

1990

# Knowledge and attitudes of high school students concerning aids

Madelene T. Hudson  
*San Jose State University*

Follow this and additional works at: [https://scholarworks.sjsu.edu/etd\\_theses](https://scholarworks.sjsu.edu/etd_theses)

---

## Recommended Citation

Hudson, Madelene T., "Knowledge and attitudes of high school students concerning aids" (1990). *Master's Theses*. 3326.  
DOI: <https://doi.org/10.31979/etd.vnwt-tsg2>  
[https://scholarworks.sjsu.edu/etd\\_theses/3326](https://scholarworks.sjsu.edu/etd_theses/3326)

This Thesis is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Theses by an authorized administrator of SJSU ScholarWorks. For more information, please contact [scholarworks@sjsu.edu](mailto:scholarworks@sjsu.edu).

## INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

**The quality of this reproduction is dependent upon the quality of the copy submitted.** Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

# U·M·I

University Microfilms International  
A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
313:761-4700 800:521-0600



**Order Number 1941677**

**Knowledge and attitudes of high school students concerning  
AIDS**

**Hudson, Madelene T., M.S.**

**San Jose State University, 1990**

**U·M·I**  
300 N. Zeeb Rd.  
Ann Arbor, MI 48106



**KNOWLEDGE AND ATTITUDES OF HIGH SCHOOL  
STUDENTS CONCERNING AIDS**

**A Thesis**

**Presented to**

**The Faculty of the Department of Nursing  
San Jose State University**

**In Partial Fulfillment  
of the Requirements for the Degree  
of Master of Science**

**by**

**Madelene T. Hudson**

**August 1990**

APPROVED FOR THE DEPARTMENT OF NURSING

Virgil Parsons  
Virgil Parsons, RN, DNSc

Jayne Cohen  
Jayne Cohen, RN, DNSc

Joan Edelstein  
Joan Edelstein, RN, DrPh

APPROVED FOR THE UNIVERSITY

Serena M. Stanford

#### ACKNOWLEDGEMENTS

I first would like to thank God for giving me health and strength to complete my thesis. I would also like to thank my mother, Virgie, and my father, Lloyd, for being so supportive and always being there for assistance; my son, Jeremy, who was born during the start of my graduate work, for his patience; my best friend, Sandy, and my cousin, Joann, for their encouragement; my friend and classmate, Suzie, who was always available for that extra push; Drs. Virgil Parsons, Jayne Cohen, and Joan Edelstein who helped me put it all together; Mr. Tony Paulus and Ms. Bridgit Kubik for their assistance and cooperation in the data collection; and last, but not least, Arthur, my effective writing instructor, who inspired me.



## ABSTRACT

### KNOWLEDGE AND ATTITUDES OF HIGH SCHOOL STUDENTS CONCERNING AIDS

By Madelene T. Hudson

This exploratory study utilized questionnaires to assess the knowledge, attitudes, and beliefs of high school students regarding AIDS. The survey instrument requested information in two parts: (a) general knowledge about AIDS, and (b) attitudes and beliefs regarding severity, susceptibility, and the need for AIDS instruction in the high school curriculum. The sample was a group of 9th and 12th grade high school students. The response rate was 100% of all students in attendance that day. The results indicated that students at this high school had increased knowledge about AIDS compared to the students in a previous study. However, about 18% of them revealed ignorance about the characteristics of the disease. Students in this study were significantly less concerned about getting the disease than were previously surveyed students.

## Table of Contents

	Page
LIST OF TABLES . . . . .	viii
Chapter	
1. INTRODUCTION . . . . .	1
Purpose of Study . . . . .	1
Statement of the Problem . . . . .	1
Questions . . . . .	2
Definitions . . . . .	3
Significance of the Study . . . . .	3
Research Procedures . . . . .	3
Limitations . . . . .	5
2. CONCEPTUAL FRAMEWORK AND	
REVIEW OF THE LITERATURE . . . . .	6
Conceptual Framework . . . . .	6
Review of the Literature . . . . .	10
3. METHODOLOGY . . . . .	18
Sample and Setting . . . . .	18
Data Collection Instruments . . . . .	19
Data Collection . . . . .	19
Data Analysis . . . . .	20
4. ANALYSIS AND INTERPRETATION OF DATA . . . . .	22
Description of Analysis . . . . .	22
Results . . . . .	22

5. CONCLUSIONS AND RECOMMENDATIONS . . . . .	53
Summary . . . . .	53
Major Findings . . . . .	54
Limitations . . . . .	55
Inferences . . . . .	56
Recommendations . . . . .	57
Concluding Statement . . . . .	58
REFERENCES . . . . .	60
APPENDICES . . . . .	63
A. Questionnaire . . . . .	63
B. Informed Consent Letter . . . . .	67
C. Project Proposal Review . . . . .	71
D. Consent Request . . . . .	73
E. Consent Letter . . . . .	75
F. Informed Consent Letter . . . . .	77
G. Consent Letter . . . . .	81

LIST OF TABLES

Table	Page
1. Knowledge and Beliefs of Adolescents About AIDS Transmission . . . . .	12
2. Results of the T-Test Between Students from This Study and Students from the DiClemente study on Categories . . . . .	24
3. Comparison Between Students in This Study and the DiClemente Sample on Each Acquisition/Prevention Item . . . . .	26
4. Comparison Between Students in This Study and DiClemente Sample on Each Disease Item . . . . .	31
5. Comparison Between Students in This Study and DiClemente Sample on Attitude and Belief Items. . . . .	34
6. Results of the T-Test Between Seniors and Freshmen . . . . .	36
7. Results of the Chi-Square Test Between Seniors and Freshmen on Acquisition/Prevention Items. . . . .	41
8. Comparison Between Seniors and Freshmen in This Study on Each Disease Item . . . . .	46

9. Comparison Between Seniors and Freshmen in This  
Study on Each Belief/Attitude Item. . . . . 50

## Chapter 1

### INTRODUCTION

#### Purpose of Study

The purpose of this study was to assess the knowledge and attitudes of adolescents on the subject of Acquired Immune Deficiency Syndrome (AIDS). These findings were compared to the results of a previous study of San Francisco high school students (DiClemente, Zorn, & Temoshok, 1986).

#### Statement of the Problem

AIDS is a world-wide problem which affects people of all ethnic, social, and economic backgrounds. The adolescent years represent an especially trying and vulnerable period for young people (Havighurst, 1974). At this time, the power of group approval is most evident, with peer pressure exerting enormous influence on the sexual attitudes and behaviors of adolescents. These young people often engage in sexual activity and experiment with illicit drugs, activities which place them at great risk of contracting the AIDS virus (Remafedi, 1988).

Price, Desmond, and Kukulka (1985) suggested that high school students possess little information about AIDS, and many are not concerned by its threat. With the number of AIDS cases rising daily, it is important to reach adolescents. Because many adolescents are becoming sexually active, they are at great risk of being poorly informed and

without education regarding AIDS and AIDS transmission. They are also likely to indulge in unsafe sex and drug practices (Remafedi, 1988). As more adolescents are exposed to AIDS, they can transmit the disease, resulting in an increased loss of life.

High school freshman are just starting to be more socially active with their peers. High school seniors will be leaving a structured environment for a more independent one. Because these are potentially sensitive times in their lives, these groups are more likely to engage in sex and drugs due to peer pressure. Therefore, this study looked particularly at the knowledge and attitudes of freshman and seniors. A comparison between these two groups will also allow us to assess their different levels of knowledge and to see if attitudes toward AIDS might change between the 9th and 12th grades.

#### Questions

The following research questions were proposed:

1. To what extent are high school freshmen and seniors correctly informed about AIDS? Are they as informed as subjects from the DiClemente et al. (1986) study?
2. Do high school freshmen differ significantly from high school seniors in their knowledge and beliefs about AIDS?
3. To what extent do students believe instruction about AIDS is important?

4. Have students received instruction on AIDS in their school curriculum?

#### Definitions

1. AIDS. AIDS is a disease caused by a virus that breaks down a part of the body's immune system, leaving a person vulnerable to a variety of unusual, life threatening illnesses (Quackenbush & Sargent, 1986). It is a devastating disease characterized by a defective cell-mediated immune system which enables other unusual opportunistic infections to occur in the body (Price, Desmond, & Kukulka, 1985).

2. High School Student. A person who studies at a secondary school that includes grades 9 through 12 and offers academic or vocational subjects (Guralnik, 1986).

#### Significance of the Study

This study provides information about high school students' awareness about AIDS. Study results permit the evaluation of whether students were obtaining sufficient information in their classes. From this information, it will be possible to design programs to disseminate information about AIDS to high school students.

#### Research Procedures

The study used a questionnaire which evaluated the knowledge, attitudes, and beliefs of local high school students regarding AIDS. The tool (Appendix A) used for this study was based on an instrument used in the 1985



research study conducted by DiClemente et al. (1986). The questionnaire in this study was slightly modified. (The questions were stated in a "yes," "no," and "don't know" form. DiClemente's questions were written in "true," "false," and "don't know" form. Otherwise, the questions were the same.) A formal letter was sent to one high school principal, parents, and students to inform them of the study (see Appendices B, D, and F).

