived support from their family, more often reveal thoughts and actions about hurting themselves, will report lower overall life satisfaction and feel they have less say in deciding important things in their lives, than those who are not sexually active.

Hypothesis V

Female students who are sexually active, will be more likely to have lower grades in school, to expect to achieve a lower educational level, and to have had a larger number of negative life change events in their lives in the past year, than students who are not sexually active.

Hypothesis VI

Female students who are sexually active will be more likely to engage in other risk activities such as using cigarettes or alcohol which are illegal for age, or other illegal substances, than students who are not sexually active.

Hypothesis VII

Female students who are sexually active, will report a higher number of people living in their home, have parents with less education and parents who are more likely to be divorced or separated, be more likely to be on Medicaid and to report not being able to obtain medical care when needed than those who are not sexually active.

Hypothesis VIII

Female students who initiate sexual intercourse between ages 11 and 14, will be less likely to report the use of contraception either the first or the last time they had intercourse or, if they do contracept, will use a less effective method than girls who initiate sexual activity later.

Hypothesis IX

Female students who postpone initiation of sexual activity until age 15 or later, will adopt contraception sooner after initiating sex, than girls who begin sexual activity at 14 or earlier.

This chapter briefly reviewed adolescent morbidity and mortality statistics and the role of sexual activity in those statistics. The problem to be addressed in this research was stated and the purpose of the study described. The chapter concluded with the study's specific aims and hypotheses. Subsequent chapters deal with a review of the literature

pertaining to this subject; a description of the methodology used in the data analysis; the results of the analyses; and the implications of the findings.

CHAPTER II

LITERATURE REVIEW

Despite statistics that indicate early and widespread sexual activity, relatively little is known about differences in girls who become sexually active early in their teens, as compared to those who become sexually active later, or who chose to remain abstinent during their high school years. Even less is known about the sexual behavior of some of the ethnic groups who may be relatively new arrivals in the United States, especially Hispanic and Asian adolescents. This literature review has six areas of interest which are outlined below in the manner in which they are presented in the review.

I. Changing Adolescent Population
   - A. National changes
   - B. California changes

II. Incidence of Adolescent Sexual Activity and Contraception
   - A. National changes
     1. Sexual activity
     2. Contraception
   - B. California Changes
     1. Sexual activity
     2. Contraception

III. Characteristics of Sexually Active and Contracepting Adolescents
   - A. Characteristics of sexually active adolescents
     1. Biologic characteristics

Changing Adolescent Population

National Changes

The number of youth in America reached a peak of 42.7 million in 1980, declined to 38.9 million in 1986, and is expected to total only 34 million by 1996 because of declines in total birth rates, (Bureau of Census [BOC], 1983). However, the composition of that population is expected to change over the next few years with a considerable rise in both the number and percentages of minority youth. Hispanic youth in 1980 accounted for 7.5% of the total United States youth population (3.2 million). It is estimated that Hispanic youth have increased by 10% during the early 1980's to 9% of the population in 1986, and there is an expected rise to 11-13% by 1996 (BOC, 1986). Taken together, Native American, Asian and Pacific Islander youth are estimated to have increased about 5% between 1980 and 1986 and are projected to account for 3.9% of the total American youth population in the late 1990's (BOC, 1983).

California Changes

One in ten Americans lives in California and the population in that state is even more unique. Currently, California has seven million children and is expected to add one and a half million (20%) to that number within the next ten years while the overall U.S. teen population declines. In California in 1986, births to Hispanic teenagers (age 10-19) accounted for 15.1% of the total births (Brindis & Jeremy, 1988).

A report issued by the Center for Continuing Study of the California Economy (Levy, 1990) states that California will continue to grow, with 5.5 million births and newcomers to arrive in the 1990's. California's population is currently 42% "minority" and it is expected that more than four in five of California's new residents will be Hispanic or Asian during the next decade. This report attributes the unprecedented growth to the high fertility rates of new, young immigrants and even higher fertility rates for middle age "baby boomers" who are now beginning their families. California's birth rates, which are 20% higher than the rest of the United States, plus 300,000 people a year moving into the State, make California's population and growth extremely unique.

Adolescent Sexual Activity and Contraception

National Data

National Sexual Activity Data

Research concerning sexual behavior, especially adolescent sexual behavior, is still in its infancy. One of the first and probably the most influential work was conducted by Kinsey and colleagues (1953) in the 1940's and 50's. However, a very small proportion of the Kinsey work concerned adolescents. Even when research did begin, the early work, such as Reiss in 1967, tended to examine attitudes rather than behaviors, and especially attitudes and knowledge regarding contraception.

National survey data regarding non-marital sexual behaviors of adolescent women did not occur until 1971 (Kantner & Zelnik, 1972) despite marked changes in societal sexual attitudes and behavior before that time. The Kantner and Zelnik (1972) research included over 4,500 15-19 year old black and white teens of varying marital status. In this work, as well as in many later studies, the category "white" included all persons not designated as "black". Hispanics, if they were represented in the studies at all, were categorized as "white". The authors of that study found a higher percent of blacks who experience premarital intercourse even controlling for socioeconomic status (SES). Especially among younger adolescents, those teens who shared more confidences with their families had relatively lower proportions of sexual experience. They also found that nominal religious affiliation made little difference except among fundamentalist Protestants, but persons with faithful attendance at church showed lower proportions of teens with sexual experience. It is interesting that these researchers, like most others, chose to concentrate their work on young women rather than on both men and women.

Increasing proportions of unmarried teen girls are having sexual intercourse and having it at a younger age. In the U.S. from 1938 to 1950, approximately 7% of Anglo females had intercourse by age 16, (Kinsey, Pomeroy & Martin, 1953). Between 1970 and 1988 there was a marked increase, from 28.6% to 51.5%, in sexual activity among all never

married females, 15-19 years old. The largest increase occurred among 15 year old adolescents (Morbidity and Mortality Weekly Report [MMWR], January 4, 1991). This same report (MMWR, Jan. 4, 1991) also notes that in 1988 adolescents who initiated sexual activity early reported a greater number of sex partners with a subsequent higher risk of sexually transmitted infections. Irwin and Ryan (1989), estimate that between 12% and 32% of all teens under age 15 are sexually active.

There has also been a concomitant increase in the abortion rate in the adolescent age group. In 1976, more pregnant teens under age 15 had abortions than had live births (Kovar, 1979).

The rates of sexual activity for teens vary by sex and ethnicity with rates for blacks and males being higher, at least at younger ages. In 1983, among 15 year old boys, 42% of blacks had initiated sexual intercourse, as had 19% of Hispanics and 12% of white teens. By the age of 15, 10% of black females, 4% of Hispanics, and 5% of whites had begun sexual activity (Hofferth & Hayes, 1987). There are fewer ethnic differences when socioeconomic status is controlled.

National Contraceptive Data

Two-thirds of sexually active teen girls do not contracept and those who do, frequently use an ineffective method. One third of sexually active women ages 15-17 still did not use contraception more than one year after beginning sexual activity (Zelnik & Kantner, 1980).

Another study, (Zabin, Kantner & Zelnik, 1979) found that one-half of all U.S. teen pregnancies occurred within the first six months of having first intercourse and one-fifth of those occurred within the first month. There are ethnic and racial differences in the use of contraception by sexually active teens, with white, female teens more likely to use contraception than either black or Hispanic teens (Hofferth & Hayes, 1987). More than half the total U.S. births to teens were to unmarried mothers: 133,000 to white teens, 120,000 to blacks and 8,087 to other ethnic groups. Poor teens are three to four times more likely to become unwed mothers than economically advantaged teens, regardless of race. Out-of-wedlock births are declining for young black women, but rising substantially for young white women, (Wetzel, 1987).

In a study of black teens in Baltimore, (Clark, Zabin & Hardy, 1984) 87% of junior and senior high school males indicated they had engaged in sexual intercourse. Although these teens indicated they recognized the need to share contraceptive responsibility, a large proportion of surveyed teens were willing to tolerate unprotected intercourse.

California Data

California Rates of Sexual Activity

There are no published rates of sexual activity for California teens. Surveys in three California schools showed that 48% of the high school students and 19% of middle school students reported sexual activity (Brindis, 1989).

California has the dubious distinction of ranking second highest in the U. S. in its rate of teen pregnancy (Pittman, 1988). In California in 1985, one in ten (140,536) teenage girls became pregnant. Girls younger than 15 accounted for 3,588 of those pregnancies (Brindis & Jeremy, 1988).

There are ethnic variations in California's rate of births to teen mothers. In 1986, California had a population that was 22% Hispanic, 62% white and 8% black; however in 1985, 43% of the births to mothers under 20 were to Hispanic mothers, 37% to whites, and 15% to Blacks (Brindis & Jeremy, 1987). There is no description of socioeconomic status in these data because it is based on birth records which do not contain social or economic data.

California Contraception Data

Approximately 50% of California teens chose to terminate their pregnancies with an abortion in 1985. The estimated rate of abortion for California females ages 15-19 was 72 per thousand, almost two-thirds higher than the national rate. Two out of three pregnancies in 13 and 14 year olds end in abortion. Brindis and Jeremy (1988) note, "California teenagers rely on abortion rather than abstinence or contraception to prevent births" (p. 19).

Characteristics of Sexually Active and Contracepting Adolescents

Sexually Active Adolescents

A number of studies have documented the incidence and

rates of sexual activity among adolescents over the years, (Udry, Bauman, & Morris, 1975; Hofferth, Kahn & Baldwin, 1987; Kantner & Zelnik, 1972; Smith & Udry, 1985). Some of that research is primarily based on biological, psychological, or social theories and will be discussed within that framework, recognizing that many of the studies overlap into two or even all three of these areas.

Biological Characteristics of Sexually Active Adolescents

The relationship between menarche and psychosexual behaviors was examined in 1,834 black and non-black, 15-19 year old females in Cycle III of the National Survey of Family Growth (Phinney, Jensen, Olsen, & Cundick, 1990). The non-black sample also included Hispanics. Early maturing females experienced earlier dating and initiation of sexual activity. Blacks experienced menarche and first intercourse earlier, but dating activity was later. Early menarche was associated with early marriage only for non-blacks. For both ethnic groups, those who initiated sexual activity earlier had both menarche and dating onset at younger ages.

Relatively few authors have looked specifically at the sexual activity of very early adolescents. Udry and Billy (1987) examined motivation, social controls, and attractiveness in a group of young black and white adolescents. The researchers used a panel design. Interviews were conducted with the 1,405 respondents, their parents, and best friends. Students were in grades 7, 8 and 9 when the study began and they were re-interviewed two years later.

These researchers found that white males' initiation of coitus was influenced by hormone effects and social attractiveness. White females' initiation of sex was dominated by social controls; while black females' initiation of sexual activity seemed to be determined by their level of pubertal development. Although this study was more rigorous than many, there are several cautions: The "white" category included all those who were not "black"; many students were already sexually active when the study began (especially black males) so were not included because transition behavior could not be studied; and pubertal development was not measured by either hormone levels or physical examination.

Psychologic Characteristics of Sexually Active Adolescents

There are two longitudinal studies that report on the transition to sexual activity during adolescence. Jessor, Costa, Jessor and Donovan (1983) conducted a prospective, longitudinal study to predict the transition from virginity to nonvirginity in adolescents over a nine year period. They concluded that there are identifiable precursors in the personality, the perceived environment, and the behavior systems that signal the transition to nonvirgin status. The personality factors include a higher value on independence, lower academic expectations and achievement, more tolerance of deviance, and less religiosity. In the environment system there tends to be less compatibility with parents and friends, less parental influence, and more perceived social approval and models for problem behavior. In the behavior

system, there is greater involvement with other problem behaviors and less involvement in conventional behavior. These factors accounted for approximately 30% of the variance in the transition to nonvirginity. Although these are very important findings and the longitudinal design was unique, the applicability of the study was limited by its largely Anglo, middle class sample from a small city in the Rocky Mountain area and the above average educational level of the fathers ("some years of college").

Social Characteristics of Sexually Active Adolescents

DuRant and Sanders (1989), examined sexual behavior and contraceptive risk taking among 1,512 black and white adolescents in Cycle III of the National Survey of Family Growth. The study concluded that, " the frequency of intercourse was positively associated with the number of years of sexual activity, the number of years the adolescent had been dating, and post menarchial age, and was negatively associated with frequency of attendance at religious services" (p. 3).

Some authors have taken one particular activity and correlated it with sexual activity, such as religious participation (Thornton & Camburn, 1989), or the impact of television on sexuality (Brown, Childres, & Waszak, 1990). The Thornton and Camburn study was part of a longitudinal study done in Detroit beginning in 1960 that was limited to white families. The findings reported in this article are from the 1980 wave of interviews of the mothers' and their 18

year old children. More than three-fourths of the sons and two-thirds of the daughters express approval of premarital sex as compared to only one-third of the mothers. Not unexpectedly, those who attend church more frequently and place more importance on religion are less likely to be sexually experienced and to be more restrictive in their attitudes toward sex.

The Brown, Childres and Waszak (1990) study reviewed a large number of research projects related to television viewing and sexuality. They concluded, " adolescents who rely heavily on television for information about sexuality will have high standards of female beauty and will believe that premarital and extramarital intercourse with multiple partners is acceptable. They are unlikely to learn about the need for contraception" (p. 62).

Some authors have correlated other risk behaviors with sexual activity such as delinquency (Weber, Elfenbein, Richards, Davis & Thomas, 1989); smoking (Zabin, 1984); or substance use (Zabin, Hardy, Smith & Hirsch, 1986). In each of these studies, there was high correlation between the risk behavior (delinquency, smoking and substance use) and sexual activity. The correlations were especially significant for the early adolescent.

Other authors have explored social factors and the onset of sexual behavior such as the influence of best friends, (Billy & Udry, 1985); parent and child communication (Newcomer & Udry, 1985); family configuration (Miller &

Bingham, 1989; Kinnaird & Gerrard, 1986). Interestingly, the Billy and Udry study (1985) found that only white females were influenced to become sexually active if their best friends were also sexually active. There was no significant influence of best friends level of sexual activity on the activity of black teens or on white males.

Although parents are often encouraged to communicate openly with their children, the study by Newcomer and Udry (1985) found that neither communication nor parental attitudes about premarital sex and contraception affected the teens subsequent sexual or contraceptive behavior. Miller and Bingham (1989) analyzed 1,571 15-19 year olds whose data set was contained in the national Data Archive on Adolescent Pregnancy and Pregnancy Prevention. Their analyses confirmed previous findings that adolescent females were more likely to be sexually active if they were older, black, had less educated and poorer parents, were not of a fundamentalist religion, and if religion was less important to them.

Early sexual activity among 758 eighth graders in small towns and rural areas in Maryland was studied by Alexander, Ensminger, Kim, Smith, Johnson and Dolan (1989). They reported that 77% of black students and 40% of white students had already begun sexual activity. In this study, cigarette smoking was related to an increased likelihood of sexual activity only for white females, while alcohol consumption was related to sexual activity for black females and white males. Use of illegal drugs was associated with a 5-9 times

greater risk of sexual activity among whites, but not among blacks. Teens who lived in a town were more likely to be sexually active than those from rural areas for both black and white males, but not for females.

A longitudinal panel design was also used by Robbins, Kaplan and Martin (1985) to study the antecedents of adolescent out of wedlock pregnancy. Their study of 2,158 Texas teens began in 1971 with follow up interviews between 1981 and 1983. This study defined differences for white, black and Hispanic teens. They found that for females, the risk of a pregnancy is related to race, a low socioeconomic status, the absence of a father, a larger number of siblings, school difficulties, and family stress. Some factors were more influential in the early, middle or late adolescent period than others.

The study is important because it did include the three racial categories, however, none of the results (except the actual pregnancy) is reported by racial categories. The authors reported in their review of literature that there is relatively little known about the psychosocial causes of adolescent illegitimacy. They cite the following limitations in existing research (p. 567);

1. Unrepresentative samples with overemphasis on black and lower SES classes;
2. Insufficient attention to males;
3. Dated samples of persons who grew up in the 1950's and 1960's;

4. Cross sectional and retrospective analyses rather than prospective;
5. A simplistic search for single causes;
6. Failure to consider confounding effects, and;
7. Failure to adequately specify intervening and modifying effects.

This study and the above comments are related only to those teens who actually experienced, or caused, a teen pregnancy and did not differentiate those teens who were sexually active but who did not become pregnant. As previously mentioned, there may be differences between those girls who do and do not become pregnant.

Contracepting Adolescents

The majority of research conducted with adolescents tends to concentrate on a particular group, such as those who contracept, or those who seek abortion and then to describe the group they are studying. A large number of authors describe and discuss teenagers' use, or non-use, of contraceptives. Zabin and Clark (1981) were one of the first to sample a large number (1,200) of teens on their first visit to seek family planning. One third of their sample came because they suspected they were already pregnant and only 14% came before they initiated sexual activity. A later article by the same authors (Zabin & Clark, 1983) evaluated reasons that teens chose a particular place to seek family planning help. The five main reasons were: confidentiality,

the people care about teens, it is physically near, their friends use it, and it was the only place they knew about.

A later study investigated the motivation of black and Hispanic adolescents' first visit to seek contraception (Schwartz & Darabi, 1986). Again, a large proportion (85%) had already initiated sexual activity and 45% of the Hispanics had already had a previous pregnancy. A large proportion of these teens (20% of the blacks and 45.6% of the Hispanics) suspected that they were already pregnant at the time of the first visit. Reasons for coming to the clinic included recently finding out about the clinic location, the convenience of hours, and location. Chamie, Eisman, Forrest, Orr and Torres (1982), in a somewhat similar study, investigated differences between counties in the United states in which high and low proportions of at risk teens sought clinic family planning services. In counties with high usage, there were more clinics and the clinics were "more flexible, diverse, innovative, assertive, and visible" (p.129).

Shea, Herceg-Baron, and Furstenberg (1984) examined the clinic records of adolescent family planning patients to document clinic use patterns. Twenty-two percent of their patients made only one visit to the clinic and the probability of making a second visit (in 15 months) was only 0.45. The single most important factor in whether a patient would keep a return appointment was their satisfaction with the selected method.

Zelnik & Kantner, in 1979, examined the reasons that sexually active females from ages 15 to 19 did not use contraception. The most common reason given was that they did not expect to have intercourse! Other reasons included adverse circumstances, their partner objected, and they believed it was wrong or dangerous to use contraception. These data were obtained from two national household samples but no description of the sample is provided in this article.

Namerov and Jones (1982) looked at ethnic differences in contraceptive utilization by 3,858 black, Hispanic, and white teenagers in New York. The term "Hispanic" was not defined. More black patients chose oral contraceptive pills as the method of choice while whites were more likely to choose a diaphragm. Small but similar proportions of all three groups chose the IUD. Black patients had more clinic visits and their duration in the program was longest.

Research on abortion by Ezzard, Cates, Kramer, and Tietze (1982) gave a clear picture of rates and numbers of abortions in "white" and "black and other races" but never defined either of those categories. The United States Census Bureau at that time defined "Hispanic" as "white".

Summary

In summary, research relating to characteristics of sexually active adolescents has generally been limited to studies of the use of contraception or of those students who become pregnant or cause a pregnancy. Longitudinal studies are rare.

Some studies have correlated single events, such as another risk behavior or family composition, with sexual activity. Even when this is done, there are no data as to which activity might have preceded the other. Few results are reported by ethnic category, except sometimes for "black" and "white" teens, and data on socioeconomic status are seldom supplied. Very little research has been specifically directed to the very young adolescents' sexual activity.

Interrelatedness of Risk Behaviors

There has long been speculation that many of the risk behaviors have been interrelated. Jessor and Jessor's (1977) work is the classic in this area. Their longitudinal study, begun in 1970, reported that there was a constellation of attitudes and behaviors that constituted what they called "problem behaviors". Their framework is used by a large proportion of the researchers studying what is now usually called "risk behaviors".

The Jessors' longitudinal study has continued (Jessor,R., Costa, Jessor,L. & Donovan, 1983) and has supported their contention that there are measures of personality, environment, and behavior that are predictive of the time of onset of first intercourse. One of this study's strongest predictors was involvement in other risk behaviors such as substance use.

Other researchers have substantiated those findings. Zabin (1984) examined cigarette smoking and sexual behavior and found that 25% of the attendees at contraceptive clinics

smoked 10 or more cigarettes a day. She additionally found early onset of sexual activity and ineffective contraceptive use were both associated with smoking. Zabin notes that these factors may have a relationship to other risk behaviors that this particular research did not explore.

Zabin, Hardy, Smith and Hirsch (1986) examined the relationship of substance abuse and sexual activity in inner city teens and found substance abuse particularly high among Caucasian females. Sexually active students were higher than virgins on indexes for both frequency and types of substances used, with students who began sexual activity earlier being highest on both indexes. Interestingly, there was no mention of whether sexual activity or substance use preceded each other.

Alexander et al. (1989) examined race, gender, and other risk behaviors in sexually active teens and found that only among white females was cigarette smoking associated with an increased likelihood of sexual activity. Among black females and white males, drinking alcohol was predictive of sexual activity. For all groups except black females, "cruising" (driving with no particular destination) was found to correlate with a higher incidence of sexual activity. This study was conducted in a group of 758 eighth graders in rural counties in Maryland. Despite an intensive survey format, no apparent attempt was made to control for, or define, the students' socioeconomic status.

Developmental Theories of Adolescent Sexual Activity

Most authors studying adolescent risk taking are beginning to accept two assumptions, 1) that risk taking behaviors do not occur in isolation, but tend to cluster (Donovan & Jessor, 1985; Bachman, O'Malley & Johnston, 1984; Kandel, 1984; Radius, Dielman, Becker, Rosenstock, & Horvath, 1982; Alexander et al., 1989) and; 2) causation must be examined from a biopsychosocial framework (Cvetkovitch & Grote, 1980; Irwin & Millstein, 1986; Irwin & Ryan, 1989; and Jessor & Jessor, 1987). Cognizant of these two factors, an attempt has been made in the present research to examine adolescent sexual activity from a biopsychosocial viewpoint recognizing that separating the types of risk behaviors is artificial.

There are at least two issues involved in premature adolescent sexuality: the first is the activity of sexual intercourse and the second is that of the risk and outcome of adolescent pregnancy. Although pregnancy is obviously a result of the first activity, the root causes of pregnancy may be different than those for engaging in sexual intercourse in which pregnancy may be an accidental outcome. This research will deal only with sexual activity and contraception, and not with pregnancy. Since the majority of adolescent pregnancies are stated by the pregnant girls to be unplanned, it is often not clear how adolescents view the relationship of sexual intercourse to pregnancy or to contraception.

Biological Theories

As previously documented, female adolescent sexual activity including intercourse, is occurring earlier with 46.2% of 15-19 year old girls reporting sexual activity in 1982 as compared to only 30.1% in 1971 (Irwin & Millstein, 1986). It may not simply be chance that menarche is also occurring at an average age of 12.8 years instead of age 16 at the turn of the century. Although menarche is perhaps the easiest marker to measure, maturation also involves changes in body shape and size and hormone levels.

Soefer, Scholl, Sobel, Tanfer and Levy (1987), in a study of 702 black and 1,491 white female 15-19 year olds compared age at menarche with initiation of sexual intercourse. They found that both black and white female early maturers experienced premarital sex earlier than average maturers and both early and average maturers experienced intercourse earlier than late maturers. However, this study was carried out on data collected in 1971 and 1976 and there was a marked change in social norms that seemed to allow greater sexual freedom especially during the later period. It appears these authors made no attempt to control for socioeconomic status and it might be that such a control would eliminate the differences found between groups.

Westney, Jenkins, Butts and Williams (1984) studied black 9-11 year olds and found that genital development in the males, but not in females, was significantly related to self reports of heterosexual behavior ($p < .005$). This study

used physical examination with Tanner staging along with interviews to gather data.

Irwin and Millstein (1986) report that early maturing girls have earlier heterosexual interests and behavior and Berzonsky and Lombardo (1983) report earlier identity crises with early maturity. Late maturing boys who do not have the physical attributes most highly valued by peers, appear to engage more frequently in non-sex related risk behaviors (Irwin & Millstein, 1986). These same authors point out that a strong predictor of sexual involvement is the earlier timing of puberty for black male and all female adolescents.

In a study that analyzed the hormone levels and sexual behavior of 78 white, 13 to 16 year old females (Udry, Talbert & Morris, 1986), the authors concluded that, for this population, androgens are responsible for libido. Although no hormonal variables predicted whether or not a girl had intercourse, there was strong correlation between the presence of adrenal androgens and masturbation. In males, the presence of androgens indicated a strong correlation with initiating sexual intercourse. These same authors concluded that "the difference is that coital behavior of females is influenced by differences in their social environments to a much greater extent than is true for males" (p. 225).

Udry (1988) later expanded the original biological model into a biosocial model. For girls, the biosocial model accounted for over half the variance in explaining female sexuality. The term "sexuality" included not only sexual

behaviors such as masturbation and coitus, but also thinking about sex and future intentions to engage in sex.

Susman, Notelman, Inoff-Germain, Dorn and Chrousos (1987) reviewed literature relating to hormonal influences on adolescent behavior. They conclude, "Thus, although the precise mechanisms involved in hormone-behavior interactions are unknown, the identification of sex steroids and possibly other puberty related hormones as substances affecting brain functioning is a major advance in identifying the mechanisms whereby the effects of hormone changes become manifested in the behavior of adolescents" (p. 493).

Psychological Theories

Most researchers are also aware that not only are there multiple biopsychosocial causes for adolescent sexual activity, but no single psychological theory is adequate to "explain" this or any other risk behavior (Cvetkovich & Grote, 1980). However, the adolescent search for an identity is basic to any psychological theory since it encompasses both the intense peer involvement seen at this age and consolidation of the social role. No one who has dealt with adolescents doubts the influence of the adolescent peer group, especially in early adolescence. Perhaps nowhere is that influence more keenly felt than in the area of premature sexual activity. Teens have an intense desire to emulate the peer group, and to not want to be different. Muuss (1988) in discussing Erikson's theories notes, "Since an identity can best be found in interaction with significant other people,

the adolescent may go through a period of almost compulsive peer group involvement...The peer group, the clique, and the gang, even the lover, aid the individual in the search for a personal identity," (p. 61). If a teen perceives, or knows, that the group in which he is or aspires to be a member are sexually active, or if their best friend is sexually active, it is highly likely that the teen will soon become sexually active (Jessor & Jessor, 1977; Shah & Zelnik, 1981; Billy & Udry, 1985).

The lack of a sense of future would also appear to be of significance in adolescent sexual activity. Inhelder and Piaget (1959) postulate that a sense of future doesn't develop until sometime in adolescence. Kuhn, Langer, Kohlberg, and Hahn (1977) found that formal operational thinking with a future orientation may develop even later than the 11-15 years that Piaget claimed. It is difficult for many teens to look at the consequences of a sexual act that <u>might</u> in nine months result in the birth of a baby. It is equally difficult for those teens to plan for and correctly utilize a safe, effective method of contraception. In a study by Zabin and Clark (1981), 36% of teens who sought family planning services came because they already suspected they were pregnant. In the same study, the mean interval from first intercourse to first contraceptive visit was 16.6 months, and this is for the group of females who <u>did</u> seek contraceptive care. Many adult women are equally unable to plan for the future with a consistent, reliable contraceptive

method. However, as Blum and Stark (1985) point out, "...one must not only believe that a future exists and the future is one in which you will participate, but that the future is worth investing in" (p. 29). Many teens in the low socioeconomic groups with minimal educational skills may realistically not see a future worth investing in. Expecting an early adolescent who is still in the concrete stage of thinking to not only actively consider the future but to take a pill every day to prevent some future possibility may not be reasonable unless there is an excellent support and counseling system in place.

This lack of a sense of future may be even more true for children of low socio-economic groups. Research conducted on 148 Finnish male and female teens (Nurmi, 1987) demonstrated that subjects' knowledge of the future increased with age and that subjects from the higher social classes were oriented farther in the future than teens from the lower classes. Both interviews and a self-report survey were used in the research with two researchers rating the interviews and interrater reliabilities of .77 to .94 reported for different sections. No mention was made of validity or of reliability of the survey instrument. To what extent those findings can be extended to American adolescents is not known, however, the developmental sequence of cognitive skills is generally thought to be universal. What may be different in the two cultures may be the availability of role models who promote advanced cognitive skills.

Mann, Harmoni and Power, (1989) explored the development of adolescent competence in decision making. These authors defined the elements necessary to such competence as: choice, comprehension, creativity, compromise, consequentiality, correctness, credibility, consistency, and commitment. In quoting some of their own research as well as that of others, these authors concluded that, " by age 15 years many adolescents have achieved a reasonable level of competence in most of the nine components identified" (p. 275). However, they also point out that the development of this competence is limited by social and legal constraints that do not allow most adolescents the ability to practice decision making skills. These authors have developed a course (called GOFER) to teach skills to high school students that can be applied to many areas where decisions must be made such as engaging in health risk behaviors.

Dembo and Lundell (1979) examined adolescent contraceptive use in three domains: lack of information, cognitive emotional development and acceptance of sexuality. All three domains are active during adolescence. These authors conclude that although there is a lack of information available to teens about sex and contraception, information alone may not change behavior. Youth who are not ready to emotionally or cognitively accept their sexuality will not be able to plan their sexual activity or use contraception.

Pete and DeSantis,(1990) using ethnographic methodology, conducted in depth interviews and used participant

observation to examine sexual decision making in five, black, pregnant, 14 year old females. Many of the findings in this study supported previous research. One of the authors' hypotheses was not supported when they found these girls were unable to recognize or articulate the factors that influenced their sexual decision making. Contrary to some research findings, the authors concluded that: young, black adolescents do seek committed relationships before having sex; most females are not abandoned once they were pregnant; young teens discuss sexual matters with their sex partners rather than with same sex friends; and young teens are capable of abstract, future oriented thinking. After making the previous sweeping conclusions, the authors state that the "limitations of the study do not allow for generalization of the findings" (p. 153). While this author agrees that the findings are of interest and help to break down some established stereotypes, a sample of five, pregnant, adolescents of generally unknown socioeconomic status is not strong enough evidence for some of the conclusions reached.

Zabin, Hirsch, Smith, and Hardy, (1984) report on research conducted with 3,500 junior and senior high school students in 1981-82. These authors found general disparity between what students state is the best age to initiate sexual intercourse, whether premarital intercourse is wrong, who should be responsible for contraception, the best age at which to become pregnant and the behaviors these teens are demonstrating. They conclude, "It would appear that the

majority of young people already have values and attitudes consistent with responsible sexual conduct, but not all of them are able to translate these attitudes into personal behavior"(p. 181).

Interestingly the phenomena of peer pressure can often be used to interest teens in either abstinence or in contraception use IF there is peer group support and role modeling for this behavior (Carnegie Quarterly, 1986). The program "Postponing Sexual Involvement" (Howard & McCabe, 1990), uses a combination of a knowledge based curriculum, plus skill building in dealing with peer and social pressures, to enable young teens to postpone sexual involvement. The program uses a social inoculation approach with the use of older teen role models as group facilitators. In a control group study of over 500 low income, primarily black students, those who experienced the program and were followed demonstrated that the "Postponing Sexual Involvement" program was **effective for young people who had not yet had sex at the time of the program.** It was not as effective for those who had already initiated sexual activity.

Especially when dealing with the younger teen, it is important to take into account both Elkind's imaginary audience (Elkind & Bowen, 1979) and personal fable constructs (Elkind, 1978). The teen who feels that "everyone" is watching him will be very reluctant to go to a family planning clinic or purchase contraceptive supplies. If their

personal fable includes the belief that they are invulnerable to pregnancy, they will be even less likely to seek contraception. Normally, these feelings decrease as teens reach middle and late adolescence.

An equally significant factor in adolescent sexual behavior and pregnancy relates to the double moral standard in America. On one hand, we have an administration and many state and federal legislators who appear to feel that sex and the need for contraception and abortion do not exist because all <u>females</u> have to do is say "No". On the other hand, Americans are bombarded with sexually explicit messages and acts in everything from movies to TV, newspapers, and magazines. Sprafkin and Silverman (1981) state there are 20,000 scenes of suggested sexual intercourse and behavior, comment and innuendo in a year of prime time television. The same television stations and magazines that carry thousands of sexually explicit acts do not allow advertisements for contraceptives. Additionally, a minority group of vocal well financed people have kept comprehensive family life education programs out of many public schools and have restricted access for teens to family planning and abortion services.

There is a tendency for much of American society to operate at Kohlberg's (1964) preconventional level where moral decisions are based on self interest, fear of punishment, anticipation of reward, or material considerations. Ideally legislators would base their views on issues of abortion, family planning and sexual conduct

on personal moral commitment rather than what will buy votes. Adults do not always provide strong moral role models for adolescents.

