1-1-1996

The modification, implementation, and evaluation of an HIV/AIDS education programme for students in year 10

Paula Hahnel
Edith Cowan University

Edith Cowan University

Copyright Warning

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

THE MODIFICATION, IMPLEMENTATION, AND EVALUATION OF AN HIV/AIDS EDUCATION PROGRAMME FOR STUDENTS IN YEAR 10

By

Paula Hahnel

A Thesis Submitted in Partial Fulfilment of the

Requirements for the Award of

MASTER OF NURSING

at the School of Nursing, Edith Cowan University

Supervisor: Dr. Patricia Percival

Date of Submission: November 30, 1995

ABSTRACT

This research addresses the issue of HIV/AIDS education for Year 10 students. The purpose of this study was twofold: to provide baseline data on students' knowledge, beliefs, and attitudes about HIV and AIDS (Phase 1), and to evaluate the effect of an education intervention on possible determinants of behaviour (Phase 2). Previous studies have indicated that improved knowledge may influence risk-reducing behaviour. In addition, adolescents have numerous misconceptions about the cause and transmission of HIV. However, there has been no known assessment of AIDS knowledge, attitudes, beliefs, and behaviours of high school students in Western Australia.

The study was guided by the Health Belief Model (HBM), which attempts to explain preventative health behaviour in terms of attitudes, values, and beliefs. Using a descriptive, quasi-experimental design, the study drew a non-random convenience sample of 269 students aged 14-15 years from two senior high schools in Perth, Western Australia. One school received the education intervention, and the other school was used as the control group.

Phase 1: A questionnaire was administered to gather baseline data on AIDS knowledge, attitudes, perceived risk, and intention to change risk behaviours. Students were also asked to identify sources of HIV/AIDS information. Results revealed that students knew most about the prevention of HIV/AIDS, and least about its transmission. Understanding of the severity of the disease was poor, students reported high levels of fear, and varying degrees of willingness to practice risk-reducing behaviours. There was a significant relationship between knowledge of HIV/AIDS and: perceived severity, perceived barriers, and perceived pressures. Schools, television, and magazines were major sources of AIDS information.

Phase 2: A pre-test was administered to both groups to gather data on existing AIDS knowledge, attitudes, perceived risk, and intention to change risk behaviours. The data gathered in Phase 1 also served as the pre-test data in Phase 2. Following the pre-test, students in the experimental group were given an HIV/AIDS education programme, and tested immediately following its completion. Six weeks later, both groups were evaluated using a questionnaire identical to the pre-test and intervention test, to allow comparison of data between the groups, and to evaluate the effect of the intervention on the following HBM variables: knowledge of HIV/AIDS, knowledge of HIV/AIDS prevention, perceived severity, perceived susceptibility, preventive intentions, perceived barriers, and perceived pressures. Data from the intervention test and post-test were used to evaluate knowledge retention rates in students in the experimental group.

To allow for pre-test differences, post-test scores were subtracted from pre-test scores. Using these difference scores, t-test analyses were conducted to test the hypotheses. Results indicated support for hypotheses investigating the effect of the intervention on adolescents' knowledge about HIV/AIDS, perceived severity, and perceived pressures. However, differences in responses relating to knowledge of prevention, preventive intentions, and perceived barriers, were not statistically significant. At post-test, the experimental group maintained knowledge levels, felt less threatened and less susceptible to AIDS, acknowledged fewer pressures, and were less inclined to practice preventive health behaviours. Study findings have implications for nursing practice, health education, planning, and research.

DECLARATION

"I certify that this thesis does not incorporate, without acknowledgment, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text."

Paula Hahnel

November 30, 1995

ACKNOWLEDGMENTS

I would like to gratefully acknowledge the following people who assisted in the completion of this thesis:

My supervisor, Dr. Patricia Percival, for her guidance, patience, constant encouragement, many hours of over-time, and never-ending support.

Dr. Amanda Blackmore, Research Consultant at Edith Cowan University, for guiding me throughout the development of the questionnaire, and for invaluable advice regarding statistical analyses.

Elaine Pascoe and Andrew Guilfoyle, Research Consultants at Edith Cowan University, for assistance and support with data analyses.

Mr. Hank Schook and colleagues at the experimental school, who coped magnificently with my advice on how and what to teach their health education students, and who diligently administered and collated the questionnaires.

The students from the control school, and their teachers, who also diligently administered and collated the questionnaires.

My husband, Dennis Hahnel, for his continued love and unending support, and whose patience and understanding were much appreciated. My children, who, at times, found themselves motherless, but carried on regardless.

My friends, without whose valued support I would have given up.

TABLE OF CONTENTS

Chapter 2 - continued

Chapter 6 - continued

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

Introduction

This study describes the modification, implementation, and evaluation of an HIV/AIDS education intervention for Year 10 students. The identification of knowledge gaps, attitudes about AIDS, and reported preventive behaviour intentions will determine future needs for education and counselling. The evaluation of the intervention programme is based on the expectation that those students surveyed will provide accurate information about their knowledge of HIV/AIDS transmission and prevention. Guided by the Health Belief Model, the study will also provide a useful and valuable insight into how adolescents perceive the severity of HIV/AIDS, how susceptible they feel about acquiring the disease, and how the programme may impact on their future sexual behaviour. The study has focussed on adolescents aged 14 to 15 years, currently enrolled at two state senior high schools in Perth, Western Australia.

Background

Of all the viruses that have plagued human beings throughout the world, few have cast darker shadows or proved more formidable than the one that causes Acquired Immune Deficiency Syndrome (AIDS). The disease was initially identified in the United States of America in 1981, and the first Australian case was diagnosed in December, 1982. AIDS has since been reported in all parts of the world.

Webman and Alwon (1990) described AIDS as "a collection of infections and diseases made possible by the presence of the Human Immunodeficiency Virus (HIV) which attacks the human immune system" (p. 3). HIV is a blood-borne virus which is introduced into a person's system via blood, semen, and vaginal fluid. HIV can also be passed from

mother to baby. It is not transmitted through casual contact such as touching, sharing eating utensils or food, or working alongside an infected person. The virus can be spread by someone who appears healthy, but is HIV-positive and who has not yet been diagnosed as having AIDS. Moreover, HIV can lie dormant in a person's body for up to ten years before it begins to attack the immune system, which becomes suppressed. As the body begins to lose its capacity to defend itself against disease, the infected person develops a variety of symptoms, infections, or diseases, known as a syndrome (Webman & Alwon, 1990).

AIDS was first recognised in homosexual men and intravenous drug users. However, in this, its second decade, AIDS is a disease that is "increasingly female, increasingly heterosexual, and increasingly young" (Novello, 1992, p. 547). Latest figures from the World Health Organisation (National Centre in HIV Epidemiology & Clinical Research, 1993), reported 10-12 million people (including 1 million children) have become infected with HIV since the beginning of the epidemic. The WHO estimated that up to 5,000 people are infected with HIV each day and predicted that the number of world-wide HIV infections would increase four-fold by the end of the decade.

In Australia, as many as 17,068 individuals are known to be infected with HIV. Currently, 4,102 are living with AIDS, and 2,630 have died from AIDS (National Centre in HIV Epidemiology & Clinical Research, 1993). The report also indicated an increased proportion of young people are being infected by the virus. Nationally, 343 Australian teenagers are known to be HIV-positive, and of those known to have AIDS there are 18 people (1%) within the 13 to 19 age group, and 619 (20%) in the 20 to 29 age group. Because AIDS has a long incubation period, this latter group was probably infected during adolescence.

Furthermore, many adolescents fall into a high-risk category for HIV infection because of their risk-related sexual behaviours, drug use, apparent lack of knowledge about AIDS, and limited ability to understand and anticipate the long-term consequences of their behaviour (Becker & Joseph, 1988; DiClemente, Boyer, & Morales, 1988; DiClemente, Zorn, & Temoshok, 1986; Price, Desmond, & Kukulka, 1985; Simkins & Kushner, 1986; Strunin & Hingson, 1987; Taylor, Wang, & Jack, 1989). In the absence of an effective vaccine or treatment for AIDS, health professionals can rely only on education to stem the tide of the epidemic.

Significance

Petosa and Wessinger (1990) stressed that without accurate information about AIDS, and awareness of safer sex behaviours, the adolescent population is extremely vulnerable to HIV infection. Since they are easily reached in schools, and at an age during which risky behaviours are likely to begin, adolescents are a logical target group for HIV/AIDS education. Schools offer a vital means for providing programmes directed toward altering these behaviours. School health nurses can play a significant role in the prevention of HIV/AIDS as they have specific expertise in counselling, assessment, and in accessing health care services. They also have a practical understanding and professional knowledge of sexual health, including pregnancy, sexually transmitted diseases, and HIV/AIDS.

In this study, the researcher, a school health nurse, has modified an existing HIV/AIDS education programme, to include current, up-to-date information relevant to the specific educational needs of young people in Year 10. Study findings will provide baseline information on knowledge, attitudes, perceived risk, and behavioural intentions of adolescents in two schools. Data from the study will also furnish additional information about perceived severity and susceptibility to AIDS, and the identification of

barriers and pressures which increase AIDS risk. The data collected in this study can be used by other schools with similar backgrounds for planning educational programmes, and developing interventions. If the intervention used in this study is found to be effective, it can be used by other nurses and teachers working in schools. In addition, instructional time can be used more efficiently to reinforce correct beliefs, address specific misconceptions, and use appropriate teaching strategies to equip students with the necessary skills to apply preventive actions to personal lifestyles.

Purpose

This descriptive, quasi-experimental study consisted of two distinct phases: a descriptive phase (Phase 1), and an intervention phase (Phase 2). Although for reasons of clarity these phases were described separately, data from Phase 1 and the pre-test data used in the intervention phase was the same.

The purpose of Phase 1 is to provide baseline data on Year 10 students' knowledge, beliefs, and attitudes about HIV and AIDS. The researcher will also investigate the relationships between the variables, and sources of adolescents' information about HIV/AIDS. Phase 1 focuses on the total sample of students in two schools in the Perth metropolitan area.

Phase 2 focuses on students in the experimental school, using students in the other school as a control. The purpose of Phase 2 is to evaluate the effect of an intervention programme on determinants of behaviour change. These determinants include: knowledge of HIV/AIDS, knowledge of HIV/AIDS prevention, perceived severity of HIV/AIDS, reported preventive intentions, perceived barriers to preventive intentions, and perceived pressures to increase AIDS risk. A comparison will be

made from information obtained from the experimental group in one school, and the control group in the other school. In addition, the researcher will investigate retention of knowledge at post-test, six weeks post-intervention, in the experimental school only.

Phase 1: Descriptive Phase

Research Questions.

Combined data from the total sample, that is, Year 10 students in both schools, will provide answers to the following questions.

1) From where do adolescents obtain their information about HIV/AIDS?

2) What are the levels of knowledge about: HIV/AIDS and its prevention; perceived severity; perceived susceptibility; preventive intention; perceived barriers; and perceived pressures of students in both schools?

3) Is there a relationship between students' reported knowledge and:
   a) preventive intentions.
   b) perceived severity of HIV/AIDS.
   c) perceived susceptibility to HIV/AIDS.
   d) perceived barriers to preventive actions.
   e) perceived pressures to increase AIDS risk.

Phase 2: Intervention Phase

Hypotheses.

Pre and post-test data collected from the students in the experimental and control schools will be analysed to test the following hypotheses.

At post-test, the Year 10 group in the experimental school who receive the HIV/AIDS intervention programme will demonstrate:

1) an increase in knowledge about HIV/AIDS over the Year 10 group in the control school.

2) an increase in knowledge of HIV/AIDS prevention over the Year 10 group in the control school.

3) a greater awareness of the severity of HIV/AIDS than those in the Year 10 group in the control school.