#### Subjects

The research subjects were 9th and 12th graders enrolled in English classes in a high school in San Mateo County, CA (total 9th grade population was 98; total 12th grade population was 109). Ethnic groups were represented as follows: 20 minority 9th graders and 16 minority 12th graders. The English class was chosen because it is a mandatory subject for high school students. Data were collected from a cross section of adolescents.

#### Design of the Study

The study used a survey research design. This type of design tends to be descriptive and appropriate for the questions to be asked. The researcher did not attempt to manipulate or control any variables.

Data were collected by administering a self-report questionnaire based on the one used by DiClemente et al. (1986). The instrument consisted of 30 questions regarding knowledge of students about AIDS and 11 questions which

assessed attitudes and beliefs concerning severity, susceptibility, and the need for AIDS instruction to be contained in the high school curriculum. Data were analyzed through the use of descriptive statistics.

#### Limitations

One important limitation of the design was the locale in which the survey was administered. Because the research setting was a high risk area near San Francisco, many adolescents were likely more aware of AIDS compared to students in other areas where AIDS statistics are low. The researcher did not get a cross section of information from students in other locales. Also, some students in both classes had already taken required health education classes, which very possibly played a significant role in their awareness of AIDS.

## Chapter 2

### CONCEPTUAL FRAMEWORK AND REVIEW OF THE LITERATURE

#### Conceptual Framework

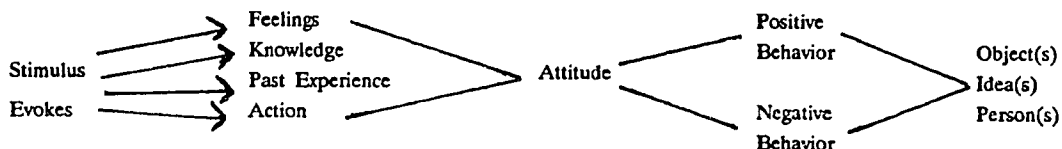
The conceptual framework for this study was based on the concept that attitudes affect behavior. Three important issues included:

1. An interrelationship and mutual interdependency exist between the cognitive (knowledge), affective (feeling) and behavioral (action tendency) components of an attitude, with knowledge and feelings tending to produce certain behavior (Freedman, Carlsmith, & Sears, 1970, p. 247).

2. Attitudes are learned from past experiences and, although resistant to change, can be relearned, unlearned, or modified (Taylor & Harned, 1978, p. 43).

3. An attitude is directed toward an object, idea, or person (individually or clustered into broad cultural patterns), manifesting itself in positive or negative behavior(s).

The following sequence is schematically represented (White, 1977, p. 19).



Johns (1988) defines attitude as a fairly stable emotional tendency to respond consistently to some object, situation, or person. As a function of what we think and what we feel, "an attitude is a product of an interrelated thought and feeling. These thoughts are called beliefs and these feelings are called values" (p. 116).

In social psychology, the concept of attitude represents a learned tendency to behave positively or negatively toward a person or situation. Williamson, Swingle, and Sargent (1982) stated that "attitudes are dynamic cognitive constructs which have several dimensions and components and are basic to personality structure" (p. 219). Attitude is probably the most distinctive and indispensable concept in social psychology. Most often used in experimental and theoretical literature, many authors define social psychology as the "scientific study of attitudes" (Freedman, Carlsmith, & Sears, 1970).

It is important to know what attitudes adolescents have toward AIDS. Lambert and Lambert (1973) state that "attitudes are particularly resistant to change if they are developed early in life, or if they have been deeply integrated into personality and style of behavior" (p. 79). This study centered on high school students' knowledge and attitudes about AIDS. If a change of attitudes is needed, educational materials designed to increase their knowledge may be necessary to effect this change.

Sexual intercourse for many Americans begins during adolescence, a fact which puts many teenagers at risk for contracting and transmitting the Human Immunodeficiency Virus (HIV). Adolescence is the phase during which many decide to explore and experiment. Because peer pressure exerts such great influence on an adolescent's sexual attitudes and behaviors during this period, the person is often hastened into engaging in sexual activity and experimenting with illicit drugs (Remafedi, 1988).

According to a report from a congressional fact sheet released by the National Research Council, over 11.6 million teens (80% of boys and 70% of girls) have, by the age of 20, engaged in sexual intercourse. There are over 1 million teenage pregnancies each year, with 1 in 7 having an accompanying sexually transmitted disease. Drug use among adolescents is frightening. Heroin has been tried by over 200,000 high school students, and 2 million have used other opiates. Another 7 million have tried stimulants, and over 3 million have used cocaine. These substances can all be used intravenously, which also increases the chances of adolescents being exposed to the HIV and subsequently acquiring AIDS. Because the incubation period is believed to be at least 5 to 7 years, many teenagers will not be aware that they have the virus until actual symptoms manifest themselves (Haven & Stolz, 1989).

### Adolescent Sexual Attitudes

Although recent statistics on adolescent sexual behavior are difficult to obtain, studies done before the occurrence of AIDS indicated increased sexual behavior on the part of teenagers. Studies which were conducted at Indiana University at the Institute for Sex Research found that sexual behaviors were more open for adolescents, which made them more at ease in discussing sexuality. Compared to their parents, these teens felt less guilt about having sex, which enabled them to enjoy it more. Although these behaviors did not seem to constitute a sexual revolution, such changes could represent a health trend. One fact is certain--the sexual experiences of adolescents, both for males and for females, were taking place at an earlier age than before (Hopkins, 1977).

There were several reasons to explain this increase in teenagers' sexual activities. First, there was less fear of pregnancy. Second, menarche (the onset of menstruation) has started earlier over the past century, decreasing from 17 years to 12½ years.

### Effect of Change

Freedman, Sears, and Carlsmith (1970) indicate that attitudes are very resistant to change and do not usually respond to a few facts. Individuals do not readily change their attitudes without putting forth a determined effort and being influenced by a considerable amount of persuasion.

However, with increased awareness and education, it would be possible to influence adolescent attitudes in regard to AIDS. This study sought to determine what these attitudes were.

#### Review of the Literature

In 1981, the first cases of AIDS were recognized in New York and California. Since then, AIDS has become the fastest growing disease known to man and has been reported in all 50 states.

The AIDS weekly surveillance report for December 31, 1989 (Centers for Disease Control, 1989) reveals 117,781 known cases of AIDS in the U.S. since the first reported case in 1981. California reported 24,427 cases (State of California, 1990), and San Mateo County (San Mateo County, 1990) reported 396 cases as of March, 1990. Since the first reported case of AIDS in 1981, a total of 9,263 Californians have contracted the disease. Statistics indicate that the number of AIDS cases is not only increasing but that it is an extremely deadly disease. Approximately 21% of these cases occur in individuals ages 20-29 (Strunin & Hingson, 1987).

Given the long incubation period of the disease, it is possible that many individuals may have contracted the virus during adolescence. The two groups at highest risk in the U.S. are homosexual or bisexual men and intravenous drug users. There has been an increase of heterosexual

transmission of the disease (Strunin & Hingson, 1987). According to Remafedi (1988), the adolescent population must become the focus of attention when addressing effective methods for the prevention of AIDS. As they begin to explore adult lifestyles, teenagers must become knowledgeable about their sexual behaviors, drug use, and sexually transmitted diseases. Effective educational programs can hopefully address their needs and concerns regarding AIDS (Remafedi, 1988).

There are several documented studies of the knowledge, attitudes, and beliefs of adolescents concerning AIDS. A questionnaire-type survey, focusing on the mode of transmission and treatment of AIDS, was used to collect data in the Strunin and Hingson (1987) study. From the results of this questionnaire (Table 1), the researchers assessed the students' attitudes and beliefs regarding disease severity and personal susceptibility and concluded that there is a need for AIDS education in the school curriculum. The questionnaire dealt with pertinent information which assessed students' awareness about AIDS. It is evident that the students had a lack of knowledge about AIDS. This lack of knowledge is one way of measuring their misconceptions about the disease.

The Centers for Disease Control (CDC) reported that approximately 2.5 million sexually transmitted disease (STD) cases are diagnosed every year among teenagers. Other



Table 1

Knowledge and Beliefs of Adolescents  
About AIDS Transmission

Mode of Transmission Can you get AIDS from:	Responses					
	Yes		No		Don't Know	
	%	n	%	n	%	n
Toilet seats?	14	(115)	72	(597)	14	(114)
Sharing eating/drinking utensils with an AIDS carrier?	37	(304)	54	(442)	9	(78)
Getting a blood transfusion	93	(769)	5	(38)	2	(17)
Giving blood?	60	(498)	38	(310)	2	(17)
Tears?	19	(155)	65	(535)	16	(135)
Saliva?	60	(487)	31	(259)	9	(78)
Semen?	78	(642)	12	(980)	10	(83)
Vaginal fluids?	71	(580)	13	(117)	15	(125)

Note: From "Acquired immunodeficiency syndrome and adolescents: Knowledge, beliefs, attitudes, and behaviors" by J. Strunin and R. Hingson, 1987. Pediatrics, 79, 825-828.

teenagers are engaging in illicit intravenous drug use. Both of these behaviors place these adolescents at increased risk of becoming infected with AIDS. Adolescents who do not indulge in such activities were encouraged to continue in their positive behaviors (Tolsma, 1988).

