



Adolescent decision making and risk behavior  
by Dolores Jean Trombetta

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Nursing  
Montana State University

© Copyright by Dolores Jean Trombetta (1996)

Abstract:

Adolescents are a group primarily at risk of contracting HIV/AIDS due to their dangerous sexual activities. The period between HIV infection and clinical diagnosis of AIDS can be up to ten years. In Montana, the 20-29 year age group represents 24% of the total AIDS cases compared with a national rate of 19%. With the high rate of HIV among adolescents, there is an urgent need for interventions that will provide teenagers with information; decision making, communication, and assertiveness skills necessary to decrease risk and foster prevention.

Secondary data analysis was performed on the 1995 Montana Youth Risk Behavior Survey to determine relationships between sexual activity, demographic variables, education in the school setting and parental discussions of HIV/AIDS. Cluster analysis was applied to the variables in order to group similar entities. The three identified groups were characterized by differing number of sexual encounters, age, education about HIV/AIDS in school, discussion with parents regarding HIV/AIDS, and use of condoms or other birth control methods.

Interventions that increase knowledge about HIV/AIDS and influence decision making skills are effective in decreasing risk behavior among adolescents. Schools and health care providers are in the unique position to implement effective educational programs aimed at adolescents who have a variety of experiences and knowledge.

ADOLESCENT DECISION MAKING  
AND RISK BEHAVIOR

by

Dolores Jean Trombetta

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

Master of Nursing

MONTANA STATE UNIVERSITY  
Bozeman, Montana

May 1996

© COPYRIGHT

by

Dolores Jean Trombetta

1996

All Rights Reserved

N378  
T7499

APPROVAL

of a thesis submitted by

Dolores Jean Trombetta

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

Sharon R. Hovey, MN, RNC Sharon R. Hovey 4-8-96  
Chairperson, Date  
Graduate Committee

Approved for the Department of Nursing

Kathleen Chafey, PhD, RN Kathleen Chafey April 5 1996  
Head, Major Department Date

Approved for the College of Graduate Studies

Robert L. Brown, PhD. R. L. Brown 5/7/96  
Graduate Dean Date

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Montana State University-Bozeman, I agree that the library shall make it available to borrowers under rules of the library.

If I have indicated my intention to copyright this thesis by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted only by the copyright holder.

Signature

Dolores Jean Trombetta

Date

April 7, 1996

## ACKNOWLEDGEMENTS

I wish to recognize, with deepest gratitude, the members of my thesis committee. Sharon Hovey, for her unending faith, encouragement, and assistance in this undertaking; Sharon Howard, for always believing in me; Dr. Kathleen Chafey, for her technical expertise; and Dr. Robert Fellenz, for his consistent support. Further thanks also must be extended to Dr. Gary Conti and his statistical assistance.

Genuine appreciation is extended to The Montana Office of Public Instruction and Rick Chiotti for allowing me to perform secondary analysis on the 1995 Montana Youth Risk Behavior Survey.

However, none of my graduate work nor this thesis would have been possible had it not been for the constant support of my family. Greatest acknowledgment goes to my husband, Mike, for his unending encouragement and confidence in me; and also to my children, Stephanie and Stacie, for their sacrifices and tolerance during the last three years. Finally, I wish to acknowledge my mother for her immeasurable faith, and emotional and physical support during this endeavor.

## TABLE OF CONTENTS

	Page
LIST OF TABLES . . . . .	vii
LIST OF FIGURES . . . . .	viii
1. INTRODUCTION . . . . .	1
Problem Statement . . . . .	2
Purpose . . . . .	3
Background and Significance of Study . . . . .	3
Conceptual Framework . . . . .	6
Definitions . . . . .	12
Assumptions . . . . .	12
Limitations . . . . .	12
2. REVIEW OF LITERATURE . . . . .	14
The Adolescent . . . . .	14
Development . . . . .	14
Relationships . . . . .	16
Sexuality . . . . .	17
Decision-Making . . . . .	19
Behavior and Behavioral Changes . . . . .	21
Education . . . . .	25
Health and Education . . . . .	33
3. METHODOLOGY . . . . .	37
Design . . . . .	37
Population and Sample . . . . .	38
Data Collection Procedures . . . . .	39
Data Collection Instruments . . . . .	39
Statistical Analysis . . . . .	40
Human Subjects Review . . . . .	42
4. DATA ANALYSIS . . . . .	44
Demographics . . . . .	44
Results . . . . .	46
Cluster Analysis . . . . .	50
Descriptions of Clusters . . . . .	53
Cluster 1 . . . . .	53
Cluster 2 . . . . .	54
Cluster 3 . . . . .	54

5. DISCUSSION . . . . . 56

    Evaluation of Results . . . . . 57

    Limitations . . . . . 58

    Implications For Practice . . . . . 59

    Implications For Research . . . . . 62

    Conclusions . . . . . 64

REFERENCES . . . . . 65

APPENDICES . . . . . 71

    Appendix A--Youth Risk Behavior Survey

        Questionnaire . . . . . 72

    Appendix B--Number Values Assigned to Responses

        Selected Questions from YRBS . . . . . 84

    Appendix C--Approval Letters . . . . . 90

## LIST OF TABLES

	Page
1. Demographic Data for Age Groups . . . . .	45
2. Gender of Participants . . . . .	45
3. Grade in School . . . . .	46
4. Education About HIV/AIDS at School or With Parent . . . . .	46
5. Students Who Have Engaged in Sexual Intercourse . .	47
6. Age at First Intercourse . . . . .	47
7. Number of Sexual Partners--Lifetime . . . . .	48
8. Number of Partners--Last Three Months . . . . .	49
9. Last Intercourse--Condom Use . . . . .	49
10. Last Intercourse--Method of Birth Control . . . . .	50
11. Group Means Per Variable . . . . .	51
12. ANOVA Differences Among Variables Between Clusters . . . . .	52
13. Composition of Clusters. . . . .	55

LIST OF FIGURES

	Page
1. Pre-Adult Health Decision-Making Model . . . . .	11

## ABSTRACT

Adolescents are a group primarily at risk of contracting HIV/AIDS due to their dangerous sexual activities. The period between HIV infection and clinical diagnosis of AIDS can be up to ten years. In Montana, the 20-29 year age group represents 24% of the total AIDS cases compared with a national rate of 19%. With the high rate of HIV among adolescents, there is an urgent need for interventions that will provide teenagers with information; decision making, communication, and assertiveness skills necessary to decrease risk and foster prevention.