It is unknown how much of adolescent pregnancy is planned and how much is incidental. Zelnik and Kantner (1979) found that 66% of pregnant teens stated they "did not want to become pregnant" but only 14% of them were using any type of contraception at the time they conceived. Even when rates of "planned" teen pregnancy are quoted, these statistics are gathered after the teen is pregnant and may attempt to justify her pregnancy by saying that it was planned.

Social Theories

A myriad of social and demographic factors have been blamed, or determined to be instrumental in the early initiation of adolescent sexual activity. One of the arguments is whether race or ethnicity is a determinant in early sexual activity. Part of the difficulty in the argument lies in the definition or determination of "race" and "ethnicity". "Race" is most commonly accepted as being biologically, or genetically determined, while "ethnicity" may connote a national identity or a cultural group. However, as Wilkinson and King (1987) note "...there exists no universal or exact definition of what constitutes a race among either physical or social scientists" (p.62,63) . The two criteria most often applied are blood type and the relative frequency of genetic traits (Dobzhansky, 1964). The

use of either race or ethnic categories as a variable when describing specific behaviors or conditions is discussed in a classic article by Wilkinson and King (1987). As referred to in this paper, the terms will be used as they were by the authors of the various studies. The use of any racial or ethnic terms in the results section of this paper will be discussed in the methodology section. It is apparent, however, that results of research need to be reported by variables that include SES, education, and other social parameters and not simply by race.

There are other social factors that may contribute to early sexual activity and subsequent pregnancy. Over 50% of mothers now work outside the home and, since the U.S. has inadequate child care facilities, many children are left alone after school. Access to an empty home where sexual activity can be conducted may play a part in initiation of sexual activity by early adolescents. Irwin and Millstein (1986) point out other social, environmental factors in premature sexual activity such as absent or ineffective sex education, increased advertising promoting sexuality, lack of advertising on contraception and sexually transmitted diseases, and parental and/or physician denial of adolescent sexuality.

Robbins, Kaplan, and Martin (1985) examined antecedents to pregnancy in both the females who became pregnant and in the males who caused a pregnancy in 2,158 unmarried Texas adolescents. This was a longitudinal study that began with

students who were in seventh grade in 1971, and defined "adolescence" as through age 21. The study included students who were black (27% of the total), white (61% of the total), and Hispanic (12% of the total). Results demonstrated that, for the males, causing an adolescent pregnancy is associated with school difficulties, low parental socioeconomic status, and high popularity. Among the females who later experienced an unmarried adolescent pregnancy, they were more likely to be black, in the low socioeconomic class, their father was more likely to be absent, there was more likely to be a larger number of siblings with increased family stress, school difficulties, and higher popularity. Interestingly, low levels of self esteem and feelings of powerlessness, as measured in this study, did not contribute to a higher pregnancy rate.

Although not common,it is apparent to those working with teens that a certain subset become sexually active in exchange for drugs or alcohol. The role that "crack" or cocaine plays in heightening or intensifying sexual desire is still under investigation. For a small proportion of both male and female teens, the ability to earn money in exchange for sexual activity may be a determining factor in this risk behavior.

If research is going to move beyond the simple description of the incidence of adolescent sexual activity and pregnancy, it needs to be done within the context of developmental theory. The use of Erikson's identity

formation, with Marcia's additions; Elkind's theory of egocentrism; Kohlberg's moral reasoning stages; and Piaget's cognitive development would all appear to be applicable and appropriate. However, care must be taken that samples have adequate gender, ethnic, and social class representation.

Additionally, research must document respondents' biological development, probably through questions on Tanner development or the more expensive but more accurate method of utilizing physical examinations. Research attention also needs to be paid to those social factors thought to be important to the development of adolescent sexual activity such as poor school performance, socioeconomic status, sense of hopefulness, role models, and lack of parent supervision. Qualitative research with teens regarding issues of sexual activity may also point to biopsychosocial issues not previously recognized.

Appendix A contains a model depicting a summary of the previously discussed biopsychosocial antecedents to sexual risk taking behavior with the possible outcomes. Obviously outcomes are not always necessarily negative, especially if a pregnancy does not occur.

In summary, developmental research seems to indicate that male, and probably female sexual behavior is at least in part influenced by hormonal factors that precipitate puberty. However, as Udry (1988) points out, there is no evidence that a model based only on biological causes will explain the initiation of sexual intercourse in adolescent females.

Deficiencies in Existing Research

Research Designs

Research dealing with the incidence of adolescent risk behaviors is almost exclusively in the realm of description and survey. As defined by Phillips (1986) "Descriptive designs are undertaken when the aim of the research is to delineate the characteristics of a particular population or setting" (p. 205), "Surveys are conducted for the purposes of understanding the larger population from which the sample was initially selected" (p.206). The majority of the surveys have been cross sectional.

Perhaps the weakest area in most of the samples is the lack of uniform definitions of age groupings that comprise "adolescence", and ethnic categories. The lack of consistent age groupings has meant that much of the data is not comparable. Some of the studies compound this problem by using grade in school categorization instead of ages.

The Newacheck and McManus (1989) article on insurance status of adolescents uses an age grouping of 10-18 to describe adolescents. Kovar, Klerman, Garell and Deisher (in press) point out that the general public usually thinks of adolescence as ages 12-17. Federal statistics often group children into ages under 12 or 15-24, however, adolescent birth rates often use a maternal age group extending through age 19. Medicaid, for funding purposes, refers to adolescents as anyone under age 21. The changes that occur during these various ages are enormous. The legal

ramifications include the need for approval for specific activities such as marrying, military draft, and the legal use of cigarettes and alcohol. There is no agreed upon age standard for data collection on adolescents.

Another gap is the need to standardize terms for racial and ethnic backgrounds. Definitions of "black" may be somewhat more standard, but the 1970 Federal census "white" grouping still includes persons of Mexican and/or Hispanic backgrounds. There is even less agreement on the definition of "Hispanic" or "Spanish". Schur, Bernstein and Berk's (1987) research pointed out the importance of distinguishing between Cubans, Mexicans, and Puerto Ricans because of real differences in how these groups utilized medical care, yet they traditionally have been combined into one "Hispanic" designation. In California, the recent influx of persons from Central and South America may comprise yet another Hispanic sub-category. The term "Southeast Asian" is often used as a composite for persons as varied as Vietnamese, Cambodian, Korean, and Japanese even though these groups are markedly different culturally. Since the percentage of teens from minority cultures is rising extremely rapidly, particularly in California, it is even more necessary to adequately and consistently define the terms used to denote cultural and/or ethnic backgrounds.

Lack of Conceptual Frameworks

None of the studies involving incidence data mentioned a conceptual framework. The use of developmental paradigms

would give greater coherence and applicability to much of the research. In ideal longitudinal research, the inclusion of questions related to Tanner Stages (Tanner, 1987), the possible development of formal thought, and the development of moral reasoning of both the subject and their parent(s) would expand our knowledge of adolescent pregnancy risk taking behaviors.

Sample Selection

By far the majority of adolescent surveys are conducted on children in schools. Sample selection ranges from random selection to non-probability samples with an increasing trend towards the latter (Kalton, 1983). One of the possible causes of this trend is the increasing difficulty in accessing school populations because of a concern of school administrators both for utilization of school time for academic subjects, as well as increasing concern over confidentiality of both of the students and the school. This is especially true when "sensitive" subjects such as the risk behaviors are included in, or the basis for, such surveys.

Consent Requirements

Almost all surveys of children below age 18 must have signed consent, usually of both a parent and the student being surveyed. This may take the form of "negative" consent where notification is sent to the parent that their child will participate in a survey unless a parent returns a form stating they do not wish their child to participate. A

"positive" consent requires that the parent return the permission form if the child may participate. Requiring positive consent immediately limits and biases any survey, since some California schools report that parents traditionally return only 10-15% of any requested information to the schools (Personal communication, R. Trinidad, Principal, & L.Towner, Principal, September, 1988). In the studies reviewed in this paper, only one (Kandel & Logan, 1984) mentioned either refusal rates or the characteristics of those who were NOT surveyed.

The use of schools for survey samples of adolescents causes another serious bias, that of eliminating school dropouts, the institutionalized, and those teens who are serving in the military (Kovar, 1979). It might be supposed that risk behaviors might be much higher if those groups were included in survey samples.

In risk groups generally, there is a consistent under sampling of Mexican and other Hispanic populations and an almost total lack of any data on the Asian or Southeast Asian groups. Even if various ethnic groups are sampled, the results may not be reported by ethnicity. One of the worst abuses of cultural designations is to lump together all non-whites as "others" or all non-blacks as "whites".

Credibility of Data

There is some concern over the almost total dependence on self reporting to gather information on risk behaviors. It is not certain what, if any, impact this might make.

DeLamater (1982), presumably in reference to adults, states, "There is general agreement that the validity of responses to questions on topics which are threatening or elicit social desirability concerns depends on the degree to which respondents perceive their answers as anonymous" (p. 31). He also points out that respondents are generally willing to discuss "threatening topics",but there may be underreporting of individuals who have participated in counter normative activities. This author is not aware of any data on the validity of adolescent reports of risk behaviors.

No mention was made in any of the reviewed research as to the level of reading ability required to read administered surveys, but this may have biased results since only those capable of reading the questions (either because of limited reading ability or because of an inability to read English) could participate.

Confidentiality

Most of the surveys have taken into account the need to assure confidentiality when dealing with the extremely sensitive issues of risk behaviors. Especially since many of the activities are illegal, this issue is of special significance. Most of the studies simply stated that respondents were assured of confidentiality and anonymity.

Analysis of Statistics

This was an extremely strong point in the review of risk behavior incidence. With the advent of statistical computer packages, analyses have become increasingly sophisticated.

Most of the studies used various forms of multiple regression analyses. Since incidence data are not of an experimental design, the statistical analyses are generally well served with various types of regression and Chi square analyses.

Summary

In summary, ideally, research in adolescent sexual activity could be improved by cohort sequential studies (Kandel and Logan, 1984) rather than the more common cross sectional research reported. Samples should begin in pre-puberty and continue through at least age 18 and include those who leave school. It is unlikely that attempting to include an informant such as a parent or teacher would add to knowledge of adolescent sexual activity, however, the inclusion of the sexual partner(s) would add immeasureably to such information. Optimally, questions should relate to <u>all</u> risk behaviors and should have a conceptual framework that is oriented to developmental levels rather than only to chronological age and/or grade in school. The realities of funding such research designs may preclude the "ideal", but it is still a goal for which to strive.

CHAPTER III

METHODOLOGY

Conceptual Framework

The conceptual framework for this investigation was developed using various developmental theories with a bio-psychosocial orientation. Those theorists whose work was of particular importance were: Erikson, Piaget, Kohlberg, and Elkind. Irwin and Millstein's biopsychosocial models of risk taking behaviors contributed greatly to the development of the conceptual framework that was utilized in this study. The conceptual model is found in Appendix A.

Design

This research utilized a descriptive correlational design in order to test the theoretical model. Data were obtained via a secondary analysis of an adolescent health risk survey that was conducted in 1988 by Dr. Claire Brindis of the University of California at San Francisco and this author in two high schools in Northern California. The 1988 survey was a follow up to an almost identical survey conducted at the same two schools in 1986. The original purpose of the two surveys was to measure differences over the two year period in access to health care and student participation in health risk behaviors following the introduction of School Health Centers (school based clinics) at both sites. The 1986 study was conducted just prior to the opening of the Centers and the 1988 study was the two year follow up. Original data were analyzed separately for

each school and the analyses examined the utilization of the Health Centers and changes in the engagement of risk behaviors over the two year period. Risk data were not analyzed separately by gender, age or ethnicity in the original study.

In the present study, because the two schools selected serve very similar populations, and in order to have a statistically robust sample for all of the variables, the data from the two schools were combined. A preliminary frequency analysis done prior to the combination of the data verified the similarities of the students from the two schools.

Procedure

Human Subjects

The original version of the Adolescent Health Risk Survey, as developed by Doctors Charles Irwin, Shauna Millstein, and Claire Brindis, was approved by the University of California, San Francisco Committee on Human Research at the time of its development.

This survey was conducted as part of an overall evaluation of a school health clinic at both schools. Notices were mailed home to the parents describing the survey and asking parents to return the consent only if they did NOT want their child to participate (negative consent). This form is in Appendix C. Parents were offered the opportunity to preview the survey at the school if they wished (none did). A total of six denials were received. All other students who

attended school during the third period on the day the survey was administered, and who wished to participate, completed the survey. Unfortunately, no data were available on the six students whose parents declined to let them participate. The surveys at the two schools were administered about two months apart because the two schools' Health Centers opened at different times.

Data Collection

At each school, a meeting was held with all the teachers a week before the survey was conducted to explain the purpose and answer any questions. Teachers received enough surveys for their third period students on the day before the survey was conducted. They were also notified of anyone with a negative consent in their room. The third period was selected because it is considered the "home room" period and tardy students are likely to have arrived by that time. Written instructions were included along with the notice that a survey monitor would be in their room several times during the period to answer questions and to pick up completed forms. Health Center staff and staff from the University of California at San Francisco's Center for Reproductive Health Policy served as survey monitors. Each monitor was assigned four to six rooms to cover during the period.

Students were assured of confidentiality both verbally and in writing and were told not to put their names on the survey forms. Students were also told that they did not have to answer any or all of the questions if they chose not to

participate. Less than six students at each school chose not to participate.

Each survey form and each top sheet were identified with a code number. If students wanted feedback regarding their individual level of health risk, they could write their names on the top sheet of the survey which was handed in separately from the survey form. If the student desired feedback, they received a personalized letter indicating the general state of their health in regard to health risk behaviors and how their health could be improved. Approximately 50% of the students tested requested feedback information. Messages were individualized, such as, "You are doing a great job on the food you're eating, but your health would be greatly improved if you stopped smoking. Please see the Health Center staff about helping you to stop smoking". The feedback was returned to the Health Center staff in sealed envelopes and students had to tell staff both their names and birth dates in order to obtain their report.

Instrument

The instrument used was the Teen Health Risk Survey developed by Dr. Claire Brindis. This is a modification of an instrument originally developed by the Centers for Disease Control for adults and adapted for adolescents by Doctors Charles Irwin and Shauna Millstein. A version of the same instrument was administered two years previously at these same schools and in several other locations in California and

nationally. In personal communications with both Doctors' Brindis and Millstein (July 6, 1990), neither were aware of any tests of reliability or validity of the instrument. Dr. Millstein reported that during the development period of the instrument, pilot testing was done with wording questions in different ways and examining the results. This author participated in a pre-test of the instrument when it was first given in 1986 to determine whether Hispanic and Asian students had any difficulty in understanding the questions and to determine the length of time for completion and minor changes were made at that time. This same survey has now been administered to approximately 10,000 students and remarkably consistent findings have been documented over a five year period. The repeated use and consistent findings have provided face validity for the survey. The survey is located in Appendix D.

Selection of Variables

In order to select the variables used in this research, definitions were first developed and then the variables selected.

Operational Definitions

1. **Adolescence**

   The Newacheck and McManus (1989) definition of early and late adolescence is used, with 10-14 being defined as early adolescence and late adolescence as 15 to 18.

2. **Risk Taking Behaviors**

   This study utilizes the Irwin and Millstein (1986) definition of risk taking behaviors as, "the participation by youth in potentially destructive activities with little understanding, or in spite of an understanding, of the short-term and long term consequences of their activities" (p. 82S).

3. **Sexual Activity**

   In the context of this research, sexual activity denotes sexual intercourse between two members of the opposite sex.

4. **Early Initiators of Sexual Activity**

   Initiation of sexual activity that occurs at age 14 or earlier.

5. **Later Initiators of Sexual Activity**

   Initiation of sexual activity that occurs at ages 15 to 18.

6. **Non-Initiators of Sexual Activity**

   Females who have not engaged in sexual activity at the designated ages or by the time they are over 18.

7. **Biological Variables**

   Those anatomical physical characteristics and physiological life processes that are present at birth or become apparent at a particular stage of development.

8. **Psychological Variables**

   Those factors that are related to the mind and to

mental and emotional processes; especially traits, attitudes, thoughts, and mental states.

9. **Sociological Variables**
   Those factors that relate to the beliefs and values of societal groups and the processes governing social phenomena.
10. **Socioeconomic Variables**
    Variables that affect, or are affected by, both economic and social factors.
11. **Effective Contraception**
    The use of a contraceptive method such as an oral contraceptive, diaphragm, condom, or condom with foam, and the use of that method "often" or "always".
12. **Level of Sexual Activity**
    "Level of sexual activity" is used to include both the age and whether or not the student is sexually active.

Independent Variables

Since this is a descriptive study, it was irrelevant whether groups of variables were defined as independent or dependent. The group of variables that deals with the state of the subjects' sexual activity and ages were selected as the five independent variables and defined as follows:

a. Girls who are 14 and under who became sexually active by or before the age of 14;
b. Girls who are 14 and under who are not sexually active;

c. Girls who are now 15 to 18 who became sexually active during those ages;

d. Girls who are now 15 to 18 who have not initiated sexual intercourse;

e. Girls who are now 15 to 18 who became sexually active at age 14 or younger.

Dependent Variables

The dependent variables that were selected represent the elements in the model that correspond to questions in the survey. They were divided into the biopsychosocial areas as follows:

Biological Variables

Age at first menses

Psychological Variables

How often feel angry, hurt, hopeless etc.

Perceived social support

Thoughts/ attempts to hurt self

General life satisfaction

Have a say in deciding important things

Sociological Variables

Grades in school

Amount of future education expected

Number of life change events in past year

Socio-economic Variables

Number of people living in home

Parents' education

Parents' marital status

Medicaid coverage

Accessibility of medical care

Other Risk Taking Behaviors

Use of cigarettes ever and currently

Use of alcohol ever and currently

Use of illegal drugs

Use of contraception at first intercourse

Use of contraception at last intercourse

Effectiveness of contraceptive method

Time period between initiating sexual activity and use of contraception

Data Analysis

Analysis Methods

The data are contained on the main frame computer at the University of California at San Francisco in SAS format. Data were analyzed first for general frequencies, and to determine if there were constraints to combining the data sets from the two schools. There were overall remarkable consistencies between the two schools and the data were then combined for all female students at both schools.

The data were then analyzed to test each hypothesis. Because the primary questions being asked were to determine whether there was a relationship or an association between sexual activity and another variable, Chi square tests were the primary analyses conducted. The variables were all dichotomous.

Assumptions

There were a number of assumptions made during the collection and analysis of this research.

1. Self Report

   It was assumed that self report was a valid, true measure of adolescent sexual activity.
2. It was assumed that the answers relating to the other variables were reported accurately.
3. It was assumed that biological, psychological and sociological factors all impact on risk behaviors.
4. It was assumed that the dependent variables selected were representative of the various aspects of biological, psychological and sociological states.

Level of Significance

For all hypotheses, the acceptable level of significance was established at $p < .05$. In a few instances tables were reported that did not reach those levels, but these were clearly designated as reaching lower levels of significance.

Specific Problems in Analyses

Parents' Occupational Status

The only measure of socioeconomic status that was included in the Survey were two questions that asked "what type of work does your mother do?" and the same question for fathers. There was no checklist so all answers were written out. There are various ways of ranking occupations on social or economic scales such as by prestige or census

socioeconomic scores. " Prestige scores are directly linked to persons' evaluations of the relative merits (...) of the occupation; census occupational scores are obtained by averaging the rankings of occupations arrayed by median education and income levels; the socioeconomic index scores are an amalgam of the above two because they are the 'predicted' prestige scores obtained in the regression of prestige on levels of income and education." (Stevens & Cho, 1985, p. 142).

Discussions were held with Karen Garrett, the Manager of Survey Operations; and Dr. Tom Piazza, Researcher, both at the Survey Research Center at the University of California at Berkeley, and with Dr. Michael Hout, Industrial Sociologist at the School of Sociology at the University of California at Berkeley. All of these persons recommended using the Duncan Socioeconomic Index (SEI) to translate the occupation into socioeconomic status.

The Socioeconomic Index (SEI) has been widely used to describe subjects' background and occupational status in other social processes such as fertility, migration and marriage (Stevens & Cho, 1985). It was therefore felt to be an appropriate way of characterizing the socioeconomic status of the subjects' parents in this research. Ultimately, the Duncan Socioeconomic Index (SEI) as revised in 1985 by Stevens and Cho, was used.

The first step in this process involved assigning a three digit Occupational Code to each parental occupation the

students listed. In cases where there was uncertainty which code should be selected, a second rater was utilized and a consensual decision made.

One code was added to the list to account for those who were unemployed. The unemployed group included those who were on welfare, students, and those listed as not working.

A fairly substantial number of students did not write in any answer for a parent's occupation (213 did not answer for their mother's occupation and 307 did not answer for their father's occupation). Another group of occupations (a total of 37 for the mothers and 54 for fathers) could not be coded due to the vague nature of the description, such as, "works in a hospital" or "works for IBM".

After each description was entered, a frequency table was run to determine the number of parents who fell into each category, and the average score for both mothers' and father's occupations was computed. According to Dr. Hout (personal communication, August, 1990) the most widely accepted average SEI score in the United States is 40. In this study the average SEI score for mothers was 27.63 and for fathers was 26.77.

A decision then had to be made as to whether to use the mother's or father's code (if both worked) to determine the family status. In extensive discussions with the three sources previously listed, the most common recommendation was to use whichever code was highest (mother's or father's). Where there was only one wage earner, that code was used.

In order to complete the analysis, the scores were grouped into seven categories which included five different economic levels plus the "Unemployed" and "Uncodeable" groups. These data were tabulated both with ethnicity and with the independent variables.

Collapsing of Categories

In several instances, students had many choices to choose from in selecting an answer. Some of those categories were collapsed after examining the initial data. Where groups were collapsed, these are clearly identified.

Determination of Effectiveness of Contraception

In order to be effective, a contraceptive method must have at least two attributes: it must be used; and it must be a method that has a high probability of preventing pregnancy. Effectiveness was based on the respondent's type of contraception the last time she had sex. If a respondent used a method, she was asked which method and could choose between "pill", "diaphragm", "sponge", "condom", "condom and foam", "creme, jelly, foam or suppository", "rhythm", "withdrawal" or "other". According to the 1990-92, 15th Edition of "Contraceptive Technology" (Hatcher, Stewart, Trussell, Kowal, Guest, Stewart & Cates, 1990), the failure rates for each of these method is as follows:

Method	Average Failure Rates
Oral Contraceptives	0.1-4.7% (1st year) p. 229
Diaphragm	2.1-18.6 pregnancies per 100 women who use, during 1st yr. year p. 204
Condom	12% (1st year) p.167
Condom and Foam	< 12% *
Sponge	17-24.5 pregnancies (1st yr.) per 100 women who use method (p. 203)
Creme, jelly,foam,suppos.	3-36 pregnancies (1st yr.) per 100 woman years of use (p. 183)
Rhythm	20% (typical 1st yr.users) p. 336
Withdrawal	18% (typical 1st yr.users) p. 351

* this conclusion is based on this investigator's combining of the data for foam and condoms since no other data was available.

Based on the previous data, oral contraceptives, diaphragm, condom, and condom with foam were judged to be reliable and the rest as unreliable. Students were asked in general, how often they and/or their partner used a birth control method when having sex. Choices ranged between "never", "rarely", "sometimes", "often" and "always". "Often" and "always" were judged to be reliable and the rest as unreliable. In order for a student to be judged an "effective" contraceptor she had to be <u>both</u> using a reliable method and using it either often or always.

Life Change Events

Students were asked to check any of 17 events if that event had occurred to them in the past year. There are innumerable ways of dealing with Life Change Events and it is still a somewhat controversial subject. Many events may be either positive or negative; i.e.: a parents' divorce may be viewed positively if it were preceded by years of strife or abuse. For the purposes of this study, a simple count of these events was used to determine each subject's "score". In a review entitled, Life Events as Stressors in Childhood and Adolescence, (Johnson, 1986, p. 101) the author notes, "... the available findings suggest that a simple count of events may provide the most objective and efficient index of life change". After the initial analyses for each number of events, the total number of events experienced was categorized into 0-2 events; 3-5; 6-8; 9-11; 12-17 and Chi square was used to analyze for the five independent variables.

Summary

This chapter provided a description of the methodology used in this study. The descriptive review included a presentation of the research design, the procedures for data collection, a discussion of the instrument used, and a section on the variables selected. The chapter concluded with a review of the data analysis.

~~Since~~ It is the premise of this research that the contributing factors to adolescent sexual activity are rooted

in overlapping biopsychosocial factors. For simplification in presentation, these contributing factors were assigned to either biological, psychological or social categories. The results of all findings are presented using the same format, recognizing that some factors may overlap categories. Following is the organization of the contributing factors and how they are reported for hypotheses I through VII.

Biological Factors

Age at menarche
Born in U.S.

Psychological Factors

General life satisfaction
Feelings of anger, hopelessness, depression, nervousnesss, fear, boredom, and loneliness
Feeling good about oneself (self esteem)
Thoughts and actions of self harm
Have a say in important things in life
Family support

Social Factors

Grades in school
Educational aspirations
Parent's educational achievement
Parent's marital status
Family's Medicaid status
Engage in other risk behaviors
Number of people living in home
Access to medical care
Number of life change events

The results of the study are described in detail in the next chapter and include demographic characteristics of the sample and the results of hypotheses testing of the predictive model.

CHAPTER IV

RESULTS

Preliminary results from the sample are reported first and include demographic and school characteristics. Results of correlations among different variables and the results of hypotheses testing of the predictive model are reported in the next section of this chapter which then concludes with a summary section.

Original Sample and School Characteristics

This study was a secondary analysis of a segment of data that were gathered in 1988 for a separate study by other investigators. The purpose of the larger 1988 study was to evaluate the impact of two high school based health centers that had been operational for two years. A similar survey had been conducted in 1986 to gather baseline data before the health centers opened. The 1986 and 1988 surveys included both males and females who attended each school on the day the survey was administered and who did not have a parental denial form that excluded them from participation. The 1988 survey included 1,789 total students of whom 49.1% (n= 879) were female. The numbers, percentages, and ethnic categories of the total student body at each school are described in Table 1.

Table 1.

Total Student Body at Both Schools

Ethnicity	School "A" Number	School "A" Percent	School "B" Number	School "B" Percent
Anglo	175	29.8	60	5.0
Hispanic	297	50.6	715	60.0
Asian	20	3.4	155	13.0
Black	9	1.5	60	5.0
Pacific Islander	22	3.8	120	10.0
Am. Indian	3	0.5	12	1.0
Other	61	10.4	71	6.0
TOTAL	587	100.0	1,193	100.0

The two high schools were located within three miles of each other. The primary difference between the two schools was that in 1988, School "A" was in the second year of a court ordered desegregation plan which markedly reduced enrollment at this school from 1100 in 1985, to 750 (minority students from the neighborhood were unable to attend this school since their numbers could not be balanced with Anglo students). The percentage of Anglo students at School "A" increased from 24% to 29% between 1986 and 1988. This meant that there were a considerably higher proportion of Anglo students at School "A" than School "B".

School "B" had a total population of about 1,800 students in 1988. Both schools were located in low income neighborhoods with high minority populations, although they were in different school districts, and both have extremely

mobile populations. The final sample for this study included 287 female students from School "A" and 592 female students from school "B".

Study Sample

The sample consisted of 879 females attending 9th through 12th grades at two Northern California high schools. The study sample was obtained from a larger study of both male and female high school students. Basically all of the students participated who attended school on the day the survey was administered. A total of six consent forms were returned indicating parents who did not want their children to participate. Only the data from the 879 females participating were analyzed and are reported for this study.

Demographic Data

Demographic data for this sample of female high school students are presented in Table 2. Following is a summary of that data. The sample consisted of females between the ages of 13 and 19. Only 666 students reported their age so both year of birth and age were used to assign age group, bringing the total sample to 879.

This ethnically diverse group of students reflected the larger community in which they lived. Only 12.4% (n= 98) of the sample was Anglo; 62.8% (n= 495) Hispanic; 10.9% (n= 86) Asian; 7.35% (n= 58) Pacific Islander and 6.6% (n= 52) were classified as "Other". The "Other" category was primarily black and middle eastern students. Over 35% (n= 289) of the students were born outside of the United States. Of these, 23.7% (n= 66) had lived in the U.S. for five years or less.

Table 2.

Demographic Data

Characteristic	Number	Percent
Age		
12-13	4	0.5
14	191	22.1
15	218	25.3
16	209	24.2
17	182	21.1
18	57	6.6
19	2	0.2
Total	863	100.0
Grade		
9	284	33.9
10	221	26.3
11	195	23.2
12	139	16.6
Total	839	100.0
Ethnicity		
Hispanic	495	62.8
Anglo	98	12.4
Asian	86	10.9
Pacific Islander	58	7.3
Other	52	6.6
Total	789	100.0
Born in U.S.		
Yes	535	64.9
No	289	35.1
Total	824	100.0
Length of Time in U.S. (if not born here)		
1 year	16	5.7
2 years	15	5.4
3 years	11	3.9
4 years	6	2.2
5 years	18	6.5
6-10 years	93	33.3
11-15 years	92	32.9
16 + years	28	10.1
Total	278	100.0

Education Data

Subjects were all in the 9th through 12th grades. Seventy-eight percent (n= 625) of the sample reported that their usual grades were B's or C's. Over 18% (n= 156) of the students had repeated a grade in school which may be more a reflection of language difficulties than of general ability. Almost 53% (n= 422) of the students reported that their grades were mostly A's and B's.

The extent of the drop out problem can be seen with the markedly declining percentages of students between the freshman (33.8%) and senior (16.6%) years in high school. Over 11% (n= 98) of the students had attended one other high school and an additional 5.9% (n= 51) had attended 2 or more high schools. This school transfer figure is high considering that over 33% of the respondents were only in their first year of high school. Education data can be seen in Table 3.

Table 3

Sample Education Data

Characteristic	Number	Percent
Usual Grades in School		
A's	108	13.5
B's	314	39.1
C's	311	38.8
D's	49	6.1
F's	20	2.5
Total	**802**	**100.0**
Repeated a Grade		
Yes	156	18.1
No	705	81.9
Total	**861**	**100.0**
Attended Another High School		
Never	721	82.8
1 Other H.S.	98	11.3
2 Other H.S.	32	3.7
3 or More High Schools	19	2.2
Total	**870**	**100.0**

Students' and Parents' Education

Students typically reported much higher educational aspirations than their own parents had achieved. Overall parental education tended to be low with almost half the mothers not graduating from high school. Students did not know the educational level of their mothers in over 15% (n= 131) of the responses and almost 22% (n= 185) of the students did not know their father's level of education. Over 76% (n= 661) of the students reported planning to enter or graduate from college and/or complete post college work. Only 20.9% (n= 180) of their mothers and 24.2% (n= 207) of their fathers had achieved those same levels of educations. These data are shown in Table 4.

Table 4

Students' and Parents' Education

Characteristic	Number	Percent
Educational Plans		
Some High School	11	1.3
Graduate High School	96	11.1
Some College	120	13.9
Graduate College	347	40.0
Post College Degree	194	22.4
Don't Know	98	11.3
Total	**866**	**100.0**
Parents Educational Attainment		
Mom		
No High School	199	23.0
Some High School	195	22.6
Graduate High School	158	18.3
Some College	99	11.5
Graduate College	57	6.6
Post College Degree	24	2.8
Don't Know	131	15.2
Total	**863**	**100.0**
Dad		
No High School	184	21.5
Some High School	142	16.6
Graduate High School	137	16.0
Some College	91	10.7
Graduate College	83	9.7
Post College Degree	33	3.9
Don't Know	185	21.6
Total	**855**	**100.0**

Social Characteristics

Almost 33% (n= 279) of the students reported that their parents had been divorced or separated. Frequency distributions were also compiled on whether a parent or step parent was living with the student. Almost 7% (n= 58) of the students reported living with neither a parent nor step parent; 19.9% (n= 168) reported living with only one parent or step parent. Of the students who responded to the question of which parents they lived with, 90.3% (n= 778) reported living with a mother or step mother, while only 74.4% (n= 590) reported living with a father or step father. Social data are reported in Table 5.

Table 5

Sample Social Characteristics

Characteristic	Number	Percent
Parents Divorced or Separated		
Yes	279	32.6
No	577	69.4
Total	**856**	**100.0**
Live With Mom or Step Mom		
Yes	778	98.4
No	13	1.6
Total	**791**	**100.0**
Live With Dad or Step Dad		
Yes	590	90.8
No	60	9.2
Total	**650**	**100.0**
Live with Parent or Step Parent		
Neither parent or step parent	36	6.9
Live with 1 parent or step parent	168	19.9
Live with 2 parents or step parents	617	73.2
Total	**843**	**100.0**

Physiologic Data

Generally these students considered themselves to be healthy, with over 76% replying that they were in "good", "very good", or "excellent" health. Almost 16% (n= 135) stated they were in "fair" or "poor" health and almost 7.8% (n= 67) stated they did not know the state of their health. Over 28% (n= 232) of the students reached menarche by age 11 or younger, and only 1.1% (n= 9) of the students had not yet reached menarche. The data relating to menarche are discussed in greater detail and shown in tabular form in the discussion section of Hypothesis III.