Several surveys were conducted to assess the knowledge, attitudes, and beliefs of adolescents. One of the first documented reports (Price et al., 1985), using a sample of 250 high school students, indicated that students' knowledge of AIDS was limited. The survey was conducted in Ohio, which has a low incidence of AIDS. Data analysis showed that 75% or more of the students were aware that AIDS was not something you were born with, that most likely you would die from it, and that homosexuals are at high risk for contracting the illness. Only 50-75% knew that AIDS is a defective immune system disease, that the disease is new and with no cure or known cause (true at that time), and that women are less likely to contract the disease than men. Many students, 50% or more, were unaware who was at risk of getting the disease, what happens to people who develop the disease, how to detect the HIV virus, or AIDS itself, and whether it is transmissible. In response to getting AIDS, 75% expressed concern about contracting the disease.

According to a list given to the students, the main source of information on AIDS comes from mass media: television, newspapers, magazines, and radio. Only one-

third stated that their school or a physician was another source of information. Given their low level of knowledge and few sources of information, Price et al. (1985) noted that health educators in the school system need to provide more accurate information.

In 1985, a study of San Francisco high school students enrolled in Family Life Education classes reported that students do have some limited knowledge of AIDS (DiClemente et al., 1986). With regard to disease transmission, 92% of the students indicated that sexual intercourse was one way of contracting AIDS, but 60% were unaware that using a condom during sexual intercourse decreased the risk of getting the disease. The authors interpreted the results to suggest that many adolescents will be engaging in unprotected coitus. Most adolescents (84%) knew that receiving a blood transfusion from infected blood could cause AIDS, and 81% knew that sharing intravenous needles was one means of transmitting the disease. In contrast to the above results, only 66% were aware that using someone's personal belongings was not a means of spreading AIDS; only 68% knew that casual contact would not lead to contracting the disease; and only 41% reported that kissing was not a route for transmitting AIDS. In regard to a new vaccine being available for the treatment of AIDS, only 25.3% knew that none was available. Only 60.5% were aware that AIDS could not be cured.

In contrast to the other studies of adolescents' knowledge about AIDS, in 1986, a questionnaire was distributed in two Connecticut school districts--Bridgeport and Stratford (Helgerson, Petersen, & the Aids Education Study Group, 1988). The two towns are approximately 50 miles from New York City but are socioeconomically quite different. Bridgeport has a large ethnic minority group (21% Black and 21% Hispanic), a population of 142,540, and an average income of \$16,694. In contrast, Stratford has a small ethnic minority (6% Black and 2% Hispanic), a population of 50,541, and an average income of \$23,835.

There had been no AIDS education programs in the schools prior to the study. The results were that 95% of Bridgeport and Stratford students were aware that a person with AIDS could transmit the virus through sexual contact; only 37% of Stratford students were aware that having sex with a healthy appearing person who injects drugs could transmit the virus; and only 46% were aware that IV drug users were at risk for AIDS. Sharing needles was correctly identified as a mode of transmission by 80% of all the students, and only 55% thought snorting drugs was not a mode of transmission.

Questions asked concerning risk groups were responded to in basically the same manner by both Bridgeport and Stratford students. Out of all the students, 92% knew that male homosexuals were at risk, but only 11% stated that they

felt lesbians were not at risk. Only 41% knew that babies whose mothers used IV drugs were at risk. Blood donors were correctly considered not at risk for AIDS by only 47%, and 54% of students knew that kissing an HIV carrier on the cheek was not a means of contracting the disease. One significant difference did exist between the two schools; Stratford students were somewhat aware that a vaccine did not exist for AIDS (58%) as compared with 33% of the Bridgeport students being aware of this fact.

It was reported that 73% of the students knew about AIDS from the media. A slightly higher number, 74% of the students, wanted more information about AIDS, and 49% wanted to learn it at school. Based upon the study's results, it was recommended that school districts, as well as other health care providers, assess students' knowledge and develop AIDS educational programs (Helgerson et al., 1988).

AIDS is a major health concern in today's society, especially in the adolescent population. It seems evident from the data collected from students in various parts of the country that AIDS is a concern to them. Results from the previous studies revealed that knowledge possessed by students about AIDS was inadequate. Statistics show that these adolescents had incomplete knowledge about the mode of transmission of the HIV, lack of knowledge concerning groups at risk, and the precautions necessary for preventing the spread of the infection. The manner in which many of these

questions were answered shows how misinformed the students were. The most important means of reaching adolescents is through education and by focusing special attention on adolescents who are at high risk, such as male homosexuals and IV drug users. According to Miller and Downer (1988):

It should be the intent of educators to develop educational programs to increase students' knowledge about AIDS, to enhance attitudes of compassion and understanding toward those individuals with the disease, to encourage preventive behavior, and to prepare students to make informed decisions about risk taking behavior and public health issues. (p. 137)

## Chapter 3

### METHODOLOGY

This chapter focuses on the study design and describes the methodology used for this study. The methodology consists of: (a) setting and sample, (b) data collection instruments, (c) data collection, and (d) data analysis.

The study design consists of a measure of the respondents' general and factual knowledge about AIDS and a determination of the respondents' attitudes toward and beliefs about AIDS. Survey methods were used with the instrument being in the form of a questionnaire developed by DiClemente et al. (1986).

#### Sample and Setting

The study was conducted in a small, private, non-denominational high school, located in San Mateo County, California. The high school consisted of 448 students, both male and female. The subjects for this study were 9th and 12th graders enrolled in English classes at the high school. The English class was chosen because it is a mandatory subject for high school students. The investigator received prior written permission from parents for the students to participate in the study (see Appendix B). They were informed that participation was strictly voluntary. Data were collected by administering a self-report questionnaire; at no time were students or the high school identified.

Parents and students were told that they could withdraw their consent and participation at any time.

Prior approval by the committee for protection of human subjects at San Jose State University was obtained before implementation of the research began (see Appendix C). The investigator received permission from the principal of the school (see Appendix D) to conduct the study.

#### Data Collection Instruments

The survey instrument used for this study was a self-report questionnaire based on the one used by DiClemente et al. (1986). The instrument was divided into two parts. Part 1 consisted of 30 questions regarding knowledge of students about AIDS. It was designed to measure the students' knowledge of AIDS. A "yes," "no," "don't know" response format was used. The questions focused on common misconceptions, facts, and risks of AIDS.

Part 2 consisted of 11 questions which assessed the students' attitudes and beliefs concerning the disease's severity, susceptibility, and the need for AIDS instruction to be included in the high school curriculum. It also consisted of a "yes," "no," "don't know" response format.

#### Data Collection

The principal and health educator of the selected high school were contacted (see Appendix D), and after presenting them with the study questionnaire, permission was granted (Appendix E) for the investigator to ask the parents'



permission (Appendix B) for their children to participate in the study. Participation in the study was voluntary, and anonymity was maintained.

The investigator delivered the questionnaires (Appendix A) and student consent forms (Appendix F) to the health educator. A cover letter (Appendix G) was attached for the teachers who passed out the questionnaires with instructions to return all forms to the health educator. Parents and students were informed that results of the study might be published, but that any information from the study that could be identified with them would remain confidential and would be disclosed only with their permission or as required by law. The data were collected in the month of December 1989. A total of 125 questionnaires was distributed and returned, a response rate of 100% (of all students in attendance that day).

#### Data Analysis

The data obtained in this study were responses to a questionnaire in which the subjects were asked to indicate their knowledge, attitudes, and beliefs about AIDS. Analysis of the questions was done by using chi-square and t-test. The purpose of the questionnaire was to answer the following questions:

1. To what extent are high school freshmen and seniors correctly informed about AIDS? Are they as informed as subjects from the DiClemente et al. (1986) study?

2. Do high school freshmen differ significantly from high school seniors on their knowledge and beliefs about AIDS?

3. To what extent do students believe instruction about AIDS is important?

4. Have students received instructions on AIDS in their school curriculum?

The results of the data analysis are presented in Chapter 4.

## Chapter 4

### ANALYSIS AND INTERPRETATION OF DATA

This chapter contains the data analysis of 9th and 12th grade high school students' knowledge, attitudes, and beliefs concerning AIDS. These results will be compared to those of the 1985 research study conducted by DiClemente et al. (1986). Analyses will compare: (a) current seniors to the DiClemente et al. (1986) students, (b) current freshmen to the DiClemente et al. students, (b) both seniors and freshman to the DiClemente et al. students, and (d) current seniors to freshmen.