Secondary data analysis was performed on the 1995 Montana Youth Risk Behavior Survey to determine relationships between sexual activity, demographic variables, education in the school setting and parental discussions of HIV/AIDS. Cluster analysis was applied to the variables in order to group similar entities. The three identified groups were characterized by differing number of sexual encounters, age, education about HIV/AIDS in school, discussion with parents regarding HIV/AIDS, and use of condoms or other birth control methods.

Interventions that increase knowledge about HIV/AIDS and influence decision making skills are effective in decreasing risk behavior among adolescents. Schools and health care providers are in the unique position to implement effective educational programs aimed at adolescents who have a variety of experiences and knowledge.

## Chapter 1

## INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) was first recognized in 1981 and has had a profound effect on every aspect of our society since then. In the United States today, one in 250 people is infected with the virus. As of November 1, 1995, the cumulative number of AIDS cases reported in the United States was 496,263 with 295,423 resulting deaths (Montana AIDS/STD Project, 1995). Among United States adolescents, aged 13-19 years, the reported number of AIDS cases has increased from one case in 1981 to 588 in 1993 and to 1,768 through June 1994 ("AIDS in Adolescence," 1995). In Montana there were 277 reported cases of AIDS, including two in the adolescent age group and 65 cases among adults aged of 20-29 (Montana AIDS/STD Project, 1995). Among those diagnosed with AIDS, the 20-29 year old age group accounts for one in four cases in Montana as compared to one in five throughout the United States (Montana Office of Public Instruction [OPI], 1995).

The average incubation period between infection with human immunodeficiency virus (HIV) and AIDS diagnosis is ten years. Therefore, it can be concluded that a large proportion of those in the 20 to 29 year age group with the diagnosis of AIDS contracted the disease as teenagers ("AIDS

in Adolescents", 1995; Fogiel, 1995; Facts About Adolescents & HIV/AIDS, 1994; Cohen, 1993). With no known cure or vaccine available, adolescents are at risk of contracting HIV because of their known sexual behaviors. Nationally, a 1992 study by the Centers for Disease Control (CDC) found that of adolescents between the ages of fourteen and seventeen, 43% have had sexual intercourse at least once and 13% reported having sex with four or more partners. Of the 43% of sexually active adolescents, 59% did not use a condom during their last encounter (CDC, 1994). The 1995 Montana Youth Risk Behavior Survey Report noted that among a sample of Montana ninth graders, 36% of males and 29% of females reported having sexual intercourse at least once, with the rate increasing to 62% among Montana's sampled high school seniors. Among the sexually active respondents, 46% did not use a condom during their last sexual intercourse. Further, 15% of Montana's youth claim to have had intercourse with four or more people in their lifetimes (Montana OPI, 1995).

#### Problem Statement

Many of Montana's teenagers are engaging in behaviors that may put them at risk of acquiring HIV infection. One-third of ninth graders having reported had sexual intercourse at least once and by the twelfth grade nearly two-thirds of high school students say they have had sexual intercourse. Only half of these reported the use of a

condom at their last experience and one-fourth acknowledged multiple sex partners. The number of sexual partners and age at first intercourse are associated with increased sexually transmitted diseases (Montana OPI, 1995).

Education is the best defense against the spread of HIV/AIDS and other sexually transmitted diseases. Educators are in a

position to disseminate accurate information about AIDS, and, by presenting facts, to dispel much of the fear this disease has generated. Accurate AIDS information enables people to make informed decisions and to cope rationally with the many-faceted problems this fatal disease presents (Volberding, 1988).

#### Purpose

The purposes of this study were three-fold. The first purpose was to describe the current status of sexual activity among Montana's adolescents, specifically related to age, frequency of sexual intercourse, and condom use. The second purpose was to study whether being taught in school about HIV/AIDS related to adolescent sexual behavior. The third purpose was to study the relationship between adolescent sexual behavior and parental discussion of HIV/AIDS.

#### Background and Significance of Study

In a time where one in seven adolescents has contracted a sexually transmitted disease, safer sex behaviors aimed at reducing susceptibility to contracting the AIDS virus are

essential (Walters, 1992). The objectives of Healthy People 2000 (Public Health Service, 1991) include confining the prevalence of HIV, reducing the proportion of adolescents engaging in sexual intercourse, and increasing condom use and birth control among single adolescents. Adolescents as a group tend to be impulsive regarding sexual activity and often do not take responsibility for their behavior.

Viewing themselves as indestructible, they may perceive AIDS as something that will not happen to them and do not worry about the potential consequences (Roscoe & Kruger, 1990).

Hingson and Strunin (1992) reported that while adolescents generally know the principal modes of HIV transmission, teens continue to engage in unprotected sex. These authors suggested moving beyond education about modes of transmission to stressing that there is no cure for AIDS and abstinence is the primary method of prevention. For those adolescents who will not forego sexual activity, educators should emphasize condom use and even teach proper use of condoms. In addition, the authors encouraged varying forms of instruction, such as role play, that promote(s) safe practices. Kolbe and Jones (1988) noted that brief educational offerings (such as single filmstrips or lectures) to adolescents are not sufficient to influence risk behaviors. They also advocated programs to assist teens in developing knowledge, skills and the support they need to refrain from participating in sexual activities

until they are ready to establish a mutually faithful, monogamous relationship.