4) stronger intentions not to engage in sexual behaviours that place adolescents at risk of contracting HIV/AIDS, than the Year 10 group in the control school.

5) fewer barriers to actions that prevent HIV/AIDS, than the Year 10 group in the control school.

6) fewer pressures contributing to HIV/AIDS risk, than the Year 10 group in the control school.

Conceptual Definitions

Human Immunodeficiency Virus (HIV): a retrovirus which infects white blood cells, eventually destroying them, resulting in the body's inability to protect it from infection.

Acquired Immune Deficiency Syndrome (AIDS): a collection of infections and diseases made possible by the presence of the Human Immunodeficiency Virus (HIV) which attacks the human immune system.

Perceived severity: the belief that HIV/AIDS will have serious consequences for one's health, well-being, and/or daily life.

Perceived susceptibility: the belief that one is in danger of contracting HIV/AIDS, or, when illness is present, belief in accuracy of diagnosis.

Perceived costs and benefits: before taking preventive health action against HIV/AIDS, the perceived benefits are weighed against the perceived costs of taking the proposed action.

Perceived ability to overcome barriers to action: the belief that barriers such as cost, inconvenience, and effort are realistically surmountable.

Preventive intention: an adolescent's willingness to comply with any actions that reduce the risk of contracting HIV/AIDS.

Perceived barriers: factors such as pain, inconvenience, embarrassment, or expense, which may hamper or restrict preventive actions.

Perceived pressures: pressures placed on an adolescent to participate in risk behaviours such as unprotected sexual intercourse, and intravenous drug use.

Cue to action: an event, interest, or active concern that helps motivate action.

Organisation of the Thesis

Chapter One provides an introduction, significance and purpose of the study with related research questions and hypotheses.

Chapter Two describes studies exploring adolescents' knowledge, beliefs, and attitudes about HIV/AIDS, and their implications for health education. In the same chapter, adolescents' perceptions of the severity of AIDS, and their reported risk of contracting the disease are reported. Results of the implementation of HIV/AIDS education programmes in schools, and the relationship between knowledge and behaviour, are also included.

In Chapter Three, the theoretical framework for this study is presented.

Chapter Four is concerned with method, and includes the study's design, development of the intervention and the instrument, data collection procedure, and sample details.

Analysis and reporting of results is presented in Chapter Five.

A summary of findings and their comparison to other studies is incorporated in the sixth chapter.

The thesis concludes with a discussion of the implications for nursing practice and a summary of recommendations.

CHAPTER TWO

Literature Review

Introduction

This chapter focuses on literature that provides an insight into the need for the study. In the first section, the relationship between the process of adolescence and its resulting conflicts with health is discussed. Section two describes adolescents' HIV/AIDS knowledge, attitudes, perceived risk, and behaviour. In section three, sources of adolescents' information about HIV/AIDS are detailed. The rationale for health education is discussed in section four, and the final section contains a summary of the chapter.

Adolescence and its Effect on Health

Adolescence is "a life stage involving physical, social, and psychological development" (Strunin, 1991, p. 222). Although the pace and sequence vary, the literature on adolescence described it as a developmental period characterised by a heightened sense of invulnerability, impulsive behaviour, reliance on peer networks, "concrete" versus "abstract" thinking, and exaggerated denial (McKinney & Vogel, 1987; Rotherum-Borus, 1987; Simmons, 1987).

During adolescence, teenagers are formalising behavioural decisions and practices for their adult lives. A major task is that of identity formation, including sexual identity and orientation, choices about types and frequency of sexual activity, and use of recreational drugs (Befver, 1988). It is well documented that unsafe sexual activity and intravenous drug use place adolescents engaging in these behaviours at risk of

acquiring HIV/AIDS. Furthermore, Becker and Joseph (1988) stress that adolescents' limited ability to understand and anticipate the long-term consequences of their behaviour increases their risk for human immunodeficiency virus infection.

Knowledge, Attitudes, Perceived Risk, and Behaviour

There are few relevant Australian studies addressing questions related to students' AIDS knowledge, attitudes, perceived risk of contracting AIDS, and risk-taking behaviour. However, several British, Canadian, and American studies between 1986 and 1991 have addressed these issues through an analysis of self-report questionnaires. The results of these surveys will be considered under the following headings.

Adolescents' Knowledge About HIV/AIDS

AIDS knowledge levels may be influenced by several factors, including intelligence, general academic performance, education and life plans, parental influences, peer norms, and socioeconomic status (DuRant, Ashworth, Newman, and Gaillard, 1992). Several prominent overseas studies have examined high school and college students' knowledge, attitudes, and/or behaviours relevant to AIDS. Roscoe and Kruger (1990) considered it of value to consider such surveys of adolescents because findings suggested individuals become more knowledgeable about AIDS as they remain in formal educational settings.

In the first published study on AIDS knowledge, Price et al. (1985) found that 250 high school students in Ohio reported a poor knowledge about AIDS, and many misconceptions regarding HIV transmission. Of the 19 knowledge items on the questionnaire, only three were answered correctly by 75% or more of the respondents. The majority were not aware who were more likely to develop AIDS, what happened to people

who developed AIDS, how the disease was detected, and whether it was transmissible.

These results were supported by Strunin and Hingson (1987), who gathered information from a random sample of 860 adolescents in Massachusetts concerning their knowledge, beliefs, attitudes, and behaviours regarding AIDS. Results showed that 98% of respondents knew that AIDS could be transmitted through sexual intercourse between men, however 8% were not aware it could be transmitted by sexual intercourse between a man and a woman. Further, 22% did not know that AIDS is transmitted by semen, and 29% were unaware of transmission by vaginal fluid.

In contrast to these findings, DiClemente et al. (1986), supported by Helgerson and Peterson (1988), reported an improvement in knowledge about AIDS when conducting similar surveys. DiClemente and his colleagues studied the AIDS knowledge of 1,326 high school students in San Francisco. Using a questionnaire consisting of 30 items, they evaluated knowledge about causes, transmission, and treatment. While misconceptions about the spread of HIV remained unacceptably high, knowledge scores were improved. Importantly, 74% of the students in Helgerson and Peterson's Connecticut study said they wanted to learn more about AIDS. DiClemente's findings were supported by other American researchers, who confirmed that while the majority of high school students were knowledgeable about HIV, there was still considerable confusion about transmission of the virus (Anderson & Christenson, 1991; Jones, Ellis, Tappe, & Lindsay, 1991; Naughton, Edwards, & Reed, 1991; and Weinstein, Rosen, & Atwood, 1991).

Encouraging results from a study conducted by Brown, Nassau, and Barone (1990) revealed that seventh graders in Rhode Island correctly answered 69% of items testing their knowledge about modes of

AIDS transmission. However, more than 40% of these students incorrectly associated contracting AIDS with kissing, or mosquito bites. Petosa and Wessinger (1990) confirmed these findings. A large number of seventh grade students in their South Carolina study believed that AIDS could be caught from sharing eating utensils (41%), kissing (42%), and oral sex (34%).

Although 80% of high school respondents in Helgerson & Peterson's (1988) study associated sharing needles with increased risk, 45% of those studied by Brown, Nassau, and Barone (1990) either did not know or incorrectly associated "snorting" drugs with possible viral transmission. An alarmingly high number of students (56%) believed that blood donation was a mode of HIV transmission, a view shared by 51% of respondents surveyed by Siegel, Lazarus, Krasnovsky, Durbin, and Chesney (1991).

In contrast to these results, however, two studies revealed more positive findings. Seventh grade students studied by King et al. (1989) scored an average of 83% regarding knowledge of HIV transmission, and an Australian study conducted by Dunne, Donald, Lucke, Nilsson, and Raphael (1992) reported teenagers aged 13 to 17 years scored highly on knowledge and transmission items. However, Naughton et al. (1991), and Weinstein et al. (1991) cautioned that although levels of knowledge about HIV infection and transmission were high, levels of risk-taking behaviour were also disappointingly high.

There are numerous American studies reported in the literature regarding the assessment of AIDS knowledge, attitudes, beliefs, and/or behaviours among the adolescent population (see Fennell, 1990, for selected review). Few of these studies, however, target younger adolescents--namely, those in middle high school. Those that do, tend to mix both younger and older adolescents without analysing age groups

separately. Such studies demonstrated varied levels of knowledge, numerous areas of misinformation, and mistaken beliefs about the disease. In a survey of seventh, ninth, and eleventh grade students, Petosa and Wessinger (1990) found that the range of correct responses to knowledge items was 42% to 93% for all grades. Results of a survey of seventh and eighth grade students by Konetzny, Konetzny, and Pifer (1987) indicated that 97% of the students correctly believed that receiving a blood transfusion with infected blood can give a person AIDS. However, only 42% of these students knew that there is no cure for AIDS, and 38% were unaware that AIDS is caused by a virus. Several years later, these results were confirmed by Siegel et al (1991). Although students in grades 7 to 9 displayed good knowledge about AIDS, misconceptions about casual contagion were common.

It appears that while knowledge about AIDS is steadily improving, many misconceptions about transmission of the virus persist. These misconceptions must be addressed. Discrepancies in knowledge could lead sexually active teenagers to make ineffective changes or no changes in their sexual behaviour to avoid contracting AIDS. Knowledge of HIV transmission is a necessary, if not sufficient, condition for behaviour change, and is an important foundation upon which skills that influence behaviour can be developed. It is, therefore, obvious that additional education about AIDS prevention is needed for adolescents.

Adolescents' Attitudes and Perceived Risk of HIV/AIDS

It is well documented that a weak relationship exists between students' HIV/AIDS knowledge and their attitudes about the disease (Hingson, Strunin & Berlin, 1990; Karniski, 1978; Mabe, Riley, & Treiber, 1987). Adolescents' attitudes towards HIV/AIDS appeared to fall into two categories: the perceived risk of acquiring the disease themselves, and their feelings towards those who are HIV-positive.

A recent NBC/Wall Street Journal poll (cited by Smilgis, 1987) found that AIDS had no effect on the way 92% of the population conducted their lives. This seemed especially true among adolescents, who as a group tended to be impulsive regarding sexual activity (Hirschorn, 1986; Smilgis, 1987). Adolescents admitted to hearing about AIDS daily, but to most of them it simply was not a personal problem. They believed AIDS was a concern only for "other people" (Keeling, 1988; Smilgis, 1987). Many young people resisted behaviour change because they continued to believe that AIDS only affected homosexual men, or that they were not at risk because of their infrequent sexual behaviour (Grieco, 1987; Thiers, 1987). Keeling (1988) argued that if young people did not see the threat of HIV infection as immediate and specifically related to them, they would not take precautions, tolerate essential restrictions imposed by these precautions, or provide peer support for those who choose to be careful. In addition, there is the perception that a feeling of helplessness may lead adolescents to deny the relevance of the AIDS epidemic as it applied to them personally (Brown, Nassau, & Levy, 1990). It has also been noted that adolescents often use denial as a mechanism to deal with other important, anxiety-arousing issues such as nuclear war (Beardslee & Mack, 1983), and pregnancy (Kirby, 1985).

Thiers (1987) believed young people often denied the threat of AIDS because they were not yet ready to take responsibility for their own sexual behaviour. They did not worry about AIDS because they believed it would never happen to them, and tended to view themselves as essentially indestructible. Keeling, (1988) supported by Carroll (1988), reported that because adolescents did not feel susceptible to AIDS, they continued to engage in indiscriminate sexual activity. This fact is highlighted by respondents in studies conducted by Price et al. (1985) and Trice and Price-Greathouse (1987), who felt that contracting AIDS was a chance event.