#### Description of Analysis

Of the 125 questionnaires distributed in class, all were returned--a response rate of 100% (of all students in attendance that day).

The study was guided by four research questions. Results are presented in the following section after a brief restatement of the statistical methods used to analyze the data. A criterion significance of  $p \leq .05$  was used.

#### Results

##### Research Question 1

To what extent are high school freshmen and seniors correctly informed about AIDS? Are they as informed as subjects from the DiClemente et al. (1986) study?

To answer these questions, data from students in this study were compared to the DiClemente data. Frequencies and percentages of responses to the survey knowledge questions, items 1 through 30, were computed and compared between senior and freshmen students in this study and the DiClemente sample. Results appear in a series of tables. Results for all category scores are presented in Table 2.

Students in this study had more correct knowledge than did students in the DiClemente study. On average, students in this study correctly answered each of questions 1-30 88% of the time, compared to 67% for DiClemente students. On Acquisition/Prevention items (3-9, 11-12, 16-18, 20-23, 26, and 28), students in this study scored an average of 92.4% on each question, compared to 74% for the DiClemente sample. Likewise, on Disease items (1, 4, 10, 13-15, 19, 24, 25, 27, 29-30), this study's students' average score was 81.4%, whereas the DiClemente students averaged only 57%. All of these differences were statistically significant, indicating that students in the 1989 sample were more knowledgeable about AIDS than were those in the DiClemente sample.

On Concern About AIDS scores (31, 32, 34, and 37), students from this study expressed high concern about AIDS 54% of the time, while students in DiClemente's sample expressed high concern 68% of the time. While this suggests that students in this study were less concerned about

Table 2

Results of the T-Test Between Students from This Study  
and Students from the DiClemente Study on Categories

Category	Group	Correct N	%
1. Total Knowledge			
	Students	30	88%
	DiClemente	30	67%
		t = 5.0 p<.0001*	
2. Acquisition/Prevention Items			
	Students	18	92%
	DiClemente	18	74%
		t = 4.94 p<.0001*	
3. Disease Items			
	Students	12	81%
	DiClemente	12	57%
		t = 3.18 p<.005*	
Category	Group	High Concern N	%
4. Concern About AIDS Items			
	Students	4	54%
	DiClemente	4	68%
		t = -1.04 p<.05*	

\*p ≤ .05, significant, all tests two-tailed.

getting AIDS, these results were not statistically significant.

The second set of analyses responding to research question 1 compared the students in this study with the DiClemente sample on each of the items. Items pertaining to prevention and acquisition of AIDS are presented in Table 3; items pertaining to AIDS as a disease are shown in Table 4.

Relative to the items pertaining to prevention and acquisition of AIDS, the biggest difference was found between the students in this study and the DiClemente sample on item 5 ("Is AIDS caused by the same virus that causes VD?"). Significantly more of the students in this study knew that the AIDS virus was not the same as that which causes VD.

On many items, students in this study were significantly less concerned about AIDS than were students in the DiClemente study. Students in this study were less afraid of getting AIDS, believed that living in the Bay Area was less of a threat for AIDS, and were less likely to believe that they were the kind of person to get AIDS. Significantly more students from this study indicated that they had received instruction about AIDS in their school curriculum (see Table 5).

Significant differences were found on all other items except item 11 ("Are women more likely to contract AIDS

Table 3

Comparison Between Students in This Study and DiClemente  
Sample on Each Acquisition/Prevention Item

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
3.	Can AIDS be cured?						
	Students	119	95%	1	1%	5	4%
	DiClemente	1105	92%	90	7%	11	1%
							$X^2 = 16.50^*$
4.	Is AIDS kind of like having a cold?						
	Students	120	96%	2	2%	3	2%
	DiClemente	998	76%	87	7%	222	7%
							$X^2 = 25.78^*$
5.	Is AIDS caused by the same virus that causes VD?						
	Students	113	92%	7	6%	3	2%
	DiClemente	541	41%	553	42%	225	17%
							$X^2 = 117.40^*$
6.	If you touch someone with the disease, can you get AIDS?						
	Students	123	98%	2	2%	0	0
	DiClemente	896	68%	226	17%	197	15%
							$X^2 = 51.14^*$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
7.	Do all gay men have AIDS?						
	Students	122	98%	2	2%	1	1%
	DiClemente	1057	81%	152	12%	104	8%
							$X^2 = 22.60^*$
8.	Can what you eat give you AIDS?						
	Students	112	90%	7	5%	6	5%
	DiClemente	987	74%	126	10%	203	15%
							$X^2 = 14.03^*$
9.	Can anybody get AIDS?						
	Students	117	94%	4	3%	4	3%
	DiClemente	1114	85%	136	10%	67	5%
							$X^2 = 7.88^*$
11.	Are women more likely to contract AIDS during their period?						
	Students	69	55%	10	8%	46	37%
	DiClemente	747	57%	102	8%	465	35%
							$X^2 = 0.13^*$

(Table continues)



Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
12.	Can AIDS be spread by using someone's personal belongings like a comb or a hairbrush?						
	Students	120	96%	1	1%	4	3%
	DiClemente	869	66%	206	16%	235	18%
						$X^2 = 47.08^*$	
16.	Can you get AIDS by being around someone who has the disease?						
	Students	117	94%	7	6%	1	1%
	DiClemente	926	71%	200	15%	183	14%
						$X^2 = 25.78^*$	
17.	Can you get AIDS by having sex with someone?						
	Students	115	92%	9	7%	1	1%
	DiClemente	1213	92%	51	4%	49	4%
						$X^2 = 5.83^*$	
18.	If a pregnant woman has AIDS, is there a chance it may harm her unborn baby?						
	Students	116	93%	4	3%	5	4%
	DiClemente	1124	86%	39	37%	148	11%
						$X^2 = 6.37^*$	

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
20.	Will using a condom during sex lower the risk of getting AIDS?						
	Students	120	97%	3	2%	1	1%
	DiClemente	782	60%	185	14%	336	26%
						$X^2 = 66.04^*$	
21.	Can you get AIDS by shaking hands with someone who has it?						
	Students	122	98%	3	2%	0	0%
	DiClemente	975	75%	131	10%	200	15%
						$X^2 = 34.07^*$	
22.	Can receiving a blood transfusion with infected blood give a person AIDS?						
	Students	121	97%	3	2%	1	1%
	DiClemente	1099	84%	75	6%	128	10%
						$X^2 = 14.69^*$	
23.	Can you get AIDS by sharing a needle with a drug user who has AIDS?						
	Students	124	99%	1	1%	0	0%
	DiClemente	1055	81%	82	6%	164	13%
						$X^2 = 26.21^*$	

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
26. Do all gay women have AIDS?							
	Students	114	91%	6	5%	5	4%
	DiClemente	950	73%	108	8%	237	18%
						$X^2 = 20.30^*$	
28. Can you avoid getting AIDS by exercising?							
	Students	114	91%	4	3%	7	6%
	DiClemente	1003	77%	88	7%	205	16%
						$X^2 = 13.01^*$	

\* $p \leq .05$ , significant

Table 4

Comparison Between Students in This Study and DiClemente  
Sample on Each Disease Item

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
1.	Is AIDS a medical condition whereby your body cannot fight off the disease?						
	Students	124	99%	0	0%	1	1%
	DiClemente	964	74%	161	12%	179	14%
							$X^2 = 40.14^*$
2.	Is AIDS caused by a virus?						
	Students	116	93%	6	5%	3	2%
	DiClemente	790	60%	218	17%	303	23%
							$X^2 = 52.36^*$
10.	Can AIDS be cured?						
	Students	110	88%	3	2%	12	10%
	DiClemente	790	60%	175	13%	341	26%
							$X^2 = 37.43^*$
13.	Is AIDS kind of like having a cold?						
	Students	56	57%	20	20%	22	23%
	DiClemente	1179	90%	43	3%	90	7%
							$X^2 = 98.94^*$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
14.	Is AIDS caused by the same virus that causes VD?						
	Students	67	54%	14	11%	44	35%
	DiClemente	541	41%	261	20%	504	39%
							$X^2 = 8.90^*$
15.	Is the cause of AIDS known?						
	Students	75	60%	34	27%	16	13%
	DiClemente	442	34%	608	47%	257	20%
							$X^2 = 33.98^*$
19.	Do most people who get AIDS die from it?						
	Students	111	89%	8	6%	6	5%
	DiClemente	1036	80%	126	10%	140	11%
							$X^2 = 6.46^*$
24.	Is AIDS a life-threatening disease?						
	Students	122	97%	2	2%	2	1%
	DiClemente	1087	84%	77	6%	134	10%
							$X^2 = 15.40^*$