The CDC has worked with schools and other youth supporting agencies since 1974 to develop, evaluate, improve health education programs that target health-risk behaviors among youth. Since 1986, the CDC has been responsible for helping national, state, and local education agencies in the provision of effective HIV education for this population. In 1987, a national program was launched by DASH, the CDC's Division of Adolescent and School Health. The intent of the program was "to help schools and other agencies that serve youth across the nation provide effective health education to prevent the spread of HIV" (Moore, et al., 1991). One component of DASH is their Curriculum Dissemination Project. This venture recommends curricula based on behavioral impact, which include delaying initiation of intercourse, reducing frequency of unprotected intercourse, reducing the number of partners and increasing condom use. The curricula are initially evaluated by outside reviewers. Programs are then revised and introduced nationally to state-level teacher training coordinators. The selected curricula are introduced to local schools and districts with the option to adopt or reject them. The goal of the program is for students throughout the United States to receive programs with credible evidence of effectiveness.

Of Montana's youth, 91% reported having had AIDS/HIV education in school (Montana OPI, 1995). However, only 54% of sexually active youth in Montana acknowledged using a condom at their last sexual experience. The finding that knowledge of AIDS is common among adolescents, but does not translate into actual use of safer sex practices is verified in studies (DiIorio, Parsons, Lehr, Adame, & Carlone, 1993a; Ransum, Marion, and Mathias, 1993; Roscoe & Kruger, 1990; Ross & Rosser, 1989).

Obtaining additional knowledge should assist educators and health professionals in determining the prevalence of risk behaviors among Montana's rural adolescents. Additionally, the level of parental and/or school provided instruction/information about HIV/AIDS will be identified. The focus is to identify areas of need in the development of statewide comprehensive health education. This supports the Healthy People 2000 (Public Health Service, 1991) goal to promote safer sex practices among adolescent risk takers. The ultimate goal is to reduce those unhealthy behaviors that place Montana youth at jeopardy.

#### Conceptual Framework

Sieving and Bearinger (1995) described adolescents as a group of people who are learning to develop their mental abilities to reason, assess, evaluate, and to use divergent thinking. They are also beginning to think beyond the

present and into the future. However, the ability to make good judgements is still limited by inexperience and insufficient knowledge to gain adequate perspectives for problem solving.

Schurman, Hancock, Fast, and Murphy (1994) noted that adolescents see time differently than they did as children. Responding to a problem is often delayed in order to think through the possibilities for resolving the problem. But, even though patterns are developing, the cognitive and psychologic changes adolescents are experiencing may affect their adherence to preventive health care practices. Older adolescents may not consider the risks of their behavior and are unlikely to act differently than their peers. Adult values and beliefs may be rejected while striving for independence.

Most health promotion models being used with adolescents were developed for use with adults. The assumption of most of these models is that adults are 'free' to engage in certain activities and behaviors that are not routinely acceptable for adolescents. The Pre-Adult Health Decision-Making Model (PAHDM), based on the assumptions of symbolic interactionism, was developed by Langer and Warheit (1992) in an effort to account for the different information processing mechanisms adolescents employ. These mechanisms include peers, parents and critical or reflective self-analysis.

Symbolic interaction is a theory formulated in the early part of the 20th century by social psychologists. This approach advocates that interaction is symbolic, "based on the symbols/meanings persons develop in the course of their conduct" (Langer & Warheit, 1992, p. 923).

Accordingly, conforming behavior is a part of the process of identity development in the adolescent. Willingness to conform to group norms is especially characteristic of this age group and the acceptance by peers is of utmost importance (Erikson, 1950).

An underlying premise of symbolic interactionism is that the subject component of experience should be examined in order to gain insight into behavior. The symbols/meanings people assign to objects serve to organize their behavior into social acts. Thus, the emergence, construction, and maintenance of self, as based on the attitudes, values, and behaviors of others is the focus of symbolic interactionism. (Langer & Warheit, 1992, p. 923).

The PAHDM is strongly influenced by symbolic interactionism with the central postulate being that adolescents are in the process of self-development. To understand their decision making, the concept of emerging self (as it interacts with their lifeworld) must be taken into account preceding and succeeding cues to action (Langer and Warheit, 1992). One major assumption of the PAHDM is that directedness/orientation is a major component of adolescent decision-making. "The focus is on how reference groups associated with decision-making direct and reinforce

the attitudes, beliefs, and behaviors related to risk" (Langer and Warheit, 1992, p. 933).

The PAHDM was developed from a theoretical perspective with three major components. First, from a psychosocial viewpoint, identity development during adolescence is comprised of three parts: (a) the previously held view of self and identity fostered by parents is differentiated; (b) there is a migration from the parental sphere of influence to that of peers; and (c) a blend of parental and peer influences are linked with the adolescent's own social and personal characteristics. Second, utilizing symbolic interactionism, the PAHDM considers adolescent decision-making to be socially interactive and mediated by others. Third, adolescent decision-making is considered in two contexts: (a) the processing of external information regarding health risks as an input into knowledge and beliefs; and (b) the processing of this external information into the outputs of attitudes and behaviors. (Langer and Warheit, 1992)

The conceptual framework of the PAHDM (Figure 1) focuses on two major aspects of decision making: Inputs, the adolescent's knowledge and beliefs; and outputs, the attitudes and behaviors.