Socioeconomic Data

The socioeconomic status of the study families was generally well below the average U.S. income. The 1980 Census Occupational Code was used to classify the job of every parent and then was coded using the 1980 Duncan Socioeconomic Status. According to Dr. Hout at the Berkeley Research Center, a code of 40 on the Duncan SEI scale is average for the U.S. The mean SEI Index Score for fathers in this sample was 26.78 and for mothers the mean SEI Index Score was 27.63.

In this sample, 51% (n= 340) of the mothers and 71% (n= 406) of the fathers, fell below that average score of 40. If only the highest income in each family is considered, 63.7% (n= 475) of the sample fell below the average score of 40. However, 33.8% (n= 225) of the mothers and 7.7% (n= 44) of the fathers were not working. For 5.6% (n= 37) of the

mothers and 9.4% (n= 54) of the fathers, the occupation listed was not able to be coded. Students wrote such answers as "works in a hospital", or "works for IBM".

An analysis was done of the family's socioeconomic status by ethnicity using the occupational category of the person in the family with the highest occupational level as the measure of status. The results of the correlation of ethnicity and SEI status were significant at $p < .001$. The analysis demonstrated that 44.7% (n= 16) of the "Other" families and 33.3% (n= 32) of the Anglo families had an average SEI score of 40 or more as compared to only 14% (n= 10) of the Asians and an even lower 7.8% (n= 35) of the Hispanic families. However the Asian families also had the highest percentage of both parents unemployed (32.4% [n= 23]) as compared to 11.9% (n= 54) of Hispanics; 10.6% (n= 5) of "Other" families; and 6.3% (n= 6) of Anglo families. Total results are in Table 6.

Table 6

Families' Socioeconomic Index and Ethnicity

SEI Category	Anglo		Hispanic		Asian SE Asian		Pacific Islander		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
15-18.99	11	11.5	140	30.9	9	12.7	10	20.4	6	12.8
19-24.99	22	22.9	104	23.0	14	19.7	6	12.2	6	12.8
25-39.99	17	17.7	84	18.5	7	9.9	10	20.4	9	19.1
40-54.99	20	20.8	27	6.0	6	8.4	12	24.5	7	14.9
55-99.99	12	12.5	8	1.8	4	5.6	2	4.1	9	19.2
Uncodable	8	8.3	36	7.9	8	11.3	7	14.3	5	10.6
Both Unemployed	6	6.3	54	11.9	23	32.4	2	4.1	5	10.6
Total	96	100.0	453	100.0	71	100.0	49	100.0	47	100.0

Total Values = 716 (163 values missing)

$X = 29.62$ df= 24 $p < .001$ Cramers V = 0.21

Summary

Significant demographic findings included the following:

* 62.8% of the sample was Hispanic;
* 35.1% of the sample was born outside the United States;
* 23.7% of those born outside the U.S. have lived here five years or less;
* Almost 33% of the students' parents had divorced or separated;
* Over 76% of the students planned to enter or graduate from college or complete post college training;
* 63% of the families fell below the national average on the Duncan Socioeconomic Index;

* Anglo and Other families were more likely than the other ethnic groups to have incomes at the national average or above level;

This section of the research focused on characteristics of the sample population. The next sections report the instrument related findings associated with each hypothesis.

HYPOTHESIS I

Hypothesis I stated that there would be measurable differences between sexually active females age 12 to 14 and those who are abstinent, on selected biological,psychological and social measures. These differences were examined with the Chi-square test of association. The significance level was set at p <.05. There were 181 female student responses in the sample for the analysis of Hypothesis I. Of that number, 13.8% (n= 25) indicated they were sexually active.

Biological Measure

There was a relationship between the age at menarche and whether a young female initiated sexual activity (p <.001). As can be seen in Table 7, 33.3% (n= 8) of those who were sexually active reached menarche before age 11. Only 5.6% (n= 8) of those who abstained had reached menarche before age 11. All of the sexually active students had reached menarche.

Table 7

Young Students' Sexual Activity and Age At Menarche

Age at Menarche	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq	%	Freq.	%
Under 11	8	33.3	8	5.6
11-12	11	45.9	76	53.1
13-14	5	20.8	51	35.7
No Menarche	0	0.0	8	5.6
Total	24	100.0	143	100.0

Total Values = 167 (14 values missing)

X^2= 19.41 df= 3 p < .001 Cramers V = 0.34

Psychological Measures

The measured psychological variables included general life satisfaction, the frequency of experiencing negative feelings, feeling good about themselves, thoughts and actions of harming themselves, having a say in deciding important things in their life, and perception of family support.

General Life Satisfaction

There was no statistically significant relationship between general life satisfaction and whether a young female was sexually active or abstinent. Sexually active young females were less likely to report being "extremely" or "quite a bit" satisfied with their lives (41.7%) than those who were abstinent (60.3%), but the results were not statistically significant. This table was included in Appendix B as Table 1.

Reporting of Negative Feelings

Feelings of being nervous, scared, and bored. There was a relationship between reported feelings of nervousness, being scared, and bored; feeling good about oneself; feeling hopeful; and whether a young teen was sexually active. Young female teens who were sexually active were significantly more likely to report "always" or "often" feeling nervous (48% [n= 12] as compared to 29% [n= 45]); scared (41.7% [n= 10] as compared to 20% [n= 31]); and bored (72% [n= 18] as compared to 51.3% [n= 80]) than those girls of the same age who were abstinent. These results are seen in Tables 8, 9 and 10 below.

Table 8

Young Students' Sexual Activity and Feeling Nervous

Feeling Nervous	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	12	48.0	45	29.0
Sometimes/ Seldom/ Never	13	52.0	110	71.0
Total	25	100.0	155	100.0

Total Values = 180 (1 value missing)

X^2 = 3.58 df= 3 p < .05 Cramers V = 0.14

Table 9

Young Students' Sexual Activity and Feeling Scared

Feeling Scared	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	10	41.7	31	20.0
Sometimes/ Seldom/ Never	14	58.3	124	80.0
Total	24	100.0	155	100.0

Total Values = 179 (2 values missing)

X^2= 5.53 df= 1 p < .02 Cramers V = 0.02

Table 10

Young Students' Sexual Activity and Feeling Bored

Feeling Bored	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	18	72.0	80	51.3
Sometimes/ Seldom/ Never	7	28.0	76	48.7
Total	25	100.0	156	100.0

Total Values = 181 (0 values missing)

X = 3.73 df= 1 p < .05 Cramers V = 0.14

Feeling hopeful. There were significant differences between young females who reported feeling less hopeful and whether they were sexually active (p< .04). Sexually active young teens were less likely to be hopeful (39.1% [n= 9]) than young females who abstained from sexual activity (61.3% [n= 95]).Total results are reported in Table 11.

Table 11

Young Students' Sexual Activity and Feeling Hopeful

Feeling Hopeful	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	9	39.1	95	61.3
Sometimes/ Seldom/ Never	14	60.9	60	38.7
Total	23	100.0	155	100.0

Total Values = 178 (3 values missing)

X^2= 4.05 df= 1 p < .04 Cramers V = 0.15

Feelings of depression, anger, and lonliness. Differences between the sexually active and abstinent groups of young females in reported negative feelings of depression, anger, and loneliness did not reach statistical significance and were reported in Appendix B, Tables 2-4.

Feeling good about oneself. Sexually active younger teens were less likely to think good about themselves (28% [n= 7] as compared to 51% [n= 76]) of those younger teens who were abstinent (p< .03). The full results can be seen in Table 12.

Table 12

Young Students' Sexual Activity and Feeling Good About Self

Feeling Good About Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	7	28.0	79	51.0
Sometimes/ Seldom/ Never	18	72.0	76	40.0
Total	25	100.0	155	100.0

Total Values = 180 (1 value missing)

X^2= 4.55 df= 1 p < .03 Cramers V = 0.16

Thoughts and Actions of Self Harm

There was a relationship between both thinking about and having tried to hurt themselves and whether or not a younger student was sexually active ($p < .001$ and .003 respectively). Eighty percent (n= 20) of the young students who were sexually active had thought about hurting themselves as compared to 40.1% (n= 63) of those students who were abstinent as seen in Table 13.

Table 13

Young Students' Sexual Activity and Thinking About Hurting Self

Thinking About Hurting Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	20	80.0	63	40.4
No	5	20.0	93	59.6
Total	25	100.0	156	100.0

Total Values = 181 (0 values missing)

X^2= 13.62 df= 1 p < .001 Cramers V = 0.27

Forty-four percent (n= 11) of the younger sexually active students as compared to only 17.4% (n= 27) of the abstinent students, reportedly had tried to hurt themselves. Complete results are shown in Table 14.

Table 14

Young Students' Sexual Activity and Trying To Hurt Self

Trying to Hurt Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	11	44.0	27	17.4
No	14	56.0	128	82.6
Total	25		155	100.0

Total Values = 180 (1 value missing)

X^2= 9.13 df= 1 p < .003 Cramers V = 0.23

Have a Say in Important Life Decisions

There was no relationship between whether younger students felt they had a say in important decisions in their lives and whether they were sexually active (p <.79). These data are reported in Appendix B, Table 5.

Perception of Family Support

There was no relationship between perceived availability of help from a family and whether a student age 14 or younger had initiated sexual activity (p <.85). Both sexually active and abstinent students were equally likely to perceive that there was help available from their families. This was shown in Appendix B, Table 6.

Social Measures

Social factors that were measured included the student's usual school grades and educational aspirations; parents' educational attainment; engagement in risk behaviors; number of persons living in the home; parents' marital status; family's Medicaid status; and access to medical care.

Usual School Grades

There was a relationship between usual school grades and whether a young student was sexually active ($p < .001$). Young students who were sexually active were six times more likely to report usual grades of "D's" and "F's" as those who were abstinent (25% [n= 6]) compared to 4.2% [n= 6]). The full analysis is shown in Table 15.

Table 15

Young Students' Sexual Activity and Usual School Grades

Usual School Grades	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
A's and B's	8	33.3	91	63.6
C's	10	41.7	46	32.2
D's & F's	6	25.0	6	4.2
Total	24	100.0	143	100.0

Total Values = 167 (14 values missing)

X^2= 16.12 df= 2 p < .001 Cramers V = 0.31

Expected Educational Achievement

There was no relationship between expected educational achievement and whether a young female was sexually active or abstinent ($p < .53$). Proportionately twice as many of the young students expected to achieve only a minimum high school education (4% as compared to 8%), but these numbers were very small. Basically, the same proportions of females in the sexually active and the abstinent groups expected to achieve some college or college graduation. Equal proportions of sexually abstinent young females did not know what level of education they would reach. This is shown in Appendix B, Table 7.

Mother's and Father's Education

There was no relationship between a mother's or father's level of education and whether or not a young female was sexually active ($p < .08$ and $p < .81$ respectively). These data are shown in Appendix B as Tables 8 and 9.

Parents' Marital Status

There was a relationship between the parents' marital status and whether a young female was sexually active ($p < .001$). Sexually active young females were over twice as likely to have parents who had been divorced or separated as the parents of those who are abstinent (68% [n= 17] as compared to 29.6% [n= 45]). The full analysis is in Table 16 below.

Table 16

Young Students' Sexual Activity and Parents' Marital Status

Parents Divorced or Separated	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	17	68.0	45	29.6
No	8	32.0	107	70.4
Total	25	100.0	152	100.0

Total Values = 177 (4 values missing)

$X^2 = 13.91$ df= 1 $p < .001$ Cramers V = 0.28

Families Medicaid Status

There was no relationship between a family's Medicaid status and whether a young female was sexually active or abstinent ($p < .92$). Similar proportions of families had Medicaid regardless of whether the student was sexually active. These data are shown in Appendix B, Table 10.

Number of People Living in the Home

There was no relationship between the number of people a young female lived with and whether or not that student was sexually active ($p < .20$). These data are included in Appendix B, Table 11.

Access to Medical Care

There was no relationship between the ability to access medical care and whether a young female was sexually active ($p < .96$). Proportions of students who could and could not access health care and those who did not need health care, were basically the same for sexually active and abstinent young females. The complete data are in Appendix B, Table 12.

Participation in Risk Behaviors

Ever and now smoke cigarettes. There was a relationship between the younger students who both ever and now smoked cigarettes and whether these students were sexually active ($p < .001$). Younger students who were sexually active were more than twice as likely to have ever smoked cigarettes (80% [n= 20] as compared to 36.8% [n= 56]); and were almost five times as likely to report smoking now (28% [n= 7] as compared to 5.8% [n= 9]). The full results of these analyses are shown in Tables 17 and 18.

Table 17

Young Students' Sexual Activity and Ever Smoke Cigarettes

Ever Smoke Cigarettes	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	20	80.0	56	36.8
No	5	20.0	96	63.2
Total	25	100.0	152	100.0

Total Values = 177 (4 values missing)

X^2= 16.32 df= 1 p < .001 Cramers V = 0.30

Table 18

Young Students' Sexual Activity and Now Smoke Cigarettes

Now Smoke Cigarettes	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	7	28.0	9	5.8
No	18	72.0	146	94.2
Total	25		155	100.0

Total Values = 180 (1 value missing)

X^2= 13.09 df= 1 p < .001 Cramers V = 0.27

Ever and now drink alcohol. There was a relationship between both whether a young female had ever or now used alcohol and whether a young female was sexually active ($p < .001$ for both analyses). Of the younger sexually active students, 100% (n= 25) reported that they had ever drunk alcohol as compared to 58.1% (n= 90) of those who were abstinent. Three times as many of the young sexually active females reported that they now used alcohol (64% [n= 16]) as compared to 21.3% (n= 33) of those young females who were abstinent. The full analyses for the ever and now use of alcohol by the young females are reported in Tables 19 and 20.

Table 19

Young Students' Sexual Activity and Ever Drink Alcohol

Ever Drink Alcohol	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	25	100.0	90	58.1
No	0	0.0	65	41.9
Total	25	100.0	155	100.0

Total Values = 180 (1 value missing)

X^2= 16.41 df= 1 $p < .001$ Cramers V = 0.30

Table 20

Young Students' Sexual Activity and Now Drink Alcohol

Now Drink Alcohol	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	16	64.0	33	21.3
No	9	36.0	122	78.7
Total	25		155	100.0

Total Values = 180 (1 value missing)

X^2= 19.82 df= 1 p < .001 Cramers V = 0.33

Use of illegal drugs. There was a relationship between the use of marijuana, uppers, downers, and cocaine and whether or not a young female was sexually active. Proportionately, young females who were sexually active were much more likely to use marijuana, uppers, downers, and cocaine. These analyses can be seen below in Tables 21 through 24.

In the final analyses, categories of answers to the use of these drugs were collapsed because of the small sizes of the cells. The "yes" category seen in the tables includes those who reported use "Once a Month or More", "Once Every Few Months" and "A few Times Ever". The "No/ Quit" category includes those who have never used, as well as those who stated they had quit.

Table 21

Young Students' Sexual Activity and Use of Marijuana

Use of Marijuana	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	5	20.0	5	3.3
No/ Quit	20	80.0	148	96.7
Total	25		153	100.0

Total Values = 178 (3 values missing)

X^2= 11.35 df= 1 p < .001 Cramers V = 0.25

Table 22

Young Students' Sexual Activity and Use of Uppers

Use of Uppers	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	3	12.0	3	2.0
No/ Quit	22	88.0	150	98.0
Total	25		153	100.0

Total Values = 178 (3 values missing)

X = 6.65 df= 1 p < .01 Cramers V = 0.19

Table 23

Young Students' Sexual Activity and Use of Downers

Use of Downers	Age 14 & Under; Sex.Act. Freq.	%	Age 14 & Under; Abstain Freq.	%
Yes	3	12.0	0	0
No/ Quit	22	88.0	153	100.0
Total	25	100.0	153	100.0

Total Values = 178 (3 values missing)

X^2= 18.68 df= 1 p < .001 Cramers V = 0.32

Table 24

Young Students' Sexual Activity and Use of Cocaine

Use of Cocaine	Age 14 & Under; Sex.Act. Freq.	%	Age 14 & Under; Abstain Freq.	%
Yes	3	12.0	3	2.0
No/ Quit	22	88.0	150	98.0
Total	25	100.0	153	100.0

Total Values = 178 (3 values missing)

X^2= 6.65 df= 1 p < .001 Cramers V = 0.19

There was no significant relationship between the use of crack or PCP and whether a young female was sexually active (p< .14 for both analyses). However, the numbers of females who admitted using these drugs was very small. The full analyses showing the use of PCP and crack compared to level of sexual activity is seen in Appendix B, Tables 13 and 14.

Number of Life Change Events

There was a relationship between the number of life change events experienced during the past year and whether or not a young female was sexually active ($p < .001$). Sexually active young students consistently reported experiencing a larger number of life change events than abstinent females as is seen in Table 25. Out of a total of 17 possible events, 36% (n= 9) of the sexually active students experienced six or more events as compared to only 7.1% (n= 10) of the abstinent young females who experienced six or more events.

Table 25

Young Students' Sexual Activity and Number of Life Changes

Number of Life Change Events	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
0-2	6	24.0	63	45.0
3-5	10	40.0	67	47.9
6-8	6	24.0	9	6.4
9-11	2	8.0	1	0.7
12-17	1	4.0	0	0.0
Total	25	100.0	140	100.0

Total Values = 165 (16 values missing)

X^2= 21.52 df= 4 p < .001 Cramers V = .36

Summary

Biological Factor

* Young females who became sexually active early were more likely to have experienced early menarche;

Psychological Factors

* Sexually active young females were more likely to report negative feelings of nervousness, being scared, and bored than abstinent females of the same age;
* Young sexually active females were less likely to think good about themselves than abstinent females of the same age;
* Sexually active young females were less likely to feel hopeful about the future than same age abstinent females;
* Young females who were sexually active were much more likely to have thought about and tried to hurt themselves than young abstinent females;

Social Factors

* Young sexually active females were less likely to report receiving A's and B's as usual school grades than young abstinent females;
* Parents of sexually active young females were more likely to be divorced or separated than parents of abstinent young females;

* Sexually active young females were more likely to both have ever and now used alcohol and cigarettes than same age abstinent students;
* Young sexually active females are more likely to report now using marijuana, uppers, downers, and cocaine than young anstinent females;
* Sexually active young females were more likely to report experiencing a larger number of life change events in the past year than same age abstinent females.

The sections of the hypothesis that were not statistically supported included:

Psychological Factors

* There were no differences in general life satisfaction between sexually active and abstinent young females;
* There were no differences in the frequency of feeling depression, anger or loneliness between sexually active and abstinent young females;
* Sexually active and abstinent young females equally felt they had a say in important life decisions;
* There were no differences between sexually active and abstinent young females in their perception of having help available from their families;

Social Factors

* Sexually active and abstinent young females had similar educational aspirations;

* Neither of the parent's educational levels was significantly correlated with a young female's level of sexual activity;
* A family's Medicaid status was not correlated with a young female's level of sexual activity;
* The number of people living in the home was not correlated with a young female's level of sexual activity;
* There was no correlation between the accessiblity of medical care and a young female's level of sexual activity;
* There were no significant differences in the use of PCP by sexually active and abstinent younger females.

HYPOTHESIS II

Hypothesis II stated that there will be measurable differences between sexually active females age 15 to 18 and those who are abstinent, on selected biological,psychological and social measures. The differences were examined with the Chi-square test of association, and the level of significance was set at $p < .05$. There were a total of 643 older female students in this sample. Of that number, 31.7% (n= 204) stated they had been sexually active. In the following analyses all of the sexually active students were considered as one group, regardless of what age they had initiated sexual activity. That sexually active group was compared to the abstinent students of the same ages.

Biological Measure

There was no statistically significant relationship between the age at menarche and whether a female age 15 to 18 had initiated sexual activity ($p < .06$). This was to be expected since the majority of students in the sexually active group had not initiated sexual activity until they were older. This data is included in Table 26 below since it was approached statistical significance.

Similar proportions of sexually active older females (8.8% [n= 17]) and abstinent older females (8.5% [n= 35) reached menarche before age 11. Over 63% (n= 122) of the sexually active older students reached menarche by age 12 as compared to 51.1% (n= 211) of the older abstinent females. All of the sexually active students had reached menarche.

Table 26

Older Students' Sexual Activity and Age at Menarche

Age At Menarche	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Under 11	17	8.8	35	8.5
11-12	105	54.7	176	42.6
13-14	62	32.3	181	43.8
15 and Over	8	4.2	20	4.9
No Menarche	0	0	1	0.2
Total	129	100.0	413	100.0

Total Values = 605 (38 values missing)

X^2= 9.07 df= 4 p < .06 Cramers V = 0.12

Psychological Measures

The psychological variables that were measured included general life satisfaction, the frequency of reporting negative feelings, feeling good about themselves, thoughts and actions to harm themselves, having a say in deciding important things in their life, and perception of family support.

General Life Satisfaction

There was no relationship between general life satisfaction and whether an older student was sexually active or abstinent (p< .89). Sexually active and abstinent students were equally likely to report that they were, or were not, generally satisfied with their life. The results can be seen in Appendix B, Table 15.

Reporting of Negative Feelings

Feelings of being angry, depressed, and hopeful. There were statistically significant differences in reported feelings of anger ($p < .002$); depression ($p < .02$) and; hopefulness ($p < .03$) and whether an older student was sexually active. These findings are shown below in Tables 27, 28, and 29.

Table 27

Older Students' Sexual Activity and Feeling Angry

Feeling Angry	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	106	52.7	168	39.5
Sometimes/ Seldom/ Never	95	47.3	257	60.5
Total	201	100.0	427	100.0

Total Values = 626 (17 values missing)

$X^2 = 9.67$ df= 1 $p < .002$ Cramers V = - 0.12

Table 28

Older Students' Sexual Activity and Feeling Depressed

Feeling Depressed	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	87	44.2	144	34.1
Sometimes/ Seldom/ Never	110	55.8	278	65.9
Total	197	100.0	422	100.0

Total Values = 619 (24 values missing)

$X^2 = 5.79$ df= 1 $p < .02$ Cramers V = - 0.10

Table 29

Older Students' Sexual Activity and Feeling Hopeful

Feeling Hopeful	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	119	60.1	214	50.9
Sometimes/ Seldom/ Never	79	39.9	206	49.1
Total	198	100.0	420	100.0

Total Values = 618 (25 values missing)

X^2= 4.53 df= 1 p < .03 Cramers V = - 0.09

Feelings of being nervous, scared, bored, and lonely. There were no significant relationships between reported negative feelings of nervousness (p< .39), being scared (p< .18), bored (p< .50), or lonely (p< .45) and level of sexual activity for older students. These results are reported in Appendix B, Tables 16-19.

Feeling good about oneself. There was not a statistically significant relationship between older females' level of sexual activity and reports of feeling good about oneself (p < .44). The results are reported in Appendix B, Table 20.

Thoughts and Actions of Self Harm

There was a relationship between older females' level of sexual activity and both thinking about and trying to hurt themselves ($p < .001$ for both analyses). Over 60% (n= 123) of the older students who were sexually active had thought about hurting themselves as opposed to 47% (n= 204) of those students who were abstinent as seen on Table 30.

Table 30

Older Students' Sexual Activity and Thinking About Hurting Self

Thinking About Hurting Self	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	123	61.2	204	47.0
No	78	38.8	230	53.0
Total	201	100.0	434	100.0

Total Values = 635 (8 values missing)

$X^2 = 11.07$ df= 1 $p < .001$ Cramers V = - 0.13

Over 37% (n= 71) of the older, sexually active students as compared to only 17.9% (n= 77) of the older abstinent students had actually tried to hurt themselves. Complete results can be seen in Table 31.

Table 31

Older Students' Sexual Activity and Trying To Hurt Self

Tryied to Hurt Self	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	71	37.7	77	17.9
No	128	64.3	354	82.1
Total	199	100.0	431	100.0

Total Values = 630 (13 value missing)

x^2= 24.03 df= 1 p < .001 Cramers V = - 0.20

Have a Say in Important Life Decisions

There was no statistically significant difference between whether an older female student felt they had a say in important things in their life and whether they were sexually active (p< .09). The complete results are available in Appendix B, Table 21.

Perception of Family Support

There was no relationship between perceived availability of help from a family and whether a student age 15 to 18 had initiated sexual activity (p <.74). Both sexually active and abstinent students were equally likely to perceive that there was help available from their families. The complete results are in Appendix B, Table 22.

Social Measures

Social variables that were measured included usual grades in school, educational aspirations, parent's educational achievement and marital status, family's Medicaid status, number of persons living in the home, access to medical care, involvement in risk behaviors, and the number of life change events experienced over the past year.

Usual School Grades

There was a relationship between usual school grades and whether an older student was sexually active ($p < .001$). Older students who were sexually active were less likely to report grades of "A's" and "B's" than those who were abstinent (39.3% [n= 73] compared to 56.4% [n= 226]). The full analysis is in Table 32.

Table 32

Older Students' Sexual Activity and Usual School Grades

Usual School Grades	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
A's and B's	73	39.3	226	56.4
C's	91	48.9	145	36.2
D's & F's	22	11.8	30	7.5
Total	186	100.0	401	100.0

Total Values = 587 (56 values missing)

X^2= 15.16 df= 2 p < .001 Cramers V = 0.16

Expected Educational Achievement

There was no relationship between expected educational achievement and whether an older girl was sexually active or abstinent ($p < .31$). Similar proportions of students in the sexually active and the abstinent group expected to achieve a minimum high school graduation and to enter or finish college. These data are in Appendix B, Table 23.

Mother's and Father's Education

There was no relationship between a mother's or father's level of education and whether or not an older student was sexually active ($p < .51$ and $p < .54$ respectively). Tables 24 and 25 showing these results are in Appendix B.

Parents' Marital Status

There was a statistically significant relationship between the parents' marital status and whether an older student was sexually active ($p < .001$). Sexually active older students were almost twice as likely to have parents who had been divorced or separated as the students who were abstinent (46.2% [n= 61]) as compared to 25.1% [n= 110]). The full analysis is in Table 33.

Table 33

Older Students' Sexual Activity and Parents' Marital Status

Parents Divorced or Separated	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	87	43.7	110	25.7
No	112	56.3	318	74.3
Total	199	100.0	428	100.0

Total Values = 627 (16 values missing)

$X^2 = 20.47$ df= 1 $p < .001$ Cramers V = - 0.18

Families Medicaid Status

There was a relationship between a family's Medicaid status and whether an older student was sexually active or abstinent ($p < .02$). Almost 36% (n= 88) of the older abstinent students' families were on Medicaid as compared to only 23.3% (n= 27) of the sexually active students. This is in the opposite direction predicted. The complete analysis can be seen below in Table 34. The large amount of "missing" data are apparently due to the large percent of students who did not know about their family's medical insurance.

Table 34

Older Students' Sexual Activity and Family's Medicaid Status

Family is on Medicaid	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	27	23.3	88	35.9
No	89	76.7	157	64.1
Total	116	100.0	245	100.0

Total Values = 361 (282 values missing)

$X^2 = 5.80$ df= 1 $p < .02$ Cramers V = - 0.13

Number of People Living in the Home

There was no relationship between the number of people an older student lived with and whether or not that student was sexually active ($p < .20$). This data is included in Appendix B, Table 26.

Access to Medical Care

There was no relationship between the ability to access medical care and whether an older student was sexually active ($p < .09$). There was a slight tendency for sexually active older students to report that they were able to access medical care when they needed it (74.0% [n= 145]) as compared to 67.1% [n= 273]), but this was not statistically significant. The complete data is in Appendix B, Table 27.

Participation in Risk Behaviors

Ever and now smoke cigarettes. There was a relationship between those older students who both ever and now smoked cigarettes and whether those students were sexually active ($p < .001$). Older students who were sexually active were proportionately much more likely to have ever smoked cigarettes (79.1% [n= 159] as compared to 46.2% [n= 200]). Sexually active older students were three times as likely to report smoking now (22.5% [n= 45]) as compared to 7.1% [n= 31]). The full results of these two analyses are shown below in Tables 35 and 36.

Table 35

Older Students' Sexual Activity and Ever Smoke Cigarettes

Ever Smoke Cigarettes	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	159	79.1	200	46.2
No	42	20.9	233	53.8
Total	201	100.0	433	100.0

Total Values = 634 (9 values missing)

$X^2 = 60.55$ df= 1 $p < .001$ Cramers V = - 0.31

Table 36

Older Students' Sexual Activity and Now Smoke Cigarettes

Now Smoke Cigarettes	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	45	22.5	31	7.1
No	155	77.5	404	92.9
Total	200	100.0	435	100.0

Total Values = 635 (8 values missing)

X^2= 30.73 df= 1 p < .001 Cramers V = - 0.22

Ever and now drink alcohol. There was a relationship between both ever and now use of alcohol and whether an older student was sexually active ($p < .001$ for both analyses). Older students who were sexually active were proportionately much more likely to have ever used alcohol, 93.1% (n= 188), as compared to 64.5% (n= 282) of the abstinent students. Older students who were sexually active were twice as likely to report the use of alcohol now than those who were abstinent (56.7% [n= 115] as compared to 28.4% [n= 124]). The full analyses for the ever and now use of alcohol are reported in Tables 37 and 38.

Table 37

Older Students' Sexual Activity and Ever Drink Alcohol

Ever Drink Alcohol	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	188	93.1	282	64.5
No	14	6.9	155	35.5
Total	202	100.0	437	100.0

Total Values = 639 (4 values missing)

X^2= 57.84 df= 1 p < .001 Cramers V = - 0.30

Table 38

Older Students' Sexual Activity and Now Drink Alcohol

Now Drink Alcohol	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	115	56.7	124	28.4
No	88	41.0	312	71.6
Total	203	100.0	436	100.0

Total Values = 639 (4 values missing)

X = 47.08 df= 1 p < .001 Cramers V = - 0.27

Use of illegal drugs. There was a relationship between the use of marijuana, uppers, downers, PCP, and cocaine and whether or not an older student was sexually active ($p < .001$ to .002 for all of those analyses). Proportionately, older students who were sexually active were much more likely to use marijuana, uppers, downers, PCP, and cocaine as can be seen below in Tables 39 through 43.

In the final analyses, categories of answers to the use of these drugs were collapsed because of the small sizes of the cells. The "yes" category seen in the tables below included those who reported using "Once a Month or More", "Once Every Few Months" and "A few Times Ever". The "No/ Quit" category included those who have never used, as well as those who state they have quit.

There was no significant relationship between the use of crack and whether an older student was sexually active ($p < .07$) . However, the numbers of students who admit to using crack were very small so the use of Chi-square analysis may not be valid. The table showing the use of crack is in Appendix B, Table 28.

Table 39

Older Students' Sexual Activity and Use of Marijuana

Use of Marijuana	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	39	19.3	19	4.3
No/ Quit	163	82.7	419	95.7
Total	202	100.0	438	100.0

Total Values = 640 (3 values missing)

$X^2 = 37.59$ df= 1 $p < .001$ Cramers V = - 0.24

Table 40

Older Students Sexual Activity and Use of Uppers

Use of Uppers	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	11	5.4	5	1.2
No/ Quit	191	94.6	423	98.8
Total	202	100.0	428	100.0

Total Values = 630 (13 values missing)

$X^2 = 10.14$ df= 1 $p < .001$ Cramers V = - 0.13

Table 41

Older Students' Sexual Activity and Use of Downers

Use of Downers	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	6	3.0	1	0.2
No/ Quit	194	97.0	426	99.8
Total	200	100.0	427	100.0

Total Values = 627 (16 values missing)

X^2= 9.44 df= 1 p < .002 Cramers V = - 0.12

Table 42

Older Students' Sexual Activity and Use of PCP

Use of PCP	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	8	4.0	1	0.2
No/ Quit	193	96.0	426	99.8
Total	201	100.0	427	100.0

Total Values = 628 (15 values missing)

X^2= 13.58 df= 1 p < .01 Cramers V = - 0.15

Table 43

Older Students' Sexual Activity and Use of Cocaine

Use of Cocaine	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	18	8.9	6	1.4
No/ Quit	184	91.1	420	98.6
Total	202	100.0	426	100.0

Total Values = 628 (15 values missing)

X^2= 20.98 df= 1 p < .001 Cramers V = - 0.18

Number of Life Change Events

There was a relationship between the number of life change events experienced during the past year and whether or not an older student was sexually active ($p < .001$). Sexually active older students consistently reported experiencing a proportionately larger number of life change events than abstinent students as is seen in Table 41.

Out of a total of 17 possible events, 21.2% (n= 42) of the sexually active students experienced six or more life change events in the past year as compared to only 7.7% (n= 31) of the abstinent students who experienced six or more life change events.