\* $p \leq .05$ , significant

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
25. Do people with AIDS usually have a lot of other diseases as a result of AIDS?	Students	98	78%	11	9%	16	13%
	DiClemente	475	37%	351	27%	471	36%
							$X^2 = 82.73^*$
27. Is there any known cure for AIDS?	Students	110	88%	6	5%	9	7%
	DiClemente	783	60%	219	17%	293	23%
							$X^2 = 37.05^*$
29. Can AIDS be cured if treated early?	Students	92	74%	7	6%	26	21%
	DiClemente	476	37%	389	30%	428	33%
							$X^2 = 68.36^*$
30. Can one be vaccinated for prevention of AIDS?	Students	109	87%	7	6%	9	7%
	DiClemente	328	25%	411	32%	556	43%
							$X^2 = 204.84^*$

\* $p \leq .05$ , significant

Table 5

Comparison Between Students in This Study and DiClemente  
Sample on Attitude and Belief Items

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
1. Is AIDS as big a problem as the media suggests?	Students	103	82%	19	15%	3	3%
	DiClemente	995	77%	106	8%	200	15%
$X^2 = 20.47^*$							
2. Are you afraid of getting AIDS?	Students	75	60%	43	34%	7	6%
	DiClemente	1103	79%	202	16%	69	5%
$X^2 = 27.54^*$							
3. Does living in the Bay Area increase your chances of getting AIDS?	Students	30	24%	79	63%	16	13%
	DiClemente	535	42%	526	41%	218	17%
$X^2 = 23.10^*$							
4. Are you really worried about getting AIDS?	Students	29	23%	90	72%	6	5%
	DiClemente	847	66%	336	26%	94	7%
$X^2 = 113.16^*$							

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
5.	Are you the kind of who will get AIDS?						
	Students	9	7%	96	77%	20	16%
	DiClemente	225	20%	784	61%	236	19%
							$X^2 = 14.53^*$
6.	Are you less likely than most to get AIDS?						
	Students	66	53%	34	27%	25	20%
	DiClemente	662	52%	261	21%	25	20%
							$X^2 = 4.32^*$
7.	Would you rather get any other disease than AIDS?						
	Students	61	49%	19	15%	45	36%
	DiClemente	641	51%	229	18%	397	31%
							$X^2 = 1.38^*$
8.	If a free blood test were available to determine if you were exposed to AIDS, would you take it?						
	Students	73	58%	35	28%	17	14%
	DiClemente	653	51%	321	25%	294	24%
							$X^2 = 6.04^*$

(Table continues)



Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
9.	Have you heard so much about AIDS that you don't want to hear any more?						
	Students	37	30%	73	58%	15	12%
	DiClemente	367	29%	745	59%	156	12%
							$X^2 = 0.03^*$
10.	Is it important for students to learn about AIDS in Family Life Education classes?						
	Students	111	89%	8	6%	6	5%
	DiClemente	1119	88%	74	6%	84	6%
							$X^2 = 0.65^*$
11.	Have you had any instruction about AIDS in your school curriculum?						
	Students	85	68%	39	31%	1	1%
	DiClemente	447	35%	689	54%	131	10%
							$X^2 = 54.48^*$

during their period?"), which was answered correctly by only about half of both samples, and item 17 ("Can you get AIDS by having sex with someone?"), which was answered correctly by 92% of both samples.

Relative to the items pertaining to AIDS as a disease, the biggest difference was for item 30 ("Can one be vaccinated for the prevention of AIDS?"), which was answered correctly by only 25% of the DiClemente sample and 87% of the students in this sample. All other items showed significant differences, with students in this sample consistently answering more correctly than the DiClemente sample.

#### Research Question 2

Do high school freshmen differ significantly from high school seniors in their knowledge and beliefs about AIDS? To answer this question, frequencies and percentages of responses to the survey knowledge questions, items 1 through 30, were computed and compared between senior and freshmen students. Results appear in the following series of tables.

As seen in Table 6, t-tests showed significant differences on Total Knowledge scores (items 1-30), on Disease scores, and on Concern About AIDS scores (31, 32, 34, and 37), but not on Acquisition/Prevention scores. Seniors were higher than freshmen on all but the Belief/Attitude scores.

Table 6

Results of the T-Test Between Seniors and Freshmen

Category	Group	Correct	
		N	%
<b>1. Total Knowledge</b>			
	Students	55	92%
	DiClemente	70	88%
		t = 2.66 p<.01*	
<b>2. Acquisition/Prevention Items</b>			
	Students	55	95%
	DiClemente	70	93%
		t = 1.93 p<.05*	
<b>3. Disease Items</b>			
	Students	55	86%
	DiClemente	70	80%
		t = 2.52 p<.05*	
Category	Group	High Concern	
		N	%
<b>4. Concern About AIDS Items</b>			
	Students	55	48%
	DiClemente	70	58%
		t = -2.41 p<.05*	

\*p ≤ .05, significant, all tests two-tailed.

On Acquisition/Prevention scores (total of items 3-9, 11-12, 16-18, 20-23, 26, and 28), seniors answered correctly 95% of the time and freshmen 94%, indicating good knowledge of AIDS and how to prevent it. In summation, seniors and freshmen were well aware of AIDS acquisition/prevention methods. The small difference between freshmen and seniors was not significant.

On Disease scores (1, 2, 10, 13-15, 19, 24-25, 27, 29-30), seniors had an average score of 84% correct, while freshmen had an average score of 78% correct. The fact that, on average, seniors were not able to correctly answer these questions 16% of the time and freshmen 20% of the time indicates that there remains substantial ignorance among these groups.

The Total Knowledge score (total of items 1-30, including both Acquisition/Prevention and Disease scores) differed significantly between seniors and freshmen. This difference was attributable entirely to differences on the Disease knowledge items, on which seniors knew more than freshmen.

From the Belief/Attitude section, items 1, 2, 4, and 7 were added together to get a "Concern for AIDS" score. This score also differed significantly between seniors and freshmen. Seniors were less concerned than were freshmen, with seniors giving a high concern response 47% of the time, while freshmen gave high concern responses 58% of the time.

This difference suggests that the majority of seniors may be unwisely unconcerned about contracting AIDS, or perhaps they understand that safe practices will protect them from the disease.

Research question 2 was also answered by computing chi-squares for each individual item. Tables 7 and 8 show the results for the Prevention/Acquisition items and Disease items, respectively.

On the Prevention/Acquisition items (Table 7), substantial differences between seniors and freshmen was found for item 11 ("Are women more likely to contract AIDS during their period?"), which was answered more correctly by seniors. On all other items, no differences existed between the two groups of students in this study.

On the Disease items (Table 8), a substantial difference was found on item 14 ("Is AIDS caused by the same virus that causes VD?"), which was answered more correctly by seniors. On the Belief/Attitude items (shown in Table 9), seniors and freshmen differed significantly on item 4 ("Are you really worried about getting AIDS?"), on which freshmen indicated significantly greater concern; and item 8 ("If a free blood test were available to determine if you had been exposed to AIDS, would you take it?"), on which freshmen expressed more of a willingness to take such a test than did seniors.

Table 7

Results of the Chi-Square Test Between Seniors and Freshmen  
on Acquisition/Prevention Items

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
3.	Can AIDS be cured?						
	Seniors	54	98%	1	2%	0	0%
	Freshmen	65	93%	0	0%	5	7%
							$X^2 = 5.29$
4.	Is AIDS kind of like having a cold?						
	Seniors	53	96%	2	4%	0	0%
	Freshmen	67	96%	0	0%	3	4%
							$X^2 = 4.90$
5.	Is AIDS caused by the same virus that causes VD?						
	Seniors	51	93%	3	5%	1	2%
	Freshmen	62	91%	4	6%	2	3%
							$X^2 = 0.18$
6.	If you touch someone with the disease, can you get AIDS?						
	Seniors	54	98%	1	2%	0	0%
	Freshmen	69	99%	1	1%	0	0%
							$X^2 = N.S.^a$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
7.	Do all gay men have AIDS?						
	Seniors	53	96%	1	2%	1	2%
	Freshmen	69	99%	1	1%	0	0%
							$X^2 = 1.32$
8.	Can what you eat give you AIDS?						
	Seniors	51	93%	2	4%	2	4%
	Freshmen	61	87%	5	7%	4	6%
							$X^2 = 1.06$
9.	Can anybody get AIDS?						
	Seniors	51	95%	1	2%	2	3%
	Freshmen	62	93%	3	4%	2	3%
							$X^2 = 0.65$
11.	Are women more likely to contract AIDS during their periods?						
	Seniors	35	64%	2	4%	18	33%
	Freshmen	34	49%	8	11%	28	40%
							$X^2 = 4.05$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
12.	Can AIDS be spread by using someone's personal belongings. (comb, toothbrush)?						
	Seniors	53	98%	0	0%	1	2%
	Freshmen	66	94%	1	1%	3	5%
							$X^2 = 1.42$
16.	Can you get AIDS just by being around someone who has AIDS?						
	Seniors	53	96%	1	2%	1	2%
	Freshmen	64	91%	6	9%	0	0%
							$X^2 = 3.86$
17.	Can you get AIDS by having sex?						
	Seniors	51	93%	3	5%	1	2%
	Freshmen	64	91%	6	9%	0	0%
							$X^2 = 1.69$
18.	If a pregnant woman has AIDS, is there a chance it may harm her unborn baby?						
	Seniors	50	91%	2	4%	3	5%
	Freshmen	66	94%	2	3%	2	3%
							$X^2 = 0.62$
							(Table continues)



Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
20.	Will using a condom during sex lower the risk of getting AIDS?						
	Seniors	53	96%	1	4%	0	0%
	Freshmen	67	97%	1	1%	1	1%
							$X^2 = 1.40$
21.	Can you get AIDS by shaking hands with someone who has it?						
	Seniors	54	98%	1	2%	0	0%
	Freshmen	68	97%	2	3%	0	0%
							$X^2 = N.S.^a$
22.	Can receiving a blood transfusion with infected blood give a person AIDS? having sex?						
	Seniors	52	95%	2	4%	1	1%
	Freshmen	69	99%	1	1%	0	0%
							$X^2 = 1.95$
23.	Can you get AIDS by sharing a needles with a drug user who has the disease?						
	Seniors	54	98%	1	2%	0	0%
	Freshmen	70	100%	0	0%	0	0%
							$X^2 = N.S.^a$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
26. Do all gay women have AIDS?							
	Seniors	51	93%	1	2%	3	5%
	Freshmen	63	90%	5	7%	2	3%
							$X^2 = 2.36$
28. Can you avoid getting AIDS by exercising?							
	Seniors	51	93%	0	0%	4	7%
	Freshmen	63	90%	4	6%	3	4%
							$X^2 = 3.66$

$p \leq .5$ , significant

(A chi square would not be computed because of zero in some cells.)

Table 8

Comparison Between Seniors and Freshmen in This Study  
on Each Disease Item

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
1.	Is AIDS a medical condition whereby your body cannot fight off diseases?						
	Seniors	55	100%	0	0%	0	0%
	Freshmen	69	99%	0	0%	1	1%
							$X^2 = N.S^a$
2.	Is AIDS caused by a virus?						
	Seniors	52	95%	1	2%	2	3%
	Freshmen	64	91%	5	7%	1	2%
							$X^2 = 2.48$
10.	Can AIDS be cured?						
	Seniors	50	91%	0	0%	52	9%
	Freshmen	60	86%	3	4%	7	10%
							$X^2 = 2.48$
13.	Is AIDS kind of like having a cold?						
	Seniors	14	50%	5	18%	9	32%
	Freshmen	42	60%	15	21%	13	19%
							$X^2 = 2.12$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
14.	Is AIDS caused by the same virus that causes VD?						
	Seniors	42	76%	3	5%	10	18%
	Freshmen	25	36%	11	16%	34	49%
							$X^2 = 20.47$
15.	Is the cause of AIDS known?						
	Seniors	37	67%	12	22%	6	11%
	Freshmen	38	54%	22	31%	10	14%
							$X^2 = 2.19$
19.	Do most people who get AIDS die from it?						
	Seniors	47	85%	4	7%	4	7%
	Freshmen	64	91%	4	6%	2	3%
							$X^2 = 1.49$
24.	Is AIDS a life-threatening disease?						
	Seniors	53	96%	1	2%	1	2%
	Freshmen	69	97%	1	1%	1	1%
							$X^2 = 0.07$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know		
		f	%	f	%	f	%	
25. Do people with AIDS usually have a lot of other diseases as a result of AIDS?	Seniors	44	80%	5	9%	6	11%	
	Freshmen	54	77%	6	9%	10	14%	
							$X^2 = 0.32$	
27. Is there any cure for AIDS?	Seniors	46	84%	3	5%	6	11%	
	Freshmen	64	92%	3	4%	3	4%	
							$X^2 = 2.18$	
29. Can AIDS be cured if treated early?	Seniors	40	73%	3	5%	12	22%	
	Freshmen	52	74%	4	6%	14	20%	
							$X^2 = 0.06$	
30. Can one be vaccinated for the prevention of AIDS?	Seniors	50	91%	1	2%	4	7%	
	Freshmen	59	84%	6	9%	5	7%	
							$X^2 = 2.66$	

$p \leq .05$ , significant  
<sup>a</sup>N = 28 for seniors on this item)

Research Questions 3 and 4

To what extent do students believe instruction about AIDS is important? Have students received instruction on AIDS in their school curriculum?

These two research questions were answered with reference to the last two items on the questionnaire. These questions are shown in Table 9 for seniors and freshmen. On item 10, 87% of seniors and 90% of freshmen believed that AIDS education should be taught in their Family Life classes, as compared with 88% of DiClemente's students (as seen in Table 5); thus, there was no difference between the two groups for this item. On item 11, about 67% of both seniors and freshmen answered that they had received such instruction in their schools, as compared with 35% of DiClemente's students, which shows that the students in this study received significantly more education on AIDS in their school curriculum. There was no significant difference between freshmen and seniors on this item.

Table 9

Comparison Between Seniors and Freshmen in This Study  
on Each Belief/Attitude Item

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
1.	Is AIDS as big a problem as the media suggest?						
	Seniors	42	76%	11	20%	2	4%
	Freshmen	61	87%	8	11%	1	2%
							$X^2 = 2.55$
2.	Are you afraid of getting AIDS?						
	Seniors	29	53%	24	44%	2	3%
	Freshmen	46	66%	19	27%	5	7%
							$X^2 = 3.98$
3.	Does living in the Bay Area increase your chances of getting AIDS?						
	Seniors	12	22%	38	69%	5	9%
	Freshmen	18	26%	41	58%	11	16%
							$X^2 = 1.79$
4.	Are you really worried about getting AIDS?						
	Seniors	9	16%	46	84%	0	0%
	Freshmen	20	29%	44	63%	6	9%
							$X^2 = 8.54^*$

(Table continues)

Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
5. Are you the kind of person who will get AIDS?							
	Seniors	2	4%	43	78%	10	18%
	Freshmen	7	10%	53	76%	10	14%
							$X^2 = 2.05$
6. Are you less likely than most to get AIDS?							
	Seniors	29	53%	18	33%	8	15%
	Freshmen	37	53%	16	23%	17	24%
							$X^2 = 2.56$
7. Would you rather get any other disease but AIDS?							
	Seniors	24	44%	9	16%	22	40%
	Freshmen	37	53%	10	14%	23	33%
							$X^2 = 1.05$
8. Is AIDS a life-threatening disease?							
	Seniors	27	49%	22	40%	6	11%
	Freshmen	46	66%	13	19%	11	16%
							$X^2 = 7.03$

(Table continues)



Item	Group	Correct		Incorrect		Don't Know	
		f	%	f	%	f	%
9.	Have you heard so much about AIDS that you don't want to hear any more about it?						
	Seniors	16	29%	32	58%	7	13%
	Freshmen	21	30%	41	59%	8	11%
							$\chi^2 = 0.05$
10.	Is it important for students to learn about AIDS in Family Education classes?						
	Seniors	48	87%	4	7%	3	5%
	Freshmen	63	90%	4	6%	3	4%
							$\chi^2 = 0.23$
11.	Have you had any instructions about AIDS in your school curriculum?						
	Seniors	38	69%	17	31%	0	0%
	Freshmen	47	67%	22	31%	1	1%
							$\chi^2 = 0.81$

$p \leq .05$ , significant

## Chapter 5

### CONCLUSIONS AND RECOMMENDATIONS

This chapter contains the conclusions of this descriptive study of the knowledge, attitudes, and beliefs of local high school students regarding AIDS. Inferences are suggested, and recommendations are offered for further study.

#### Summary

The study design was descriptive, and a self-report questionnaire was used. The target population for this study included high school students in the 9th and 12th grades enrolled in English classes in a small, private, non-denominational high school, located in San Mateo County California. The research subjects consisted of 125 students, of whom 70 were 9th graders and 55 were 12th graders (67% of freshmen had AIDS education and 69% of the seniors had AIDS education).

The data collection instrument (questionnaire) consisted of two parts: (a) 30 questions regarding knowledge about AIDS, and (b) 11 questions which assessed attitudes and beliefs concerning the disease's severity, susceptibility, and the need for AIDS instruction to be included in the high school curriculum. Both parts consisted of a "yes," "no," "don't know" format. The first 30 questions focused on common misconceptions, facts, and

knowledge about the risks of AIDS. The questionnaire was developed by DiClemente et al. (1986) and was slightly modified for this study. Thirty questions were used for several reasons. They covered the subject adequately, did not appear intimidating to the respondents, and made scoring easier.

The investigator delivered the questionnaires and student consent forms to the health educator. A cover letter was attached for the teachers who passed out the questionnaires, with instructions to return all forms to the health instructor.

#### Major Findings

Information was obtained in this study regarding the knowledge and attitudes of 9th and 12th grade high school students toward AIDS, and these results were compared to a 1985 study done by DiClemente et al. (1986). The findings from the questionnaires given to these students indicate that they had more correct knowledge and less concern about getting AIDS than did students in the DiClemente study.