Both inputs and outputs are mediated at different points by biopsychosocial/environmental factors which exist along a time sequence. That is, past, present, and self-perceived future factors are considered by the PAHDM to intervene or mediate adolescent decision-making at the input state (prior to any cue to action)

and/or the decision-making stage. Further it is suggested that biopsychosocial factors may determine if the cue to action will occur at all. (Langer and Warheit, 1992, p. 935)

The adolescent is portrayed by three overlapping circles which illustrate the three categories of decision making orientation, referred to as directedness: self-directed, peer-directed and parent-directed. The overlap indicates blending of the types; however, strength of directedness varies by individual. (Langer and Warheit, 1992)

Testing of the PAHDM found that decision-making orientation and directedness were significantly associated with AIDS-related attitudes, beliefs, and behaviors. These attitudes and beliefs, along with personal skills and high risk sexual behaviors, were most often found among peer-directed students and less often among self-directed and parent-directed students (Langer, Zimmerman, Warheit, & Duncan, 1993).



### Definitions

The definitions for purposes of this study included the following:

1. An adolescent is a person thirteen to nineteen years of age. However, since the survey was administered to Montana high school students, several were below the age of thirteen. Therefore, the operational definition is a person in the ninth through twelfth grades.

2. At risk or risky sexual behavior was designated by the CDC in 1988 to be behaviors that have the potential to result in HIV infection or other STDs and/or in unwanted pregnancy. This definition was adapted from the Montana Youth Behavior Risk Survey (Montana OPI, 1995) with the addition of the word 'potential'.

### Assumptions

The PAHDM assumes health behavior modeling for adolescents must exist along a developmental time line. In other words, adolescents must have progressed to a certain developmental stage in order for this type of training to be effective (Langer & Warheit, 1992).

### Limitations

Three major limitations were identified during the course of this research. First, since secondary analysis was conducted on existing data, it was not possible to

develop questions specifically related to peer-directed and parent-directed influences. Responses are restricted to questions in the survey with none relating to actual mechanisms of decision-making in this population. Second, there was no mechanism to determine differing amounts of instruction. The question, "Have you ever been taught about HIV/AIDS in school," had a wide area of interpretation as the survey did not specify the type or duration of instruction. The OPI's recommendation for education is for eight to twelve hours of instruction, as published in the AIDS Curriculum Planning Guidelines in 1993. This guide suggested a curriculum for schools to follow when planning HIV/AIDS education. Some students may have responded affirmatively to this question with less than an hour of instruction in the school. And third, it is possible for respondents in a self-reported survey to under-report behaviors that are socially undesirable, unhealthy, or illegal (such as alcohol and/or drug use, non-use of seat belts, and sexual activity) while over-reporting behaviors that are socially desirable (amount of exercise or proper diet).

## Chapter 2

## REVIEW OF LITERATURE

Adolescent knowledge and risk behavior have been thoroughly researched since the identification of the AIDS epidemic. The literature reviewed for this study was in relation to adolescent development, relationships and sexuality. Also explored was literature related to decision-making, sexual and behavioral changes in response to the AIDS epidemic, and health educative approaches for adolescents.

The AdolescentDevelopment

Mercer (1979) described the adolescent as one who is working toward "achieve(ing) the ability to maintain stable relationships" (p. 10) with chosen life tasks and goals forming. During this time, six developmental tasks are accomplished:

1. acceptance and achievement of comfort with body image,
2. determination and internalization of sexual identity and role,
3. development of personal value system,
4. preparation for productive citizenship,
5. achievement of independence from parents, and
6. development of an adult identity (Mercer, 1979, p. 10).

A critical task of adolescence is to determine an identity and a place in the world. Also during this time, the

adolescent develops a future time orientation and becomes better able to delay immediate gratification in order to gain more satisfaction in the future (Schurman, et al. 1994). Schuster, Cronk, and Reno (1992) concurred with Schurman et al. and added that adolescent maturation is accomplished by the assumption of increased responsibility for personal behavior and its consequences and is working toward acquiring the personal, academic, and social skills essential to adult living. However, as Frieberg (1992) concluded, this does not imply that adolescents are intellectually mature as individuals since they lack the breadth of experience needed to form firm foundations of wisdom. Jurich, Adams and Schulenberg (1992) noted: "The development of accountability and responsibility for one's actions is an important component in the maturation process and in the development of ego-identity" (p. 98). This concept is a crucial point in the development of the adolescent. Decision-making may be more difficult for these adolescents if a clear sense of self-definition and values has not been developed. And as a result, decision-making related to positive sexual behaviors may be impaired (Jurich, et al. 1992).

Moore and Rosenthal (1991) commented that adolescents often perceive themselves to be invulnerable to consequences of risky behavior. Adolescents also become fatalistic particularly when they feel that they have little control

over behavioral outcomes. As a result, taking sexual precautions for example will not matter. Additionally, Weinstein, Rosen, and Atwood (1991) commented that fear tactics are unsuccessful in decreasing risk for adolescents. The authors found that extreme fear creates a sense of loss of control feeling which in turn sanctions the continuation of high risk behaviors.

### Relationships

Adolescents often experience not only intense sociability but also profound loneliness. In spite of the parent-child relationship being at its low point, adolescents require a supportive family atmosphere and acceptance by peers for interpersonal maturation to occur. Behavioral standards are primarily set by the peer group and fear of rejection is great (Sieving & Bearinger, 1995). A sense of autonomy is evident during this period along with a desire for identity and independence within society (Schurman, et al., 1994). Frieberg (1992) noted that adolescents are anxious for changes to occur but are still dependent on the stability of their parents. If parents recognize this and act as mentors and role models while providing a supportive and encouraging environment, the adolescent will more likely be receptive to parental involvement. The result will be the development of self-confident, responsible, thinking adults (Frieberg, 1992).