Several other studies, however, revealed a completely different situation, with up to 78% of adolescents reporting that they were afraid of contracting the disease (DiClemente et al., 1986; Konetzny et al., 1987; Petosa & Wessinger, 1990). The impact of this concern on adolescents' sexual behaviour was investigated by Strunin and Hingson (1987), and Carroll (1988). More than half the respondents in each study reported that fear of AIDS had changed their sexual behaviour in some way. They cited greater selectivity of partners, less frequent sexual relations, and more frequent use of condoms, as the major changes. These results are encouraging, especially when compared with those of Hirschorn (1986), who found that very few of the 1.364 adolescents interviewed said they had changed their sexual habits because of concern over AIDS. However, about one in ten admitted that a fear of developing AIDS had resulted in a decision to become abstinent. Hirschorn emphasized that his respondents appeared to be more concerned with long-term relationships than with sex.

Attitudes towards those infected with the AIDS virus appeared to be inconsistent and varied among students in junior high or middle school. Research has shown that half of seventh, eighth, and tenth grade students believed that people who have AIDS should be allowed to attend regular classes, and only 14% felt that those who have the AIDS virus should be allowed to work in hospitals (King et al., 1989). Brown, Nassau, & Barone, (1990) found that only about 50% of their students endorsed attitudes reflecting tolerance towards persons with AIDS. When examining the relationship between grade and AIDS knowledge and attitudes, they discovered a significant difference between age and attitude: Fifth graders were less likely to report that they would touch a person with AIDS, blame homosexuals for the AIDS virus, and not be nervous about AIDS than were older students.

A further study found 14 to 16 year old pupils in Exeter, England, were quite prejudiced in their attitudes to AIDS patients, inferring self-blame, and derogation (Eiser, Eiser, & Lang, 1990). AIDS was seen as a disease that happened to homosexuals and prostitutes, and "those who deserve it" (p. 99). Interestingly, students commented during discussions about AIDS that they would adopt a more accepting attitude about the disease if a friend or family member developed AIDS (Zimet et al., 1991).

While the above studies have yielded very useful findings, several of the instruments used may limit their credibility. Many researchers, including Brown, Nassau, and Barone (1990), based results upon surveys with very small numbers of scale items. There are also studies that lack careful attention to the methodology of survey development, such as those carried out by Helgerson and Peterson (1988), and King et al. (1989). In some instances, the instruments are either applied across grade level or across populations without regard to such issues as readability, cognitive complexity, and culture (Brown, Nassau, & Barone, 1990; Konetzny et al., 1987). Finally, attention should be paid to the correctness of information within the surveys. For example, Helgerson and Peterson (1988), Petosa and Wessinger (1990), and Siegel et al. (1991), incorrectly use the term "AIDS" to identify "HIV" in their respective instruments.

Adolescents' HIV/AIDS Risk-taking Behaviour

Adolescents fall into a high-risk category for HIV/AIDS because of their risk-related sexual behaviour, drug use, and lack of knowledge about the disease. However, relatively little research has been done into the sexual behaviours of Australian adolescents. The largest school-based studies have been conducted in Canada (King et al., 1989), and the United States of America (Kann et al., 1991; Remafedi, Resnick, Blum, & Harris, 1992), with several smaller studies in the United Kingdom (Fife-Schaw & Breakwell, 1992) and Nordic countries (Goldman & Goldman,

1988; Kraft, 1991). While specific estimates vary, the general trends in these countries are for a median age at first intercourse of between 17 and 18 years.

In Australia in the mid-1980's, Cubis, Lewin, and Raphael (1985, 1988) surveyed 2,150 students in 23 schools in the Hunter region of New South Wales and found that at age 14, 23% of males and 18% of females had experienced sexual intercourse. This increased to 42% of males and 28% of females at age 16, and, by age 18, to 62% and 64% respectively. These results were later confirmed by Dunne et al. (1992), and Weisberg, North, and Buxton (1992), and appear to be consistent with trends in comparable western nations, for example, Norway (Kraft, 1991), and France (Analyse des Comportements Sexuels en France, 1992). Interestingly, one subtle change which has occurred in Australia is that a trend in the mid 1980s for young males to report a higher prevalence of intercourse than young females (Cubis et al., 1985, 1988) has largely disappeared. More recent research revealed that both males and females were now equally likely to report sexual activity (Dunne et al. 1992). An interesting comparison is that of post-secondary education students aged 17-21, of whom 60-80% reported experience of sexual intercourse (Crawford, Turtle, & Kippax, 1990; Moore & Rosenthal, 1991; Rosenthal, Moore, & Buzwell, 1991; Turtle et al., 1989).

Reports on the type of relationships in which intercourse occurred varied widely. While Ford and Morgan (1989) reported that over 70% of British teenagers have intercourse only within a committed, loyal, relationship, Curtis, Lawrence, and Tripp (1989) presented a contrasting picture. Fifty-six percent of their respondents, aged 15 to 17 years, had had a steady or serious relationship, and for about 40% of both sexes intercourse was a part of this relationship. Although these teenagers knew how AIDS was transmitted, only one third indicated personal

concern about the epidemic, and only a fifth anticipated a single monogamous relationship.

Studies reviewed so far have not specifically addressed actual risk behaviours of the adolescents. However, Strunin and Hingson (1987) did examine this factor. They found that the majority of high school students did not know what sexual or drug precautions were needed to prevent infection, and their sexual practices were particularly resistant to change. Only 10% reported that they would avoid sex contact or use condoms to prevent HIV infection, and only 3% indicated a willingness to become monogamous or ask questions about sex partner history. Alarmingly, there were no significant differences in knowledge between sexually active and sexually inactive adolescents, or between users and non-users of drugs and the knowledge of AIDS transmission through intravenous (IV) needle sharing.

In contrast to Strunin and Hingson's (1987) findings, respondents in two more recent American surveys appeared to have good knowledge of risky behaviours. However, they continued to take risks: Over half of the respondents in both studies had not changed sexual behaviours since they learned about AIDS (Naughton et al., 1991; Weinstein et al., 1991).

Results from the latest Australian study conducted by Dunne et al. (1992) were encouraging. Of 4,572 students surveyed in every state and territory except New South Wales, 77% of males and 64% of females had used a condom at last intercourse, with females less likely to report that a condom was used than males. This was in stark contrast to findings reported by Weisberg et al. (1992), who found that in a small sample of 71 sexually active year 9 students in Australia, only 42% always and 36% sometimes used condoms. The findings of Dunne et al. (1992), however, are consistent with most major international studies (Kann et al., 1991; Fife-Schaw & Breakwell, 1992).

Moreover, there are signs that condom use by young people is increasing over time. In Dunne's (1992) sample, where the average age of sexually experienced students was 16.8 years, 89% of non-virgins had used condoms at least once. Firstly, there was no significant difference in the rates of condom use for people who had had one partner in the past compared to those with multiple partners. This contrasts with findings from heterosexual adult surveys, where those with multiple partners tended more often to use condoms (ACSF, 1992; Catania et al., 1992). Secondly, adolescents were just as likely to use condoms with their regular partners as they were with people they had just met. Again, this contrasts with surveys with older adolescents and adults, where condom use with casual partners is much more common than with regular partners (Gallois et al., 1992; Rosenthal, Hall, & Moore, 1992). Together, this suggests that adolescents are behaving in response to the constant threat of pregnancy rather than the threat of HIV/AIDS.

Several studies have investigated the relationship between a concern for, or fear of, contracting AIDS, and behaviour change. Baldwin and Baldwin (1988) found that students who worried about AIDS scored higher on a safe sex scale than those with poor knowledge, and students with more partners were more worried about contracting AIDS but less likely to use condoms. In over 40% of respondents, concern affected behaviour by preventing students from becoming sexually active. A year earlier, however, only 15% of 15 to 19 year olds in Strunin and Hingson's (1987) study changed their behaviour because of fear of contracting AIDS, and only 20% who changed their behaviour used effective safer sex methods. Similar findings were reported by Manning, Barenberg, Gallese, and Rice (1989).

Knowing someone with HIV was more likely to trigger concern about AIDS and safer sex practices according to high school students studied by Zimet et al. (1991). This information was supported by earlier

research which indicated that reported changes in sexual behaviour among adolescents were related to worries about personal vulnerability to HIV infection (Goodman & Cohall, 1989; Zimet et al., 1989). Adolescents must first perceive themselves to be at risk before they will change their behaviour. The reasons why many young people resist behaviour change have been described earlier. According to Tucker and Cho (1991), the inability of some teenagers to change their behaviour is thought to be the result of immature cognitive development and concrete thinking. Adolescents need to understand and accept their personal level of risk, and learn how to modify it, if necessary.

Sources of HIV/AIDS Information for Adolescents

The identification of sources of AIDS information for adolescents reflects the nature and content of the AIDS message being received. Television and radio, print material, school, family members (mainly mothers), and friends have been cited as the major sources of AIDS information for adolescents (Brown, Nassau, & Barone, 1990; Helgerson & Peterson, 1988; Jones et al., 1991; King et al., 1989; Price et al., 1985).

Current research suggests AIDS is portrayed selectively by the media. Wysocki and Harrison (1991) accused the media of "constructing and maintaining the view that AIDS is a "gay" disease" (p. 22), and of being judgmental in the way they portray the person with AIDS. They suggested that by portraying people with AIDS as inherently different, adolescents are given a false sense of security. As a result, they are at a greater risk for infection.

Earlier studies, including some from the 1920's, have stressed that peers were the single most important source of sex information (Bell, 1938; Elias & Gebhard, 1970; Lee, 1952; Ramsay, 1943, Thornburg, 1975; Witmar, 1929). In a follow-up study, Thornburg (1981) reported

that over 37% of high school students cited peer contact as the source of their first information about sex. However, by 1988, television and radio had emerged as the chief source of information for 57% of students (Helgerson & Peterson, 1988).

Wysocki and Harrison (1991) argued that appropriate information about AIDS should come from all possible sources, but especially from schools, parents, television, and magazines. Children and adolescents who failed to get correct information would be unable to make sound choices about their lifestyles, and, therefore, would be unprotected against AIDS.

Implications for Health Education

Results of studies conducted in different parts of the world indicated that health problems and concerns cited by adolescents are common to all adolescent populations. The need for accurate health education has been cited as a priority by young people in Detroit, North America (Giblin & Poland, 1985), Micronesia (Mayer & Bauman, 1986), Ontario, Canada (Feldman, Corber, & Quinn, 1985), Perth, Western Australia (Henzell, 1979), and Sydney, New South Wales (Bennett, 1984). According to Bennett (1984) and Friedman (1986), health risk factors should be identified and discussed with adolescents. Friedman (1986) added that despite the belief that adolescence is a period of good health, an increasing number of studies were documenting the "unmet" health needs of young people.

Acquired Immunodeficiency Syndrome is perhaps the most significant health problem facing our nation, and perhaps the world. Education about the prevention of AIDS is particularly important for adolescents because their typical exploratory behaviour can include actions that place them at risk for AIDS, such as having unprotected

sexual intercourse with a number of different partners, and experimenting with intravenous drugs. In addition, adolescents need accurate knowledge to make responsible, informed decisions about public policies concerning AIDS. Massive public education campaigns to decrease adolescent high risk behaviours have been suggested by experts as a prevention measure, since a cure or vaccination for AIDS remains elusive (Centers for Disease Control, 1991).

For AIDS education to succeed, it should take place within the context of sex education, which should itself be part of a broader school programme of personal, social, and health education. Gillies and Wilcox (1984) suggested the optimum time for preventive education was just before the likely onset of sexual activity, and teaching needed to be repeated at regular intervals "to avoid the dilution of its impact" (p. 42). In Western Australia, schools already have a philosophy, rationale, and policy for health education. AIDS education begins in the middle years of primary school, and is repeated using different approaches to the end of Year 10. High schools have a health education co-ordinator, and teachers who are skilled in health education, supported by school nurses, health promotion officers, and local AIDS counsellors.