Table 44

Older Students' Sexual Activity and Number of Life Changes

Number of Life Change Events	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
0-2	68	34.3	192	47.6
3-5	88	44.5	180	44.7
6-8	28	14.1	25	6.2
9-11	14	7.1	5	1.2
12-17	0	0.0	1	0.3
Total	198	100.0	403	100.0

Total Values = 601 (42 values missing)

X^2= 29.68 df= 4 p < .001 Cramers V = .22

Summary

Biological Factor

* There was not a statistically significant difference between the age at menarche and sexually active and abstinent older female students;

Psychological Factors

* Older sexually active females were more likely to report negative feelings of anger and depression and were less likely to feel hopeful than older abstinent students;
* Sexually active females were more likely to report having thought about and tried to harm themselves then abstinent students;

Social Factors

* Sexually active older females were much less likely to report receiving A's and B's as their usual grades than abstinent students;
* Parents of sexually active older females were more likely to be separated or divorced than parents of abstinent students;
* Older abstinent females were more likely to have families that received Medicaid than sexually active students;
* Sexually active older females were more likely to both have ever and now used alcohol and cigarettes than abstinent female students;
* Older sexually active females were more likely to report now using marijuana, uppers, downers, PCP and cocaine than older abstinent students;

* **Sexually active older females are more likely to have experienced a larger number of life change events in the past year than older abstinent female students.**

The sections of the hypothesis that were not statistically supported included:

Biological Factor

* **There was not a statistically significant difference in level of sexual activity and whether an older female experienced early menarche;**

Psychological Factors

* **There was no difference in general life satisfaction between sexually active and abstinent older females;**
* **There were no differences in the frequency of feeling nervous, scared, bored, lonely, or good about themselves between sexually active and abstinent older female students;**
* **Sexually active and abstinent older female students equally felt they had a say in important life decisions;**
* **There were no differences between sexually active and abstinent older female students in their perception of having support available from their families;**

Social Factors

* **Sexually active and abstinent older female students had basically the same educational aspirations;**

* Neither of the parent's educational levels significantly correlated with older female students' level of sexual activity;
* The number of people living in the home did not affect an older female's level of sexual activity;
* There were no significant differences between sexually active and abstinent older females and whether they reported having access to medical care.

HYPOTHESIS III

This hypothesis dealt with biological differences between students of different ages who were and were not, sexually active. The hypothesis states that students who are sexually active, will be more likely to have experienced early menarche than other girls their age who are not sexually active. The hypothesis was tested using the Chi-square test of association. The level of significance was set at $p < .05$. For the analysis of this hypothesis, there was a total of 772 subjects.

Age at Menarche and Level of Sexual Activity

There was a relationship between the age of menarche and the level of sexual activity ($p < .001$). In examining early menarche, it can be seen that 45.8% (n= 11) of the younger, sexually active students and 46% (n= 29) of the older students who became sexually active by age 14 had reached menarche by age 11. This was in contrast to 22.4% (n= 32) of the younger group and 24.7% (n= 102) of the older group who were abstinent who reached menarche by age 11. The older group who became sexually active later was between these two groups, with 31% (n= 40) achieving menarche by age 11. Table 46 demonstrates the complete results.

Table 46

Age at Menarche by Level of Sexual Activity

Age At Menarche	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	+Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Under 11	8	33.3	8	5.6	12	9.3	35	8.5	5	7.9
11	3	12.5	24	16.8	28	21.7	67	16.2	24	38.1
12	8	33.3	52	36.4	37	28.7	109	26.4	16	25.4
13-14	5	20.9	51	35.6	46	35.6	181	43.9	16	25.4
15 & Over	0	0.0	0	0.0	6	4.7	20	4.8	2	3.2
No Menarche	0	0.0	8	5.6	0	0.0	1	0.2	0	0.0
TOTAL	24	*	143	*	129	*	413	*	63	*

* Total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Total Scores= 772 (107 missing)

X^2 = 70.9 df= 16 p < .001 Cramers V= 0.15

Summary

Biological Factor

The research finding supported the hypothesis:

* Females who experienced menarche by age 11 were proportionately more likely to become sexually active by age 14 than those who experienced menarche later.

HYPOTHESIS IV

Psychological Factors

This hypothesis dealt with selected psychological variables that may be correlate with levels of adolescent sexual activity. The hypothesis predicted that students who are sexually active will more often report lower overall life satisfaction, more negative emotional feelings, feel less good about themselves, more often reveal thoughts and actions about hurting themselves, feel they have less say in deciding important things in their lives, and will feel less perceived support from families than those who are not sexually active.

Comparisons between the groups were examined with the Chi-square test of association and the level of significance was established at $p < .05$. There were a total of 879 subjects' responses for these analyses. Because of the number of dependent variables involved in this hypothesis, tables are presented in the text only for those findings that approached or reached statistical significance. Tables for those that were not statistically significant are in Appendix B.

General Life Satisfaction

There was not a statistically significant relationship between general life satisfaction and whether a student was sexually active ($p < .24$). Students were generally equally satisfied with their lives, with younger sexually active students somewhat more likely to report little or no satisfaction from their lives when compared to abstinent

students of the same age. This was in the direction predicted. This was reported in Appendix B, Table 29.

Reporting of Negative Feelings

Students were asked to check one of five categories which described how frequently they felt various emotions. The frequencies varied from "Almost Always", and "Often", to "Sometimes" "Rarely" and "Never". During final analysis the first two categories and the last three were collapsed. Negative emotions included on the checklist were angry, nervous, depressed, scared, lonely, and bored. The emotions of hopefulness and feeling good about oneself were examined from the negative viewpoint for this analysis.

Feelings of Anger and Hopefulness

Differences between the levels of sexual activity and feelings of anger and hopefulness both reached significant levels ($p < .005$ and $p < .05$). All three groups of sexually active students were proportionately more likely to report feelings of anger than those students who were not sexually active (Table 46). This was proportionately highest among older students who became sexually active by age 14, with 62.3% (n= 43) of this group reporting that they "Always" or "Often" felt angry. This was compared to 54.2% (n= 13) of the younger, sexually active students and 47.7% (n= 63) of the older sexually active students who became sexually active early.

Table 46

All Female Students' Sexual Activity and Feeling Angry

Feeling Angry	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	13	54.2	67	43.0	63	47.7	168	39.5	43	62.3
Sometimes/ Seldom/Never	11	45.8	89	57.0	69	52.3	257	60.5	26	37.7
Total	24	*	156	*	132	*	425	*	69	*

* Total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Total Scores = 806 (73 values missing)

$X^2 = 14.67$ df= 4 $p < .005$ Cramers V = 0.14

As predicted sexually active younger girls were proportionately the least likely (39.1% [n= 9]) to report feeling hopeful "always" or "often" (p <.05) as compared to all other groups of girls. In the older groups, this trend was reversed with the older girls who were abstinent slightly less likely to report feeling hopeful (51% [n= 214]) as compared to the two sexually active, older students at 58.9% (n= 76) and 62.3% (n= 43). These results can be seen in Table 47.

Table 47

All Female Students' Sexual Activity and Feeling Hopeful

Feeling Hopeless	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	9	39.1	95	61.3	76	58.9	214	51.0	43	62.3
Sometimes/ Seldom/Never	14	60.9	60	38.7	53	41.1	206	49.0	26	37.7
Total	23		155		129		420		69	

Total Scores = 796 (83 values missing)

x^2= 9.88 df= 4 p < .05 Cramers V = 0.11

Feelings of Being Scared and Bored

There was a relationship between level of sexual activity and being scared and bored and it was in the direction predicted, but these analyses did not reach the accepted level of significance. Sexually active students of both age groups were proportionately more likely to report feelings of being scared ($p =< .08$) than those who were not sexually active. These results are in Appendix B, Table 30.

Younger sexually active students were more likely to report feelings of being bored than those who were abstinent. For older students, proportions of those reporting being bored were about the same for sexually active and abstinent students ($p < .07$). Results are in Appendix B, Table 31.

Feelings of Being Nervous and Depressed

There were no statistically significant relationships between the level of sexual activity and feeling nervous or depressed. The results were reported in Appendix B, Tables 32 and 33. Students who were sexually active of all ages, were consistently more likely to report feelings of being nervous and depressed, but the differences did not reach statistical significance.

Feeling Good About Oneself

There was a tendency for the younger sexually active students to feel less good about themselves, but this was reversed in the older age group where the sexually active older students reported feeling better about themselves than the abstinent students. These differences were not

statistically significant (p <.24). These data are reported in Appendix B, Table 34.

Thoughts and Actions of Self Harm

There was a relationship between the level of sexual activity and those who thought about or tried to hurt themselves (p <.001 for both comparisons). In both instances, the three categories of students who were sexually active were proportionately more likely to have both thought about and tried to harm themselves than those who were not sexually active.

Younger, sexually active students were proportionately more likely to have thought about hurting themselves than older, sexually active students. In the older age groups, 60.6% (n= 80) and 62.3% (n= 43) of the sexually active students had thought about hurting themselves as compared to 47% (n= 204) of the older students who were abstinent. These data are shown in Table 48.

Table 48

All Female Students' Sexual Activity and Thinking About Hurting Self

Thought About Hurting Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	20	80.0	63	40.4	80	60.6	204	47.0	43	62.3
No	5	20.0	93	59.6	52	39.4	230	53.0	26	37.7
Total	25		156		132		434		69	

Total Scores = 816 (63 values missing)

X^2= 26.44 df= 4 p < .001 Cramers V = 0.18

The results were equally significant for students who had tried to hurt themselves. In the younger age group, 44% (n= 11) of the sexually active students had attempted to hurt themselves as compared to only 17.4% (n= 27) of the abstinent students.

In the older age group, 42% (n= 29) of the older females who became sexually active early and 32.3% (n= 42) of the sexually active students who initiated sexual activity later had tried to harm themselves. This was compared to 17.9% (n= 77) of the older girls who abstained. These results are shown in Table 49.

Table 49

All Female Students' Sexual Activity and Trying to Hurt Self

Tried to Hurt Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	11	44.0	27	17.4	42	32.3	77	17.9	29	42.0
No	14	56.0	128	82.6	88	67.7	354	82.1	40	58.0
Total	25		155		130		431		69	

Total Scores = 810 (69 values missing)

X^2= 35.87 df= 4 p < .001 Cramers V = 0.21

Have a Say in Important Life Decisions

There was not a statistically significant difference between the level of sexual activity and whether a student felt they had a say in deciding the important things in their lives (p < .51). Students generally felt they had a say in

deciding important things in their lives. Sexually active students felt they had a very slightly greater say in decision making than those who were abstinent. (Appendix B, Table 35). This was in the opposite direction hypothesized, but again, did not reach significance.

Perception of Family Support

There was a statistically significant difference between the level of sexual activity and a student's perception of whether family assistance was available to them ($p < .05$). Students in general thought that their families were available to help. This was proportionately more true for younger students, both sexually active and abstinent, than for the older students, as is seen on Table 50. The relationship appears to be primarily in the differences between the younger and the older age groups rather than whether the student was sexually active.

Table 50

All Female Students' Sexual Activity and Perceived Family Assistance

Family Assist. Available	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	24	96.0	148	96.7	117	87.3	383	88.3	64	92.7
No	1	4.0	5	3.3	17	12.7	51	11.7	5	7.3
Total	25		153		134		434		69	

Total Scores = 815 (64 values missing)

$X^2 = 12.09$ df= 4 $p < 0.05$ Cramers V = 0.12

Summary

Psychological Factors

The findings that supported the hypothesis included:

* **Sexually active students of both age groups were more likely to report feelings of anger and less likely to report feelings of hopefulness than abstinent students;**
* **Sexually active younger girls were the least likely of any of the groups studied to report feeling hopefulness;**
* **Sexually active older students were somewhat more likely to report feelings of hopefulness than same age abstinent students, but this was not statistically significant;**
* **Sexually active students of both ages were more likely to report both thoughts and actions of self harm than abstinent students;**
* **Younger students, both sexually active and abstinent, were more likely to perceive that they had family support available than older students.**

The sections of the hypothesis that were not statistically supported included:

* **There were no statistical differences between sexually active and abstinent students in reported general life satisfaction;**
* **There were no significant differences between sexually active and abstinent students in reports of being scared, bored, depressed or nervous;**

* There were no statistical differences between sexually active and abstinent students in whether they felt good about themselves.
* Sexually active and abstinent students both felt they had a say in making important life decisions.

This section has explored selected psychological factors that may correlate with an adolescent female's level of sexual activity. The next section will examine selected social factors that might affect the level of sexual activity.

HYPOTHESIS V

Social Factors

Hypothesis V deals with selected social factors that might be correlated with an adolescent female's level of sexual activity. The hypothesis states that female students who are sexually active will be more likely to have lower grades in school, to expect to achieve a lower educational level and to have experienced a larger number of life change events in their lives than students who are not sexually active. These differences were examined with the Chi-square test of association and the level of significance was set at $p < .05$. There were a total of 879 subjects involved in these analyses.

Usual School Grades

There was a relationship between a student's usual grades in school and their level of sexual activity ($p < .001$). Students who were sexually active in both age groups were significantly less likely to report receiving grades of "A's" or "B's" and were much more likely to report receiving "D's" and "F's". Consistently only about one-third of the sexually active students in both age groups reported A's and B's as their usual grades, as opposed to 63.6% ($n = 91$) of the younger and 56.4% ($n = 226$) of the older students who abstained. These findings are in Table 51.

Note: In all the tables in this section the total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Table 51

All Female Students' Sexual Activity and Usual School Grades

Usual School Grades	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
"A's" & "B's"	8	33.3	91	63.6	47	38.2	226	56.4	26	33.3
"C's"	10	41.7	46	32.2	63	51.2	145	36.1	28	44.4
"D's" & "F's"	6	25.0	6	4.2	13	10.6	30	7.5	9	14.3
Total	24		143		123		401		63	

Total Scores = 754 (125 values missing)

X^2= 34.64 df= 8 p <.001 Cramers V = 0.15

Expected Educational Achievement

There was a statistically significant relationship (p< .05) between expected educational achievement and level of sexual activity. For the purpose of these analyses, minimal education was considered some high school or high school graduation. Younger sexually active students were proportionately twice as likely to expect to achieve only minimal education (8% [n= 2]) as were the younger students who abstained (3.9% [n= 6]). Sexually active older students who became sexually active early were the most likely of any of the groups studied to expect to receive only a minimum level of education. Younger students generally were less likely than older students to know what level of education to expect. This information is contained in Table 52.

Table 52

All Female Students' Sexual Activity and Expected Educational Achievement

Expected Academic Achievement	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Some HS or graduate HS	2	8.0	6	3.9	22	16.4	56	12.9	13	19.1
Some College, Graduate or More	19	76.0	122	80.3	98	73.1	337	77.5	49	72.1
Don't Know	4	16.0	24	15.8	14	10.5	42	9.6	6	8.8
Total	25		152		134		435		68	

Total Values = 814 (65 values missing)

X^2= 19.13 df= 8 p < .05 Cramers V = 0.11

Number of Life Change Events

Data on life change events were analyzed by each event for level of sexual activity. These analyses were statistically significant (p < .001). Students were asked to check all of the events that they had experienced **in the past year.** Although some of the numbers were very small, those results are reported in Table 53. Younger girls who abstained were proportionately three times more likely to have jobs as sexually active young girls. Older girls who abstained were almost twice as likely to have jobs as their same age counterparts who were sexually active.

Only 16% (n= 4) of the younger sexually active females reported having failed a grade in the past year, as opposed to 28.6% (n= 40) of the same age group who were abstinent.

This same proportion was true for the older student where 13.1% (n= 17) of the sexually active students, who became sexually active older, reported failing a grade in the past year as compared to 24.6% (n= 99) of the abstinent students. The proportion of older students who became sexually active younger and reported failing a grade in the past year is similar to that of older abstinent students (25.5% [n= 16]).

Only 12% (n= 3) of the sexually active younger girls reported being suspended in the past year as compared with 25.7% (n= 22) of the same age girls who were abstinent. This was reversed in the older girls where 23.1% (n= 30) of those who were sexually active had been suspended compared to only 17.1% (n= 69) of those who were abstinent. Older girls who became sexually active before age 15, reported a proportion similar to the abstinent girls at 16.8% (n= 11).

Younger girls who were sexually active were twice as likely to report having family problems as the same age girls who were abstinent (20% [n= 5]) as compared to 10% [n= 14]). However in the older age groups, students who were sexually active and abstinent were almost equally likely to report having family problems.

Younger students who reported having sex when they didn't want to were proportionately less likely to be sexually active, but this was reversed in the older age group. Younger sexually active students had all experienced proportionately more physical fights, the death of someone close and the ending of a close friendship than those of the

same age group who were abstinent. Complete results are shown in Table 53.

Table 53

Sexual Activity and Life Changes

Life Change Events	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Experienced No Events	1	4.0	6	4.3	0	0.0	15	3.7	0	0.0
Have a Job	2	8.0	35	25.0	19	14.6	108	26.8	8	11.8
Failing Grade	4	16.0	40	28.6	17	13.1	99	24.6	16	25.5
Suspended	3	12.0	22	25.7	30	23.1	69	17.1	11	16.8
Family Problem	5	20.0	14	10.0	17	13.1	47	11.7	9	13.2
Forced Sex	1	4.0	13	9.3	22	16.9	34	8.4	7	10.3
Verbal Threat	2	8.0	3	2.1	6	4.6	10	2.5	5	7.3
Physical Fight	2	8.0	2	1.4	7	5.4	8	2.0	4	5.9
Death (close)	2	8.0	4	2.9	4	3.1	7	1.7	2	2.9
End Friendship	2	8.0	0	0.0	3	2.3	2	0.5	3	4.4
Carry Gun/Knife	0	0.0	0	0.0	4	3.1	3	0.7	1	1.5
Sell Drugs	0	0.0	1	0.7	1	0.8	0	0.0	2	2.9
Stealing	1	4.0	0	0.0	0	0.0	0	0.0	0	0.0
Gang Member	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Witness Crime	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Involve Crime	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jail/Juv.Hall	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Police Trouble	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0
Total	25		140		130		403		68	

Total Scores = 766 (113 values missing)

X^2= 129.22 df= 52 p <.001 Cramers V = 0.21

Summary

All sections of this hypothesis were supported at statistically significant levels as follows:

* **Sexually active females consistently report being less likely to have A's or B's as their usual grades than abstinent students;**
* **Sexually active students statistically have lower expectations for higher education than do abstinent students;**
* **Sexually active older students who began sexual activity early, were the most likely of any of the groups studied to expect only a minimal education.**
* **Sexually active students have consistently experienced a proportionately larger number of life change events over the past year than abstinent students.**
* **Abstinent students in both age groups were much more likely to have a job than sexually active students.**
* **Younger sexually active students were proportionately more likely than any of the other groups studied to have experienced family problems, physical fights, the death of someone close and/ or the ending of a close relationship.**

HYPOTHESIS VI

Social Factors

This hypothesis is part of the measure of social factors that may correlate with a female student's level of sexual activity. The hypothesis states that female students who are sexually active will be more likely to engage in other risk activities such as using cigarettes, alcohol and other illegal substances than students who are not sexually active. These differences were examined with the Chi square test of association. The level of significance was set at $p < .05$.

Participation in Risk Activities

Ever and Now Use of Cigarettes

There was a relationship between the use of cigarettes and the level of sexual activity. Students who were sexually active were proportionately more likely to both have ever smoked ($p < .001$) and to state that they now smoke cigarettes ($p < .001$).

Younger sexually active students were proportionately twice as likely to have ever smoked than those who abstained and over four times as likely to report now smoking. Both groups of sexually active older students were over three times as likely to smoke now (21.2% [n= 28] and 25.4% [n= 17]) as compared to 7% (*n*= 31) of the older abstinent students. Sexually active older females who became sexually active younger, reported the highest proportion of those who have ever smoked (85% [n= 17]). The results of both analyses are shown in Tables 54 and 55.

Table 54

All Female Students' Sexual Activity and Ever Smoke Cigarettes

Ever Smoked Cigarettes	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	20	80.0	56	36.8	101	75.9	200	46.2	58	85.3
No	5	20.0	96	63.2	32	24.1	233	53.8	10	14.7
Total	25	*	152	*	133	*	433	*	68	*

* Total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Total Scores = 811 (68 values missing)

X^2= 87.89 **df**= 4 p < .001 **Cramers V** = 0.33

Table 55

All Female Students' Sexual Activity and Now Smoke Cigarettes

Now Smoke Cigarettes	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	7	28.0	9	5.8	28	21.1	31	7.1	17	25.4
No	18	72.0	146	94.2	105	78.9	404	92.9	50	74.6
Total	25		155		133		435		67	

Total Scores = 815 (64 values missing)

X^2= 45.08 **df**= 4 p < .001 **Cramers V** = 0.24

Ever and Now Drink Alcohol

There was a similar relationship between the ever and now use of alcohol and the level of sexual activity as there

was to the use of cigarettes. Students who were sexually active at both ages, were significantly more likely to both have ever used alcohol (p <.001) and to be using it now (p< .001). In this population, alcohol use was even more prevalent than cigarette use, with 100% (n= 25) of the younger, and 92.7% (n= 64) and 93.2% (n= 124) of the older sexually active students having ever used alcohol. Among sexual abstainers, 58.1% (n= 90) of the younger and 64.5% (n= 282) of the older females had ever used alcohol. Full data are reported in Table 56.

Table 56

All Female Students' Sexual Activity and Ever Drink Alcohol

Ever Drink Alcohol	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	25	100.0	90	58.1	124	93.2	282	64.5	64	92.7
No	0	0.0	65	41.9	9	6.8	155	35.5	5	7.3
Total	25		155		133		437		69	

Total Scores = 819 (60 values missing)

X^2= 87.89 df= 4 p < .001 Cramers V = 0.33

Current use of alcohol was also statistically significant (P <.001) with proportionately two to three times as many sexually active students of both age groups using alcohol as those who abstained. The results are seen in Table 57.

Table 57

All Female Students' Sexual Activity and Now Drink Alcohol

Now Drink Alcohol	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	16	64.0	33	21.3	79	59.0	124	28.4	36	52.2
No	9	36.0	122	78.7	55	41.0	312	71.6	33	47.8
Total	25		155		133		435		67	

Total Scores = 815 (64 values missing)

X^2= 45.08 df= 4 p < .001 Cramers V = 0.24

Use of Illegal Drugs

Students were asked the frequency with which they used a number of illegal drugs, including marijuana, uppers, downers cocaine, crack, and PCP. They were asked to check whether they used these drugs "once a month or more", "once every few months", "a few times ever", "never" or have "quit". For purposes of analysis, the first three categories and the last two were collapsed.

There was a relationship between the use of illegal drugs and the level of sexual activity. Sexually active students of both ages were proportionately significantly ($p < .001$) more likely to admit to use of marijuana, cocaine, uppers, downers, and PCP than abstinent student. They were also more likely to admit to the use of crack, but the numbers were not statistically significant. For completeness, the analysis of crack use is shown even though it was not statistically significant. Proportionately, the highest

users of uppers, downers, cocaine, and crack were the younger sexually active students; however the numbers in each category were very small. The analyses of illegal drug use and the levels of sexual activity are shown in Tables 58 through 63 .

Table 58

All Female Students' Sexual Activity and Use of Marijuana

Now Use Marijuana	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	5	20.0	5	3.3	23	17.2	19	4.3	16	23.5
No	20	80.0	148	96.7	111	82.8	419	95.7	52	76.5
Total	25		153		134		438		68	

Total Scores = 818 (61 values missing)

X^2= 53.10 df= 4 p < .001 Cramers V = 0.26

Table 59

All Female Students' Sexual Activity and Use of Cocaine

Now Use Cocaine	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	3	12.0	3	2.0	13	9.8	6	1.4	5	7.3
No, or Quit	22	88.0	150	98.0	120	90.2	420	98.6	64	92.7
Total	25		153		133		426		69	

Total Scores = 806 (73 values missing)

X^2= 28.46 df= 4 p < .001 Cramers V = 0.19

Table 60

All Female Students' Sexual Activity and Use of Uppers

Now Use Uppers	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	3	12.0	3	1.9	8	6.0	5	1.2	3	4.4
No	22	88.0	150	98.1	126	94.0	423	98.8	65	95.6
Total	25		153		134		428		68	

Total Scores = 808 (71 values missing)

X^2= 18.43 df= 4 p < .001 Cramers V = 0.15

Table 61

All Female Students' Sexual Activity and Use of Downers

Now Use Downers	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	3	12.0	0	0.0	4	3.0	1	0.2	2	2.9
No, or Quit	22	88.0	153	100.0	128	97.0	426	99.8	66	97.1
Total	25		153		132		427		68	

Total Scores = 805 (74 values missing)

X^2= 34.09 df= 4 p < .001 Cramers V = 0.21

Table 62

All Female Students' Sexual Activity and Use of PCP

Now Use PCP	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	1	4.0	1	0.7	3	2.3	1	0.2	5	7.4
No	24	96.0	152	99.3	130	97.7	426	99.8	63	92.6
Total	25		153		133		427		68	

Total Scores = 806 (73 values missing)

X^2= 24.82 df= 4 p < .001 Cramers V = 0.18

Table 63

All Female Students' Sexual Activity and Use of Crack

Now Use Crack	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	1	4.0	1	0.7	2	1.5	1	0.2	1	1.5
No, or Quit	24	96.0	152	99.3	132	98.5	427	99.8	67	98.5
Total	25		153		134		428		68	

Total Scores = 808 (71 values missing)

X^2= 6.63 df= 4 p < .16 Cramers V = 0.09

Summary

The following findings supported the hypothesis:

* Sexually active students were proportionately more likely to report both having ever and to now smoking cigarettes than abstinent students;
* Sexually active students were proportionately more likely to report both having ever and now drinking alcohol than abstinent students;

* Sexually active students were proportionately more likely to use marijuana, uppers, downers, cocaine and PCP.
* Sexually active younger students were proportionately more likely than any other group studied to use uppers, downers, and cocaine.

The section of the hypothesis that was not statistically supported was:

* Sexually active students were more likely to use crack than abstinent students, but this was not statistically significant.

HYPOTHESIS VII

Social Factors

Hypothesis VII deals with additional social variables that might impact on whether and how early a female adolescent becomes sexually active. Hypothesis VII states that female students who are sexually active will report a higher number of people living in their home, parents with less education who are more likely to be separated or divorced, on Medicaid and to report not being able to access medical care when needed than those who are not sexually active. These differences were examined with the Chi square test of association. The responses of 879 subjects were involved in these analyses.

Number of People Living in the Home

There was no relationship between the number of people living in the home and a student's sexual activity. Students reported living with a wide range of numbers of other people in their homes. The frequency analysis revealed that students lived with one other person to 26 others. Over 70% (n= 606) of the students reported that they lived with five or fewer other persons. An additional 12.1% (n= 106) students lived with six other people in the household. For purposes of analysis, the number of other people in the household was collapsed into three categories, ie: 1-4 others; 5-9 others and 10 or more. A Chi-square analysis was then performed for the levels of sexual activity and is shown in Table 64. For both age groups, all three groups of sexually active students

were proportionately more likely to live in homes with a fewer number of people than the abstinent students even though the entire analysis was not statistically significant.

Table 64

All Female Students' Sexual Activity and Number of People Living in the Home

Number of People in the Home	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1-4	15	60.0	81	51.9	78	58.2	217	49.5	48	69.6
5-9	9	36.0	70	44.9	50	37.3	201	45.9	19	27.5
10 or more	1	4.0	5	3.2	6	4.5	20	4.6	2	2.9
Total	25	*	156	*	134	*	438	*	69	*

* Total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Total Values = 822 (57 values missing)

X^2= 12.39 df= 8 p < 0.14 Cramers V = .09

Mother's and Father's Education

There was a significant relationship between mother's educational level and the level of the daughter's sexual activity (p< .01) . During the final analysis, the mother's known educational level was collapsed into three groups: "No or Some High School"; "Graduated from High School and those with Some College"; and those who had "Graduated from College" and/or obtained "Post College Training".

Among younger students, those who were sexually active were more likely to have mothers who had minimal education

(54.2% [n= 13]) as compared to those who were abstinent (41.2% [n= 49]). However, for the older students, this was reversed. Over 58% (n= 208) of those students who abstained had mothers with minimal education as opposed to 46% (n= 29) of those older students who became sexually active before age 15, and 55.6% (n= 70) of those females who became sexually active later.

None of the sexually active younger students had mothers who had graduated from college or gone beyond college, as compared to 17.7% (n= 21) of the mothers of those females in the same age group who abstained. Among older students, those who abstained were proportionately more likely to have mothers who were college graduates or who have had post college training. The results of this analysis are seen in Table 65.

Table 65

All Female Students' Sexual Activity and Mother's Education

Mother's Education	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No/Some H.S.	13	54.2	49	41.2	70	55.6	208	58.1	29	46.0
H.S. Grad./ Some College	11	45.8	49	41.2	45	35.7	110	30.7	29	46.0
College Grad./ Post College	0	0.0	21	17.7	11	8.7	40	11.2	5	8.0
Total	24		119		126		358		63	

Total Scores = 690 (189 values missing)

X^2= 20.06 **df=** 8 **p** < .01 **Cramers V =** 0.12

There was no statistically significant relationship between a father's level of education and the daughter's level of sexual activity. However, this is shown in Table 66 in order to demonstrate the differences between the mother's level of education and sexual activity which was statistically significant. The large amount of missing data represented those students who did not know their father's level of education as well as those who chose not to answer.

Table 66

All Female Students' Sexual Activity and Father's Education

Father's Education	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No/Some H.S.	6	37.5	44	39.7	58	48.3	174	54.0	25	42.3
H.S. Grad./ Some College	7	43.8	40	36.0	42	35.0	97	30.1	24	40.7
College Grad./ Post College	3	18.7	27	24.3	20	16.7	51	15.9	10	17.0
Total	16		111		120		322		59	

Total Scores = 628 (251 values missing)

X^2= 10.92 **df=** 8 **p** < .21 **Cramers V** = 0.09

Parents' Marital Status

There was a relationship between having divorced or separated parents and the level of sexual activity (p <.001). The parents of younger, sexually active students were over twice as likely to have experienced divorce or separation (68% [n= 17]) as the parents of the younger students who abstained (29.6% [n= 45]). This trend was the same for

the older students although the difference was not quite as pronounced as can be seen in Table 67. Over 25% (n= 110) of the parents of older students who abstained were divorced or separated, as opposed to 46.2% (n= 61) of the older students who became sexually active later, and 38.8% (n= 26) of those who became sexually active by age 14. The older students who were still abstaining were the least likely to have divorced or separated parents.

Table 67

All Female Students' Sexual Activity and Parents' Marital Status

Parents Div/ Separated	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	17	68.0	45	29.6	61	46.2	110	25.7	26	38.8
No	8	32.0	107	70.4	71	53.8	318	74.3	41	61.2
Total	25		152		132		428		67	

Total Scores = 804 (75 values missing)

X^2= 36.63 **df=** 4 **p <** .001 **Cramers V =** 0.21

Families Medicaid Status

There was no statistically significant relationship between students whose families received Medicaid and the level of sexual activity. Students were asked what type of medical insurance their families carried. Choices on the survey included "Medicaid", "HMO", "Private", "Other" and "Don't Know". In the frequency analysis, 76.7% (n= 660)

students stated that their parents had some type of insurance; 10% (n= 80) stated there was no insurance, and 13.1% (n= 113) did not know whether their families had any type of insurance. In the analyses completed for the families that were known to be on Medicaid, there was no statistically significant difference between the levels of sexual activity as shown in Appendix B, Table 36. There was a slight trend for the older sexually active students to have families receiving Medicaid, but it was not statistically significant.

Access to Medical Care

There was no statistically significant relationship between a student's ability to access health care and their level of sexual activity ($p < .15$). Students were asked whether, during the past year, they had always been able to get health care when they felt they needed it. Although there were not any statistically significant differences, there were some interesting trends as seen in Table 68. Younger students were more likely to report that they did not need health care during the past year, and sexually active students in both age groups were somewhat more likely to report that they did have health care available.

Table 68

All Female Students' Sexual Activity and Availability of Health Care

Health Care Available	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	17	68.0	95	66.9	97	73.5	273	67.1	48	75.0
No	4	16.0	21	14.8	24	18.2	82	20.2	13	20.3
Didn't Need Health Care	4	16.0	26	18.3	11	8.3	52	12.8	3	4.7
Total	25		142		132		407		64	

Total Scores = 770 (109 values missing)

X^2= 11.94 df= 8 p <.15 Cramers V = 0.09

Summary

The following findings supported the hypothesis:

* Abstinent students of both age groups were more likely to have mothers who were college graduates or beyond than same age sexually active students.
* Sexually active younger females were more likely to have mothers with minimal education than younger abstinent students;
* Sexually active younger females were the least likely of any of the groups studied to have mothers who attended college or have post college training.
* Parents of sexually active students in both age groups were more likely to be divorced or separated than parents of students who abstained;

The following parts of the hypothesis were not statistically supported:

* **There was no significant relationship between the number of people living in the home and the level of sexual activity;**
* **There was no relationship between a father's level of education and a female's level of sexual activity;**
* **There was no relationship between a family's Medicaid status and a female's level of sexual activity;**
* **There was no relationship between female students' level of sexual activity and having access to medical care.**

HYPOTHESIS VIII

Data On Contraceptive Behavior

Hypothesis VIII examines contraceptive behavior of the three groups of sexually active females. The hypothesis asserts that female students who initiate sexual intercourse between ages 11 and 14, will be less likely to report the use of contraception either the first or the last time they had intercourse or, if they do contracept, will use a less effective method than girls who initiate sexual activity later. These differences were examined with the Chi-square test of association and the significance level was set at $p < .05$. There was a potential total of 283 subjects in this analysis, but there were a large number of missing values due to the several variables in each analysis.