The peer group is an important socializing agent for adolescents. This group is a strong support to its members and provides a sense of belonging and a feeling of power and strength. Therefore, as adolescents increase the time spent with their peers and decrease time at home, they can and will question and challenge adult values and societal institutions (Sieving and Bearinger, 1995). As adolescents move out and away from the family unit, the peer group assists in providing the means for achieving the goals of individualization. Again, it is the parents' responsibility to identify crucial consequences of actions and provide alternate opportunities in decision making. Limits on independence should be decreased providing for a smooth transition into adulthood and responsible independence (Cronk, 1992).

### Sexuality

Our Western society allows individuals freedom to decide when to begin sexual activity and whom to select as partners. In some adolescents' views, the right to choose is an indication of maturity. The 'sexual revolution' of the 1970's launched an era in which sexual activity began at an earlier age along with increased sexual experience and rise in number of partners in unmarried youth (Netting, 1992). Schurman et. al (1994) noted that "adolescents have sex for affection, because of peer pressure, as a symbol of maturity, as spontaneous experimentation, to feel close and

because it feels good" (p. 567). In addition, intercourse "may be engaged in by those who are lonely in an attempt to gain a sense of security or reassurance through intimacy" (Moon, 1995, p. 227).

Adolescents as a group tend to be impulsive regarding sexual activity and often do not take responsibility for their behavior. Often contraception is not used nor are the potential outcomes of sexual intercourse considered. Sieving and Bearinger (1995) expanded on this idea by adding that physical maturity precedes psychological and cognitive maturity. Long-term implications of behavior may be considered by some older adolescents (those over the age of sixteen). Therefore, they may be able to respond to health promotion efforts that require a future time perspective. However, younger adolescents (up to the age of fourteen) are often concrete thinkers and unable to conceptualize long-range consequences of their behavior. They may view themselves as indestructible and engage in sex spontaneously, based on passion of the moment. As a result, a common attitude is that AIDS is something that will not happen to them and they do not worry about the potential consequences (Roscoe & Kruger, 1990).

Hernandez and DiClemente (1992) evaluated sensation seeking, self-control and ego-identity related to sexual risk behavior in older adolescent males. Examining social factors alone, it was found that adolescents who had low

scores for ego-development (goal-directedness) and self-control were significantly more likely to engage in sex without condoms.

### Decision-Making

"Physical maturity affects adolescents' self-perception and social interactions; cognitive development affects their ability to make decisions about risk taking" (Beaman, 1993, p. 174). As decision-making abilities increase over the adolescent period, so does the ability "to consider hypothetical risks and benefits of possible behaviors, along with potential consequences of such behaviors" (Sieving & Bearinger, 1995, p. 832). Lewis (1981) found that as an adolescent cognitively matures, she or he is more likely to consult with mentors, role models and adult experts regarding concerns. However, those adolescents who are able to apply reasoned decision-making do not use these processes on every occasion. Rational thought processes are likely to be abandoned by adolescents when facing overwhelming peer pressures, personal stress or time pressures. In addition, thought processes are less sophisticated and more vulnerable to effects of stresses and pressures when youths deal with unfamiliar or emotionally arousing topics. Health related decisions, including sexual behavior, encountered by adolescents are often personally stressful, emotion laden, or new. During such circumstances, even those with advanced

decision-making skills may not utilize their capacities of abstract formal reasoning (Sieving & Bearinger, 1995).

Bandura's social cognitive theory (1986), examined how environmental events, cognitive factors and behavior all interact with each other. The author suggested that human beings have the opportunity to apply control over their own destiny as well as set limits of self-direction. Specifically, people will anticipate the likely consequences of their actions and set goals and plan courses of action. Humans also have the capacity to learn by observation which enables them to acquire rules for generating and regulating behavioral patterns. This modeling occurs among groups of all ages (including adolescents).

Bandura (1992) noted that interpersonal aspects of sexuality require extensive practice among all age groups. Once knowledge of new skills and social strategies is gained, opportunities must be provided to perfect these skills. Practicing in simulated situations should be promoted, where participants need not fear making mistakes or appearing inadequate. "This is best achieved by role playing in which they practice handling the types of situations they have to manage in their social environment" (Bandura, 1992, p. 103). Finally, people are able to analyze their experiences and think about their own thought processes in order to derive knowledge about themselves and their environment. The skills of applying control over

one's own destiny develop and influence decision-making throughout the lifetime.

### Behavior and Behavioral Changes

Fisher, Misovich, and Fisher (1992) focused their literature review on the effects of reference group social norms on HIV-risk behavior and prevention. They defined social norms as "expected modes of behavior and belief that are established formally or informally by a group" (p. 118). Humans behave in certain ways in order to gain approval from their reference group and avoid group sanctions. Surveyed high school students showed a high level of understanding of HIV and its transmission in addition to knowledge that contracting the virus can be decreased by employing safer sexual behavior (such as condom use). While some students showed evidence of decreasing high-risk behaviors in favor of safer ones, and a belief that they are practicing safer sex, a large portion of the students had not changed their behavior despite a cognitive understanding of AIDS and its risks (Brown, 1991; DiIorio, Parsons, Lehr, Adame, & Carlone, 1992; DiIorio et al., 1993a; DiIorio, Parsons, Lehr, Adame, & Carlone, 1993b; Hobart, 1992; Jurich, et al., 1992; Moore and Rosenthal, 1991; Netting, 1992; Roscoe and Kruger, 1990; Strader and Beaman, 1991; Svenson and Varnhagen, 1990; Walters, 1992; Weinstein, Rosen and Atwood, 1991).

Interestingly, a major finding in Hobart's (1992) study was that those sampled who knew the most AIDS victims and had high awareness of the mechanisms for spread of the disease were the respondents who rated sex with briefly known partners as least risky. In addition, the same respondents were least inclined to use condoms in sexual encounters with briefly known partners. A sobering statistic was presented by Weinstein et al. (1991): When students were asked if they would tell their sexual partner if they were HIV positive, 3% stated no, 20% did not know, only 71% indicated yes, and 6% did not answer.