Brown, Barone, Fritz, Cebollero, and Nassau (1991) stressed that with the initiation of educational efforts, there was a need to conduct programme evaluation of their efficacy in order to determine the effects of the curricula and its need for refinement. Since AIDS education is a recent development, few programmes have been evaluated. In addition, previous investigators of these programmes have not been able to assess participants' attitudes toward, or actual practice of, preventive behaviours (DiClemente et al., 1989; Miller & Downer, 1988) because questions about adolescents' sexual behaviour and drug use are sensitive, and explicit questions can be objectionable in many communities (Huszti, Clopton, & Mason, 1989). However, the major goal of AIDS educational

programmes is to increase the use of preventive behaviours. Therefore, to assess the programme's effectiveness, a necessary component of evaluation is some measure of adolescents' attitudes toward, or actual practice of, high risk and preventive behaviours.

Additionally, with a topic such as AIDS, for which new information increases daily, people's knowledge and attitudes can change rapidly. As a result, it becomes important to include a control group to assess changes in knowledge and attitudes due to factors beyond the effects of the educational programme.

The following examples highlight several limitations placed on previous study results. Early cross-sectional surveys of adolescents described deficiencies in knowledge and intolerant attitudes about AIDS that varied with the cultural, ethnic, and geographical profile of the adolescents (Anderson et al., 1990; Brown, Fritz, & Barone, 1989; Goodman & Cohall, 1989; Helgerson & Petersen, 1988; Hingson, Strunin, & Berlin, 1990; Strunin & Hingson, 1987). Hingson's 1990 study compared results from a survey of 16 to 19 year olds in 1986 with information from a telephone survey in 1988 (Anderson et al., 1990). Although there was an increase in knowledge among adolescents, self-reported behaviour did not change. The non-matched, pre-test--post-test design of the study limited the conclusions that could be drawn. Also, a specific educational programme was not evaluated; instead, the generalised approach of the mass media and individual learning experiences were assumed to be the intervention. The ability of such non-specific and non-directed efforts to change adolescents' behaviour is limited.

Failure to include a control group also limits the conclusions that can be drawn from a study, a factor clearly illustrated in research carried out by Brown et al. (1989) and Miller and Downer (1988). Using a pre-

test--post-test non-control design, Miller and Downer found a 13% increase in HIV/AIDS knowledge, and an increase in tolerance towards AIDS patients following a 50-minute education programme. However, students' perceptions of their own risk of acquiring AIDS did not increase following the programme.

Brown et al. (1989) presented pilot data of the impact of a brief AIDS education programme on the knowledge and attitudes about AIDS among seventh and tenth grade public school students, using a quasi-experimental, pre-test--post-test design. Students reported more knowledge, greater tolerance of AIDS patients, and more hesitancy toward high-risk behaviours after the programme, but these changes were modest. The change in knowledge was independent of a change in tolerance, attitudes regarding high-risk behaviours, or coping strategies. A control group was not included, making it impossible to determine whether the changes from pre-test to post-test were due to external factors such as media exposure, a testing effect, or other variables.

Failure to randomly assign respondents to control and experimental groups also places limitations on study conclusions. In a follow-up study, Brown et al. (1991) included a control group but used a non-randomised pre-test--post-test design to evaluate a 5 hour AIDS education programme among seventh to twelfth grade students. The education programme had a significant effect on knowledge, tolerant attitudes, and intention to avoid sexual intercourse as a means of AIDS prevention. In an earlier study, the effect of four commercial videotape presentations on college students, using a non-randomised five by two repeated-measures factorial design, was assessed by Rhodes and Walitski (1989). Knowledge and attitudes about AIDS were measured prior to, immediately after, and 4-6 weeks following presentation of the videotapes. There was a significant, immediate increase in AIDS knowledge attributable to all four videotapes. These gains persisted until follow-up, with erosion found only with one

videotape. The sole attitude change was an increase in the perceived effectiveness of AIDS prevention methods; however, classes were not randomly assigned to the intervention and control groups, possibly producing biased results. Furthermore, these results are of questionable relevance to younger high school students due to differences in cognitive maturation.

Although Huszti et al. (1989) did assign individual classes in two schools to one of two intervention groups or a control group, it is not clear how the classes of subjects were assigned "randomly" to a particular group. The interventions consisted of video intervention programmes, and question-and-answer sessions, and a non-intervention group was included. The possibility of contamination between friends in different groups within the same school was introduced. Huszti's students demonstrated a significant increase in the level of HIV/AIDS knowledge in the intervention groups. Although knowledge dropped after the immediate post-test, it was still maintained at a higher level than at the initial examination. Huszti did not find that the educational programme had a sustained effect on the intent to change risk-taking behaviours.

DiClemente et al. (1989) used a similar design to evaluate a 3-class period intervention in three middle and three high schools in San Francisco. Significant increases in knowledge were found among students in the intervention class, indicating that even brief programmes are associated with a measurable increase in AIDS-related knowledge.

Ashworth, DuRant, Newman, and Gaillard (1992) used a quasi-experimental pre-test--post-test control group design, and reported the intervention had a significant effect on knowledge of HIV/AIDS in 11th and 12th grade students. Their findings held true after controlling for previous AIDS education, gender, and Hispanic ethnicity. These results supported the findings of Brown et al. (1989); Brown et al. (1991); DiClemente

(1989); Hingson, Strunin, and Berlin, (1990); Huszti et al. (1989); Kirby, Barth, Leland, and Fetro (1991); Schinke, Gordon, and Weston (1990); and Strunin and Hingson (1987). Although at pre-test, the intervention group reported greater worry about exposure to HIV than the control group, at post-test the differences were not significant. These pre-test differences were not associated with any other factors and were thought to be due to sampling error. There were no significant differences in attitudes about AIDS patients or perceived risk of getting AIDS. Education efforts from the community may have affected each group equally, or students may have failed to utilise knowledge to change their attitudes. The failure of this intervention to influence risk-taking behaviours should be interpreted with care; only one item concerning intravenous drug use was evaluated by the questionnaire because of modification required by the Board of Education. Another limitation of this study was the inability to measure sexual risk-taking behaviour owing to the School Board's restrictions, a problem encountered by many investigators.

Chapter Summary

It is apparent from this review of the current literature that adolescents have numerous misconceptions about the cause of AIDS, and about how HIV is spread. They are also only moderately well informed about the prevention of HIV infection. Their knowledge about AIDS tends to be superficial and in many cases inconsistent. Furthermore, many are unwilling to adopt safer behaviours. The most serious gaps appear to be in knowledge of specific steps that can be applied to lifestyle choices and in making actual changes in behaviour to reduce risk. Few studies have investigated adolescents' perceptions of their risk for HIV infection.

In addition, there appears to be an over emphasis on older adolescents to the exclusion of lower school students. Many young adolescents experiment with, or engage in, practices that increase the risk of HIV infection. Early intervention is of extreme importance in attempting to change students' knowledge and attitudes about AIDS, thereby encouraging a resultant change in risk-related behaviours.

Several surveys also reflect a lack of theory. Variables measured were limited to factual content about AIDS and lifestyle practices. Current theories in health education emphasise the importance of psychosocial variables which help explain the likelihood of preventive actions. They suggest the incorporation of theory into the design of educational needs assessments could provide valuable insights for improving programmes.

The main source of adolescents' information about HIV/AIDS appears to be the media, with schools and parents playing a smaller role. However, these sources show little evidence of having dispelled AIDS misconceptions or impacting on sexual behaviour.

In addition to these limitations, there is a dearth of relevant Australian studies available. Although education interventions are slowly being implemented, published evaluations of their effectiveness are scarce. Studies that have been evaluated often lack a control group, and contain sampling errors, or contamination. Furthermore, there has been no known assessment of AIDS knowledge, attitudes, beliefs, and behaviours of high school students in Western Australia. The Health Education curriculum includes a Year 10 unit on HIV/AIDS, which was written in 1984, and its implementation is not compulsory.

It is, therefore, reasonable to conclude that there is an urgent need for research to identify and target specific educational needs of Australian adolescents, and to evaluate the effectiveness of current intervention

programmes. The present study will evaluate the effect of a Year 10 HIV/AIDS education programme on students' knowledge, attitudes, perceived risk of contracting AIDS, and intention to practice safer sex behaviours. Evaluation of the intervention is essential to identify gaps in knowledge, (allowing specific needs to be targeted in future programmes), and to discover students' beliefs and intentions regarding the prevention of HIV infection. The following chapter provides a conceptual foundation for the study.

CHAPTER THREE

Theoretical Framework

In this chapter the conceptual structure of the research is discussed. The theoretical framework for this study is based on Becker's (1974) Health Belief Model (HBM). The key concepts of the HBM will be presented, and previous studies which have utilised this model as a theoretical framework will be discussed.

The Health Belief Model

The ultimate goal of any HIV/AIDS intervention is to change the risk behaviours of individuals. Knowledge about HIV and AIDS is essential in the process of changing these behaviours "even if it does not by itself cause those changes" (Farley, Pomputius, Sabella, Helgerson, & Hadler, 1991, p. 18).

For the past decade, a theoretically-focused model, the Health Belief Model (HBM), has been used to describe the elements that must be present if health knowledge is to be followed by appropriate action (Janz & Becker, 1984; Rosenstock, 1974). In this study, the HBM is used as a conceptual framework to analyse knowledge and attitudes that may influence risk behaviours for HIV/AIDS. The questionnaire used in this study was developed by Petosa and Wessinger (1990), and is based on the HBM concepts.

The HBM was developed in the early 1950s by Hochbaum, Leventhal, Kegeles, and Rosenstock (Rosenstock, 1960), a group of social psychologists. It was formulated initially in an attempt to understand "the widespread failure of people to accept disease

preventives or screening tests for the early detection of asymptomatic disease" (Rosenstock, 1974). It was later applied to patients' responses to symptoms (Kirscht, 1974), and to compliance with prescribed medical regimens (Becker, 1974). The HBM was modified by Becker and Maiman in 1975 (Becker and Maiman, 1980), and in 1988, Rosenstock, Strecher, and Becker suggested expanding the HBM by incorporating the variable "self-efficacy", which refers to the individual's perception that s/he can successfully execute the behaviour required to produce desired outcomes.

The HBM attempts to explain preventive behaviour in terms of the combination and interaction of differing attitudes, values, and beliefs. The model is based on the premise that health beliefs are the result of one's beliefs about health and illness. The specific beliefs that influence health-related behaviours are perceived severity, perceived susceptibility, and perceived costs and benefits of care. Other factors involved include cues to action and client motivation (Rosenstock, 1974).

The model is based on three assumptions: First, that people are interested in protecting their health; second, that people believe they can have some control over their own health and illness; and third, that people make "rational", cost-benefit calculations before adopting preventive behaviour. That is, they make logical connections between personal perceptions and desired goals. The logical outcome of these assumptions is that providing people with the appropriate means to avoid illness will lead them to change their behaviour.

Among the variables the HBM includes as predictors of HIV/AIDS-related behaviour are perceived severity, perceived susceptibility, perceived costs and benefits, and perceived ability to overcome barriers to action. An adolescent's perceptions of the severity of HIV/AIDS influences readiness to engage in health behaviours. Many do not take

preventive measures against HIV because they perceive it as a problem specific to homosexual men (Curtis et al, 1989). The HBM assumes that the more serious a health threat is viewed, the more likely one is to take preventive action (Herold, 1983).

Before adolescents can consider how susceptible they are to the threat of HIV, they must first be aware that the threat exists. An adolescent who continues to have unprotected intercourse is frequently operating on the assumption that "it won't happen to me." However, another adolescent, whose brother is HIV-positive, may have a higher perception of their own vulnerability, for example, "It happened to my brother, so it could happen to me." Rosenstock (1974) suggested that the perceived threat of any specific health problem is the result of the combination of perceived susceptibility and perceived severity. The greater the perceived threat, the greater the likelihood of action to prevent the problem. Similarly, Herold (1983) believed that a decrease in perceived susceptibility can lead to risk-taking. However, risk-taking can also lead to decrease in susceptibility, for example, if contraceptive risk-taking did not result in pregnancy, an adolescent may believe she is sterile, and couldn't ever become pregnant.