Knowledge questions were broken down into two parts: (a) acquisition/prevention questions, and (b) disease questions. There were significant differences on all prevention and acquisition items except item 11 ("Are women more likely to contract AIDS during their period?"), and item 17 ("Can you get AIDS by having sex with someone?"). Items pertaining to AIDS as a disease found the biggest

difference on question 30 ("Can one be vaccinated for the prevention of AIDS?"); 25% of DiClemente's sample answered correctly, but 87% of the students in this sample were correct. Students in this sample showed significant differences on all other items by consistently answering more correctly than the DiClemente sample.

There were also significant differences between the two groups of students when assessing attitudes about AIDS. There were significantly fewer concerns about AIDS from students in this study than students in the DiClemente study. Students in this study were less worried about getting AIDS, were less likely to believe that they were the kind of person to get AIDS, were less afraid of getting AIDS, and believed living in the Bay Area was less of a threat for AIDS. Significantly more students in this study had received AIDS instruction in their school curriculum than had students in the DiClemente sample.

#### Limitations

Limitations to generalization are evident due to the size of the sample (125) and the single setting utilized (a private high school in San Mateo County, California). It is not implied that the findings obtained from this study are applicable to all high school students. Generalizations may be suggested to other high school students who attend private schools in that area.

The questionnaire used seemed clear and easy to understand. The respondents showed a willingness to participate by answering all questions on the forms. No limitations were seen to using this questionnaire.

#### Inferences

The findings presented from the knowledge questionnaire suggested that students who have had AIDS education possessed good general knowledge regarding AIDS. The findings from the Attitude Questionnaire suggested that students were significantly less concerned about AIDS than were students in the DiClemente study.

An inference can be made regarding the attitude formation of high school students presented in the Conceptual Framework and Related Literature in Chapter 2. Theoretically, students with adequate knowledge about AIDS and a lack of fear concerning AIDS are in a position to influence other students and their attitudes. This process could favorably influence the culture over time, bringing about more enlightened attitudes.

Another inference noted is that, even with adequate knowledge, students may still behave inconsistently, since value systems, beliefs, cultural ideologies, and other considerations are involved with behaviors. These students' relative lack of concern about catching the disease may be the result of their greater knowledge about how the disease is acquired, or it may be a youthful illusion that, "it

can't happen to me!" Further work would be required to determine if these students are behaving in ways that could put them at risk for AIDS.

Another inference can be drawn regarding students with increased knowledge concerning AIDS. Since DiClemente's study was published in 1986, there has been much more publicity about AIDS, which could account for the increased number of correct responses by the students. The media have played an important role, too, by keeping the public informed about AIDS.

Another inference is based on the fact that the students in this study had more classroom orientation to sex education, with an emphasis on AIDS. This can be a contributing factor to their increased knowledge and change in attitude about the disease.

#### Recommendations

Based upon the findings from this study, the following recommendations are made. All students should have AIDS education. Students would benefit by having yearly updated information about new facts concerning AIDS, with special emphasis placed on practicing safe sex and not sharing needles. It is also recommended that this study be replicated in the San Francisco school district, which DiClemente used, to see if there have been any significant changes in these high school students' knowledge and attitudes concerning AIDS.

### Concluding Statement

With the increasing spread of AIDS throughout the world and, in particular, in light of the increased sexual activity of teens and the alarming rate at which these teens are experimenting with drugs, it is our responsibility as adults to reach high school students and to increase their factual knowledge about AIDS. It would be naive to believe that teens are not engaging in sex or experimenting with drugs. We must, therefore, stress the need to make these individuals more aware of how the disease is acquired and how it can be prevented.

R E F E R E N C E S



## REFERENCES

- Centers for Disease Control. (1989). AIDS weekly surveillance report (12/31/89). Atlanta, Ga.
- DiClemente, R.J., Zorn, J., & Temoshok, L. (1986). Adolescents and AIDS: A survey of knowledge, attitudes, and beliefs about AIDS in San Francisco. American Journal of Public Health, 76, 1443-1445.
- Guralnik, D. (1986). Webster's new world dictionary. New York: Prentice Hall.
- Freedman, J., Carlsmith, J., & Sears, D. (1970). Social psychology. Englewood Cliffs: Prentice-Hall.
- Haven, G. G., & Stolz J. W. (1989). Students teaching AIDS to students: Addressing AIDS in the adolescent population. Public Health Reports, 104(1), 75-79.
- Havighurst, R.J. (1974). Development tasks and education. New York: David McKay, Inc.
- Helgerson, D.S., Peterson, R.J., & the AIDS Education Study Group. (1988). Acquired immune deficiency syndrome and secondary school students: Their knowledge is limited and they want to learn more. Pediatrics, 81, 350-355.
- Hopkins, J. R. (1977). Sexual behavior in adolescents. Journal of Social Issues, 33, 67-85.
- Johns, G. (1988). Organizational behavior: Understanding life at work. Glenview, Illinois:
- Lambert, W. W., & Lambert, W. E. (1973). Social psychology (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

- Miller, L., & Downer, A. (1988). AIDS: What you and your friends need to know: A lesson plan for adolescents. Journal of School Health, 58, 137-140.
- Price, J.H., Desmond, S., & Kukulka, G. (1985). High school students' perceptions and misconceptions of AIDS. Journal of School Health, 55, 107-109.
- Quackenbush, M., & Sargent, P. (1986). A resource guide on AIDS. Santa Cruz: Network Publications.
- Remafedi, G. J. (1988). Preventing the sexual transmission of AIDS during adolescence. Journal of Adolescent Health Care, 9, 139-143.
- San Mateo County. (1990). AIDS monthly surveillance report (3/21/90). San Mateo, CA.
- State of California. (1990). AIDS update surveillance report (1/31/90). Sacramento, CA.
- Strunin, J., & Hingson, R. (1987). Acquired immunodeficiency syndrome and adolescents: Knowledge, beliefs, attitudes, and behaviors. Pediatrics, 79, 825-828.
- Taylor, K. H., & Harned, T. L. (1978). Attitudes toward old people. Journal of Gerontological Nursing, 4(5), 43-47.
- Tolsma, D.D. (1988). Activities of the Centers for Disease Control in AIDS education. Journal of School Health, 58, 133-136.

- White, C. M. (1977). The nurse-patient encounter: Attitudes and behaviors in action. Journal of Gerontological Nursing, 3(3), 16-20.
- Williamson, R. C., Swingle, p. G., & Sargent, S. (1982). Social psychology. New York: F. E. Peacock Publishers, Inc.
- Yankaver, A. (1986). The persistence of public health problems: SF, STD, and AIDS. American Journal of Public Health, 76, 494-495.

APPENDIX A  
Questionnaire

## Appendix A Questionnaire

Please Check:

Freshman \_\_\_ Senior \_\_\_

Knowledge Questions	Yes	No	Don't Know
<ol style="list-style-type: none"> <li>1. Is AIDS a medical condition whereby your body cannot fight off diseases?</li> <li>2. Is AIDS caused by a virus?</li> <li>3. Were most people who have AIDS born with it?</li> <li>4. Can stress cause AIDS?</li> <li>5. If you kiss someone with AIDS, will you get the disease?</li> <li>6. If you touch someone with the disease, can you get AIDS?</li> <li>7. Do all gay men have AIDS?</li> <li>8. Can what you eat give you AIDS?</li> <li>9. Can anybody get AIDS?</li> <li>10. Can AIDS be cured?</li> <li>11. Are women more likely to contract AIDS during their period?</li> <li>12. Can AIDS be spread by using someone's personal belongings, like a comb or a hairbrush?</li> <li>13. Is AIDS kind of like having a cold?</li> <li>14. Is AIDS caused by the same virus that causes VD?</li> <li>15. Is the cause of AIDS known?</li> <li>16. Can you get AIDS just by being around someone who has the disease?</li> <li>17. Can you get AIDS by having sex with someone?</li> <li>18. If a pregnant woman has AIDS, is there a chance that it may harm her unborn baby?</li> </ol>			

Knowledge Questions	Yes	No	Don't Know
19. Do most people who get AIDS die from it?			
20. Will using a condom during sex lower the risk of getting AIDS?			
21. Can you get AIDS by shaking hands with someone who has it?			
22. Can receiving a blood transfusion with infected blood give a person AIDS?			
23. Can you get AIDS by sharing a needle with a drug user who has the disease?			
24. Is AIDS a life-threatening disease?			
25. Do people with AIDS usually have a lot of other diseases as a result of AIDS?			
26. Do all gay women have AIDS?			
27. Is there any cure for AIDS?			
28. Can you avoid getting AIDS by exercising regularly?			
29. Can AIDS be cured if treated early?			
30. Can one be vaccinated for the prevention of AIDS?			