A research study by Smith and Rosenthal (1995) polled adolescents regarding risk behavior, perceived risk behavior on the part of the adolescent, peer approval and parental distress. Respondents identified having unprotected sexual intercourse as a high risk activity. The boys surveyed indicated a higher peer approval and less parental distress related to intercourse without a condom than the girls surveyed. Other findings were that older adolescents (grade eleven) had a more realistic assessment of their risk environment than the younger adolescents (grades seven and nine).

Pendergrast, DuRant, and Gaillard (1992) employed a questionnaire with a convenience sample of adolescent males attending a general adolescent clinic to determine correlates of condom use. Increased condom use was

significantly associated with lower perceived hassle of use, perception of girl-friend's positive attitude toward condoms, greater self-confidence in correct use, younger age, reported degree of education about sexually transmitted diseases (STD), greater perceived condom safety, and higher perceived risk of STD if not wearing a condom. One surprising result was that 30% more respondents were concerned about acquiring AIDS than impregnating their partner, this within a geographic study area where there was a low AIDS prevalence. However, while attitudes about condom use were found to be positive, results indicated that high-risk sexual behaviors were widespread. One of the authors' data-based conclusions "was that health concerns do not play a significant role in adolescents' decisions to use condoms" (p. 137).

A study of female adolescents identified four risk groups. Categories of risk were related to 1.) knowledge, beliefs, and behavioral practices relevant to HIV transmission; 2.) history of intravenous drug use and/or STD; and 3.) probable risk contact with an HIV/AIDS infected individual (Millstein, Moscicki & Broering, 1993). The sample consisted of an ethnically diverse group of sexually active adolescents recruited from several health clinics. The four identified groups were: Very high risk, moderately high risk, moderate risk, and low risk. As expected, those subjects in the lowest-risk group were also the ones

engaging in less risky behaviors. The number of sexual contacts did not differ among the three highest groups. The risk group having the least knowledge about AIDS was the moderately high risk group. Among all respondents, this group also had the highest concentration of those living in a high risk geographic area. And, finally, as subjects' risk status increased, so did their perceptions that they would engage in risky behaviors in the upcoming year.

Leigh, Morrison, Trocki, and Temple (1994) presented results from a national survey of the sexual behavior of adolescents (aged twelve to seventeen). Results showed that few twelve and thirteen year old boys and twelve through fourteen year old girls had engaged in sexual intercourse. These numbers increased significantly in the sixteen to seventeen year olds. Condom use at last intercourse was 47% for girls and 67% among boys, with the boy providing the condom 86% of the time. There was no relationship between condom use at most recent intercourse and perceived AIDS risk. Condom use in general was not more likely for those who were worried or afraid of contracting AIDS or by those who perceived their behavior as risky.

Contrary results were found by Nguyet, Naheux, Beland, and Pica (1994). Sexual behaviors and condom use were surveyed among adolescent boys, aged twelve to nineteen. Results of the self-administered questionnaire revealed this group of boys became sexually active at an average age of

13.9 years. While 60% of them utilized condoms at their first intercourse, the rate decreased to 33% use in subsequent episodes. Condom use was greatest among fourteen year old boys and decreased with increase in age, being replaced most often by oral contraceptive use among their female partners. This finding suggests that this group is more concerned with unwanted pregnancy than with an STD or AIDS.

#### Education

It is society's expectation that parents should provide some sort of sex education for their children. Morris (1993) found that a majority adolescents and their parents "saw teens' risk taking as both normal and inevitable" (p. 76). The teens and their parents were aware of the consequences of high-risk behaviors, but also felt the consequences were part of a 'good time.' However, contrary to the adolescents' opinion, the parents did not think that this meant the behaviors were acceptable. Mueller and Powers (1990) commented that "current formal, institutionalized sex education programs are not significantly lowering sexual activity and pregnancy rates" (p. 469). They investigated the relationship between parent's style of sexual communication as perceived by adolescents and adolescents' behavior and information accuracy. Findings included the belief by parents that they

are the most important source of information to their children. However, adolescents expressed the need for sex education for parents in order to deal with teenagers' concerns and the need to create better parent-child sex communication. Adolescents also identified the need for earlier sex education than their parents did.

Mueller and Powers' (1990) data indicated students who perceived their parents' communicative styles as friendly and attentive were less likely to engage in sexual activity as adolescents and young adults. This style was seen as supportive, possibly lending to a greater impact on sexual behavior than a communication style perceived as a threat to self-image and self-esteem. However, the strength of correlation of these variables was not documented.

Results of a study by Shoop and Davidson (1994) revealed knowledge alone about AIDS was not an effective deterrent to unsafe practices (specifically condom use). However, increased condom use was linked to communication with parents about sex and AIDS and the adolescent's perceived ability to talk with partners about AIDS.

Findings from several studies suggest that traditional education programs have not been successful in altering unsafe sexual behaviors in adolescents. Therefore, educational programs must be revised to include alternative methods. Jurich et al. (1992) presented several recommendations for adolescent education and decreased risk

behavior. First, programs must be structured to address behavioral variation among participants. Students should be encouraged to evaluate and label their own behavior with the desired outcome being recognition of vulnerability. This perceived vulnerability will instill a motivation for change. Second, the information should be tailored specifically to the situation in which action is to be taken. In this case, changing risky behavior would be easier when such behavior has been clearly identified and alternative 'safer' behaviors are offered as possible solutions. Lastly, intervention programs should teach individuals skills (such as communication about sex, responsible contraceptive behavior and a strong sense of values related to dating relationships) related to developing and maintaining relationships. These skills could result in engaging in relationships that tend to be less risky.