Perceived costs and benefits must be ascertained before taking action against a health threat. However, an adolescent may have erroneous beliefs about preventive measures, or feel that obtaining and using condoms is inconvenient and embarrassing. In addition to weighing up costs and benefits, adolescents must consider perceived ability to overcome barriers to action. An adolescent may believe that cost, inconvenience, and effort are worth overcoming.

Two additional concepts employed by Petosa and Wessinger (1990), those of "preventive intention" and "perceived pressures to increase AIDS risk", have been included in this study. Preventive

intention refers to an adolescent's willingness to comply with any actions that reduce the risk of contracting HIV/AIDS. Perceived pressures includes pressure placed on an adolescent to participate in risk behaviours such as unprotected sexual intercourse, and intravenous drug use.

Other factors, in addition to beliefs which influence health behaviour, are cues to action, and client motivation. Rosenstock (1974) suggested that these are necessary for triggering preventive behaviour, and include such variables as knowledge, previous history of the disease, and media influences.

However, an adolescent may have a high degree of perceived severity, perceived susceptibility and perceived benefits, and still not engage in preventive health behaviours. Frequently, some "cue to action" is required, for example, discovering a relative or close friend is HIV-positive. Client motivation is also an important influence on health behaviour. An adolescent who values health will engage in health activity more readily than one who does not. Unfortunately for some adolescents, health is a low priority compared to other aspects of life, for example, money, and prestige. Even recreation may have a higher priority than health, or the pleasure involved in sexual activity might outweigh the fear of HIV/AIDS.

Self-concept is another motivational factor that needs to be considered. An adolescent who believes himself to be worthless will not view his health status as of any importance to himself or others, and may even resort to intentional self-harm. A further consideration in terms of client motivation is that of perceived benefit of being ill. An adolescent may purposefully expose himself to the risk of HIV/AIDS to punish his parents. Other motivating factors might be an adolescent's desire to conform to peer expectations, or pressure from a girlfriend or boyfriend.

In utilising the HBM, it is essential that adolescents' beliefs and their influence on behaviour are identified. The presence or absence of cues to action and of motivational factors influencing behaviour should also be examined. When behaviours conducive to ill health are found to be the result of erroneous or unrealistic beliefs, cues, or motivators, intervention must occur, with an anticipated change in behaviour. Interventions may include health education, motivational strategies (promoting strong self-image and assertive behaviours), and presentation of cues to action.

A review of 46 studies involving the HBM, 24 of which examined preventive health behaviour, showed "substantial empirical evidence supporting the HBM dimensions as important contributors to the explanation and prediction of health behaviors" (Janz and Becker, 1984, p. 1). These included preventive dental care, hypertension control, smoking, medical checkups, dieting and compliance with physicians' advice. Perceived barriers proved to be the most powerful predictor among the HBM dimensions across these studies, and perceived susceptibility appeared second in importance (Janz and Becker, 1984). Furthermore, "although economic and sociodemographic models have been used effectively to analyse other health practices (see Becker and Maiman, 1983), the use of sociopsychological principles makes the HBM an especially useful heuristic for understanding why individuals continue to put themselves at risk for contracting AIDS" (Hayes, 1991, p. 588).

The HBM has provided a framework for several studies investigating knowledge of HIV/AIDS and its impact on health behaviour change (Becker & Joseph, 1988; Catania et al., 1989; Emmons et al., 1986; Hingson, Strunin, Berlin, & Heeren, 1990; Janz & Becker, 1984; Joseph, et al., 1987; Keeter & Bradford, 1988; McKusick et al., 1985; Montgomery et al., 1989; Valdisseri et al., 1988). A substantial amount of

research has been based on either all or a subset of the components of the HBM (Burns, 1992).

Studies by Hingson, Strunin, Berlin, and Heeren (1990), Montgomery et al. (1989), and Williams (1991) all reported significant correlations with preventive intention and perceived severity. Other researchers found that perceived benefits were significant indicators for changing risk behaviours (Carmel, Green, Slepon, Tsur, & Vardi, 1992; Emmons et al., 1986). The combined concepts of barriers and benefits were found to be significantly correlated with behaviour change by Becker and Joseph (1988) and Hingson, Strunin, Berlin, and Heeren (1990), while perceived severity and perceived susceptibility were found to be successful determinants for change in studies conducted by Allard (1989), and McCusker, Zapka, Stoddard, and Mayer (1989).

The HBM also includes "cues to action" as a catalyst for health behaviour. The concept of cues has not been studied as thoroughly as the other dimensions of the model. Interestingly, Becker and Joseph (1988) reported that cues for action appear to be the least significant predictors of behaviour change, an observation supported by Janz and Becker (1984).

The concept of "self-efficacy" is not included in the HBM (see Figure 1). Rosenstock et al. (1988) claimed that this may be a major reason why results from studies using the HBM as a framework have not been as significant as expected. They also suggested that future studies should include self-efficacy as part of the concept of barriers to allow for further adaptation of the model. In this study, the researcher was unable to evaluate the effect of self-efficacy. Due to timetabling constraints, there was sufficient time to provide only basic training to improve students' personal and social skills.

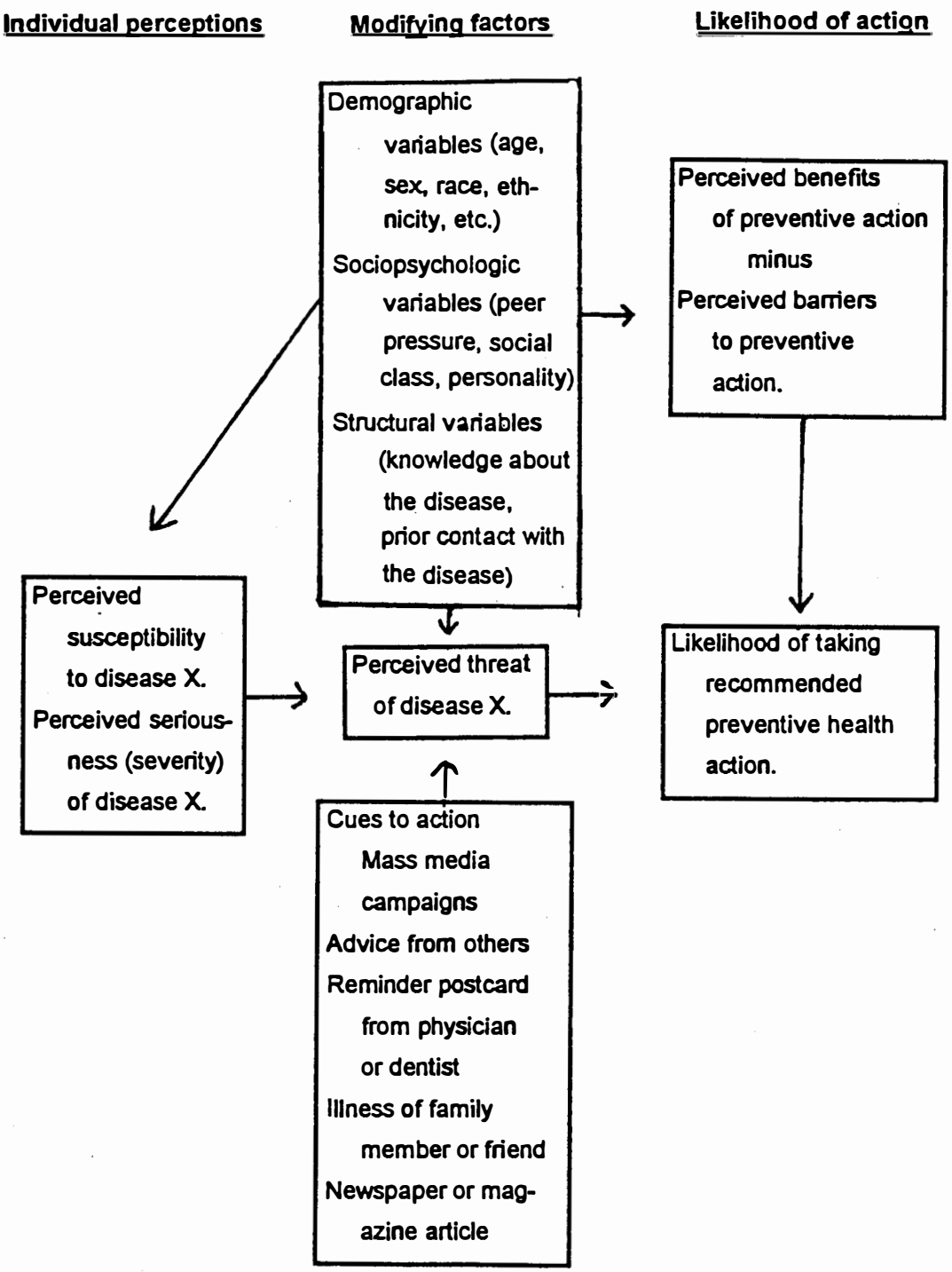


Figure 1. The Health Belief Model.
(Rosenstock, in Becker (1974), p. 7).

Assumptions

The study is based on the following assumptions:

1) Health is a priority for most adolescents.
2) Adolescents want to assume control of their own health problems.
3) Increased knowledge about an event may lead to a change in behaviour.
4) Students will respond to the questionnaire in a truthful and thoughtful manner.

Chapter Summary

The Health Belief Model (Becker, 1974) provides the conceptual basis for this study. According to the HBM, the likelihood of adolescents changing risk behaviours is influenced by their knowledge, attitudes, and beliefs about HIV/AIDS. The variables explored in this study, are: knowledge of HIV/AIDS, knowledge of prevention of HIV/AIDS, perceived susceptibility of acquiring HIV/AIDS, perceived severity of the disease, reported preventive intentions, perceived barriers to preventive actions, and perceived pressures to increase AIDS risk.

Perceived severity refers to adolescents' perception of the seriousness of AIDS, and perceived susceptibility refers to their belief in contracting AIDS. Preventive intention refers to willingness to comply with behaviours that reduce the risk of contracting AIDS, and perceived benefits refers to the belief that a change in risk behaviours will be beneficial in preventing AIDS. Perceived barriers prevent adolescents from successfully changing or eliminating risk behaviours, and perceived

pressure includes the concept of pressure placed on adolescents by peers, or others, to engage in behaviours which increase their chance of contracting HIV/AIDS. Elements of the HBM have been used to explain risk-taking behaviour, and to predict change in HIV-preventive behaviours. Details of the method and procedure used in the study are presented in the following chapter.

CHAPTER FOUR

Method

This quasi-experimental study used a pre-test/post-test design. The study consisted of two sections: a descriptive phase (Phase 1), and an intervention phase (Phase 2). The baseline data used for the descriptive phase was the same as the pre-test data for Phase 2.

Phase 1: Descriptive Phase

Setting and Sample

The sample consisted of 314 Year 10 students, aged between 14 and 15 years, from two senior high schools in the northern suburbs of Perth, Western Australia. A total of 269 respondents completed the questionnaire, resulting in an overall response rate of 85.6%. One hundred and forty two respondents (53%) were female, and 127 (47%) were male.

Design

Phase 1 used a descriptive design. A questionnaire was administered to both groups to determine HIV/AIDS knowledge, attitudes, perceived risk, and intention to change risk behaviours. In addition, students were asked to identify sources of HIV/AIDS information.