Use of Birth Control at Initiation of Sexual Activity

There was no relationship between the use of a birth control method at initiation of sexual activity and the level of sexual activity ($p < .49$). As can be seen, 137 students did not answer the question. Of those who answered, 53.3% (n= 13) of the younger sexually active students used a method of birth control compared to only 37.2% (n= 35) of the older students who became sexually active later, and 40.5% (n= 15) of the older students who became sexually active early. These results were in the opposite direction to that hypothesized. Table 69 contains all of these results and is shown although the results are not statistically significant.

Table 69

Sexually Active Students' Use of Birth Control With First Sexual Encounter

Use of B.C. When First Had Sexual Activity	14& Under; Sexually Active		15-18; Sex.Act. > 14		15-18; Sex.Act. <15	
	Freq.	%	Freq.	%	Freq.	%
Yes	8	53.3	35	37.2	15	40.5
No	7	46.7	59	62.8	22	59.5
Total	15	100.0	94	100.0	37	100.0

Total Values = 146 (137 values missing)

X^2= 1.41 df= 2 p= < 0.49 Cramers V = 0.10

Use of Birth control At Last Sexual Experience

There was no relationship between the use of birth control during the last sexual encounter and the level of sexual activity (p< .64). This is shown in Table 70 even though it was not statistically significant because it demonstrated a pattern consistent with the use of birth control at the first sexual encounter. Over 50% (n= 13) of the younger, sexually active females stated they did use a method at the last sexual encounter. Over 43% (n= 55) of the older girls who initiated sex later and over 48% (n= 31) of the older girls who became sexually active early had used a method with their last sexual experience. Again, the data does not approach statistical significance (p < .64).

Table 70

Sexually Active Students' Use of Birth Control With Last Sexual Encounter

Use of B.C. At Last Sexual Activity	14& Under; Sexually Active		15-18 ; Sex.Act. > 14		15-18; Sex.Act. <15	
	Freq.	%	Freq.	%	Freq.	%
Yes	13	52.0	55	43.3	31	48.4
No	12	48.0	72	56.7	33	51.6
Total	25	100.0	127	100.0	64	100.0

Total Values = 216 (67 values missing)

X^2= 0.88 df= 2 p < 0.64 Cramers V = 0.06

Effectiveness of Birth Control At Last Encounter

There was no relationship between the effectiveness of the birth control method on the last encounter and the age now or at initiation at sexual activity. Methods of birth control were ranked "effective" if the method used was the pill, diaphragm, condom, or condom and foam. Even though it was not significant, Table 71 is shown to demonstrate the differences in effectiveness of birth control by current age and age at initiation of sexual activity. Basically, two-thirds of all three sexually active groups used an ineffective method of birth control, if they used any method at all. There was a large amount of missing data.

Table 71

Sexually Active Students' Effectiveness of Birth Control Method at Last Encounter

Effectiveness of B.C. at Last Encounter	14& Under; Sexually Active		15-18; Sex.Act. > 14		15-18; Sex.Act. <15	
	Freq.	%	Freq.	%	Freq.	%
Ineffective	14	66.7	79	64.2	36	60.0
Effective	7	33.3	44	35.8	24	40.0
Total	21	100.0	123	100.0	60	100.0

Total Values = 204 (56 values missing)

X^2= 0.43 df= 2 p < 0.81 Cramers V = 0.05

Summary

None of the analyses done to test this hypothesis were statistically significant.

The following parts of the hypothesis were not statistically supported:

* Younger students were more likely than older students to have used a method birth control when they initiated sexual activity but this was not statistically significant:
* Younger students were more likely than older students to have used a method of birth control the last time they had sex, but this was not statistically significant;
* Younger sexually active students used less effective methods of birth control, but the results were not statistically significant.

HYPOTHESIS IX

Additional Contraceptive Data

Hypothesis IX states that female students who postpone initiation of sexual activity until age 15 or later, will adopt contraception sooner after initiating sex than girls who begin sexual activity at 14 or earlier. These differences were examined with the Chi-square test of association. The level of significance was set at $P < .05$. Only 84 students answered this question.

Time Before Adoption of Birth Control

There was no statistically significant relationship between when a sexually active student adopts contraception and the age when she became sexually active. The results are shown in Table 72 even though they are not statistically significant. The younger students who initiated sexual activity early were proportionately much more likely to have never used a method of birth control than students who waited until later to initiate sexual activity (71.4% [n= 5) as compared to 51.8% [n= 29]). Students who were older but who initiated sexual activity earlier, were between those two extremes with 57.1% (n= 12) reporting they had never used a method of birth control.

Only 14.3% (n= 1) of the younger sexually active students began using birth control within six months of initiating sex. This is compared to 30.3% (n= 17) of the older sexually active females who began sexual activity after age 14 and to 28.6% (n= 6) of the older students who had

initiated sexual activity before age 15. Because of the large amount of data that is missing plus the number of cells that are smaller than 5, the results must be viewed with great caution, but they are in the direction hypothesized. Full results of this analysis can be seen in Table 72.

Table 72

Time Between Initiation of Sex and Use of Birth Control

Time Between Initiating Sex & Using B.C.	14& Under; Sexually Active		15-18 Sex.Active > 14		15-18; Sex.Active <15	
	Freq.	%	Freq.	%	Freq.	%
Never Used B.C.	5	71.4	29	51.8	12	57.1
< One Month	0	0.0	11	19.6	5	23.8
1-6 Months	1	14.3	6	10.7	1	4.8
6- 12 Months.	1	14.3	5	8.9	3	14.3
Other	0	0.0	5	8.9	0	0.0
Total	7	100.0	56	100.0	21	100.0

Total Values = 84 (199 values missing)

X^2= 5.81 df= 8 p= < 0.67 Cramers V = 0.19

Summary

The analysis done to test this hypothesis was not statistically significant.

The following parts of the hypothesis were not statistically supported:

* Younger, sexually active students were much more likely to have <u>never</u> used a method of birth control than those

who began sexual activity later, but the results of the entire analysis were not statistically significant;

* Of those students who eventually used a birth control method, older sexually active students who initiated sex when they were age 15 or older were more likely to adopt a method within six months than younger sexually active students.

Chapter IV presented the results of all the hypotheses tested. Chapter V will discuss the implications of these findings.

ADDITIONAL FINDINGS

Data Related to Ethnicity

Although there were no formal hypotheses related to the possible effects of ethnicity, a number of analyses were completed in order to determine whether ethnicity affected the outcome of selected analyses. Many of these analyses were also included in the original model. These differences were examined with the Chi-square test of association and the level of significance was set at $p < .05$.

Ethnicity and Age At Menarche

There was a relationship between ethnicity and age of menarche (p <.001) as seen in Table 73. Over 68% (n= 32) of the students in the Other" category and 65.7% (n= 67) of the Anglo students had reached menarche before age 13 as compared with only 31.4% (n= 27) of the Southeast Asian students. Hispanic students (59.9% [n= 299]) and Pacific Islander students (52.8% [n= 29]) were between those two extremes.

Table 73

All Female Students' Ethnicity and Age at Menarche

Age at Menarche	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Under age 11	7	6.8	49	9.8	5	5.8	4	7.3	6	12.8
11-12	60	58.8	250	50.1	22	25.6	25	45.5	26	55.3
13-14	31	30.4	186	37.3	45	52.3	24	43.6	14	29.8
15	2	2.0	10	2.0	12	14.0	1	1.8	1	2.1
No Menarche	2	2.0	4	0.8	2	2.3	1	1.8	0	0.0
Total	102	*	499	*	86	*	55	*	47	*

* Total percentages were unable to be listed due to formatting limitations. For this and all subsequent tables the percentage columns total 100.0% even though the totals are not listed.

Total Values = 789 (90 values missing)

X = 58.90 df= 16 p < .001 Cramers V = 0.14

Ethnicity and Level of Sexual Activity

There was a relationship between ethnicity and level of sexual activity ($p < .001$). Asian females were most likely to abstain with 90.7% (n= 78) of those students abstaining. Those least likely to abstain were the Anglo females with only 67.3% (n= 66) abstaining and the "Other " students where 63.5% (n= 33) abstained. A higher proportion of Anglo and "Other" females of both ages became sexually active before age 15 than any of the other ethnic groups. Complete results are in Table 74.

Table 74

All Female Students' Sexual Activity and Ethnicity

Level of Sex. Activity	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
14 & Under, Sex. Active	4	4.1	14	2.8	1	1.2	4	7.0	2	3.8
14 & Under. Abstain	27	27.5	87	17.6	13	15.1	13	22.4	9	17.3
15-18, Sex. Act. > 15	15	15.3	93	18.8	5	5.8	8	13.8	9	17.3
15-18, Abstain	39	39.8	261	52.7	65	75.6	32	55.2	24	46.2
15-18, Sex. Act. < 15	13	13.3	40	8.1	2	2.3	1	1.7	8	15.4
	98		495		86		58		52	

Total Values = 789 (90 values missing)

$X = 42.47$ df= 16 $p < .001$ Cramers V = 0.12

Ethnicity and Tried to Hurt Oneself

There was no relationship between ethnicity and a student's statement that she had tried to harm herself ($p < .06$). This is shown below in Table 75 since there were some interesting trends. Proportionately, Hispanic and "Other" female students were most likely to have tried to hurt themselves with 26.8% (n= 138) and 22.6% (n= 12) respectively reporting such an action. This was compared to 16.1% (n= 14) of the Asian, 15.3% (n= 9) of the Pacific Island, and 19.2% (n= 20) of the Anglo female students.

Table 75

All Female Students' Ethnicity and Trying to Hurt Self

Tried to Hurt Self	Anglo		Hispanic		Asian		Pacific Island		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	20	19.2	138	26.8	14	16.1	9	15.3	12	22.6
No	84	80.8	377	73.2	73	83.9	50	84.7	41	77.4
Total	104		515		87		59		53	

Total Values = 818 (61 values missing)

$X = 9.05$ df= 4 $p < .06$ Cramers V = 0.11

Ethnicity and Usual School Grades

There was a relationship between ethnicity and a student's usual grades in school ($p < .001$). Over 92% (n= 81) of the Asian students reported their usual grades were A's and B's as compared to over 68% (n= 66) and (n= 37) of both Anglo and Pacific Islander students. Hispanic and "Other" students were proportionately much more likely to report grades of D and F. Complete results are shown in Table 76.

Table 76

All Female Students' Ethnicity and Usual School Grades

Usual School Grades	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
"A's" & "B's"	66	68.1	200	41.8	81	92.1	37	68.5	24	48.0
"C's"	27	27.8	229	47.8	7	7.9	14	25.9	21	42.0
"D's" & "F's"	4	4.1	50	10.4	0	0.0	3	5.6	5	10.0
Total	97		479		88		54		50	

Total Values = 768 (111 values missing)

$X = 93.5$ df= 8 $p < .001$ Cramers V =0.25

Ethnicity and Expected Educational Achievement

There was a statistically significant relationship between ethnicity and expected educational achievement ($p < .05$). The results are shown in Table 77. The groups who expected to achieve the highest levels of education (some college, college graduate and beyond) were the "Others", Asians and Pacific Islanders with 87% (n= 46), 85.4% (n= 76) and 84.6% (n= 50) respectively. Hispanics were the most likely of any of the groups studied to not know what level of education they expected to achieve.

Table 77

All Female Students' Ethnicity and Expected Educational Achievement

Expected Academic Achievement	Anglo		Hispanic		Asian		Pacific Island		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Some HS or Graduate HS	14	13.1	76	14.6	5	5.6	2	3.4	5	9.3
Some college, Graduate or More	85	79.4	377	72.4	76	85.4	50	84.6	46	87.0
Don't Know	8	7.5	68	13.0	8	9.0	7	12.0	2	3.7
Total	107		521		89		59		53	

Total Values = 829 (50 values missing)

X = 19.06 **df=** 8 **p <** .015 **Cramers V =** 0.11

Ethnicity and Number of People Living in Home

There was a relationship between ethnicity and the number of persons who lived in the home as seen in Table 78, ($p < .001$). The Anglo and "Other" categories reported proportionately fewer persons living in the home than the other ethnic groups in the study. Over 54% (n= 286) of the Hispanic, 56.1% (n= 51) of the Asian students, and 47.5% (n= 28) of the Pacific Island students reported five or more persons living in the home. This was compared to 17.6% (n= 19) of the Anglo students and 14.9% (n= 8) of the "Other" students who reported living with five or more other persons.

Table 78

All Female Students' Ethnicity and Number of Persons Living in the Home

Number of People in the Home	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1-4	89	82.4	241	45.7	40	44.0	31	52.5	46	85.2
5-9	18	16.7	259	49.2	48	52.8	27	45.8	7	13.0
10 or more	1	0.9	27	5.1	3	3.3	1	1.7	1	1.9
Total	108		527		91		59		54	

Total Values = 839 (40 values missing)

$X = 76.12$ df= 8 $p < .001$ Cramers V = 0.21

Ethnicity and Parent's Marital Status

There was a relationship between ethnicity and parents' marital status (p <.001). Asian and Pacific Islander parents were the least likely to have experienced divorce or separation (14.6% [n= 13] and 14.3% [n= 8] respectively). The "Other" category (54.7% [n= 29] and Anglos (43% [n= 46]) were most likely to have experienced divorce or separation. Full results are shown in Table 79.

Table 79

All Students' Ethnicity and Parents' Marital Status

Parents Div./ Separated	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	46	43.0	169	32.7	13	14.6	8	14.3	29	54.7
No	61	57.0	348	67.3	76	85.4	48	85.7	24	45.3
Total	107		517		89		56		53	

Total Values = 822 (57 values missing)

X = 38.9 df= 4 p <.001 Cramers V = 0.22

Ethnicity and Use of Birth Control At Initiation of Sex

There was no relationship between ethnicity and whether birth control was used at the first sexual encounter (p< .90). This data is presented in Appendix B, Table 36.

Ethnicity and Use of Birth Control at Last Encounter

There was no relationship between ethnicity and the use of a birth control method at the last sexul encounter (p< .56). Anglos were proportionately the most likely and

Asians the least likely to have used any method of birth control at the last sexual encounter, but this was not statistically significant. Full results are in Appendix B, Table 38.

Ethnicity and Time Until Seek Birth Control

There was no relationship between ethnicity and the length of time students waited before obtaining birth control after initiating sexual activity. Complete results are in Appendix B, Table 39. Over 71.4% (n= 5) of the Anglo and 75% (n= 3) of the Asian students reported never having used birth control as compared to 51.7% (n= 30) of the Hispanic students. Since numbers are comparatively small, these results must be viewed with caution.

Other Biological Data

Sexual Activity and Born in U.S.

There was a significant relationship ($p < .004$) between level of sexual activity and whether a student was born in the U.S. In the younger age group, a higher proportion of students who were not born in the U.S. were sexually active (36.4% [n= 8]) than were abstinent (22.9% [n= 35]).

Older students who became sexually active earlier were almost equally likely to have been born outside the U.S. as within the U.S. Older students who became sexually active when over age 14 and those who were abstinent, were almost equally likely to have been born outside the U.S. Complete results are shown in Table 80.

Table 80

All Female Students' Sexual Activity and Born in U.S.

Born in U.S.	14& Under Sexually Active		14& Under Abstain		15-18 Sex.Act. > 14		15-18 Abstain		15-18 Sex.Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	14	63.6	118	77.1	74	62.7	276	64.0	30	50.9
No	8	36.4	35	22.9	44	37.3	155	36.0	29	49.1
Total	22		153		118		431		59	

Total Values = 783 (96 values missing)

$X = 15.57$ df= 4 $p < .004$ Cramers V = 0.141

Knowledge of When Female Is Most Fertile

There was a statistically significant difference between knowledge of when a female is most fertile and the level of sexual activity ($p < .05$). The survey question asked the student to identify when in the menstrual cycle a female was most likely to become pregnant. Choices included "during her period", "a few days after her period", in the middle of her monthly cycle", "a few days before her next period" and "equally throughout her monthly cycle". The only correct answer was "in the middle of her monthly cycle". A total of 758 girls responded; only 19.9% (n= 181) answered correctly. **In only one of the five groups of girls (older girls who became sexually active early) did even 25% know the correct answer.** The younger girls proportionately had only 12.5% (n= 3) and 10.7% (n= 15) correct answers for the sexually active and abstinent girls as seen in Table 81.

Table 81

All Female Students' Sexual Activity and When Female is Most Fertile

When is Female Most Fertile?	14& Under Sexually Active		14& Under Abstain		15-18 Sex.Act. > 14		15-18 Abstain		15-18 Sex.Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Correct Answer	3	12.5	15	10.7	28	22.2	88	22.0	17	25.4
Incorrect Answer	21	87.5	125	89.3	98	77.8	313	78.1	50	74.7
Total	24		140		126		401		67	

Total Scores = 758 (121 values missing)

X = 10.96 **df=** 4 $p < .05$ **Cramers V** = 0.12

Other Social Data

Sexual Activity and Living With Parents

There was a statistically significant relationship between the number of parents or step-parents a student lived with and their level of sexual activity ($p < .001$). An analysis was completed of whether the students were living with neither a parent nor step parent; one parent or step-parent; or two parents or step parents. Forty-four percent (n= 11) of the younger sexually active students, as compared to 20.9% (n= 32) of the younger abstinent students, lived with either no or only one parent. For the older students, 34.6% (n= 45) of those who became sexually active later as compared to only 24.6% (n= 104) of those who are abstinent, lived with neither or only one parent or step parent.

In contrast, the older students who became sexually active by age 14 had results proportionately similar to the older abstinent students. Responses represented the living situation the student was in at the time of the survey and not necessarily her living situation at the time sexual activity began. Complete results are given in Table 82.

Table 82

All Female Students' Sexual Activity and Living With Parents

Living With Parents	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Neither Parent nor Step-Par.	2	8.0	4	2.6	19	14.6	25	5.9	2	3.1
One Parent or Step-Parent	9	36.0	28	18.3	26	20.0	79	18.7	15	23.1
Two Parents or Step-Parents	14	56	121	79.1	85	65.4	318	75.4	48	73.8
Total	25		153		130		422		66	

Total Scores = 795 (84 values missing)

X = 25.23 **df=** 8 **p** < .001 **Cramers V** = 0.12

Summary

The following findings were significant and/or supported the model:

* Anglo and "Other" females reached menarche significantly earlier than Hispanic, Asian and Pacific Islander females;
* Anglo and "Other" ethnic groups were statistically the most likely of the groups studied to report becoming sexually active before age 15.
* Anglo and "Other" females were the most likely ethnic groups to report being sexually active and Asians the least likely to report being sexually active.
* Asian females reported receiving the highest grades. Hispanic and "Other" students were more likely than the other groups studied to report grades of D's and F's;

* Anglo and "Other" females reported the least number of persons living in their homes compared to the other groups studied;
* Asian and Pacific Islander parents were less than the other ethnic groups studied to have experienced divorce or separation;
* Over 49% of the older age group who became sexually active before age 15 were born outside the United States.
* More than 75% of the students did not know when during a menstrual cycle pregnancy was most likely to occur;
* Abstinent females are more likely to live with two parents or step-parents. Females who are sexually active are more likely to live with either no or only one parent or step parent;

The following analyses were not statistically supported:

* There were no correlations between ethnicity and whether a student had tried to hurt themselves;
* There were no correlations between ethnicity and whether a student used birth control the first or the last time they were sexually active;
* There were no differences between ethnic groups and the length of time before seeking birth control after initiating sexual activity.

CHAPTER V

DISCUSSION

The issue of possible biopsychosocial factors that might be correlated with the initiation of sexual activity in the adolescent female was the focus of this study. The conceptual framework for the study was derived from selected developmental theorists who have approached the question of adolescent risk taking from a biopsychosocial perspective. It was that framework which was used in examining the results of this study.

A descriptive model was utilized to enumerate various biological, social, and psychological factors that may be correlated with whether and when adolescent females of various ethnic backgrounds become sexually active as well as the timing of the adolescents' initial sexual debut. Results of the Chi-square analyses indicated a number of factors that appeared to be correlated with the initiation of sexual activity. There were also a limited number of ethnic differences between the Hispanic, Anglo, Asian, Pacific Islander and "Other" groups studied. The term "Hispanic" was used to describe the Mexican and Mexican-American students who praticipated in this study. The conclusions incorporated the findings related to the model and include two new models.

A section on significance follows the conclusions, then implications for theoretical development and nursing advancement are presented. Recommendations for future research are offered as the final section of chapter five.

Conclusions

A summary of the findings for each of the biological, psychological, and social factors and their possible significance is presented. A brief discussion of factors impacting adolescent contraception follows the biopsychosocial factors.

Biological Factors

Age at Menarche

The age at which menarche occurred was the only strictly biological factor that was included in the survey. Students who reached menarche by age 11 were more likely to become sexually active by age 14. The Chi-square value of 70.9 was one of the highest achieved in this study. These findings are supported by the results of numerous other studies in which strong correlations between age at menarche and initiation of sexual activity among females was found (Soefer, Scholl, Sobel, Tanfer & Levy, 1987; Susman, Notelman, Inoff-Germain, Dorn & Chrousos, 1987; Bingham, Miller, & Adams, 1990; Presser, 1978; Phinney, Jensen, Olson & Cundick, 1990).

It is unclear in the results of any of the research reviewed whether the initiation of sexual activity is more influenced by hormonal factors or by a societal or cultural assumption that biological puberty encourages or allows adolescents to play a more adult role. There is undoubtedly no simplistic perspective of a single factor that influences early sexual activity.

The original descriptive model included two additional biological factors besides menarche: increasing hormone levels and being born in the United States. This study did not test hormone levels. The findings related to place of birth are discussed under the section on ethnicity.

Ethnicity

Ethnicity and age at menarche. Although not a true biological measure, the issue of ethnicity was examined to determine if this affected either the age at menarche or level of sexual activity. There was a significant correlation between ethnicity and menarche. Anglo and the "Other" categories reached menarche significantly earlier than Asian students who were the slowest to mature. It was interesting that Anglo and "Other" female students were also the most likely to become sexually active by age 14. The age of menarche for Hispanic and Pacific Islander students lay midway between the two extremes. Over the last century the age of menarche has continued to decrease, particularly in industrialized areas, yet there is still no universally accepted explanation for that reduction. The most plausible explanation probably is the role of improved nutrition in industrialized countries that fosters more rapid growth. Socioeconomic status may also be associated with early menarche, because of its association with better nutrition (Presser, 1978).

Ethnicity and level of sexual activity. There was a significant relationship ($p < .004$) between ethnicity and level of sexual activity. A total of 35.1% (n=271) of the study females were born outside the United States. Fifty percent of those who were then 15 to 18, but who became sexually active at 14 or younger, were born outside the United States. This is an unusual finding. However, the length of time these sexually active students had been living in the United States was not known and this may have markedly affected the findings. Aneshensel, Beccera, Fielder and Schuler (1990), in their study of Mexican American Hispanics and non-Hispanic whites found that Mexico-born Mexican Americans have the lowest rate of early sexual activity.

Darabi and Ortiz (1987), report that as Mexican-origin young women are distanced from their traditional norms of disapproval of premarital sex and in succeeding generations, they become more likely to engage in premarital intercourse and to bear children outside of marriage. Aneshensel, Beccera, Fielder and Schuler (1990), also report that Mexican-born Mexican Americans have the highest birth rates because they are more likely to become pregnant if sexually active and more likely to give birth if they become pregnant.

In this study, Pacific Islander, Anglo, and "Other" students showed a proportionately higher percentage of sexually active younger (14 and under) students than

did young Asian and Hispanic females. However, proportionately the largest percentage of those who became sexually active between the ages of 15 and 18 was Hispanic. Asian female students were the most likely to consistently abstain from sexual activity in both the age groups studied. Asian and Hispanic students were also those who were more likely to be born outside the United States. It is important that future research include measures of birthplace, generation and assimilation.

Ethnicity and other social factors. There were significant differences between the various ethnic groups and school grades, parents' marital status, and the number of people living in the home. Proportionately more Asian students reported receiving A's and B's as their usual grades than the other ethnic groups. Hispanic and "Other" students were proportionately the most likely to report grades of D's and F's. The strong emphasis on academic achievement by Asian parents has been well documented. In many other cultures, the emphasis is more likely to be on becoming a wage earner as young as possible.

Asian and Pacific Islander parents were the least likely to be divorced or separated. Anglo and "Other" parents were the most likely to have experienced divorce or separation and Hispanic parents were midway between these two groups. Religion undoubtedly plays some

protective role against divorce, but this study did not document parents' religious preference. The majority of the Asian students attending the study schools are members of a very traditional Catholic Church while the Hispanic and Anglo Catholic students were more likely to attend a less traditional Catholic Church.

Anglo and "Other" students proportionately reported fewer people living in their homes, while Asian and Hispanic students reported proportionately more people. In the community surrounding the study schools, there has been a large influx of refugee and immigrants in the past few years. The majority of the new arrivals were Hispanic and Asian and many times these immigrants were financially forced to live with friends and relatives in very crowded circumstances. In addition, the birth rate for Hispanic and Asian families in this County was also higher than for other ethnic groups. Undoubtedly both immigration and high birth rates contribute to having more people per household for Hispanic and Asian families.

It was extremely difficult to compare the findings related to ethnicity and levels of sexual activity with those of other studies. The few studies that examined ethnic differences and sexual activity predominantly compared only black to white subjects and many researchers included Hispanics in the white group (Furstenberg, Morgan, Moore, & Peterson, 1987 and Zabin,

Hardy, Smith & Hirsch, 1986). Harlan, Harlan and Grillo (1980) reported that black girls matured earlier than white girls. However, since the present study did not include blacks as a separate category because of their relatively small numbers, the results of most other studies are not directly comparable.

The most probable explanation of ethnic differences lies in the different economic, cultural and societal norms within each of the groups. Many of the Hispanic students in the present study were born in Mexico and have been subjected to very close supervision as young girls. That close supervision often decreases after the female reaches age 16 and in some groups, there may be a tacit expectation or approval of marriage at an early age. Traditionally, Hispanic adolescents are more likely to be married shortly before or after a pregnancy occurs (Brindis & Jeremy, 1988).

Psychological Factors

General Life Satisfaction

There were no differences in reported general life satisfaction and levels of sexual activity for either the younger or older female students. No studies were found that reported on a similar finding. This one question was insufficient to totally assess life satisfaction however, being sexually active does not necessarily imply that the subject is "distressed" or dissatisfied with her life.

Reported Negative Feelings

Younger sexually active females were statistically more likely to report negative feelings of nervousness, being scared, and bored than younger abstinent females. Older sexually active females were more likely to report negative feelings of anger and depression than same age abstinent females. In this study it was not possible to determine whether a particular emotion was present before the subject became sexually active. It was interesting to note that there were differences between the younger and older students and their level of sexual activity in the frequency of reporting specific emotions.

However, sexually active students of both ages felt less hopeful about the future than abstinent students. This feeling may be reality for these same students who generally have lower school grades, lower educational aspirations, and generally more disruptive lives. Because this study used categorical data, it was not possible to draw any conclusions about cause or effect, however for some females sexual activity may be the only positive aspect of their lives if the rest is bleak and they see little for themselves in the future.

Feeling Good About Themselves

There was a strong tendency for younger sexually active students to report feeling less good about themselves than the same age abstinent students ($p < .03$), but this was reversed for the older age females. Young females may begin

to engage in sexual activity because of possible low self esteem while sexual activity in the older female may increase their self esteem by making them feel popular or wanted. This one question was not meant to be a complete measure of self esteem, however it does present interesting trends. There is a need for measures of self esteem that are sensitive to both adolescents and to cultures in which self esteem is not considered desirable. No other known studies have documented changes in self esteem in the sexually active early and late female adolescent.

Thoughts and Actions of Self Harm

Sexually active students of both ages were significantly more likely to both think about and attempt to harm themselves. Chi-square values were 26.44 for thinking about hurting themselves and 35.9 for trying to hurt themselves. No other studies were found that specifically compared these psychological factors and level of sexual activity.

The data on thoughts and attempts to harm themselves were alsocompiled by ethnicity and was not significant ($p < .06$).

There was a tendency for Hispanic and "Other" students to report having tried to hurt themselves more frequently than the other ethnic groups tested, but that was not significant.

The finding linking sexual activity and thoughts or actions to hurt themselves may reflect the generally greater risk taking behavior of sexually active students and of their more dysfunctional lives. This is evidenced by the larger

number of life change events experienced by sexually active students. It was not possible to assign cause or effect in this descriptive study.

Have a Say in Important Decisions

Sexually active and abstinent students in both age groups felt they had an equal say in deciding important things in their lives. This finding was not predicted, but did indicate that generally female students felt they had some control over their lives. In some cases that control may have been exercised through the decision to become sexually active.

Perceived Family Support

Younger students but not those who are older, perceived they had support from their families, but this was no different whether the student was sexually active or abstinent. This appears to be congruent with the previous finding that students felt they had a say in making important decisions.

There were minimal reports in the literature in regard to the specific psychological issues that were explored in this study. Robbins, Kaplan and Martin (1985), found only weak relationships between sexual activity and powerlessness and self esteem and concluded that under some conditions students with low self esteem were at less risk for a non-marital pregnancy. Galavotti and Lovick (1989) did not find any relationship between self esteem and sexual activity in their study of black, white and Hispanic students. However,

their study included only 29 sexually active Hispanics and did not distinguish between early and late adolescents. It is not known what measure of self esteem was used in this study. Neither of these studies (Robbins, Kaplan & Martin, 1985, or Galavotti & Lovick, 1989) distinguished between different adolescent age groups on the psychological data that was tested.

The original model included a number of psychological factors, some of which were tested in this study's hypotheses including: negative feelings; a sense of hopelessness; thoughts or actions to harm oneself; and, to a limited extent, knowledge of reproduction and contraception.

The primary question in the survey that was related to contraception/ reproduction knowledge in the model, was a question that asked when in the menstrual cycle a female was most likely to become pregnant. There was a significant relationship between sexual activity and knowledge of when a female was most likely to become pregnant ($p < .05$). However the differences were primarily related to age rather than to level of sexual activity. In none of the groups studied did more than 25% of the respondents answer the question correctly, but the percentage of correct answers was even lower for the younger females.

Social Factors

Grades in School

Sexually active students of both age groups are much more likely to report receiving lower grades in school than

abstinent students. Robbins, Kaplan and Martin (1985), confirmed the finding that females who became pregnant had already been having school difficulties. Miller and Sneesby (1988) found that school grades were more predictive of sexual attitudes and activity than any other variable.

Poor grades may be a reflection of both language difficulties and the more disruptive lives that sexually active students seem to lead rather than an indication of less ability. Conversely, females who are poor students may turn to sexual activity in an attempt to increase their self esteem by becoming "popular" or desired.

Expected Educational Achievement

Sexually active students expected to achieve lower academic goals than abstinent students. A lack of parent or peer role models plus the generally lower family incomes of sexually active students may be more important factors in determining academic aspirations than lack of desire for more education. Miller and Sneesby (1988) found that future educational goals were only weakly related to sexual intercourse experience.

Parent's Educational Achievement

Mothers of sexually active younger students were more likely to have had lower levels of education, but this was not statistically significant ($p < .08$). The father's level of education was not a statistically significant factor. Several researchers have found that mother's education, but not father's, correlates with sexual activity (Furstenberg,

Morgan, Moore, & Peterson, 1987; and Bingham, Miller & Adams, 1990). However, Miller and Sneesby (1988) and Casper (1990) found that both mother's and father's educational level was inversely related to their children's sexual activity.

Mothers with lower educational levels may have shortened their own education because of a pregnancy, and sexually active students may identify with those mothers by becoming sexually active and/or by not achieving in school. It is likely that adolescent females identify more closely with their mother than with their father.

Parent's Marital Status

The parents of sexually active students were more likely to be divorced or separated. This finding was supported by Miller and Bingham's (1989) work which found that teen females raised by a single parent were more likely to be sexually active before marriage. Kinnaird and Gerrard (1986) found that teens from divorced families reported more sexual experience than those from intact families. Teens from homes in which the father was absent were more likely to experience a premarital pregnancy (Robbins, Kaplan & Martin, 1985).

The divorce or separation of a parent may be another manifestation of the more disturbed lives that sexually active students tended to report. Again, no cause or effect can be assigned in this descriptive study. However, if the student lives in a single parent home and that parent works, there may be less parental supervision provided and more availability of time and place for sexual activity to occur.