DiIorio et al. (1993a) also recognized that traditional methods of education related to AIDS and safer sex behavior are not successful and suggested including teaching strategies that promote skill development and practical application of information. These programs may include small discussion groups, role-playing activities, and workshops. Brown (1991) concluded that media presentations can change beliefs and concerns about AIDS and as a result change the way people communicate about AIDS. Hernandez and

DiClemente (1992) indicated that enhancing ego identity development would improve adolescent health promotion and disease prevention behaviors.

A health promotion program which encourages adolescents to envisage themselves in the role they wish to grow into, under conditions of poor or good health, might be quite effective in giving them new perspectives on adolescent risk taking behavior (Hernandez & DiClemente, 1992, p. 445).

Mueller and Powers (1990) advocated identifying the communicator styles that tend to discourage sexual activity and encourage contraceptive use at different age levels. Training in these styles should be offered to parents and sex educators (teachers and health care providers).

Beaman (1993) advocated providing instruction to school children of all ages, with content being age specific. An advisory committee comprised of teachers, school nurses, health educators, administrators, clergy, students and parents could be appointed to assist in planning. The AIDS education policy should be broad, with a simple purpose statement and should be coordinated with other community efforts. A program for young adolescents should be focused on concrete facts with problem solving exercises related to every day experiences in order to strengthen self-confidence and prepare young teens to make independent decisions. A program at the high school level should focus even more on decision making, assertiveness, and skills training. These programs can be integrated in a variety of ways in order to provide repetition which is important for retention.

Variations could include reading stories in English class about teens who take risks and suffer the consequences, writing an essay related to AIDS, or preparing debates arguing specific aspects of HIV/AIDS; in social studies, articles could be collected related to the AIDS epidemic; studies related to viruses and HIV could be undertaken in science; and finally, students could take home assignments that encourage family and peer discussions. The desired result is teaching teens to make decisions through problem identification, analysis of results and evaluation of final choices. The emphasis focuses on learning respect for each individual's personal choice within the peer group or in a more intimate relationship. Beaman (1993) further added that adolescents need complete information in order to make sound decisions, with questions answered honestly and encouragement to discuss material with their parents. Finally, educators "must be role models for students, accepting the students' views and allowing them room to explore alternatives and gradually make changes" (Beaman, 1993, p. 178).

Sieving and Bearinger (1995) stated, "Health promotion efforts, especially those aimed at younger adolescents, should offer learning strategies that enhance decision making skills" (p.832). These endeavors could emphasize health promoting norms for behavior as well as alternatives

to unhealthy behaviors. Further efforts could be focused on practicing skills necessary to resist unhealthy behaviors.

Fisher, Misovich, and Fisher (1992) promoted 'normative social influences' in which processes within the group work to increase preventive behavior. They suggested instituting group-level interventions to change reference group norms in a pro-prevention direction. Interventions include

continual presence in the intervention of attractive, popular peers who continually endorse HIV prevention and attempt to make it seem like 'the thing to do,'... presentation of videotaped pro-prevention testimonials by individuals who are viewed by adolescents as especially influential referent others...(and recognition of) changed behavior of adolescent intervention participants themselves (Fisher, et al., 1992, p. 131).

Kirby (1992) reported that curricula which focused primarily on cognitive approaches were effective in changing knowledge only, not behavior. He advocated presenting curricula implementing social learning theory or a social-influence approach to change behavior via decision-making. Topics could focus on presenting skills to resist pressures and establishing more positive and accurate norms regarding risk-taking behaviors.

A sexuality education curriculum entitled "Reducing the Risk" was evaluated by Kirby, Barth, Leland, and Fetro (1991) using a quasi-experimental method. The program was based on social learning theory, social inoculation theory and cognitive-behavioral theory as well as employing explicit norms against unprotected sexual intercourse.

Treatment and control groups were surveyed four times before, during, and after the program. Knowledge and parent-child communication about abstinence and contraception was significantly increased. For the students who had not participated in intercourse, the curriculum significantly reduced the likelihood that they would not have intercourse eighteen months later. However, the curriculum did not significantly affect frequency of intercourse or use of birth control among students already sexually active.

An AIDS prevention intervention presented by Schinke and Gordon (1992) utilized social learning theory and cognitive-behavioral approaches in the development of the SODAS model. The steps in SODAS stand for "stop", "options," "decide," "act," and "self-praise." This comic book approach is divided into two sections. The first section integrated HIV information into five segments: AIDS definition, transmission, high-risk behaviors, symptoms, and prevention. The second section utilizes a game format and presents hypothetical situations in which the student must utilize a sequence of steps in order to complete the situation. The players read the situation, then "stop" and consider their choices along with the consequences of risky behavior. In the "options" section, players are encouraged to brainstorm a variety of options and rank them a certain way. "Decide" shows players how to select the best option

while evaluating positive and negative consequences of each solution. Here, students are taught to base their decisions on an informed assessment of the problem. In the "act" step, students plan and rehearse the best responses to the situation in relation to peer pressures. These responses include "I" statements, delay statements, refusal statements, alternative suggestions and "blunt and blur" statements. In the last step, "self-praise," reinforcement is given to completion of situations and encouraged to continue to the next problem.