Instruments

An instrument developed by Petosa and Wessinger (1990), (with minor adaptations by the researcher), was used in this study. The questionnaire contained 38 items, and elicited true/false and Likert-type responses to measure students' knowledge, beliefs, and preventive actions about AIDS.

Petosa and Wessinger's (1990) questionnaire.

In addition to variables testing knowledge, Petosa and Wessinger used the HBM to develop subscales measuring perceived susceptibility, perceived severity, preventive intention, barriers to action, and social pressures. Petosa and Wessinger's instrument (see Appendix C) contained 38 items representing these variables, which were grouped by Petosa and Wessinger in the following way: knowledge of HIV/AIDS (items 1-14), knowledge of HIV/AIDS prevention (items 15-18), perceived susceptibility (items 19-24), perceived severity (items 25-27), reported preventive intentions (items 28-33), perceived barriers (items 34-36), and perceived pressures (items 37-38). Each item elicited a true/false response. A score of 1 was allotted to each correct response. Despite numerous attempts by facsimile, telephone, and letter, the researcher was unable to establish contact with Petosa or Wessinger to obtain permission to use the instrument. However, verbal permission was given by the head of the faculty at the university where Petosa was based.

A summary of the development of the scale as described by Petosa and Wessinger is provided below. First, the original items in each scale were produced by an expert panel of three health educators and an epidemiologist from a school of public health in an American state university. The panel conducted three reviews of the instrument "to assure conceptual clarity, factual accuracy, and readability" (p. 130).

Second, the instrument was piloted on 70 seventh grade students to determine readability and comprehension of the items. Minor revisions were made to the wording of items based on the comments of teachers and students. For the knowledge items, a Cronbach Alpha reliability coefficient of .73 for the pilot sample was judged adequate. Factor analysis was used to verify the subscales designed to measure the HBM variables. An alpha level of .35 was used as the criterion for inclusion of an item on a factor. Several items were dropped from the scale, leaving

four factors. Reliability coefficients for each variable in the original scale are reported in Table 1.

Table 1

Reliability Coefficients for Variables on Original Instrument

	Items	Reliability coefficient
Knowledge of HIV/AIDS	1-14	.73
Knowledge of prevention	15-18	.58
Perceived susceptibility	19-24	.78
Perceived severity	25-27	.81
Preventive intention	28-33	.64
Perceived barriers	34-36	.76
Perceived pressures	37-38	.65

Pilot study and instrument modification.

To ensure the instrument was culturally appropriate for Australian students, a pilot study was conducted by the researcher. In addition, procedures for contacting schools, obtaining parental and student consent, working with school teachers, and administering the questionnaire were evaluated.

The pilot survey was completed at the end of the school year by 43 students from Year 10 in the experimental school. Data indicated that changes to several items were required. Most of the procedures were tested successfully, and found to work well. There were no complaints from teachers, parents, or students, and there were minimal problems with readability.

Petosa and Wessinger (1990) designed their instrument for a specific target group. Results of the pilot survey indicated that minor modifications to the questionnaire were necessary so that the instrument could be used for a different target group. As a result of more recent advances in knowledge about HIV/AIDS, several items in the questionnaire were amended after respondents identified obvious weaknesses.

For the variable "knowledge of HIV/AIDS", the following items were modified:

Item 3 was rephrased to reflect tighter screening controls over blood donation in Australia.

To ensure accuracy, the word "virus" was inserted after "AIDS" in items 7 and 9. People with AIDS display symptoms of the disease, while those who are HIV-positive are symptom-free for 7 to 10 years following exposure to the virus. During pregnancy, it is the virus rather than the disease which is transmitted from mother to baby.

In addition to these modifications, items 6 and 7 were separated after 82% (n = 41) of students reported confusion over their apparent similarity.

For the variable "perceived susceptibility", one item was altered.

Item 22 was rephrased after 12 respondents (24%) were unsure whether "someone" represented an actual person in their peer group. As a result, the item was rewritten to read "It is likely that at least one person I know will get AIDS".

For the variable "reported preventive intentions", one item was revised.

Item 32 was clarified since students can legally finish school during Year 10. "....until I graduate from high school" was

replaced with "....at least for the next three years (that is, until the end of Year 12).

In addition to these changes, students were asked a further two questions: one evaluating sources of information about HIV/AIDS, and one for gender identification. The grouping of items under the seven variables was identical to that of Petosa and Wessinger (1990). The questionnaire concluded with the researcher's thanks, and instructions for checking and placement. The cover page of each questionnaire informed the respondents of the following: the purpose of the study; maintenance of confidentiality through identification coding; instructions on how to fill it in, the approximate time taken to complete the questionnaire. Students were assured of confidentiality. A copy of the modified questionnaire, cover page, and scoring system is included in Appendix D.

Data Collection

The questionnaire was administered to students in both schools prior to the commencement of their usual health lesson, and took 15 minutes to complete. Students were asked to read the instructions carefully, and to answer the questions truthfully, and were assured their responses were confidential, and would only be used for research purposes. On completion, questionnaires were placed in a "ballot box" at the front of the class, and delivered by the teacher to the researcher. All respondents were asked to contact the researcher if they were interested in the results of the study.

Data Analyses

For Phase 1, data were analysed using Statistical Package for the Social Sciences (SPSS) Version 6.0. The amount of missing data was minimal. Where an individual score was found to be missing, the group mean for that item was entered as the respondent's score. For Phase 1, descriptive statistics were used to answer the research questions, and to

summarise general characteristics of the groups. Frequency distribution scores demonstrated the percentage of correct/incorrect responses to each question, and the sources of information about HIV/AIDS. The relationships between the seven variables were tested using Pearson Product Moment Correlations.

Phase 2: Intervention Phase

Setting and Sample

The sample was selected from two senior high schools in the northern suburbs of Perth. One school received the educational intervention, and the other school was used as the control group. The original sample consisted of 314 Year 10 students, aged between 14 and 15 years. One hundred and sixty two students were from the experimental school, and 152 from the control school.

The response rate for the experimental school was 89.5% (n = 145). Of 17 questionnaires not returned, 4 students had left the school, 3 were newly enrolled, and 10 were absent from one or both lessons. In addition, questionnaires from 8 students with an intellectual disability could not be included in the data analyses. In this school, 137 (84.5%) subjects participated in the study: 70 (51%) were female, and 67 (49%) were male.

The response rate for the control school was 86.8% (n = 132). Of 20 missing questionnaires, 2 students had left the school, and 18 were absent for either the pre-test or post-test. In this school, 132 (86.8%) subjects participated in the study: 72 (54.5%) were female, and 60 (45.5%) were male.

A total of 269 respondents completed the pre-test and post-test questionnaires, resulting in an overall response rate of 85.6%. The number of students in the individual groups is shown in Table 2.

Table 2

Participants in Experimental and Control Groups

	Experimental (n = 137)		Control (n = 132)		
	No. students	% total	No. students	% total	Total %
Female	70	26	72	27	53
Male	67	25	60	22	47

Characteristics of the experimental and control groups are displayed in the following table.

Table 3

Characteristics of Experimental and Control Groups

	Experimental	Control	Total
Year 10 students	162	152	314
Attrition	25	20	45
Mean class size	24	22	
Female-male ratio	1.04:1	1.2:1	
Total no. respondents	137	132	269

Design

In this quasi-experimental study, the four-cell design used a pre-test/post-test, administered to students in the experimental group (Group 1), and the control group (Group 2). Since the health education course is compulsory in both schools, students could not be randomly allocated to groups, making full experimental control impossible.

Following the pre-test, students in Group 1 were given an HIV/AIDS education programme. Six weeks later, at post-test, both groups were evaluated using a questionnaire identical to the pre-test. For the experimental group only, the same questionnaire was administered at the conclusion of the intervention to allow for comparison with post-test data to assess knowledge retention rates.

Based on the Health Belief Model, the independent variable was the AIDS programme, and the dependent variables were (a) knowledge of HIV/AIDS, (b) knowledge of prevention of HIV/AIDS, (c) perceived susceptibility of acquiring HIV/AIDS, (d) perceived severity of the disease, (e) reported preventive intentions, (f) perceived barriers to preventive actions, and (g) perceived pressures to increase AIDS risk.

Since the HIV/AIDS component was already part of the health course, and changes to the intervention did not have any ethical implications, parental permission was not required for student participation in the study. However, a letter was sent to parents of all Year 10 students in both schools outlining the lesson content and the use of the questionnaire (see Appendix A). Parents were asked to contact the researcher with any questions.

Instruments

Development of the instrument, pilot study testing, and instrument modification have been described in Phase 1. Before the questionnaire was administered to students, a final check was carried out to ensure the content areas and components measured on the questionnaire had been addressed by the intervention unit "Understanding HIV/AIDS".

Procedure

Development of the programme.

To fulfil the purpose of this study , an accurate HIV/AIDS education programme was required. The existing K-10 Health Education curriculum Unit 5, "AIDS Education", had been written 10 years previously, and a significant section was found to be out-dated. Therefore, it became necessary to develop a programme based on current knowledge and recent data. Initial discussions were held with the health education curriculum planner in the Ministry of Education to determine content. The unit "Understanding HIV/AIDS" (reproduced in Appendix E) was adapted from the original programme, and included resource material recommended by Quackenbush and Sargent (1988) and Webman and Alwon (1990). It contained two teaching units tailored to the 75 minute lesson format.

Each lesson, complete with overhead transparencies, was given to a health education expert visiting from the United States of America, one health education programme writer, one health education coordinator, five health education teachers, three school nurses, and the education coordinator from the AIDS Bureau for appraisal and critique. As a result of their recommendations, several minor changes were made to terminology and sequencing of information. The final assessment by the experts yielded positive comments, and no further changes were deemed necessary.

The information and activities in the programme were designed to provide accurate information about HIV/AIDS, to emphasize positive health behaviours, to allay needless fears about HIV/AIDS, and to give young people a sense of control over their health. An HIV health education programme should ensure that young people acquire knowledge, skills, and the types of behaviours that will reduce their risk of becoming infected with HIV (Gillies and Wilcox, 1984). This programme aimed to educate students about HIV/AIDS, to encourage them to adopt safer sex behaviours and to refrain from intravenous drug use. However, it was recognised that due to timetabling restrictions, there was insufficient time available to equip students with little more than basic practical skills to empower them to change risk behaviours.

The purpose of the first lesson was to communicate accurate HIV/AIDS information and risk reduction guidelines, to clarify that the AIDS virus is not spread by casual contact, and to equip students with basic decision-making, communication, and assertiveness skills. The lesson format included instruction, discussion, group activity, and overhead transparencies which illustrated relevant segments of the lesson content. Students were given the pamphlet "AIDS: The Facts", and a list of resources for further information, which included counselling services (see Appendix E).

Lesson 2 began with a revision of risk information and risk-reduction guidelines from Lesson 1, followed by a demonstration of the correct way to apply a condom. It concluded with a facilitated discussion about the personal and societal implications of AIDS. Overhead transparencies were used to reinforce information revised from the first lesson.

Included in the plan for the second lesson was a video, "Teen AIDS in Focus", (recommended by the visiting health education expert), or a

visit from a person living with AIDS. However, due to circumstances beyond the control of the researcher, two of the planned lesson strategies had to be abandoned. The video recording recommended by the visiting health education expert did not arrive from the United States of America in time for the lessons, and a replacement was found to be unsuitable. The planned visit from an AIDS-infected person did not eventuate, since the AIDS Council could not guarantee that the same person would speak to each class. For the purposes of research, it was felt that it was not acceptable to have speakers different in gender and AIDS history addressing the students in the study.

Teaching and evaluating the programme.

Implementation of the intervention for all classes required a total of 12 teaching sessions. Since it was not possible for the researcher to teach every class, two health educators assisted by teaching 4 sessions each, leaving the researcher with the remaining 4 sessions. To ensure consistency, these staff attended two training sessions with the researcher, where a detailed script of the lessons was discussed, and the need for strict adherence to the lesson plan was stressed. Instructions were also given regarding the administration of the questionnaires.