Families Medicaid Status

Older abstinent students were more likely to have families that received Medicaid assistance than older sexually active students. There was no significant relationship between younger students' sexual activity and whether their families received Medicaid. However, large numbers of students did not answer or did not know the family's insurance or Medicaid status.

In contrast, Casper (1990) found that a lower family income increased the probability that a teen would become sexually active. However, being on Medicaid is not necessarily synonymous with low income and in fact, may provide an increase in income for many families. In the study population, it is known that many families do not request Medicaid because of fear of immigration authorities.

Number of People Living in the Home

There was a trend for sexually active students to have a larger number of people living in the home, but this was not statistically significant. These trends were confirmed by Robbins, Kaplan and Martin (1985) who found that adolescent females who subsequently became pregnant were more likely to be from low socioeconomic homes in which there were a larger number of siblings. Again, this may be a further indication of sexually active students' more disruptive lives.

Access to Medical Care

There were no significant differences between either younger or older students and their level of sexual activity

and whether they had access to medical care. It had been hypothesized that sexually active students may have tried to access medical care for contraception or prenatal care, but if they did, they may have been successful in accessing that care. The presence of the school health centers for these students may have also contributed to the general accessibility of medical care.

Engagement in Other Risk Behaviors

Both age groups of sexually active students were proportionately more likely to engage in other risk behaviors such as the ever or current use of cigarettes and alcohol, and the current use of marijuana, cocaine, PCP, uppers and downers. The use of crack was the only substance that was not statistically significant, and that was in the direction hypothesized. The Chi-square values ranged from a high of 87.9 (ever use of cigarettes and alcohol) to 18.4 (use of uppers). Cramer's V ranged from 0.33 (moderately significant) for ever use of cigarettes to 0.18 for the use of PCP.

These results were generally supported by other researchers who have investigated links between various health risk behaviors. Alexander et al. (1989) found that cigarette smoking was associated with an increase in sexual activity among white, but not black, females. Zabin (1984) found an increase in sexual activity among early adolescents who smoke and found that the use of other drugs was linked to an increase in sexual activity among whites but not blacks.

Jessor, Costa, Jessor, and Donovan (1983) reported that use and abuse of alcohol and drugs is associated with earlier onset of intercourse. Similarly, Zabin, Hardy, Smith and Hirsch (1986) reported that sexually active black and white students had a higher use of all drugs than virgins. They also reported that Caucasian students exceeded blacks in the use of all substances including cigarettes.

The use of substances may reflect the general tendency of some individuals to engage in a variety of risk taking activities. This would include sexual activity as well as the use of cigarettes, alcohol, and illegal substances.

Number of Life Change Events

Sexually active students of both ages consistently reported experiencing a larger number of life change events during the past year than abstinent students of the same ages ($p < .001$). Galavotti and Lovick (1989) in their study of 260 adolescents found that sexual activity correlated with all other risk activities tested such as the use of illegal substances, fighting, shoplifting and physical fights for Mexican American teens, but not for black students. Again, this reflects the findings that sexually active students generally report more disturbed life styles.

A number of the socio-environmental factors in the model were tested by the hypotheses. As predicted there were very strong correlations between the use of cigarettes, alcohol and illegal drugs and sexual activity. Again as predicted, there were strong associations between parents' marital

status, and subjects' academic grades and aspirations and level of sexual activity. Also as hypothesized there was a relationship between the number of parents or step-parents a student lived with and their level of sexual activity. Parents' socioeconomic status and occupation were not related to level of sexual activity as had been predicted in the model.

Because of using a secondary analysis of a data set, this research did not test factors in the model related to peer pressure, double standards, availability of contraception, sex education, sexual abuse and the influence of sexual stimulation from movies and TV. Family structure was tested only indirectly by the number of parents or step parents in the home.

The issue of adolescent sexual activity is enormously complex and an individual's decision to become sexually active is undoubtedly due to a large number of biological, psychological and social-environmental causes. It was not expected that any one study would be able to assess all of those factors.

Contraceptive Behavior

Knowledge of Fertility

Less than 25% of this group of adolescent females were able to correctly answer a question that asked "When during a female's menstrual cycle is a woman most likely to be able to become pregnant?". If this information is being taught in the schools tested, it is not being remembered by either the

sexually active or abstinent students. Other assumptions are that family life education programs are not being taught, are being taught ineffectually, or that adolescents do not listen to the material being taught because they feel that it is not pertinent to them.

Ethnicity and Ever Use of Contraception

Between 51.8% and 71.4% of the sexually active students in this study had never used a method of birth control. Of those students who are sexually active, a lower percentage of Pacific Islanders and Hispanics had never used a method of birth control than the other ethnic groups, but the numbers are relatively small and the findings were not statistically significant.

These statistics were similar to those of Kantner and Zelnik (1972) who found that, regardless of age or race, 77% of black and white adolescent females had either never used a method of birth control or used a method only sometimes. Additional confirmation was obtained in a study of sexually active 13 to 17 year olds who attended family planning clinics in Southern California, where 61% had never used a contraceptive method before coming to the clinic (Settlage, Baroff & Cooper, 1973).

Ethnicity and When Began Contraceptive Use

The results of the analysis that related ethnicity to how soon contraception was obtained after initiating sexual activity was confirmed by other studies. This study found that Hispanics and Pacific Islanders were the least likely to

have never used a method of contraception (51.7% and 40% respectively), but of those teens who did contracept, Hispanics were the only group who waited more than six months before beginning contraception.

Namerow and Jones (1982) confirmed this last finding in their study of Hispanic, black and white patients and found that Hispanics had the longest interval between initiation of sexual activity and the use of birth control. Schwartz and Darabi's (1986) work also corroborated this when they found that black teens came to a family planning clinic almost a year earlier than Hispanics (at age almost 18 and almost 19 respectively). Both groups of teens had initiated sexual activity at an average age of 16. The Hispanics in the Schwartz and Darabi's study however, were almost exclusively from Puerto Rico or the Dominican Republic. These findings may not be comparable since at least one study (Schur, Bernstein, & Berk, 1987) has documented major differences between various Hispanic sub-populations and how they seek health care.

It was impossible in this study to determine the role that religion played in determining contraceptive activity. The majority of both the Hispanic and Asian populations in this study are nominally Catholic. However at least one of the Catholic priests serving part of the school's Hispanic neighborhoods is sympathetic to the problems involved in early sexual activity and contraception (Personal communication, 1986). Religions which prohibit contraceptive

use undoubtedly play some role in an adolescent's decision of whether to contracept.

Use of Contraceptive Method At First and Last Encounter

Contrary to what was predicted, younger sexually active students were somewhat more likely than older sexually active students to have used a contraceptive method both the first and the last time they were sexually active, but this was not statistically significant. Zabin and Clark (1981) found that those who had used any type of contraceptive method at the last sexual encounter, were more likely to come to a family planning clinic. Galavotti and Lovick (1989), found that teens who were older when they initiated intercourse, were more likely to contracept. No other comparable data was available concerning age and likelihood of contraceptive use at the first or last sexual encounter.

The students in the two study schools had access to a School Health Center (School Based Clinic) at their school that provides primary health care including examinations and prescriptions for contraceptives. Students then pick up contraceptive supplies free of charge at a nearby pharmacy. It is possible that the presence of the School Health Center may have given younger students easier access to contraception that was not as easily available to the older students before the Centers opened. The presence of the School Health Centers may also have increased the acceptability of seeking reproductive health care for all students.

Effectiveness and Timing of Contraception

As predicted, the younger students' methods of contraception were less effective, and students who were older when they initiated sex were more likely to initiate birth control sooner than younger students, but neither of these findings reached statistical significance. Initially it had been decided that in order to measure effectiveness, this study would use both frequency of use as well as the method of contraception. Using that methodology, the numbers of contracepting students in each cell was so small that the analysis was useless. This study ultimately only used only the method of contraception to measure effectiveness.

Zabin and Clark (1981), in studying a group of black and white teens on their first visit to a family planning clinic, found that the mean interval from first intercourse to first contraceptive visit was 16.6 months. They also found that the youngest girls of both races (black and white) delayed their first contraceptive visit for the longest periods. Blacks were more likely than whites to come to the clinic at the same age as they initiated intercourse.

With the propensity of younger adolescents to engage in personal fables (Elkind, 1967) with a belief in their own indestructibility, teens may believe that any method will protect them from pregnancy, or simply that they are invulnerable to pregnancy. Additionally the tendency of younger adolescents to feel that the whole world is watching them and knows their thoughts, the "imaginary audience",

(Elkind & Bowen, 1979) may preclude or complicate their utilization of clinics that are clearly marked "Family Planning" or "Planned Parenthood". Generally this study's findings agreed with other research results in relation to percentages of non-contracepting, sexually active students and length of time between initiating sexual activity and seeking contraception.

Proposed New Conceptual Models

Because of differences between the findings for the early adolescent and the middle-to-late adolescent, two separate conceptual models are offered. These models are meant to provide a conceptual framework for the later development of prescriptive and intervention models, and the ultimate development of a longitudinal causal model. This research progression is discussed in more detail in this paper's section on "Recommendations for Future Research".

Proposed Conceptual Model for Risk Factors for Sexual Activity in the Early Adolescent Female

The conceptual model of possible risk factors for sexual activity in the early adolescent female can be seen in Figure 2. In this model the data that were correlated with sexual activity were listed under the appropriate biological, psychological or social factors. Those items which were not tested in this study but which have been suggested by other studies, are included in the model under "Possible Precipitating Factors". The biopsychosocial factors that are included in Figure 2 have already been discussed in the

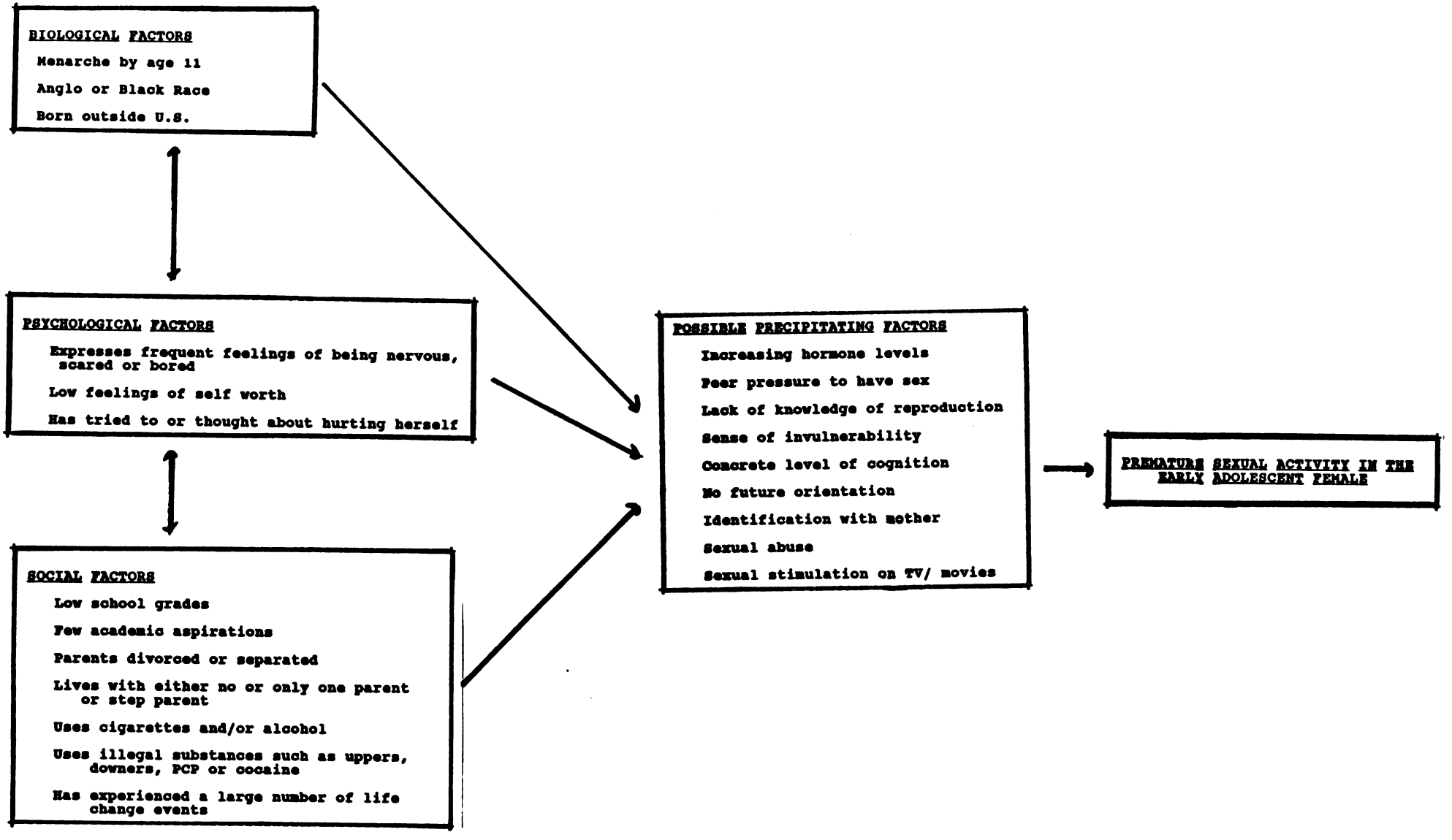

Figure 2: Conceptual Model of Risk Factors for Sexual Activity in the Early Adolescent Female

preceding "Results" section of this study. The precipitating factors have been referred to in this study's literature review but will be discussed very briefly.

The role that hormones play in the initiation of sexual activity has only begun to be studied. Although this line of inquiry is of scientific interest, it is doubtful that any interventions designed in the near future will alter hormone levels in an effort to change behavior. The impact of peer pressure has been tested in several other research studies (Billy & Udry, 1985; Jessor & Jessor, 1977; and Shah & Zelnik, 1981) and undoubtedly plays some role in an individual's decision to become sexually active.

A lack of knowledge about reproduction probably has more impact on contraceptive decisions than on the initiation of sexual activity, although it is not unusual to find female adolescents who do not know basic facts of anatomy nor of reproduction. Family life education courses in public schools are still too often either totally absent, taught by inadequately prepared instructors, or taught too late to help this vulnerable group of early adolescents.

Early adolescents' sense of invulnerability, their concrete cognitive level of orientation, and lack of a future orientation all combine to make this group vulnerable to sexual exploitation and pregnancy. There is no verification for the concept that an early adolescent's identification with her mother may be a precipitating factor in adolescent sexual activity, but the possibility deserves to be examined.

Many authors have documented a high incidence of sexual abuse and sexual activity in adolescent females. However there is also a high incidence of sexual abuse in the general population. In a recent review of School Health Center records in the two study schools, 100% (n= 36) of the pregnant students had histories of sexual abuse. Longitudinal research will best resolve the issue of cause and effect. Sexual stimulation on television, advertisements, and movies is a fact of American culture. This factor is somewhat similar to the increasing hormone level in that it is interesting, but even if causation is demonstrated, it is highly doubtful that any action will be taken in the near future to eliminate this factor.

Proposed Conceptual Model for Risk Factors for Sexual Activity in the Middle to Late Adolescent Female

The conceptual model of possible risk factors for sexual activity in the middle to late adolescent female can be seen in Figure 3. This model incorporates the data found in this study to be correlated with sexual activity in the older adolescent (age 15-18) and that information was listed under the appropriate biological, psychological or social factor. Those items not tested in this study but which have been suggested by other authors are included in the model as "Possible Precipitating Factors". The biopsychosocial factors included in Figure 3 have been thoroughly discussed. The precipitating factors have all been referred to in this study's literature review but will be discussed briefly.

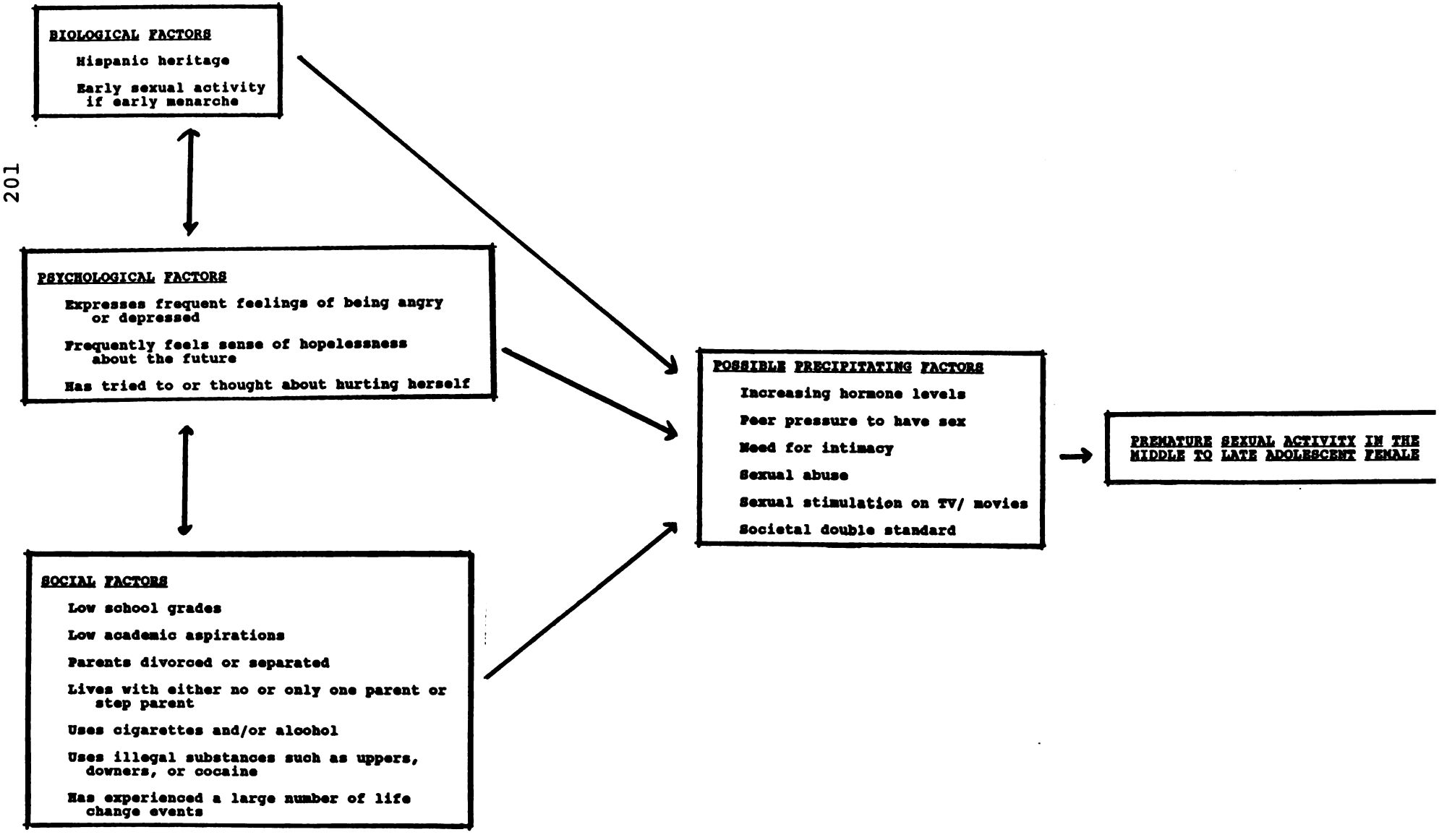

Figure 3: Conceptual Model of Risk Factors for Sexual Activity in the Middle and Late Adolescent Female

The issue of increasing hormone levels was discussed in the previous model's description and are not different for the older adolescent. Since puberty still occurs over a wide age range, especially when comparing various ethnic groups, the issues are basically the same.

The effect of peer pressure to engage in sex continues into the middle adolescent stage, but peer influence normally decreases in later adolescence as individual identity strengthens. This factor is included in the model because of the widely varying ages at which adolescents mature.

The need for intimacy increases during middle and late adolescence (Eriksen, 1950). The role that the need for intimacy plays in initiating adolescent female sexual activity is not known. The issues of sexual abuse and sexual stimulation on television, movies and advertisements were discussed in relation to the previous model. The issues for the middle and late adolescent are probably very similar, but undocumented by known research at this time.

The issue of society's double standard that exploits and promotes sexuality but espouses chastity for unmarried females has been alluded to previously. Most people recognize the double standard, at least for the early adolescent, but that recognition is probably not going to cause change. It is beyond the boundary of this study to discuss why the double standard exists and what might be done to alter it, but it is included in the model as a possible precipitating factor.

The preceding section of this chapter presented the results of testing the original model and then two additional conceptual models were proposed. The new models utilize those factors that were found to correlate with adolescent female sexual activity as well as precipitating factors that have been suggested in other studies. Models were presented for both the early adolescent female (Figure 2) as well as the middle to late adolescent female (Figure 3). It must be emphasized again that there is no simple, single causative factor for adolescent sexual activity. Sexual activity is only one part of a constellation of risk behaviors that are exhibited by a substantial group of adolescents. The models only suggest ways in which these factors may interact to promote this particular risk behavior. Further research may well clarify causative factors and suggest appropriate interventions.

Significance

There were a number of significant conclusions from this study. Perhaps most consequential is that there were significant differences between abstinent and sexually active adolescent females. Sexually active students were more likely than abstinent students to have used and still use cigarettes, alcohol, marijuana, cocaine and all illegal drugs. Although no cause and effect relationship can be inferred, knowledge of the existence of either sexual activity or substance use should be a clear indication to look for the other behavior. The interrelationship of these

risk behaviors emphasizes the need to not separate them during assessment, interventions or evaluation.

Sexually active students were also more likely to have experienced a wide variety of generally negative life change events during the past year, and were significantly less likely to report having a job than abstinent students. Knowledge of students who are experiencing large numbers of life changes should signal the possibility of sexual activity.

Sexually active students were more likely to report lower school grades, to have lower educational aspirations, and to feel less hopeful about the future than abstinent students. The parents of sexually active students were more likely to be divorced or separated and sexually active students more frequently reported living with only one or no parent or step parent. Mothers of sexually active students were less likely to be college graduates than mothers of abstinent students.

There was a very strong relationship between sexual activity and having had thoughts and attempts to harm oneself. Nearly the same percentages of students in each school tested in California report having thought about or attempted to harm themselves. No corroborating research could be found that correlated sexual activity and thoughts or actions of self harm.

All of these factors combined to produce generally higher risk for sexually active students. Along with their

sexual activity, these students are more at risk for dropping out of school, for becoming involved in substance use and for the risks of sexually transmitted diseases as well as for pregnancy.

The second area of significance is that the study found identifiable differences between younger and older sexually active female adolescents. Sexually active females who were age 14 or younger were more likely to have experienced menarche by age 11. It would be useful to add a section to surveys of adolescents that would allow the student to indicate their own Tanner Stage, possibly through the use of drawings where the student matches their development with drawn figures. In pre-adolescents, this might be useful in anticipating when menarche is likely to occur and providing anticipatory counseling and teaching.

Younger sexually active students were more likely to report feelings of being nervous, scared, and bored; older sexually active students are more likely to report more frequent feelings of anger and depression. There was a trend for younger sexually active students to report feeling good about themselves less often than same age abstinent students. This trend was reversed for the older sexually active females who were more likely to report feeling good about themselves than older abstinent students. The issue of whether self esteem is related to sexual activity has been debated at length. More definitive research is needed to explore the relationship of self esteem and negative feelings and sexual

activity in both the younger and older adolescent female. Longitudinal research can probably best define whether these emotions are causes or effects of sexual activity. Younger sexually active students were more likely than any of the groups studied to have recently experienced family problems, physical fights, the death of someone close to them and the ending of a close relationship.

Older sexually active females were more likely to begin using contraception sooner after initiation of sexual activity. Younger sexually active students tended to use less effective methods of birth control when they did contracept. Older sexually active students began to use contraception sooner after initiating sexual activity than younger students. These findings emphasized the need for different descriptive models for each age group.

A third significant finding is that there were cultural and ethnic factors in some of the risk taking. Ethnicity was correlated with age at menarche which in turn was associated with the age at which sexual activity may begin.

There were also ethnic differences between the groups' school grades, parent's marital status, and the number of people living in the home. More research is needed to understand the role of culture and religion on adolescent sexual decisions.

In summary, this study demonstrated significant findings that differentiated sexually active and abstinent students, that suggested differences between younger and older sexually

active students, and identified some ethnic and cultural distinctions between the groups studied.

Limitations of the Study

There were a number of significant limitations of this study, among them sample limitations, factors involving the study and instrument design, and generalizability. An important limitation to the present work is that the sample included only adolescents who were still attending high school and who were in school on the day that the survey was conducted. This eliminated school drop outs and those students who were not in school on the day of the survey. Since the constellation of risk behaviors often includes truancy, the consequences of eliminating those who were not in school may have resulted in a lower count of risk behaviors than existed in the general adolescent female population.

Students who were surveyed needed to be able to read and understand English. Even though the reading ability required was estimated at the sixth grade level, the survey eliminated some students whose English reading ability was very limited, especially recently arrived, non-English speaking students.

Ethnicity was designated by student self report. For analysis purposes Asians and Southeast Asians were combined, as were all groups self identified as Hispanic. There are certainly cultural differences within those categories, but in order to have sufficiently large categories for analysis the decision was made to combine those groups.

Another limitation was the result of using a secondary analysis of data from a survey that did not specifically utilize a biopsychosocial conceptual framework (S.Millstein, personal communication, July 6, 1990). However, the instrument used was adapted from the Adolescent Health Risk Survey as designed by Irwin and Millstein and these authors were among the first proponents of the biopsychosocial approach to risk behaviors (Irwin & Millstein, 1986). The survey used was adapted by Dr. Claire Brindis and was not based on a specific model since it was developed for evaluation of the effectiveness of school based clinics. Data in this study were not longitudinal. As previously discussed, the most ideal methodology for examining any series of behaviors such as health risk taking, is a longitudinal study that can examine precursors and cause and effect.

All of the data were dependent on self report. Surveying the students at two different schools, and the close correlations between the incidences of behaviors at each school as well as with national data, lend credibility to the use of self report for studying adolescent health risk behaviors. There have been limited reports validating self reports of adolescents. Two studies tested self reports of smoking behavior in early teens. One early study (Evans, Hansen, & Mittelmark, 1977) found that there was a difference in the validity of self reports when children were told that their saliva would be tested for the presence of nicotine.

The later study (Hansen, Malotte & Fielding, 1985) found that there was no change in self reports when ninth graders were told that their self reports of smoking would be confirmed by saliva tests for nicotine. No other studies were found that attempted to validate self reports of adolescent sexual activity or other health risk behaviors. However, the similarity of results of this same survey with many thousand adolescents appears to support the validity of self report for health risk behaviors.

This research is generalizable only to similar populations since California ethnic populations are fairly distinct. For instance, the Northern California "Hispanic" population is almost entirely composed of Mexican Hispanics with a small proportion of Central American Hispanics. On the East Coast the Hispanic population is more likely to be Puerto Rican and/or Cuban. Within the above limitations, the results of this study are reasonably generalizeable.

Theoretical Implications

There were a number of theoretical implications that were gained from this study. Perhaps the most obvious is the need for longitudinal, causal models that are firmly based on developmental theory. Although descriptive models are appropriate as a beginning, causal models are critically needed. The progression of research from this conceptual model should include its expansion to adolescent male sexual activity, then expansion and study of a prescriptive model, and finally into a predictive model. This final step can be

achieved with longitudinal research designs implemented with subjects before any of the risk behaviors have begun. This progression is discussed more fully in the section titled "Recommendations for Future Research".

The second most imperative need is for research that is not single theory or single behavior based. The present study strongly supports the contention that risk behaviors are not isolated, but cluster and need to be investigated together. Single issue research, which for example may deal only with pregnancy or only with substance abuse, is simplistic and no longer relevant to the current state of knowledge of the interrelationships between health risk behaviors.

The third priority is that research must be designed from an interdisciplinary perspective and to utilize theories that have been integrated from several disciplines. Nurses, educators, social workers, physicians, and public health professionals are all affected by and impact adolescent health risk taking activities. Each of these disciplines has appropriate, developmentally based theories that can be drawn upon in designing adolescent research.

The fourth implication is for research designs with sampling techniques that incorporate both students and out-of-school youth and appropriate ethnic and socioeconomic groups of both genders. It is increasingly clear that adolescent sexual activity and substance use are not limited to low income or to minority groups, yet too often only those groups are included in surveys and needs' assessments.

A fifth theoretical implication is the urgent need for theory based research that will explore issues of access and acceptability of both therapeutic and preventive health services for adolescents. In order to be effective prevention and intervention services must be accessible, available and acceptable to the adolescents they are meant to serve. This type of theory based research must also incorporate adolescents' varying cognitive levels.

A final theoretical suggestion is the potential value of qualitative research regarding teens' perceptions of the causes of early sexual activity and other health risk taking behaviors. However, one of the few studies to attempt this, (Pete & DeSantis, 1990) was not notably successful in eliciting this type of information from early adolescents who were pregnant. Qualitative research might be very effective in exploring health needs and issues of accessibility and acceptability because these issues are of a less sensitive nature than sexual activity. The above suggestions constitute only the most obvious theoretical needs that were identified in this study.

Nursing Implications

This study has a number of nursing implications that are relevant to assessment, intervention, evaluation, and policy. These implications are discussed using that framework.

Nursing Assessment

The findings of this study provide a description of adolescent females at risk of complications of premature sexual activity. Nurses who work in schools, institutional settings, camps, physician offices, emergency rooms and clinics are all in positions to take both medical and social histories from adolescent patients. Nursing education programs need to incorporate adolescent specific information when teaching students to perform nursing assessments.

A nursing assessment is often an adolescent's first contact within a health facility. The history must be designed to gather biopsychosocial data and the nurse must be skilled in interpersonal relationships with adolescents. In facilities that deal exclusively or primarily with adolescents, all staff should be specifically trained to work with that age group.

The nursing assessment should include an evaluation of the adolescent's Tanner Stage and cognitive development as well as a history of participation in health risk behaviors and a social and medical history. A nursing assessment that reveals a single parent family, a large number of recent life change events, poor school performance, the use or abuse of substances, or a history of recent accidents that may

indicate substance abuse should alert the nurse to possible sexual activity.

During the assessment phase, the awareness of depression and/or actual attempts to harm themselves should alert nurses to the possibility that the student is also sexually active. An assessment that reveals sexual activity should also signal the possible need for HIV testing if there have been multiple partners or if the patient or partners use substances.

Nursing Intervention

This study's findings could facilitate the development of nursing interventions with specific target groups instead of the more generalized programs that are frequently too early or too late for much of the audience. It appears that prevention programs that target adolescents who are entering puberty or who have just reached menarche would be more effective than those which target a population based only on age or grade. If an assessment has been done of cognitive development, it will be easier to design programs specifically for students who may still be at the concrete level of cognitive development.

School nurses or staff who work in school based clinics would be well able to target such individuals. Programs such as Marion Howard's "Postponing Sexual Involvement" (Howard, 1985) show promise in assisting vulnerable adolescent females to postpone sexual activity. Nurses working with students who have already begun sexual activity should make certain that students have access to reproductive health care.

Being able to identify potentially sexually active students should also target those groups for direct AIDS education programs. Students who are already sexually active must be reached with programs and services to help them decrease their vulnerability to pregnancy and sexually transmitted diseases.

Nurses should be in the forefront of movements to provide students with accessible, affordable, acceptable health care that includes reproductive health services. School based clinics have shown promise in this respect because they are located at the schools and thus are accessible. School clinics are free and confidential, and are generally acceptable since students also use the school clinics for sports' physicals and for other illnesses and injuries. Unfortunately, school nurses have often actively or passively resisted school based clinics because of a mistaken fear that their job may be in jeopardy if a school clinic is placed in their school site. In reality, there are definite roles for all health providers in school clinics, especially for the school nurse (Access. Winter, 1990).

Nursing Evaluation

Evaluation of nursing care must include issues that are specific for the adolescent age group, with particular attention to health risk taking behaviors. Evaluation of care must include the comprehensiveness and appropriateness of the nursing assessment and referral to other disciplines when indicated.

Nursing evaluation must include an evaluation of programs that are conducted by or with nursing staff. Nurses may need assistance in designing appropriate program evaluation. There is an obvious need for research on making methods of contraception both available and acceptable to sexually active students. Of particular importance are the findings related to the lack of contraceptive use among sexually active adolescents. Forest and Singh (1990), found that taxpayers will save $4.40 for every dollar of public funds spent to provide contraceptive services. Dollar amounts cannot begin to measure the savings in terms of children who do not drop out of school because of an unintended pregnancy and who can go on to become productive, working citizens.

Nursing Policy

It is hoped that this analysis will be useful for policy development, both for nursing and for general health care. Policies affecting nursing care of adolescents cannot be set in isolation from state or federal policies, nor apart from policies set by other disciplines who work with adolescents.