Belief/Attitude Questions	Yes	No	Don't Know
<ol style="list-style-type: none"> <li>1. Is AIDS as big a problem as the media suggests?</li> <li>2. Are you afraid of getting AIDS?</li> <li>3. Does living in the Bay Area increase your chances of getting AIDS?</li> <li>4. Are you really worried about getting AIDS?</li> <li>5. Are you the kind of person who will get AIDS?</li> <li>6. Are you less likely than most to get AIDS?</li> <li>7. Would you rather get any other disease but AIDS?</li> <li>8. If a free blood test were available, to determine if you had been exposed to AIDS, would you take it?</li> <li>9. Have you heard so much about AIDS that you don't want to hear any more about it?</li> <li>10. Is it important for students to learn about AIDS in Family Life Education classes?</li> <li>11. Have you had any instruction about AIDS in your school curriculum?</li> </ol>			

**APPENDIX B**  
**Informed Consent Letter**



## Appendix B

## Informed Consent Letter

Dear Parent:

I am currently involved in a research project that is being used to complete a thesis for partial fulfillment of a Master's degree in Nursing at \_\_\_\_\_.

Your permission is being requested for your child to participate, in his or her English class, in a study to evaluate high school students' knowledge, attitudes, and beliefs concerning Acquired Immune Deficiency Syndrome (AIDS). Data will be collected by administering a self-report questionnaire. Data compiled from students will be kept confidential, and neither students nor the high school will be identified at any time in the report.

Participation in this research study is voluntary. You may withdraw your consent and discontinue your child's participation at any time.

Sincerely,

---

## Appendix B (Cont.)

## Parent Consent Form

RESPONSIBLE INVESTIGATOR: \_\_\_\_\_

TITLE OF PROTOCOL: Knowledge and Attitudes of High School Students Concerning AIDS

My child has been asked to participate in a research study that is investigating high school students' knowledge and attitudes concerning AIDS. Participating in this study should further my child's understanding of the disease of AIDS.

I understand that:

1. My child will be asked to fill out a questionnaire that should take no longer than 30 minutes.
2. No risks will accrue to my child as a result of participating in this study.
3. The possible benefit of this study for my child is greater awareness about the disease of AIDS.
4. That the results from this study may be published, but that any information from this study that can be identified with my child will remain confidential and will be disclosed only with my permission or as required by law.
5. My child will receive no financial compensation for participating in this study.

## Appendix B (Cont.)

6. Any questions about my child's participation in this study will be answered by \_\_\_\_\_.

[Complaints about the procedures may be presented to Dr. \_\_\_\_\_, Professor of Nursing at \_\_\_\_\_ University. For questions or complaints about research subjects' rights, or in the event of research-related injury, contact \_\_\_\_\_ (Associate Academic Vice President for Graduate Studies and Research at \_\_\_\_\_).

7. My consent is being given voluntarily, with no coercion; I may refuse my child's participation in this study, or any part of this study; my child may withdraw at any time.
8. A copy of the consent form is to be kept for my own files.

I have made a decision whether or not to have my child participate. My signature indicates that I have read the information provided above and that I have decided to let my child participate.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Parent's Signature

\_\_\_\_\_  
Investigator's Signature

APPENDIX C

Project Proposal Review

APPENDIX C

SAN JOSE STATE UNIVERSITY  
GRADUATE STUDIES AND RESEARCH

HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD  
PROJECT PROPOSAL REVIEW

Regular Review  Expedited Review  Deadline Date \_\_\_\_\_

I, the undersigned member of the San Jose State University Human Subjects Institutional Review Board, have reviewed the following proposal submitted to the Board on 6/14/89 by:

PRINCIPAL INVESTIGATOR: MADALENE T. HUDSON  
PROTOCOL #: 7531 DEPT: NURSING  
PROJECT TITLE: KNOWLEDGE AND ATTITUDES OF HIGH SCHOOL STUDENTS CONCERNING AIDS

I recommend the following action (indicate one):

- 1. Approved for clearance as involving minimal risk to Human Subjects.
- 2. Approved for clearance with risk to Human Subjects.
- 3. Approval depends upon the satisfactory completion of the following conditions: Please include the University recommended Consent Form.
- 4. I have serious concerns about this protocol and it should go before the full committee to review.

\_\_\_\_\_  
Signature of IRB-HS member Robert A. Hudson Date 6-14-89

5. Not Approved.  Approved.

OFFICIALS SIGNING FOR INSTITUTION  
Toni Campbell \* 6/23/89 Re-read 8/8/89  
Chair, Human Subjects Institutional Review Board Date  
Toni Campbell for Serena Stanford 4/23/89  
Serena Stanford, Ph.D. Date  
AAVP for Graduate Studies & Research S. Stanford 8/17/89

Please return to: Graduate Studies and Research Office, Administration Building 150, San Jose State University, One Washington Square, San Jose, CA 95192-0139 (408) 924-2480

**APPENDIX D**

**Consent Request Letter**

## Appendix D

## Consent Request Letter

24 April, 1989

Dear Mr. Paulus:

I am currently involved in a research project that is being used to complete a thesis for partial fulfillment of a Masters degree in Nursing at \_\_\_\_\_.

Permission is being requested for your students (9th and 12 graders) to participate in their English classes in a study to evaluate high school students' knowledge, attitudes, and beliefs concerning AIDS.

Data will be collected by administering a self-report questionnaire. The data which is compiled from students will be kept confidential, and neither students nor high school will be identified at any time in the report.

If permission is granted, I will send a consent form to students and parents explaining the study to be performed. Participation in this research is, of course, voluntary.

If you have any questions, you may call Dr. \_\_\_\_\_ at \_\_\_\_\_, or call me, Madeline Hudson at \_\_\_\_\_. Thank you very much for your cooperation.

Sincerely,

Madelene T. Hudson, R.N.

APPENDIX E  
Consent Letter



Appendix E  
Consent Letter

From: Headmaster

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To: To Whom It May Concern

\_\_\_\_\_ School and \_\_\_\_\_, Headmaster,  
have agreed to help Madelene Hudson with her AIDS research  
project for her Masters thesis. In conjunction with this  
project, Madelene will be handing out a questionnaire to all  
of our 9th and 12th grade students to determine the level of  
their knowledge about AIDS. The results of this survey will  
be used in Madelene's thesis.

APPENDIX F

Informed Consent Letter

## Appendix F

## Informed Consent Letter

Dear Student:

I am currently involved in a research project that is being used to complete a thesis for partial fulfillment of a Master's degree in Nursing at \_\_\_\_\_.

Your permission is being requested to participate in a study to evaluate high school students' knowledge, attitudes, and beliefs concerning Acquired Immune Deficiency Syndrome (AIDS). Data will be collected by administering a self-report questionnaire. All of the data compiled will be kept confidential, and neither you nor your high school will be identified at any time in the report.

Participation in this research study is voluntary. You may withdraw your consent and participation at any time.

Sincerely,

---

## Appendix F (Cont.)

## Student Consent Form

RESPONSIBLE INVESTIGATOR: \_\_\_\_\_

TITLE OF PROTOCOL: Knowledge and Attitudes of High School Students Concerning AIDS

I have been asked to participate in a research study that is investigating high school students' knowledge and attitudes concerning AIDS. Participating in this study should further my understanding of the disease of AIDS.

I understand that:

1. I will be asked to fill out a questionnaire that should take no longer than 30 minutes.
2. No risks will accrue to me as a result of participating in this study.
3. The possible benefit of this study for me is greater awareness about the disease of AIDS.
4. That the results from this study may be published, but that any information from this study that can be identified with me will remain confidential and will be disclosed only with my permission or as required by law.
5. I will receive no financial compensation for participating in this study.

## Appendix F (Cont.)

6. Any questions about my participation in this study will be answered by \_\_\_\_\_ (Tel: \_\_\_\_\_ ).

[Complaints about the procedures may be presented to Dr. \_\_\_\_\_, Professor of Nursing at \_\_\_\_\_ University. For questions or complaints about research subjects' rights, or in the event of research-related injury, contact \_\_\_\_\_, (Associate Academic Vice President for Graduate Studies and Research at \_\_\_\_\_ University.

7. My consent is being given voluntarily, without being coerced; I may refuse participation in this study, or any part of this study; I may withdraw at any time.
8. A copy of the consent form is to be kept for my own files.

I have made a decision whether or not to participate. My signature indicates that I have read the information provided above and that I have decided to participate in this study.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Subject's Signature

\_\_\_\_\_  
Investigator's Signature

APPENDIX G  
Consent Letter

## Appendix G

## Consent Letter

---

---

---

Dear Teacher:

I am currently involved in a research project that is being used to complete a thesis for partial fulfillment of a Masters degree in Nursing at \_\_\_\_\_.

I am asking for your help in administering a self-report questionnaire to be filled out in your students' English classes. The majority of the students' parents did give their consent, but a few students will not be participating.

This study will evaluate high school students' knowledge, attitudes, and beliefs concerning acquired Immune Deficiency Syndrome (AIDS). Data compiled from students will be kept confidential, and neither students nor the high school will be identified at any time in the report.

This questionnaire should take no longer than 30 minutes of class time. Please return all completed questionnaires to Ms. \_\_\_\_\_. I appreciate your time and effort. Thank you for your cooperation.

Sincerely,