Students in the experimental group were taught about HIV/AIDS in two 75-minute lessons. These lessons combined a variety of different teaching strategies, including lectures, facilitated discussions, role play activities, overhead transparencies, pamphlets, and resource information. Audiotapes were used to check for lesson consistency. On one occasion, a segment was found to have been omitted from the first lesson for one class. It was subsequently included in the second lesson.

Data collection

Data collection times are illustrated in the following table.

Table 4

Data Collection Times for Experimental and Control Groups

Group	Pre-test questionnaire	Intervention questionnaire	Post-test questionnaire
Experimental	**	**	**
Control	**		**

The pre-test and post-test questionnaires were identical, and took 15 minutes to complete. The pre-test questionnaire was administered to students in the experimental group prior to the commencement of their usual health lesson (week 2, term 1). Students were asked to read the instructions carefully, and to answer the questions truthfully. Each questionnaire contained a number which corresponded to the student's name on a master list. This was necessary to facilitate computerised data entry, and to ensure respondents had completed each questionnaire. Students were assured their responses were confidential, and would only be used for research purposes. On completion, questionnaires were placed in a "ballot box" at the front of the class, and delivered by the teacher to the researcher.

At the same time, and under identical conditions, the pre-test questionnaires were given out to students in the control school. The Health Education co-ordinator in the control school collated the completed papers, and notified the researcher, who collected them from the school.

The intervention programme commenced in the experimental school in week 2, term 1, and was completed by all classes by week 5. Six weeks after the intervention programme (week 9), students in both groups completed the post-test under the same conditions as before.

At the conclusion of lesson 2, an identical questionnaire was given to the experimental group under the same conditions as the pre-test, to allow for knowledge retention testing. Students were also asked to fill in a lesson evaluation sheet. All respondents were asked to contact the researcher if they were interested in the results of the study.

Data Analyses

For Phase 2, data were analysed using Statistical Package for the Social Sciences (SPSS) Version 6.0. The amount of missing data was minimal. Where an individual score was found to be missing, the group mean for that item was entered as the respondent's score.

To test the hypotheses, t-test was the preferred method of analysis. Use of Analysis of Variance (ANOVA) or Analysis of Covariance (ANCOVA) were considered by the researcher. However, the two testing occasions made t-test a simple, direct and valid alternative. As random assignment of subjects was not possible, the use of difference or change scores was felt to be the most appropriate. To control for any pre-test differences, pre-test scores were subtracted from post-test scores. These difference scores were used to test the hypotheses, and to calculate the impact of the intervention on each of the variables.

Further brief analyses using t-test were undertaken to investigate knowledge retention levels between the intervention and the post-test. The level of statistical significance was set at .05 or below.

Ethical Considerations

Consent for this study was sought and obtained from the Ethics Committee of the Edith Cowan University, and from the Principals at each school (see Appendices F, G, & H). Once approval was given, the schools provided a list of students in each health education class. Each name was entered onto a master list and allocated an identification number. The class lists were then destroyed, and the master list locked separately from the questionnaires. Only the researcher had access to the locked cupboard. Student consent was not required for participation in the educational intervention, since health education is a mandatory subject. A letter of explanation inviting comment was sent to all parents. Consent from students participating in the study was implicit in their voluntary placement of the questionnaire into the collection boxes. The intervention programme was given to students in the control group at the conclusion of the study.

Strengths and Limitations

In terms of selection-maturation, the study could not control for the possibility that some respondents may have been exposed to prior or additional information about HIV/AIDS in the electronic or print media. In addition, some students may have remembered questions from the pre-test, or been influenced by personal experience or family factors.

A convenience sample was used for the study, as restrictions imposed by the nature of the health education curriculum prevented random allocation of students and schools. However, two conditions governing experimental research--the use of a control group, and manipulation of the independent variable--lend strength to this study. In addition, although the two groups were non-equivalent, they were similar. Furthermore, the schools participating in this study are located in a

specific geographical area, and in a similar socio-economic stratum, so these findings can be generalised to schools in similar settings. The increased possibilities of achieving statistical significance and decreasing sampling error in this study are reflected in both the response rate (85.6%) and sample size (N = 269).

Several additional features of this study lend considerable credibility to its internal validity: A pilot-tested reliable instrument was used to collect data for the study; Testing was conducted in regular classroom situations by teachers following a prescribed protocol; and missing data were minimal. In the next chapter, results of the study are presented.

CHAPTER FIVE

Results

Phase 1 provided data on adolescents' knowledge about the transmission and prevention of HIV/AIDS, perceived risk, and intention to change any risk behaviors.

Phase 2 measured the effect of an educational intervention on these same concepts. The experimental group received the intervention which consisted of instruction, discussion, and role play, while the control group did not. The health belief scores for the total sample were also correlated to test the chosen theoretical framework as an indicator for health behaviour change.

The results are presented in two major sections. In the first section, results from Phase 1, the descriptive phase, are reported. These include characteristics of the sample, sources of information about AIDS, students' knowledge, beliefs, and attitudes about HIV and AIDS, and the relationship between knowledge and other concepts of the HBM.

In the second section, results from Phase 2, the intervention phase, are reported. These include characteristics of the experimental and control groups, and the effect of the intervention, including the results of hypotheses testing. In addition, knowledge retention rates for the experimental group are reported, and, in conclusion, a summary of the findings is presented.

Phase 1: Descriptive Phase

Characteristics of the Sample

As presented in the Method section, the sample population consisted of 314 Year 10 students aged between 14 and 15 years from two Perth metropolitan high schools. Of 314 questionnaires handed out to students, 277 (88.2%) complete data sets were returned. A total of 269 students were included in the study. Fifty-two percent (n = 142) were female, and 48% (n = 127) were male. The attrition rate was 14.3% (n = 45).

Sources of Information

The first research question examined which agencies provided adolescents with most information about HIV and AIDS. School (88%) was identified most frequently by all respondents, followed by television programmes (76%), and magazines (75%). Parents were cited by less than half the respondents (43%), and only 25% named their doctor as a provider of information. Results are shown in Figure 2.

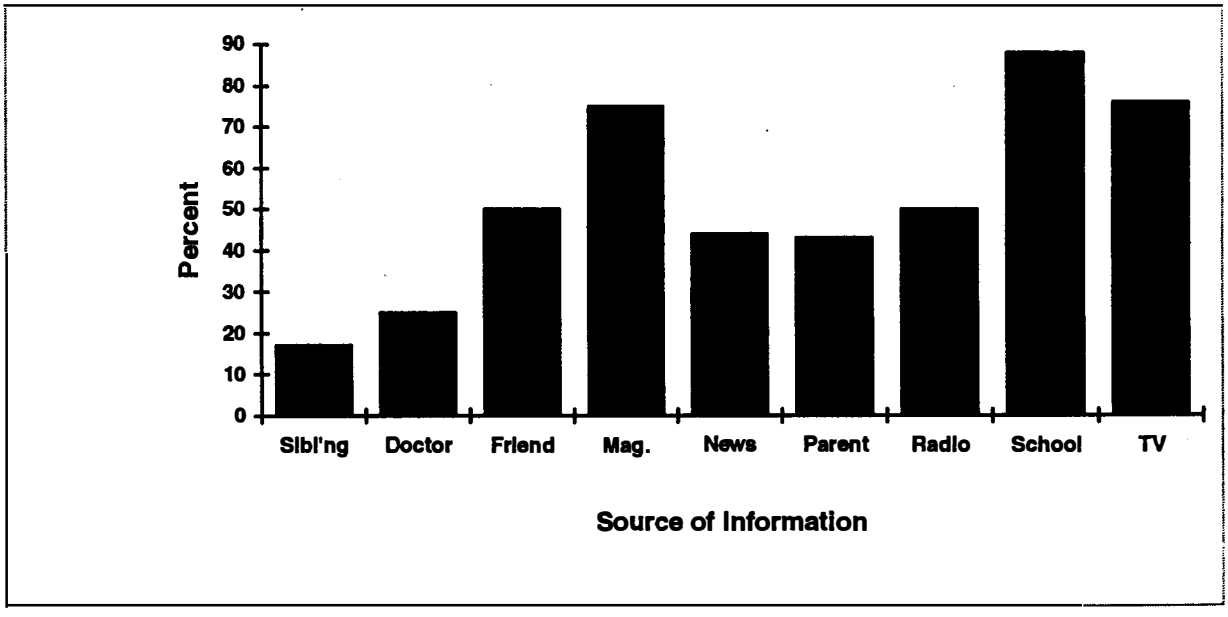


Figure 2. Sources of information about HIV and AIDS.

Knowledge, Beliefs, and Attitudes

The second research question investigated the levels of knowledge about: HIV/AIDS and its prevention; perceived severity; perceived susceptibility; preventive intention; perceived barriers; and perceived pressures of students in both schools. In this section, results from the questionnaire will be presented. Mean scores for each of the seven variables are presented in table 5.

Table 5

Mean Scores for Total Sample

	Mean	SD	Maximum score
Knowledge of HIV/AIDS	10.15	2.41	14
Knowledge of prevention	3.42	.84	4
Perceived severity	2.17	.57	3
Perceived susceptibility	3.60	.47	6
Preventive intention	3.40	.92	6
Perceived barriers	2.48	.85	3
Perceived pressures	1.71	.87	2

(N = 269)

Knowledge of HIV/AIDS.

Table 6 below shows the percentage of correct responses for each knowledge item. As illustrated, data from the total sample revealed gaps in knowledge about transmission of the AIDS virus. Seventy-four respondents (28%) were sure that screening procedures at the blood bank make it impossible to get HIV from blood transfusions. A high number (n = 113, 42%) believed they could get HIV from donating blood.

Forty-six percent (n = 123) believed those with HIV were symptomatic, and 14% (n = 37) thought they could identify these people just by looking at them. In addition, 35% (n = 94) reported that almost all homosexuals have HIV.

One quarter of the respondents (n = 65) did not understand that they could get HIV from an asymptomatic carrier, while 22.3% (n = 60) thought AIDS was spread by kissing, and 45% (n = 121) believed they could not get AIDS from oral sex. An additional misconception was revealed by the 36% (n = 97) who believed there is a vaccine available to prevent AIDS. Table 6 illustrates students' HIV/AIDS knowledge levels.

Table 6

Percentage of Correct Responses for Knowledge of HIV/AIDS

Question	Correct response (Percent)
A man who has sex only with women cannot get AIDS	96
You can get AIDS from shaking hands with or hugging a person who has AIDS	96
Women with AIDS can infect men	95
You can tell if people have the AIDS virus just by looking at them	86
A woman can infect her baby with the AIDS virus during pregnancy	84
You can get AIDS from sharing forks or glasses with a person who has AIDS	80
You can get AIDS from kissing	78
You can get AIDS from a person who is infected but does not have symptoms	75
Almost all homosexuals have the AIDS virus	65
A vaccine is available to prevent AIDS	64
You can get AIDS from donating blood	57
You can get AIDS from oral sex	55
You can get infected with the AIDS virus and not have symptoms	54
Screening procedures at the blood bank make it impossible to get AIDS from blood transfusions	35

(N = 269)

Knowledge of HIV/AIDS prevention.

The majority of respondents had a clear understanding of the preventive actions needed to protect themselves against HIV. However, 28% (n = 75) did not acknowledge abstinence as a risk reduction practice. Levels of knowledge of HIV/AIDS prevention are shown in Table 7.

Table 7

Percentage of Correct Responses for Knowledge of HIV/AIDS Prevention

Question	Correct response (Percent)
One way of reducing the risk of AIDS is to use a condom during sex	96
One way of reducing the risk of AIDS is not to share needles with drug users	94
One way of reducing the risk of AIDS is to avoid sex with many people	80
One way of reducing the risk of AIDS is to not have sex	72

(N = 269)

Perceived severity.