In their comprehensive review of policies that affect adolescent health care delivery, Brindis and Lee (1990), point out that the concept of access to health care as a "right" began to disappear in the 1970's. Both individuals and communities will have to assume the responsibility for ensuring adequate services for adolescents. Nurses should be in the vanguard of that move to involve both individuals and

communities in advocating for the needs of adolescents. However nursing alone cannot accomplish this task, nor are adolescents the only ones in need.

Brindis and Lee (1990) state that when developing strategies to meet the needs of adolescents, it is important to remember that:

* "on some issues adolescents are part of a larger group (e.g., the uninsured, the poor).
* Some issues have their origins among adolescents (teenage pregnancy, drug abuse, cigarette smoking), but they impact a larger population as well.
* There are multiple critical problems facing the adolescent population" (p. 394).

In the same article (Brindis and Lee, 1990) the authors specified the role of professionals in policy formulation as understanding and participating in the political process; assisting in research, program evaluation and policy analysis; educating the public and advocating for adolescents; and developing effective constituencies to advocate for youth on a variety of issues.

Nurses may both initiate and support health policies that assist adolescents by making use of the political processes on national, state and local levels. This can be facilitated by becoming active in professional nursing organizations such as the American Nurse Association and the State affiliates and working with their lobbying efforts to improve the health of adolescents. On a local level nurses should become acquainted with and inform their local Boards of Supervisors and their aides about local health needs of

adolescents and how these politicians can help. At the State level, it is important to become acquainted with the aides and chairpersons of State Health Committees and provide relevant information in brief, easily understood "packages". Few individuals can do these things alone, but there is strength in numbers and much can be accomplished by joining the lobbying efforts of other professional groups such as social workers; school nurses; parent-teacher associations, public health professionals; and children's lobbies such as "Children Now" and the Children's Defense Fund.

Nurses can facilitate policy change through becoming active in the research process. Encouraging health care organizations to seek affiliations with a local university or college school of nursing or public health, and facilitating access for students and staff who wish to pursue research projects related to adolescent health care and related subjects are methods to increase relevant research. Nurses particularly need to encourage more outcome studies that will results in the promotion of better health care for adolescents as well as demonstrate the nursing role in providing that care.

Nurses can improve their practice by incorporating the results of nursing research in the care of adolescents. Individual nurses and groups of nurses can promote the formation of research committees within their own agencies for the purpose of both promoting and evaluating research and helping staff to develop practical, outcome oriented

research. The Stanford Nursing Research in Practice Consortium has designed an excellent model for this process by organizing a coalition of nurses from community agencies who encourage nursing research in their own agencies. The Consortium also provides continuing education and practical assistance to nurses in member agencies.

In order to affect health policy for adolescents, nurses need to educate the public and be advocates for adolescents. These goals can be achieved by attending the conferences of other professional groups and eventually encouraging the exchange of speakers. There is often more similarity of concerns than there are differences between professional groups. Advocacy can be advanced by creating partnerships with non-traditional groups such as school boards, local industries, teachers' unions, service clubs, churches, recreation departments, Police Athletic Leagues, the American Association of University Women, YMCA's and YWCA's, Girls' and Boys' Clubs, Girl and Boy Scouts, PTA's, etc. These groups are concerned about children and have broad constituencies. Seeking their active, written support for health care for youth can enhance the collective political strength. Many of these groups have effective lobbying and money raising mechanisms as well as extensive mailing lists.

Nurses can also become advocates for policy change by seeking the active, vocal support of the population they serve. One young student presenting his or her need to a

political group can often be more effective than a dozen "professionals".

If effective advocacy is to take place, nurses must develop constituencies that involve and support other issues that are impacted by and impact the status of young people. It would be prudent to expand already existing partnerships with physicians, mental health, substance abuse and social work staffs to work together on joint legislation and projects that benefit youth. Additionally, there is an almost endless list of issues such as poverty, AIDS, homeless, hunger, mental and chronic illnesses, drop outs, and joblessness among a host of other problems that affect young people.

It is also possible to join State and national programs which include similar aims. One of the most exciting of the newer programs is the "Healthy Cities" project. Although not specifically designated for teens, the groups responsible for selecting projects can be encouraged to make teens a target group for improved health services. Nurses should be represented on planning groups and can take the lead in promoting youth programs.

In the next few years there is likely to be a shrinking of health care resources at the Federal, state and local levels. It is even more imperative that policies be set now which insure that scarce resources are targeted to those most in need and to programs that have proven records of effective

delivery. Rigorous program evaluation will be even more necessary.

There is strength in numbers, and those numbers can be multiplied many times through the cooperation of other professionals. Nurses are often accused of parochialism and being so concerned with protecting and defining nursing that they tend to forget the client and the need to improve the health of both individuals and groups. The world today is truly a global village and the issues that affect youth affect the United States, and those problems that affect the United States affect the world.

Recommendations for Future Research

Although a large number of biopsychosocial variables has been identified that describe adolescent females who are and are not sexually active, too little is still known about which of these factors are cause and which are effect. Until such knowledge is available, it will be difficult to look at definitive, long term prevention strategies.

An agenda for further research includes the extension of the conceptual descriptive model to adolescent males. Additional descriptive data might also be helpful in relation to socio-environmental factors such as the effect of television on early sexuality. Such data might also be helpful in describing peer pressure and the effects of varying levels of cognitive reasoning.

Qualitative studies with their richness of anecdotal data may add to the conceptual model with adolescents'

Prescriptive models must also incorporate issues of access and acceptability of both therapeutic and preventive health services for adolescents. In order to be effective prevention and intervention services must be accessible, available and acceptable to the adolescents they are meant to serve.

Ultimately there is the need for longitudinal causal models that are firmly based on developmental theory. This can be achieved most easily with longitudinal research designs implemented with subjects before any of the risk behaviors have begun. That research must be designed from an interdisciplinary perspective and utilize theories that have been integrated from several disciplines. Nurses, educators, social workers, physicians, and public health professionals are all affected by and impact adolescent health risk taking activities. Each of these disciplines has appropriate, developmentally based theories that can be drawn upon in designing longitudinal research.

In summary, conceptual descriptive models need to be expanded to include adolescent males and other risk behaviors. Then prescriptive models are needed that test the conceptual models and those models should be expanded into practice models. Ultimately, longitudinal causal models are necessary in order to separate cause and effect.

The previous discussion outlines a research agenda that theoretically could be accomplished by a single person or group. However there are a number of issues that should be

of concern to all adolescent health researchers. These issues are prioritized below:

1. National standardized definitions and age groups must be developed and accepted. This is necessary before comparable data bases can be collected.
2. Future instruments that are designed to examine adolescent risk behaviors should use a developmental framework, preferably one that incorporates a biopsychosocial approach.
3. Longitudinal design should study children no later than age eight or nine and that follows those who drop out of school. All such research needs to include appropriate ethnic and socioeconomic representation.
4. Survey instruments should examine <u>all</u> health risk behaviors, and not attempt to isolate specific behaviors.
5. Any research conducted with multicultural adolescents needs to be cognizant of cultural and parenting issues that may affect behavior and research results. Cultural issues should include length of time in the United States and measures of acculturation.
6. There is a need for programs to assist those youth who wish to abstain from risk behaviors, as well as to help those who are already at health risk. Sound research needs to evaluate both types of programs.

The research described above is expensive and time consuming, but ultimately is the optimal approach to provide definitive answers to the problems of adolescent risk taking.

The long term need to determine cause and effect must be balanced with the needs of those who are currently providing services to the already existing at-risk adolescent population. The preceding study is only a first step in understanding adolescent health risk behaviors and ultimately to decreasing both morbidity and mortality statistics for this age group. It is a hopeful expectation that nurses and nursing will be at the forefront of this movement.

REFERENCES

Access. (Winter, 1990). School nurses find additional help through health centers. Princeton: New Jersey: Robt. Wood Johnson Foundation.

Alexander,C., Ensminger,M., Kim,Y., Smith,B., Johnson,K., & Dolan,L. (1989). Early sexual activity among adol. in small towns & rural areas: Race & gender patterns. Fam. Planning Persp., 21(6), 261-266.

Aneshensel,C., Becerra,R., Fielder,E., & Schuler,R. (1990). Onset of fertility-related events during adolescence: A prospective comparison of Mexican American and non-Hispanic white females. AJPH, 80(8), 959-963.

Bachman,J.,O'Malley,P.,& Johnston,L. (1984). Drug use among young adults: The impacts of role status & social environment. J. Pers. Soc. Psychol. 47, 629-645.

Berzonsky,M. & Lombardo,J. (1983). Pubertal timing and identity crisis: A preliminary investigation. J. Early Adolescence, 3, 239-246.

Billy, J., & Udry,J. (1985). The influence of male and female best friends on adolescent sexual behavior. Adolescence, XX(77), 21-32.

Bingham,C., Miller,B., & Adams, G. (1990). Correlates of age at first sexual intercourse in a national sample of young women. J. of Adol. Research, 5(1), 18-33.

Blum,R., & Stark,T. (1985). Cognitive development in adolescence. Seminars in Adol. Med. 1 (1), 25-32.

Blum,R. (1987). Contemporary threats to adolescent health in the U.S. JAMA, 257 (24), 3390-3395.

Brindis, C., & Lee, P. (1990). Public policy issues affecting the health care delivery system of adolescents. J. of Adol. Health Care, 11(387-397.

Brindis,C. (1989). An evaluation of the School Based Health Centers: Results of the follow-up teen health risk survey. (Unpublished manuscript., Center for Repro. Health Policy, Univ. of California, Health Policy Research, San Francisco.

Brindis,C., & Jeremy,R. (1988). Adolescent pregnancy and parenting in California: Building a strategic plan for action. Institute for Health Policy Studies, San Francisco: University of California.

Brown, J., Childers,K., & Waszak,C. (1990). Television and adol. sexuality. J. of Adol. Health Care, 11, 62-70.

Bureau of Census. (1983). Projections of the population of the U.S.: 1983-2080. (GPO, Washington DC) P-25,952, 45-73.

Bureau of Census. (1986). Fertility of American Women: June 1985. (GPO, Washington DC), P-20,, 406. 40.

Carnegie Quarterly. (1986). Adolescent pregnancy: Testing prevention strategies. XXXI, (3 &4), 1-8.

Casper,L. (1990). Does family interaction prevent adolescent pregnancy? Fam. Planning Perspectives, 22(3), 109-114.

Chamie,M., Eisman,S., Forrest,J., Orr,M., & Torres, A. (1982). Factors affecting adolesecents' use of family planning clinics. Family Planning Perspectives, 14(3), 129-139.

Clark, S., Zabin,L., & Hardy,J. (1984), Sex, contraception and parenthood: Experience and attitudes among urban, black young men. Family Planning Perspectives, 16 (2), 77-82.

Cvetkovitch,G.& Grote,B. (1980). Psychosocial dev. & the social problem of teenage illegitimacy. In C. Chilman (Ed.), Adol. preg. & childbearing: Findings from the research (NIH Pub. No. 81-2077). Washington,DC: U.S. Government Printing Office.

Darabi,K., & Ortiz,V. (1987). Childbearing among young Latino women in the U.S. AJPH, 77 (1),25-28.

DeLamater, J. (1982). In W. Dijkstra and J. Van der Zouwen (Eds.). Response behavior in the survey-interview. London: Academic Press.

Dembo,M., & Lundell,B. (1979). Factors affecting adolescent contraceptive practices: Implications for sex education. Adolescence, XIV (56), 657-664.

Dobzhansky,T. (1964). Heredity and the nature of man. New York: Harcourt, Brace and World.

Donovan,J. & Jessor,R. (1985). Structure of problem behavior in adol. & young adulthood. J. of Consult. & Clinical Psychol. 53 (6), 890-904.

DuRant,R. & Sanders,J. (1989). Sexual behavior & contraceptive risk taking among sexually active adol. females. J. of Adol. Health Care, 10, 1-9.

Elkind, D. (1967). Egocentrism in adolescence. Child Development, 38, 1025-1034.

Elkind, d., & Bowen,R. (1979). Imaginary behavior in children and adolescents. Developmental Psychology, 15(1), 38-44.

Erikson,E. (1950). Childhood and society. New York: Norton.

Evans,R., Hansen,W.,& Mittlemark,M. (1977). Increasing the validity of self-reports of smoking behavior in children. J. of Applied Psychology, 62 (4), 521-523.

Ezzard,N., Cates,W., Kramer,D., & Tietze,C. (1982). Race-specific patterns of abortion by Am. teenagers. AJPH, 72(8), 809-813.

Forrest,J., & Singh,S. (1990). Public-sector savings resulting from expenditures for contraceptive services. Fam. Planning Perspectives, 22(1), 6-15.

Furstenberg,F., Morgan,S., Moore,K., & Peterson,J. (1987). Race differences in the timing of adolescent intercourse. Am. Sociological Review, 52, 511-518.

Galavotti,C., & Lovick,S. (1989). School-based clinic use and other factors affecting adolescent contraceptive behavior. J. of Adol. Health Care, 10, 506-512.

Harlan,W., Harlan,E., & Grillo,G. (1980). Secondary sex characteristics of girls 12-17 years of age: The U.S. Health Examination Survey. J. of Pediatrics, 96, 1074-1078.

Hansen,W., Malotte,C. & Fielding, J. (1985). The bogus pipeline revisited: The use of the threat of detection as a means of increasing self-reports of tobacco use. J. of Applied Psychology, 70(4), 789-792.

Hatcher,R., Stewart,F., Trussell,J., Kowal,D., Guest,F., Stewart,G., & Cates,W.(1990). Contraceptive technology: 1990-1992. New York: Irvington Pub. Inc.

Hofferth,S. & Hayes,C.(Eds.). (1987). Risking the future: Adolescent sexuality, pregnancy and childbearing. Washington DC,: National Academy Press.

Hofferth,S., Kahhn,J. & Baldwin,W. (1987). Premarital sexual activity among U.S. teenage women over the past three decades. Fam. Planning Persp. 19(2), 46-53.

Howard,M. (1985). Postponing sexual involvement among adolescents: An alternative approach to prevention of STD's. J. of Adol. Health Care, 6(4), 271-277.

Howard,M.,& McCabe,J. (1990). Helping teenagers postpone sexual involvement. Fam. Planning Perspectives, 22(1), 21-26.

Inhelder,B. & Piaget,J. (1959). Adolescent thinking. The growth of logical reasoning from childhood to adolescence. (pp.334-350.). New York: Basic Books.

Irwin,C. & Millstein, S. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence. J. Adol. Health Care, (7), 82S-96S.

Irwin, C., & Ryan,S. (1989). Problem behavior of adolescents. Pediatrics in Review, 10(8), 235-246.

Jessor,R., Costa,F., Jessor,L., & Donovan,J. (1983). Time of first intercourse: A prospective study. J. of Person. & Social Psych., 44(3), 608-626.

Jessor,R, & Jessor,S. (1977). Problem behavior & psychosocial development: A longitudinal study of youth. New York: Academic Press.

Johnson,J. (1986). Life events as stressors in childhood and adolescence. Nrebury Park: Sage Publications.

Kalton,G. (1983). Introduction to survey sampling. Newbury Park: Sage Publications.

Kandel,D. (1984). Marijuana users in young adulthood. Archives of Gen. Psych, 41, 200-209.

Kandel,D., & Logan,J. (1984). Patterns of drug use from adol. to young adulthood: I. Periods of risk for initiation, continued use, and discontinuation. AJPH, 74(7), 660-666.

Kantner,J.& Zelnik,M. (1972). Sexual experience of young, unmarried women in the U.S. Fam. Planning Perspectives, 4(4), 9-18.

Kinnaird,K., & Gerrard,M. (1986). Premarital sexual behavior & attitudes toward marriage & divorce among young women as a function of the mother's marital status. J. of Marriage & the Family. 48, 757-765.

Kinsey,A., Pomeroy,W.,& Martin,C. (1953). Sexual behavior in the human female. Philadelphia: W.B. Saunders.

Kohlberg,L. (1964). Development of moral character & moral ideology. In M.L. Hoffman & L.W. Hoffman (Eds.) Review of child development research, (Vol. 1,pp. 383-423), New York: Russell Sage Foundation.

Kovar,G. (1979). Some indicators of health-related behavior among adolescents in the U.S. Pub. Health Reports, 94 (2), 109-118.

Kovar, M., Klerman,L., Garell,D., and Deisher,R. (in press). Status of adol. health: The data and their limitations.

Kuhn,D., Langer,J., Kohlberg, L., & Hahn,N. (1977). Development of formal operations and moral judgement. Genetic Psychology Monograph. 95, 97-188.

Levy,S. (1990). Calif. population characteristics: What the 1990 census will show, what the next decade will bring. San Francisco: Center for Continuing Study of the Calif. Economy.

Mann,L., Harmoni,R.,& Power,C. (1989). Adol. decision making: The dev. of competence. J. of Adolescence, 12, 265-278.

Miller,B., & Bingham,R. (1989). Family configuration in relation to the sexual behavior of female adol. J. of Marriage & the Family, 51, 499-506.

Miller,B. & Sneesby,K. (1988). Educational correlates of adolescents' sexual attitudes and behavior. J. of Youth and Adol., 17 (6), 521-530.

Morbidity and Mortality Weekly Report (MMWR). (January 4, 1991). Premarital sexual experience among adolescent women: United States, 1970-1988. Waltham, MA: Massachusetts Medical Society.

Muus,R.(Ed.). (1988). Theories of adolescence. New York: Random House.

National Center for Health Statistics. (1989). Health United States, 1988. (DHHS Pub. No. PHS 89-1232). Public Health Service. Washington, DC: U.S. Government Printing Office.

Namerow,P.,& Jones,J. (1982). Ethnic variation in adol. use of a contraceptive service. J. of Adol. Health Care, 3, 165-172.

Newacheck,P. & McManus,M. (1989). Health insurance status of adolescents in the U.S. Pediatrics, 84(4), 699-708.

Newcomer,S. & Udry,J. (1985). Parent-child communication & adol. sexual behavior. Fam.Planning Persp. 17(4), 169-174.

Nurmi,J. (1987). Age,sex,social class, and quality of family interactions as determinants of adolescents' future orientation: A developmental task interpretation. Adolescence, XXII (88), 977-991.

Pete,J.,& DeSantis,L. (1990). Sexual decision making in young, blackadol. females. Adolescence, XXV(97),145-154.

Phillips, L. (1986). A clinician's guide to the critique and utilization of nursing research. Norwalk, Connecticut: Appleton-Century-Crofts.

Phinney,V., Jensen,L., Olsen,J., & Cundick,B. (1990), The relationship between fam. dev. & psychosexual behaviors in adol. females. Adolescence, 25(98), 321-332.

Pittman,K. (1988). Teenage pregnancy: An advocate's guide to the numbers. Washington DC: Children's Defense Fund.

Presser,H. (1978). Age at menarche,socio-sexual behavior & fertility. Social Biology, 25(2), 93-101.

Radius,S.,Dielman,T., Becker,M., Rosenstock,I., & Horvath,W. (1982) Health beliefs of the school aged child and their relationship to risk taking activities. Int. J. of Health Ed., 23, 227-235.

Reiss,R. (1967). The social context of sexual permissiveness. New York: Holt,Rinehart and Winston.

Robbins,C., Kaplan,H., & Martin,S. (1985). Antecedents of pregnancy among unmarried adol. J. of Marriage & the Family, 47(3), 567-583.

Schur,C., Bernstein,A., & Berk,M. (1987). The importance of distinguishing Hispanic subpopulations in the use of medical care. Medical Care, 25(7), 627-641.

Schwartz,A., & Darabi,K. (1986). Motivations for adol. first visit to a fam. planning clinic. Adolescence, 21(83), 535-545.

Settlage,D., Baroff,S. & Cooper,D. (1973). Sexual experience of younger teenage girls seeking contraceptive assistance for the first time. Fam. Planning Perspectives, 5(4), 223-226.

Shah,F. & Zelnik,M. (1981). Parent & peer influence on sexual behavior, contraceptive use & pregnancy experience of young women. J. of Marriage & the Family,(43), 339-348.

Shea,J., Herceg-Baron,R., & Furstenberg,F. (1984). Factors assoc. with adol. use of fam. planning clinics. AJPH, 74(11), 1227-1230.

Smith,E., & Udry,R. (1985). Coital & non-coital sexual behaviors of qhite & black adol. AJPH, 75(10), 1200-1203.

Soefer,E.,Scholl,T.,Sobel,E., Tanfer,K.,& Levy,D., (1987). Sexually active teenagers. 1(1), 15-18.

Sprafkin,J. & Silverman,L. (1981). Update: Physically intimate and sexual behavior on prime-time television, 1978-79. J. of Communication. Winter.

Stevens,G., & Cho,J. (1985). Socioeconomic indexes and the new 1980 census occupational classification scheme. Social Science Research. 14, 142-168.

Sussman,E., Nottleman,E., Inoff-Germain,G., Dorn,L., & Chrousos,G. (1987). Hormonal influences on aspects of psychological development during adolescence. J. of Adol. Health Care, 8 , 492-504.

Tanner,J. (1987). Issues and advances in adolescent growth and development. J. Adol. Health Care, 8, 470-478.

Thornton,A., & Camburn,D. (1989). Religious participation & adol. sexual behavior & attitudes. J. Marriage & the Family, 51(Aug), 641-653.

Udry,J. (1988). Biological predispositions & social control in adol. sexual behavior. Am. Sociological Review. 53, 709-722.

Udry,J., Bauman,K., & Morris,N. (1975). Changes in premarital coital experience of recent decade-of-birth cohorts of urban Am. women. J. of Marriage & the Family. Nov., 783-786.

Udry,J., & Billy,J. (1987). Initiation of coitus in early adolescence. Am. Sociological Review, 52(Dec.),841-855.

Udry, J., Talbert,L.,& Morris,N. (1986). Biosocial foundations for adol. female sexuality. Demography, 23(2), 217-227.

Weber,F., Elfenbein,D., Richards,N., Davis,A., & Thomas,J. (1989). Early sexual activity of delinquent adol. J. Adol. Health Care, 10, 398-403.

Westney,O.,Jenkins,R., Butts,J., & Williams,I. (1984). Sexual development & behavior in black preadol. Adolescence, XIX,(75), 557-568.

Wetzel,J. (1987). American youth: A statistical snapshot. New York: Wm. T. Grant Foundation.

Wilkinson,D.,& King, G. (1987). Conceptural and methodological issues in the use of race as a variable: Policy implications. The Millbank Quarterly, 65, (Suppl. 1), 56-71.

Zabin, L. (1984). The association between smoking & sexual behavior among teens in US contraceptive clinics. AJPH, 74(3), 261-263.

Zabin,L. & Clark,S. (1981). Why they delay: A study of teenage family planning clinic patients. Fam. Planning Perspectives, 13 (5), 205-217.

Zabin,L., & Clark,S. (1983). Institutional factors affecting teenagers' choice and reasons for delay in attending a family planning clinic. Family Planning Perspectives, 15(1), 25-29.

Zabin,L., Hardy,J., Smith,E., & Hirsch,M. (1986). Substance use & its relation to sexual activity among inner-city adolescents. J. Adol. Health Care, (7), 320-331.

Zabin,L., Hirsch,M., Smith,E.,& Hardy,J. (1984). Adol. sexual attitudes & behavior: Are they consistent? Fam.Planning Perspectives, 16(4), 181-185.

Zabin, L., Kantner,J., & Zelnik,M. (1979). The risk of adol. pregnancy in the first months of intercourse. Fam. Planning Perspectives, (11), 215-222.

Zelnik, M., & Kantner,J. (1977). Sexual & contraceptive experience of young unmarried women in the US.:1976 and 1971. Fam. Planning Perspectives, 10(1), 55-71.

Zelnik,M., & Kantner,J. (1979). Reasons for nonuse of contraception by sexually active women ages 15-19. Fam. Planning Persp. 11(5) 289-296.

Zelnik,M.,& Kantner,J. (1980). Sexual activity, contraceptive use & pregnancy among metropolitan area teenagers:1971-1979. Fam. Planning Perspectives,9, 55-71.

APPENDIX A

Original Model of Risk Factors for Adolescent Sexual Activity

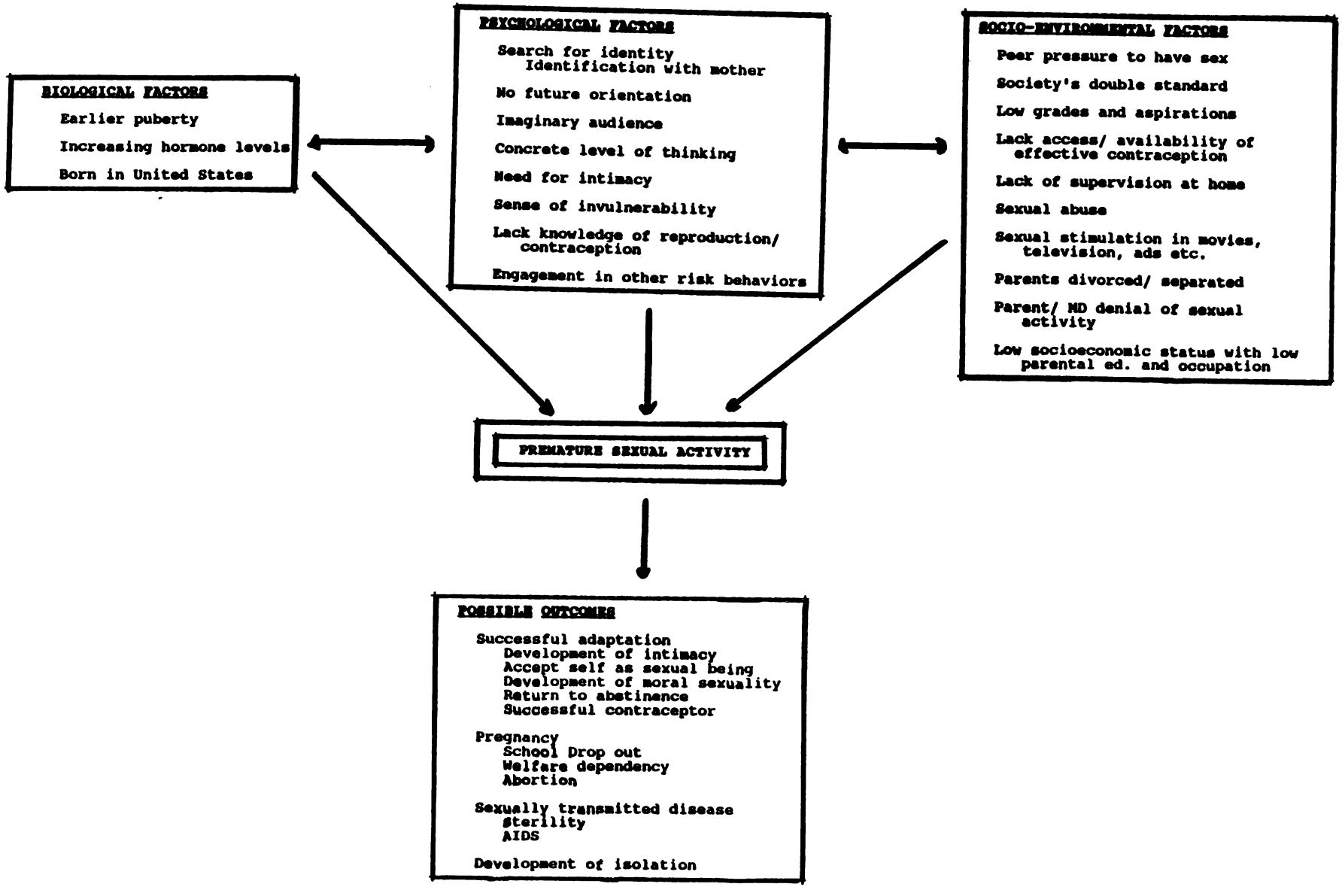

Figure 1: Model of Sexual Risk Taking Behavior

GMC 7/90

APPENDIX B

Tables With Less Significant P Values

APPENDIX B

Table B-1

Young Students' Sexual Activity and General Life Satisfaction

General Life Satisfaction	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Extremely/ Quite a Bit	10	41.6	91	60.2
Moderately	7	29.2	30	19.9
A Little/Not at All	7	29.2	30	19.9
Total	24	100.0	151	100.0

Total Values = 175 (6 values missing)

X^2= 2.94 df= 2 p < .23 Cramers V = 0.13

Table B-2

Young Students' Sexual Activity and Feeling Depressed

Feeling Depressed	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	12	50.0	52	33.8
Sometimes/ Seldom/ Never	12	50.0	102	66.2
Total	24	100.0	154	100.0

Total Values = 178 (3 values missing)

X^2= 2.38 df= 1 p < .12 Cramers V = 0.12

Table B-3

Young Students' Sexual Activity and Feeling Angry

Feeling Angry	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	13	54.2	67	43.0
Sometimes/ Seldom/ Never	11	45.8	89	57.0
Total	24	100.0	156	100.0

Total Values = 180 (1 value missing)

X^2= 1.06 df= 1 p < .30 Cramers V = 0.08

Table B-4

Young Students' Sexual Activity and Feeling Lonely

Feeling Lonely	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	7	29.2	43	27.9
Sometimes/ Seldom/ Never	17	70.8	111	72.1
Total	24	100.0	154	100.0

Total Values = 178 (3 values missing)

X^2= 0.02 df= 1 p < .90 Cramers V = 0.009

Table B-5

Young Student's Sexual Activity and Have a Say in Events

Have a Say in Events	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	20	83.3	120	81.1
Sometimes/ Seldom/ Never	4	16.7	28	18.9
Total	24	100.0	148	100.0

Total Values = 172 (9 values missing)

X^2= 0.07 df= 1 p < .79 Cramers V = 0.02

Table B-6

Young Student's Sexual Activity and Perceived Family Support

Perceived Family Support	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Always/Often	24	96.0	148	96.7
Sometimes/ Seldom/ Never	1	4.0	5	3.3
Total	25	100.0	153	100.0

Total Values = 178 (3 values missing)

X^2= 0.04 df= 1 p < .85 Cramers V = -0.01

Table B-7

Young Students' Sexual Activity and Educational Goals

Educational Goals	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Some HS/ Graduate HS	2	8.0	6	3.9
College/ More Than College	19	76.0	122	80.3
Don't Know	4	16.0	24	15.8
Total	25	100.0	152	100.0

Total Values = 177 (4 values missing)

X^2= 0.83 **df**= 2 **p** < .53 **Cramers V** = 0.07

Table B-8

Young Students' Sexual Activity and Mother's Education

Mother's Education	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
No or Some H.S.	13	54.2	49	41.2
H.S. Grad./Some College	11	45.8	49	41.2
Grad.College/ Post. Grad.	0	0.0	21	17.6
Total	24	100.0	119	100.0

Total Values = 143 (38 values missing)

X^2= 5.12 **df**= 2 **p** < .08 **Cramers V** = 0.19

Table B-9

Young Students' Sexual Activity and Father's Education

Father's Education	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
No or Some H.S.	6	37.5	44	39.7
H.S. Grad./Some College	7	43.7	40	36.0
Grad.College/ Post. Grad.	3	18.8	27	24.3
Total	16	100.0	111	100.0

Total Values = 127 (54 values missing)

X^2= 0.43 df= 2 p < .81 Cramers V = 0.06

Table B-10

Young Students' Sexual Activity and Family's Medicaid Status

Family Medicaid Status	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	8	72.7	57	71.2
No	3	27.3	23	28.8
Total	11	100.0	80	100.0

Total Values = 91 (90 values missing)

X^2= 0.01 df= 1 p < .92 Cramers V = 0.01

Table B-11

Young Students' Sexual Activity and the Number of People Living in the Home

Number Living With	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
1-4	15	60.0	81	51.9
5-9	9	36.0	70	44.9
10 or More	1	4.0	5	3.2
Total	25	100.0	156	100.0

Total Values = 181 (55 values missing)

X^2= 0.70 df= 2 p < .71 Cramers V = 0.06

Table B-12

Young Students' Sexual Activity and Availability of Medical Care

Availability of Medical Care	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	17	68.0	95	66.9
No	4	16.0	21	14.8
Didn't Need	4	16.0	26	18.3
Total	25	100.0	142	100.0

Total Values = 167 (14 values missing)

X^2= 0.09 df= 2 p < .96 Cramers V = 0.02

Table B-13

Young Students' Sexual Activity and Use of PCP

Use of PCP	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	1	4.0	1	0.7
No/ Quit	24	96.0	152	99.3
Total	25	100.0	153	100.0

Total Values = 178 (3 values missing)

X^2= 2.17 df= 1 p < .14 Cramers V = 0.11

Table B-14

Young Students' Sexual Activity and Use of Crack

Use of Crack	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain	
	Freq.	%	Freq.	%
Yes	1	4.0	1	0.7
No/ Quit	24	96.0	152	99.3
Total	25	100.0	153	100.0

Total Values = 178 (3 values missing)