Finally, a study was undertaken by the CDC in order to survey school affiliated programs designed to reduce sexual risk-taking behavior (Kirby, et al., 1994). Twenty-three such studies based on sound research were reviewed. Findings showed that some, but not all, programs related to HIV and sex education delayed the initiation of sexual intercourse, reduced the frequency of intercourse, reduced the number of sex partners, or increased the use of condoms or other contraceptives. No programs were found to increase sexual activity. Effective curricula shared the following characteristics: (a) A narrow focus on reducing specific sexual risk-taking behaviors that may lead to HIV infection, other STD's, or unplanned pregnancy, (b) use of the four components of social learning theory (knowledge, motivation, outcome expectancy, and self-efficacy) as a foundation for program development, (c) provision of basic accurate

information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse, (d) instruction on social and media influences on sexual behaviors, (e) reinforcement of individual values and group norms against unprotected sex, and (f) activities to increase skills in communicating and negotiating, as well as confidence in those skills. Ineffective curricula covered a broader array of topics but failed to emphasize particular facts, values, norms, and skills needed to postpone sex or avoid unprotected sex.

#### Health and Education

In this time of adolescent participation in risky sexual behavior, health care providers must be aware of the unique needs of this population. All adolescents are in need of education regarding AIDS/HIV disease processes, transmission, prevention, and skills training/decision-making instruction.

The primary purpose of health education is to provide instruction that will result in adoption of behaviors that will enhance health status (thus prevent disease) or motivates changes in those behaviors that do not contribute to health maintenance (Weinstein, et al., 1991, p. 317).

Nurses should to be aware of methods to promote non-risk taking behaviors and be able to recognize adolescent norms for behavior while being accepting of the adolescent's need to emulate their chosen role models. As mentioned in the review of literature, one effective health promotion

campaign is to use famous role models in programs such as smoking cessation and birth control/STD prevention (Schurman, et al., 1994). Another effective strategy is to develop adolescent-focused clinics where specific needs of this age group are addressed. Education services related to preventive health care are easily incorporated into a clinic setting. Establishing a clinic environment in which adolescents can speak freely about STD's, risk behavior, substance use, birth control, and HIV/AIDS issues is of utmost importance. Every visit can be used as a time when decision making and behavioral choices can be discussed. Liaison work with other agencies dealing with adolescent issues can also be incorporated into this setting (Villareal, 1988).

However, Baldwin (1988) reported that health professionals, as a general rule, are not comfortable talking about sex issues. For example, he noted that few physicians ask about sexual activities nor have they been trained to do so. He feels that it is imperative for health professionals to become more comfortable with discussing sex or they will not adequately respond to the needs of their clients. "If we are going to educate the public effectively, we must first educate ourselves" (Baldwin, 1988, p. 356). Additionally, adolescents need to be able to talk to someone whom they trust and who had experienced the same problems they had (Morris, 1993).

Health care providers for adolescents must feel comfortable and competent in evaluating adolescents from a sexual standpoint. Sanders (1988) suggested four ways in which this objective may be accomplished. First, the providers of adolescent health care must maintain professional standards. When adolescents come to a health care facility, they are seeking a professional not someone who looks, talks and acts like an adolescent. The health care provider must be able to send the subtle message that she or he is genuinely interested in why the adolescent came to the health care facility and what that individual has to say. Second, confidentiality must be established and maintained. The adolescent must be able to trust the provider to maintain confidentiality and not pass information along to parents or others. If the youth comes to the facility with a parent, time must be allowed to interview the adolescent in private.

The third suggestion Sanders (1988) presented was to explore the chief complaint completely. Allowing the youth to verbalize and actively listening to what is said is imperative. At times, however, the chief complaint is not the real reason for coming to the facility. The provider must trust the adolescent to reveal the 'hidden agenda' and be able to discuss this topic in a non-threatening, trusting atmosphere. Lastly, perform a thorough physical exam. Often the 'hidden agenda' will surface during the exam and

can be addressed openly at that time. Since adolescents are extremely aware of and concerned with their bodies, any abnormalities may be viewed as catastrophic. A reassuring explanation by the provider may relieve overwhelming anxiety. When these suggestions are undertaken by the health care professional, adolescents may be able to comfortably address their concerns and receive competent information to improve their knowledge and, hopefully, impact on their behaviors.

## CHAPTER 3

## METHODOLOGY

Design

A nonexperimental, exploratory design was used to examine relationships among the variables in this study. Nonexperimental designs are used by researchers who wish to "construct a picture of a phenomenon or make account of events as they naturally occur" (LoBiondo-Wood & Haber, 1994). LoBiondo-Wood and Haber (1994) defined an exploratory design as one in which researchers

collect detailed descriptions of existing variables and use the data to justify and assess current conditions and practices or to make more intelligent plans for improving health care practices (p. 233).

Participants in this study included 2,537 students enrolled in ninth through twelfth grades and randomly selected from throughout Montana. The Montana Youth Risk Behavior Survey (YRBS) was the data collection instrument and consisted of an 84 item questionnaire. The survey was part of a surveillance and reporting system for adolescent risk behaviors developed by the Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, U.S. Centers for Disease Control and Prevention (Montana OPI, 1995).

Secondary data analysis was performed by the researcher on thirteen questions from the survey related to sexual knowledge and behavior. Secondary data analysis

involves reanalysis of data originally collected and analyzed by another investigator addressing the same question, a different question, or applying different methods of analysis (Woods, 1988b, p.334).

Variables examined included demographic characteristics, sexual behavior, school presented education related to HIV/AIDS, and parental discussions regarding HIV/AIDS. Cluster analysis was applied to the variables in order to group similar entities. "Cluster analysis yields a reorganization of these entities into relatively homogeneous groups" (Woods, 1988a). The obtained clusters were then analyzed using one-way analysis of variance (ANOVA) which is used to "test the significance of differences between the means of two or more groups" (Woods, 1988c, p.410).

#### Population and Sample

Eligibility for inclusion in the original study sample was open to all public and private schools in Montana with grades nine through twelve. Of these, 54 schools were randomly selected with probability proportional to enrollment. A total of 38 schools agreed to participate in the survey and 89% of the students in these schools volunteered to take part in the survey. A total of 2,535 students ultimately participated in the survey (Montana OPI, 1995).

















































































