X^2= 2.17 df= 1 p < .14 Cramers V = 0.11

Table B-15

Older Students' Sexual Activity and General Life Satisfaction

General Life Satisfaction	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Extremely/ Quite a Bit	99	49.2	213	51.0
Moderately	57	28.4	111	26.6
A Little/Not at All	45	22.4	94	22.4
Total	201	100.0	418	100.0

Total Values = 619 (24 values missing)

X^2= 0.24 df= 1 p < .87 Cramers V = 0.02

Table B-16

Older Students' Sexual Activity and Feeling Nervous

Feeling Nervous	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	64	32.2	123	28.9
Sometimes/ Seldom/ Never	135	67.8	303	71.1
Total	199	100.0	426	100.0

Total Values = 625 (18 values missing)

X^2= 0.70 df= 1 p < .40 Cramers V = - 0.03

Table B-17

Older Students' Sexual Activity and Feeling Scared

Feeling Scared	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	46	23.5	80	18.9
Sometimes/ Seldom/ Never	150	76.5	343	81.1
Total	196	100.0	423	100.0

Total Values = 619 (24 values missing)

X^2= 1.72 **df=** 1 **p <** .19 **Cramers V =** - 0.05

Table B-18

Older Students' Sexual Activity and Feeling Bored

Feeling Bored	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	97	48.5	188	44.3
Sometimes/ Seldom/ Never	103	51.5	236	55.7
Total	200	100.0	424	100.0

Total Values = 624 (19 values missing)

X^2= 0.95 **df=** 1 **p <** .33 **Cramers V =** - 0.04

Table B-19

Older Students' Sexual Activity and Feeling Lonely

Feeling Lonely	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	61	31.1	118	28.0
Sometimes/ Seldom/ Never	135	68.9	303	72.0
Total	196	100.0	421	100.0

Total Values = 617 (26 values missing)

X^2= 0.62 **df**= 1 **p** < .43 **Cramers V** = - 0.03

Table B-20

Older Students' Sexual Activity and Feel Good About Self

Feeling Good About Self	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	64	50.0	195	46.1
Sometimes/ Seldom/ Never	64	50.0	228	53.9
Total	128	100.0	423	100.0

Total Values = 551 (23 values missing)

X^2= 0.60 **df**= 1 **p** < .44 **Cramers V** = - 0.03

Table B-21

Older Students' Sexual Activity and Have a Say in Events

Have a Say in Events	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	174	87.0	349	81.5
Sometimes/ Seldom/ Never	26	13.0	79	18.5
Total	200	100.0	428	100.0

Total Values = 628 (15 values missing)

X^2= 2.92 df= 1 p < .09 Cramers V = - 0.07

Table B-22

Older Students' Sexual Activity and Perceived Family Support

Perceived Family Support	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Always/Often	181	89.2	383	88.3
Sometimes/ Seldom/ Never	22	10.8	51	11.7
Total	203	100.0	434	100.0

Total Values = 637 (6 values missing)

X^2= 0.11 df= 1 p < .74 Cramers V = - 0.01

Table B-23

Older Students' Sexual Activity and Educational Goals

Educational Goals	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Some HS/ Graduate HS	35	17.3	56	12.9
College/ More Than College	147	72.8	337	77.5
Don't Know	20	9.9	42	9.7
Total	202	100.0	435	100.0

Total Values = 637 (6 values missing)

X^2= 2.32 df= 2 p < .31 Cramers V = 0.06

Table B-24

Older Students' Sexual Activity and Mother's Education

Mother's Education	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
No or Some H.S.	99	52.4	208	58.1
H.S. Grad./Some College	74	39.1	110	30.7
Grad.College/ Post. Grad.	16	8.5	40	11.2
Total	189	100.0	358	100.0

Total Values = 547 (96 values missing)

X^2= 4.22 df= 2 p < .12 Cramers V = 0.09

Table B-25

Older Students' Sexual Activity and Father's Education

Father's Education	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
No or Some H.S.	83	46.4	174	54.0
H.S. Grad./Some College	66	36.9	97	30.1
Grad.College/ Post. Grad.	30	16.7	51	15.8
Total	179	100.0	322	100.0

Total Values = 501 (142 values missing)

X^2= 2.99 **df**= 2 **p** < .22 **Cramers V** = 0.08

Table B-26

Older Students' Sexual Activity and Number of People Living in the Home

Number Living With	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
1-4	78	58.2	217	49.5
5-9	50	37.3	201	45.9
10 or More	6	4.5	20	4.6
Total	134	100.0	438	100.0

Total Values = 572 (2 values missing)

X^2= 3.22 **df**= 2 **p** < .20 **Cramers V** = 0.08

Table B-27

Older Students' Sexual Activity and Availability of Medical Care

Availability of Medical Care	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	145	74.0	273	67.1
No	37	18.9	82	20.1
Didn't Need	14	7.1	52	12.8
Total	196	100.0	407	100.0

Total Values = 603 (40 values missing)

X^2= 4.85 df= 2 p < .09 Cramers V = 0.09

Table B-28

Older Students' Sexual Activity and Use of Crack

Use of Crack	Age 15-18; Sexually Active		Age 15-18; Abstain	
	Freq.	%	Freq.	%
Yes	3	1.5	1	0.2
No/ Quit	199	98.5	427	99.8
Total	202	100.0	428	100.0

Total Values = 630 (13 values missing)

X^2= 3.41 df= 1 p < .07 Cramers V = - 0.07

Table B-29

All Female Students' Sexual Activity and General Life Satisfaction

Satisfied With Life	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Extremely	10	41.6	91	60.2	69	51.0	213	51.0	30	44.1
Moderately	7	29.2	30	19.9	32	24.1	111	26.5	25	36.8
A Little/ Not At All	7	29.2	30	19.9	32	24.1	94	22.5	13	19.1
Total	24		151		133		418		68	

Total Scores = 794 (85 values missing)

X^2= 10.36 df= 8 p < .24 Cramers V = 0.08

Table B-30

All Female Students' Sexual Activity and Feeling Scared

Feeling Scared	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	10	41.7	31	20.0	31	24.4	80	18.9	15	21.7
Sometimes/ Seldom/Never	14	58.3	124	80.0	96	75.6	343	81.1	54	78.3
Total	23		155		127		423		69	

Total Scores = 798 (81 values missing)

X^2= 8.32 df= 4 p < .08 Cramers V = 0.10

Table B-31

All Female Students' Sexual Activity and Feeling Bored

Feeling Bored	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	18	72.0	80	51.3	63	47.7	188	44.3	34	50.0
Sometimes/ Seldom/Never	7	28.0	76	48.7	69	52.3	236	55.7	34	50.0
Total	25		156		132		424		68	

Total Scores = 805 (74 values missing)

X^2= 8.78 df= 4 p < .07 Cramers V = 0.10

Table B-32

All Female Students' Sexual Activity and Feeling Nervous

Feeling Nervous	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	12	48.0	45	29.0	43	32.8	123	28.9	21	30.9
Sometimes/ Seldom/Never	13	52.0	102	71.0	88	67.2	303	71.1	47	69.1
Total	25		155		131		426		68	

Total Values = 805 (74 values missing)

X^2= 4.64 df= 4 p < .33 Cramers V = 0.08

Table B-33

All Female Students' Sexual Activity and Feeling Depressed

Feeling Depressed	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	12	50.0	52	33.8	56	43.1	144	34.1	31	46.3
Sometimes/ Seldom/Never	12	50.0	102	66.2	74	56.9	278	65.9	36	53.7
Total	24		154		130		422		67	

Total Scores = 798 (81 values missing)

X^2= 21.9 df= 16 p < .15 Cramers V = 0.08

Table B-34

All Female Students' Sexual Activity and Feeling Good About Self

Feeling Good About Self	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Always/Often	7	28.0	79	51.0	64	50.0	195	46.1	34	50.8
Sometimes/ Seldom/Never	18	72.0	76	49.0	64	50.0	228	53.9	33	49.2
Total	25		155		128		423		67	

Total Scores = 798 (81 values missing)

X^2= 5.50 df= 4 p < .24 Cramers V = 0.08

Table B-35

All Female Students' Sexual Activity and Have a Say About Events in Life

Have a Say in Events	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	20	83.3	120	81.1	114	87.0	349	81.5	60	87.0
No	4	20.0	28	18.9	17	13.0	79	18.5	9	13.0
Total	24		148		131		428		69	

Total Scores = 800 (79 values missing)

X^2= 3.27 df= 4 p < .51 Cramers V = 0.06

Table B-36

All Students' Sexual Activity and Family's Medicaid Status

Family on Medicaid	Age 14 & Under; Sex.Act.		Age 14 & Under; Abstain		Age 15-18; Sex. Act.>14		Age 15-18; Abstain		Age 15-18; Sex. Act. <15	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	8	72.7	57	71.3	64	77.1	157	64.1	25	75.8
No	3	27.3	23	28.8	19	22.9	88	35.9	8	24.2
Total	11		80		83		245		33	

Total Scores = 452 (427 values missing)

X^2= 6.26 df= 4 p < .18 Cramers V = 0.12

Table B-37

All Students' Ethnicity and Use of B.C. at First Sexual Encounter

Use of B.C. at First Sex Exp.	Anglo		Hispanic		Asian		Pacific Islander		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	7	63.6	62	61.4	4	57.1	6	50.0	5	50.0
No	4	36.4	39	38.6	3	42.9	6	50.0	5	50.0
Total	11		101		7		12		10	

Total Values = 141 (142 values missing)

X^2= 1.07 df= 4 p= < 0.90 Cramers V = 0.09

Table B-38

All Students' Ethnicity and Use of B.C. at Last Sexual Encounter

Use of B.C. at Last Sex Exp.	Anglo		Hispanic		Asian		Pacific Islander		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	18	56.2	66	44.0	2	25.0	6	42.9	8	44.6
No	14	43.8	84	56.0	6	75.0	8	57.1	10	55.6
Total	32		150		8		14		18	

Total Values = 222 (61 values missing)

X^2= 3.02 df= 4 p= < 0.56 Cramers V = 0.12

Table B-39

All Female Students' Ethnicity and Length of Time Until Starting Contraception

Time Between Initiating Sex & Using B.C.	Anglo		Hispanic		Asian		Pacific		Other/ Black	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Never Used B.C.	5	71.4	30	51.7	3	75.0	2	40.0	4	80.0
< One Month	1	14.3	11	19.0	1	25.0	2	40.0	1	20.0
1-6 Months	1	14.3	5	8.6	0	0.0	1	20.0	0	0.0
6-12 Months	0	0.0	7	12.1	0	0.0	0	0.0	0	0.0
Other	0	0.0	5	8.6	0	0.0	0	0.0	0	0.0
Total	7		58		4		5		5	

Total Values = 79 (204 values missing)

X^2= 8.75 df= 16 p= < 0.93 Cramers V = 0.17

APPENDIX C

Survey Consent Form

WILLIAM C. OVERFELT HIGH SCHOOL

STUDENT HEALTH CENTER

A Licensed Outpatient Facility of San Jose Medical Center

1835 CUNNINGHAM AVENUE, SAN JOSE, CALIFORNIA 95122

TELEPHONE 259-0540 Ext. 3146

Dear Parent / Guardian:

As you may know, there has been a free Student Health Center at Wm. C. Overfelt High School for the last three years. The main part of the evaluation that enables us to keep funding this free care, is to give a Teen Risk Health Survey to our students. The survey is given and analyzed by the University of California, San Francisco.

This survey was done two years ago as the Center was opening and needs to be repeated now, to see if there has been any change in the health of the students. ALL **SURVEYS ARE TOTALLY CONFIDENTIAL AND HAVE NO NAMES.**

The survey does ask questions about any drug, alcohol or tobacco use and about nutrition and diet, exercise, car safety, sexual activity, and lifestyle. Copies of the survey are available in the Health Center for parents to preview if tney wish, and can be seen **Monday through Friday from 8:00 AM to 4 PM.** Other times can be arranged by calling **259-0540, ext. 3145.**

The survey will be given on **March 16,** during the **4th period. IF YOU DO NOT WISH YOUR CHILD TO TAKE THE SURVEY, PLEASE FILL OUT THE FORM BELOW AND HAVE YOUR CHILD RETURN IT TO THE HEALTH CENTER OFFICE.**

- -

FILL THIS OUT ONLY IF YOU DO NOT WANT YOUR CHILD TO TAKE THE HEALTH RISK SURVEY

I do **not** wish, _____, to take the
name of child

Teen Health Risk Assessment Survey on March 16th. My child

is in the _____grade and during fourth period has

_____.
name of teacher and/or class

Signed_____
name of parent/guardian

Date: _____

APPENDIX D

Adolescent Health Risk Survey Form

TEEN HEALTH RISK SURVEY

The Teen Health Risk Survey is a health education tool that asks questions about your physical characteristics and lifestyle. The information you give us is put into a computer and your answers are compared with the answers of other teens. In a few months you will get back a computer appraisal which estimates how healthy your lifestyle is now and how you might be able to improve it.

THIS IS NOT A TEST. Your answers to this survey are completely private, so please be honest. No teacher or anyone in your family will ever see your answers.

- TO GET BACK INFORMATION FROM THE COMPUTER THAT IS REALLY ABOUT YOU, YOU MUST ANSWER QUESTIONS HONESTLY.
- IF YOU HAVE A QUESTION, RAISE YOUR HAND AND SOMEONE WILL HELP YOU.

IN ORDER TO GET YOUR COMPUTERIZED FEEDBACK SHEET, YOU MUST PRINT YOUR NAME BELOW AND PULL OFF THIS PAGE SO IT MAY BE COLLECTED.

NAME: _____

First **Middle** **Last**

TEEN HEALTH RISK SURVEY

IMPORTANT: This is not a test. This is a survey conducted by UC San Francisco to help us better understand your health needs and concerns. Do not write your name on this form. Please answer honestly and completely. Check or circle the answer that best describes you.

PLEASE DO NOT WRITE HERE

About You

1. Are you: 1)___ Male 2)____ Female

2. Race/Ethnicity
   1)___ White
   2)___ Black/ Afro-American
   3)___ Chicano/ Hispanic/ Latin American
   4)___ Southeast Asian (Vietnamese, Cambodian, Thai, etc)
   5)___ Asian (Chinese, Japanese, Korean, etc.)
   6)___ Pacific Islander (Filipino, Samoan, etc.)
   7)___ American Indian/ Alaskan Native
   8)___ Other (what? _____)

3. How old are you? _____ years old.

4. What month and year were you born? (month)_____ / (year)_____

5. Were you born in the United States?
   1)___ yes
   2)___ no ⟶ If NO, how long have you lived in the US? _____ years

6. In what grade are you enrolled now? ___9 ___10 ___11 ___12

7. How many times in the **past 2 years** have you been a student at **another high school**?
   1)___ never
   2)___ 1 time
   3)___ 2 times
   4)___ 3 or more times

8. When did you first come to **this high school**?
   1)___ Spring 1986 or before
   2)___ Fall 1986
   3)___ Spring 1987
   4)___ Fall 1987
   5)___ Spring 1988
   6)___ Fall 1988

9. With whom do you live now? (Check all that apply and put numbers in spaces provided)

Adults you live with		Children you live with	
___ Mother		___ Brothers	(how many? ____)
___ Father		___ Sisters	(how many? ____)
___ Stepmother		___ Stepbrothers	(how many? ____)
___ Stepfather		___ Stepsisters	(how many? ____)
___ Grandparents	(how many? ___)	___ Other children	(how many? ____)
___ Other adult relatives	(how many? ___)		
___ Other adults	(how many? ___)		

10. Have your parents ever been divorced or separated?
    1)___ yes
    2)___ no

••• Please go to the next page •••>

DO NOT WRITE HERE

. What type of work does your mother do? _____ 44-63

. What type of work does your father do? _____ 64-83

bout School

. In general, what grades do you usually get in school? (Check only one) 84
1)___ A's 2)___ B's 3)___ C's 4)___ D's 5)___ F's

. Have you ever repeated a grade in school? 85
1)___ yes
2)___ no

. How much education do you plan to complete? 86
1)___ some high school 4)___ graduate college
2)___ graduate high school 5)___ more than college
3)___ some college 6)___ don't know

. How much education did your mother complete? 87
0)___ no high school 4)___ graduate college
1)___ some high school 5)___ more than college
2)___ graduate high school 6)___ don't know
3)___ some college

. How much education did your father complete? 88
0)___ no high school 4)___ graduate college
1)___ some high school 5)___ more than college
2)___ graduate high school 6)___ don't know
3)___ some college

bout Your Health

8. How is your overall health? 89
1)___ poor 4)___ very good
2)___ fair 5)___ excellent
3)___ good 6)___ don't know

9. FEMALES ONLY: How old were you the first time you had a menstrual period? 90
1)___ less than 11 years old 5)___ 14 years old
2)___ 11 years old 6)___ 15 years old or more
3)___ 12 years old 7)___ I have not started my periods
4)___ 13 years old

0. MALES ONLY: How old were you when you had your first "wet dream" (semen discharged during sleep). 91
1)___ less than 11 years old 5)___ 14 years old
2)___ 11 years old 6)___ 15 years old or more
3)___ 12 years old 7)___ I have not had my first "wet dream"
4)___ 13 years old

1. How many times each week do you exercise/ work out for at least 20 minutes? (Circle the number) 92

0 1 2 3 4 5 6 7 8 or more

--- Please go to the next page --->

2

269

DO NOT WRITE HERE

22. During the **past year**, how many times did you miss school to go to the doctor?
number of times ___ 93 94

23. During the **past four weeks**, how many times did you miss school because ...
a. you were sick? number of times ___ 95 96
b. you skipped or cut school? number of times ___ 97 98

24. How often do you go to...

	Never or very rarely	Every 2-3 years	About once a year	About twice a year
a. The dentist?				
b. A doctor or neighborhood clinic for: 1. a routine checkup?				
2. illness or injury?				
c. A hospital emergency room?				
d. A counselor outside of school?				
e. The school health center?				

99 100 101 102 103 104

25. During the **past year**, did you always get health care when you felt you needed it?

1)___ yes
2)___ no ——→
3)___ never needed it

If NO, why didn't you get care? (Check all that apply.)
___ My parent(s) did not think I needed care
___ My parent(s) could not take off work
___ It cost too much money
___ I did not think they would help me
___ I did not know where to go
___ I did not want to miss school
___ I just did not want to go
___ Other (what? _____)

105 106 107 108 109 110 111 112 113 114-133

26. If you felt sick or hurt now, where would you **most likely** go for medical care? (Check only one)

1)___ Alexian Brothers
2)___ San Jose Hospital
3)___ Valley Medical Center
4)___ Kaiser
5)___ Private doctor
6)___ School health center
7)___ Other (what? _____)
8)___ Don't know

134 135 136-155

27. Many families have some type of health insurance to help pay for medical care.
Does your family have any health insurance?

1)___ yes ——→
2)___ no
3)___ don't know

If YES, what type? (Check all that apply.)
___ MediCal
___ HMO (Kaiser, Cigna, United, Heals, etc)
___ Private (Blue Cross, Aetna, Prudential, etc)
___ Other insurance (what? _____)
___ Don't know

156 157 158 159 160 161 162-181

••• Please go to the next page •••>

DO NOT WRITE HERE

. How often do you do each of the following things? (Check only one box for each activity)

	Once a week or more	1-2 times a month	Once every few months	1-2 times ever	Never	
rive a car or motorcycle						182
rive faster than the speed limit						183
rive a vehicle when using drugs or alcohol						184
ide in a vehicle when the driver has used drugs or alcohol						185
ide a bicycle or skateboard when using drugs or alcohol						186

bout Tobacco, Alcohol and Other Drugs

. Have you ever, even once, smoked a cigarette?
1)___ yes → If YES, how old were you the first time you smoked? ____ years old (187, 188 189)
2)___ no

. Do you smoke cigarettes now?
1)___ yes →
2)___ no

If YES: a. How often do you smoke?
1)___ every day
2)___ a few times a week
3)___ a few times a month
4)___ once every few months
5)___ 1-2 times a year

(190, 191)

b. How many cigarettes do you smoke a day?
number of cigarettes ____

(192 193)

c. Do you think your use of cigarettes is a problem?
1)___ yes 2)___ no

(194)

. Do you plan to smoke cigarettes in the future?
1)___ yes 2)___ no

(195)

. Have you ever, even once, tried alcohol?
1)___ yes → If YES, how old were you the first time you had a drink? ____ years old (196, 197 198)
2)___ no

. Do you drink alcohol now?
1)___ yes →
2)___ no

If YES: a. How often do you drink?
1)___ every day
2)___ a few times a week
3)___ a few times a month
4)___ once every few months
5)___ 1-2 times a year

(199, 200)

b. How many drinks do you usually have?
(1 drink = 1 beer, or 1 glass of wine, or 1 shot of liquor)
number of drinks ____

(201 202)

c. Do you think your use of alcohol is a problem?
1)___ yes 2)___ no

(203)

. Do you plan to drink alcohol in the future?
1)___ yes 2)___ no

••• Please go to the next page •••> (204)

DO NOT WRITE HERE

35. Have you ever, even once, smoked marijuana?
1)___ yes → If YES, how old were you the first time you smoked marijuana? ____ years old
2)___ no

36. Do you smoke marijuana now?
1)___ yes →
2)___ no

If YES:
a. How often do you smoke?
1)___ every day
2)___ a few times a week
3)___ a few times a month
4)___ once every few months
5)___ 1-2 times a year

b. Do you think your use of marijuana is a problem?
1)___ yes 2)___ no

37. Do you plan to smoke marijuana in the future?
1)___ yes 2)___ no

38. How often do you use the following drugs? (For each drug, check only one box.)

	once a month or more	once every few months	a few times ever	never	quit
Crack					
Cocaine					
Uppers (speed)					
Downers (reds/quaaludes)					
PCP (angel dust)					
Steroids					
Other (_____)					

39. Do you ever get high (use alcohol or drugs) before school or between classes?
1)___ yes 2)___ no

About Relationships

40. Do you:

	YES	NO
a. have a best friend?		
b. have a boyfriend or girlfriend?		
c. belong to any social group (for example, school club, church group, or sports team)?		

41. In general, can you get help from family, friends or other people if you have a serious problem or worry?
1)___ yes 2)___ no

42. Do you sometimes wonder if you might be homosexual (gay or lesbian)?
1)___ Yes, I think I'm gay
2)___ I'm not sure if I'm gay
3)___ No, I know I'm not gay.

••• Please go to the next page •••>

DO NOT WRITE HERE

When is a female most likely to become pregnant?

1)___ during her period
2)___ a few days after her period
3)___ in the middle of her monthly cycle
4)___ a few days before her next period begins
5)___ equally throughout her monthly cycle

234

Some teenagers have had sexual intercourse and others have not.
Have you ever had sexual intercourse (had sex, "gone all the way")?

1)___ yes → If YES:
2)___ no
3)___ not sure

a. How old were you the first time you had sex?
___ years old

235
236 237

b. How often do you have sex?
1)___ a few times a week
2)___ a few times a month
3)___ once every few months
4)___ a few times a year
5)___ 1-2 times ever

238

c. Do you ever get high (use alcohol or drugs) before you have sex?
1)___ yes 2)___ no

239

Did you and your partner use a contraceptive method to prevent pregnancy (for example, the pill, condoms, foam, etc.) the **first** time you had sex?

1)___ I have never had sex.
2)___ No, we did not use a contraceptive method the first time we had sex.
3)___ Yes, we used a contraceptive method the first time we had sex.

240

If NO, after the first time you had sex, how long did you wait before using a contraceptive method?
1)___ We have never used a method
2)___ Less than one month
3)___ One to six months
4)___ Six months to one year
5)___ Other (what? _____)

241

Did you have sex during this time?
1)___ yes
2)___ no

242-252

Did you and your partner use a contraceptive method to prevent pregnancy the last time you had sex?

1)___ I have never had sex
2)___ No, I did not use a contraceptive method the last time I had sex
3)___ Yes, I used a contraceptive method the last time I had sex.

253

If YES: a. What contraceptive method did you and your partner use the last time you had sex? (Check only one method.)

1)___pill
2)___diaphragm
3)___sponge
4)___condom
5)___condom and foam
6)___cream, jelly, foam or suppository
7)___rhythm (safe time of the month)
8)___withdrawal (pulling out)
9)___other (what? _____)

254 255
256-265

b. Where did you or your partner get that contraceptive method? (Check all)

1)___drug store
2)___family planning clinic (like Public Health Dept., Planned Parenthood, etc.)
3)___school clinic
4)___private doctor
5)___friend or relative
6)___other (what? _____)
7)___does not apply (used withdrawal or rhythm)
8)___Don't know, partner had it.

266 267
268-287

••• Please go to the next page •••>

DO NOT WRITE HERE

47. In general, how often do you and your partner use a method to prevent pregnancy when you have sex?

1)___ doesn't apply because I have never had sex
2)___ never with sex →
3)___ rarely with sex
4)___ sometimes with sex
5)___ often with sex
6)___ always with sex

If "NEVER WITH SEX", what are the reasons you have not used a contraceptive method?
(Check all that apply)
___ I didn't think we would have sex
___ I/ my partner did not want to use a contraceptive method
___ I thought it was dangerous to use contraceptives
___ I thought it was wrong to use contraceptives
___ I didn't think I/my partner could get pregnant
___ I wanted to get myself/ my partner pregnant
___ I didn't know where to get contraceptives
___ Other (what? _____)

48. Have you ever had a sexually transmitted disease (STD)? [such as gonorrhea (GC), VD, herpes, warts, chlamydia, trich or syphilis]

1)___ yes →
2)___ no
3)___ don't know →

If YES or DON'T KNOW,
Did you seek medical treatment for these STD's?
1)___ yes 2)___ no

49. Have you or your partner ever been pregnant?

1)___ yes →
2)___ no
3)___ don't know →

If YES or DON'T KNOW,
How old were you when this first happened? ____ years old

50. Have you or your partner ever given birth to a child?

1)___ yes →
2)___ no
3)___ don't know →

If YES or DON'T KNOW,
How old were you when this first happened? ____ years old

About Your Lifestyle

51. In the **past year**, have you experienced or done any of the following things? (Check all that apply)

___ having a job?
___ failing grade(s) on a report card?
___ being suspended from school?
___ having a serious problem with family?
___ having sex when you didn't want to?
___ being verbally threatened?
___ being physically attacked?
___ the death of a close friend or relative?
___ the ending of a close friendship?
___ carrying a gun or knife?
___ selling drugs?
___ stealing something?
___ being involved with gangs?
___ witnessing a violent fight or crime?
___ getting into a violent fight or crime?
___ going to jail or juvenile detention?
___ being in trouble with the police?

52. Have you ever been so down that you **thought** about seriously hurting yourself?
1)___ yes
2)___ no

53. Have you ever been so down that you **tried** to seriously hurt yourself?
1)___ yes
2)___ no

54. In general, do you feel you have a say in deciding about the important things in your life?
1)___ yes
2)___ no

••• Please go to the next page •••>

DO NOT WRITE HERE

In general, how satisfied are you with your life?

1)___ extremely
2)___ quite a bit
3)___ moderately
4)___ a little bit
5)___ not at all

How often do you experience each of the following feelings?

I feel:	Almost Always	Often	Sometimes	Rarely	Never
Angry					
Nervous					
Good about myself					
Depressed					
Hopeful (about the future)					
Scared					
Lonely					
Bored					

...out the School Health Center

Have you **ever** been to the school health center for **any** reason?

1)___ yes 2)___ no

If yes above, how many times have you **ever** been to the school health center?

___ times, and

how many times **since school started this past fall?**

___ times

Have you ever participated in health education given by the clinic staff (clinic, classroom, assembly)?

1)___ yes
2)___ no

IF YES, which types? (Check all that apply)

___ nutrition and weight control
___ drug or alcohol prevention
___ smoking prevention
___ AIDS prevention
___ Family Life (Sex) Education
___ other (what?_____)

). If you have never been to the school health center, what are the reasons? (Check all the reasons that apply.)

___ My parent(s) didn't sign the permission form.
___ I was healthy and did not need the clinic.
___ I already have a place to go for health care.
___ The clinic did not have the services I wanted.
___ I didn't know where the clinic was.
___ I didn't like the staff at the clinic.
___ I was afraid my friends would find out.
___ I was afraid my teachers would find out.
___ I was afraid my parents would find out.
___ My friends told me the clinic was not any good.
___ I thought the clinic cost too much money.
___ I didn't know about the clinic.
___ I just didn't get around to it.
___ I didn't want to miss class.
___ The services would not be able to help me.
___ There was too long a wait for my appointment.
___ The hours were not convenient.
___ Other (what? _____)

--- Please go to the next page --->

8

BLANK 424

DO NOT WRITE HERE

61. If you have ever been to the school health center:

a. Which services have you used at the school health center? (Check all that you have used.)

Medical Services
___ minor illness (sore throat, skin problems, etc.)
___ minor injuries (sprains, cuts, bruises, etc.)
___ medications (aspirin, cough drops, etc.)
___ immunizations (shots to prevent mumps, measles)
___ sports physicals
___ physical exam (non-sports)
___ other (what?_____)

Reproductive
___ birth control information
___ birth control supplies or prescriptions
___ pregnancy test
___ STD information (VD, gonorrhea, etc)
___ protection against STD's (condoms)
___ tests or treatment of STD's
___ other (what?_____)

Counseling
___ family (parents, siblings)
___ friends (boyfriend, girlfriend)
___ emotions (the "blues," stress, anger)
___ sexual issues (sex abuse, peer pressure)
___ school (problems with homework)
___ drug or alcohol abuse
___ other (what?_____)

b. How satisfied were you with the services you received at the school health center?
1)___ very satisfied
2)___ somewhat satisfied
3)___ somewhat unsatisfied → If UNSATISFIED, why?
4)___ very unsatisfied →
___ worried it wasn't confidential (secret)
___ didn't like the staff
___ didn't offer services I wanted
___ services did not help me
___ too long a wait for my appointment

c. Why do you use the school health center? (Check all that apply.)
___ The people there really care about me.
___ I feel I can trust the clinic.
___ My friends told me the clinic was good.
___ I feel the care I get there is helpful.
___ I feel my visits are kept confidential (secret).
___ It's easy to get to.
___ It has the best hours.
___ I have no other place to go.
___ It's the cheapest place I know about.
___ Other (what?_____).

62. Do you think you will use the school health center in the future?
1)___ yes
2)___ no
3)___ don't know

••• Please go to the next page •••>

DO NOT WRITE HERE

3. Imagine you were in each of the following situations. Would you go to the school health center (SHC), another health care provider (off campus), or would you not get help? (For each situation, check only one box.)

	yes SHC	yes off campus	I would not get help	
I feel sad and I don't know why.				543
. I feel so down I think of hurting myself.				544
. I smoke cigarettes almost every day.				545
. I smoke cigarettes sometimes (weekly or monthly).				546
. I drink alcohol almost every day.				547
I drink alcohol sometimes (weekly or monthly).				548
. I don't stop drinking alcohol until I am drunk.				549
. I smoke marijuana almost every day.				550
. I smoke marijuana sometimes (weekly or monthly).				551
. I don't use a contraceptive method when I have sex.				552
. I sometimes use a contraceptive method with sex.				553
. I think I (or my partner) may be pregnant.				554
1. I would like my body to look better.				555
. I want to get along better with people.				556

4. Read each item below and decide if it describes the way you feel and think, or if it doesn't. Circle number of the response "like me" if the item matches your outlook and "not like me" if it doesn't fit.*

	Like Me	Unlike Me	
. Things usually don't bother me.	1	2	557
. I find it very hard to talk in front of a group.	1	2	558
. There are lots of things about myself I'd change if I could.	1	2	559
. I can make up my mind without too much trouble.	1	2	560
. I'm a lot of fun to be with.	1	2	561
. I get upset easily at home.	1	2	562
. It takes me a long time to get used to anything new.	1	2	563
. I'm popular with persons my own age.	1	2	564
. My family usually considers my feelings.	1	2	565
. I give in very easily.	1	2	566
. My family expects too much of me.	1	2	567
. It's pretty tough to be me.	1	2	568

••• Please go to the next page •••>

	Like Me	Unlike Me	
m. Things are all mixed up in my life.	1	2	569
n. People usually follow my ideas.	1	2	570
o. I have a low opinion of myself.	1	2	571
p. There are many times when I would like to leave home.	1	2	572
q. I often feel upset with my work.	1	2	573
r. I'm not as nice looking as most people.	1	2	574
s. If I have something to say, I usually say it.	1	2	575
t. My family understands me.	1	2	576
u. Most people are better liked than I am.	1	2	577
v. I usually feel as if my family is pushing me.	1	2	578
w. I often get discouraged with what I am doing.	1	2	579
x. I often wish I were someone else.	1	2	580
y. I can't be depended on.	1	2	581

64. Did you complete a survey questionnaire like this one at this school two years ago?
    1) ___ yes
    2) ___ no
    3) ___ don't know

582

65. Additional comments or concerns about the school health center on your campus?

583

THANKS VERY MUCH FOR FILLING OUT THIS SURVEY