Adolescents did not appear to understand the severity of HIV/AIDS. Ninety-one percent (n = 245) did not know that AIDS often leads to cancer, and 64% (n = 172) were unaware that AIDS is fatal. Over half (59%, n = 159) believed that AIDS could be cured. Students' responses about perceived severity are shown in table 8.

Table 8

Percentage of Correct Responses for Perceived Severity

Question	Correct response (Percent)
AIDS can be cured if treated early	41
People with AIDS die within 10 years	36
People with AIDS usually get cancer	9

(N = 269)

Perceived susceptibility.

Respondents revealed a high degree of fear about HIV/AIDS. Eighty-three percent (n = 223) were fearful of contracting AIDS, and while 38% (n = 102) disagreed that they were less likely than most people to get the disease, 26% (n = 73) remained uncertain. A large number (n = 227, 85%) reported not having enough knowledge to protect themselves against HIV. Eighty percent (n = 215) believed that the number of people with AIDS was increasing, and while 47.7% (n = 128) thought at least one person they knew would contract HIV, almost half (n = 114, 42.7%) were undecided. Responses for perceived susceptibility are shown in Table 9.

Table 9

Responses for Perceived Susceptibility

	Response (Percent)		
Question	Agree	Uncertain	Disagree
I am afraid of getting AIDS	83	7	9
The number of people with AIDS is increasing	81	16	3
It is likely that at least one person I know will get AIDS	48	43	9
I am less likely than most people to get AIDS	36	26	38
I would be fearful of getting AIDS if someone in my class had AIDS	19	21	60
I know enough to protect myself from AIDS	6	5	85

(N = 269)

Reported preventive intention.

Students reported varying degrees of willingness to practice risk reducing behaviours. Eighty percent (n = 215) intended to use a condom each time they had intercourse, and while 67% (n = 179) would refrain from having several partners, almost 1 in 10 (9.8%, n = 25) would not.

Less than one third (n = 81, 30.4%) intended to avoid having intercourse with those who had multiple partners, and less than half (43.4% ,n = 116) intended abstaining from sex for the next three years. The majority (n = 235, 87%) were unwilling to inject drugs. Responses for reported preventive intention are shown in the following table.

Table 10

Responses for Reported Preventive Intention

	Response (Percent)		
Question	Agree	Uncertain	Disagree
I would not use a needle to inject drugs	88	6	6
I would always use a condom when having sex	80	14	6
I would not have sex with several people	67	24	9
I would not have sex until I had a long-term relationship with one person	65	23	12
I do not plan on having sex at least for the next three years (that is, until the end of Year 12)	43	32	24
I would not have sex with someone who had sex with others	30	41	28

(N = 269)

Barriers to preventive actions.

While over half (52%, n = 139) acknowledged that it was hard to ask about a partner's sexual history, and a further 28% (n = 19) were undecided, the majority of students reported fewer barriers relating to condoms. However, 1 in 10 students (n = 27) reported difficulty obtaining condoms, and found them embarrassing to use. A substantial number (38-75) of respondents expressed uncertainty about these three issues. Table 11 shows responses for barriers to preventive actions.

Table 11

Responses for Perceived Barriers

	Response (Percent)		
Question	Agree	Uncertain	Disagree
It is hard to ask if someone has had sex with several people	52	28	21
Condoms are embarrassing to use	11	28	61
Condoms are hard to get	10	14	76

(N = 269)

Pressures which increase AIDS risk.

As shown in the Table 12, most students reported low levels of pressures from friends to participate in activities which place them at risk for HIV infection. However, 1 in 10 (n = 27) identified peer pressure to have sex, and 16 respondents (6%) felt pressure to use needles to inject drugs. In this section, uncertainty was an issue for very few students.

Table 12

Responses for Perceived Pressures

	Response (Percent)		
Question	Agree	Uncertain	Disagree
I feel pressure from friends to have sex	10	6	82
I feel pressure to use needles to inject drugs	6	4	86

(N = 269)

Relationship Between Knowledge and Other Concepts of the HBM

The third research question investigated the relationship between students' knowledge about HIV/AIDS, and each of the following: (a) perceived severity, (b) perceived susceptibility, (c) preventive intention, (d) barriers to preventive actions, and (e) perceived pressures which contribute to AIDS risk.

Analyses of the total sample using Pearson Product Moment correlation coefficient testing revealed significant negative correlations between HIV/AIDS knowledge and perceived severity, perceived barriers, and perceived pressures. Correlation coefficients are reported in the following table.

Table 13

Relationship Between Knowledge of HIV/AIDS and Other HBM Concepts

	Knowledge of HIV/AIDS	
	r	p
Perceived severity	-.20	.00
Perceived susceptibility	.08	.16
Preventive intention	-.05	.40
Perceived barriers	-.20	.00
Perceived pressures	-.34	.00

(N = 269)

Summary of Phase 1

In summary, students were most knowledgeable about preventive actions, and least knowledgeable about HIV transmission. In addition, they were fearful of contracting HIV, and did not appreciate the seriousness of the disease. Students did not feel pressured by their friends to engage in sex or drug use, but found it difficult to discuss a partner's sex history, and reported varying degrees of willingness to adopt protective behaviours. Students who knew most about HIV and AIDS, knew least about its severity, reported fewer problems with condoms and discussion about past sexual behaviour, and were least influenced by friends to have sex or use drugs.

Phase 2: Intervention Phase

Phase 2 evaluated the effect of an education programme on students' knowledge, beliefs, and attitudes about HIV and AIDS. Students from one school (the experimental group) received the intervention, while those in the other school (the control group) did not. Results of hypotheses testing are reported in this section.

Characteristics of the Sample

As discussed in the Method section, out of a possible 314 Year 10 students aged between 14 and 15 years from two Perth metropolitan schools, 269 complete data sets were obtained. Of these, 137 (50.9%) were from the experimental school, and 132 (49%) were from the control school.

Since random allocation of subjects was not possible in this study, it was necessary to remove any pre-test differences between the experimental and control groups. To do this, post-test scores were subtracted from pre-test scores. With the level of significance set at .05, analysis of mean difference scores was undertaken to test for statistical difference from pre-test to post-test. Mean scores are presented in Table 14.

Table 14

Mean Scores of Experimental and Control Groups at Pre-test and Post-test

	Experimental			Control		
	Pre x (SD)	Post x(SD)	Difference score	Pre x (SD)	Post x (SD)	Difference score
Knowledge HIV/AIDS	10.24 (2.13)	11.51 (2.19)	1.27	10.06 (2.17)	0.70 (2.26)	.64
Knowledge prevention	3.41 (.86)	3.78 (.52)	.36	3.42 (.81)	3.66 (.70)	.24
Perceived severity	2.04 (.50)	.50 (.30)	.47	2.31 (.60)	.38 (.30)	.17
Preventive intention	3.43 (.91)	3.33 (.95)	-.09	3.36 (.94)	3.36 (.95)	-.00
Perceived barriers	2.40 (.86)	.40 (.85)	-.00	2.56 (.84)	2.57 (.71)	.00
Perceived pressures (N = 269)	1.80 (.94)	1.53 (.74)	-.26	1.62 (.77)	1.74 (.99)	.12

Hypothesis Testing

Using a series of seven independent samples t-tests, the mean difference score for each of the dependent variables was calculated to allow comparison of the experimental and control groups.

Knowledge of HIV/AIDS.

Results for knowledge of HIV/AIDS supported the hypothesis that the experimental group would have greater knowledge about HIV/AIDS following the intervention. With a mean difference score of 1.27, students who received the education programme displayed a higher knowledge about HIV/AIDS compared to the control group, whose mean difference score was only .64 ($t = 2.15$, $p = .03$, $df = 267$). Mean difference scores for the experimental and control groups for knowledge of HIV/AIDS are displayed in Figure 3.

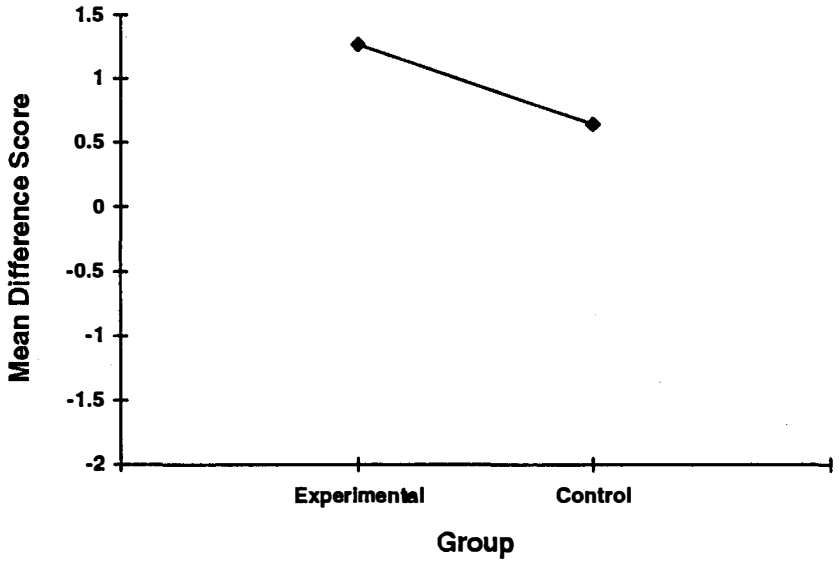


Figure 3. Mean difference scores for knowledge of HIV/AIDS.

Knowledge of HIV/AIDS prevention.

Results for knowledge of prevention of HIV/AIDS did not support the hypothesis that the experimental group would have greater knowledge of HIV/AIDS prevention. The experimental group scored a mean difference of .36, and the control group scored .24 (t = 1.17, p = .242, df = 267). Mean difference scores for the experimental and control groups for knowledge of prevention of HIV/AIDS are displayed in Figure 4.

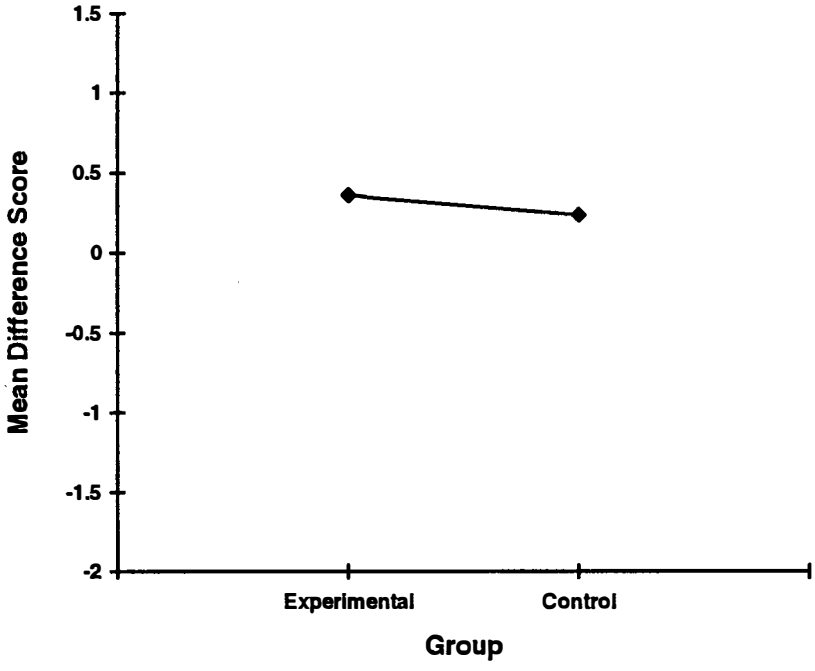


Figure 4. Mean difference scores for knowledge of HIV/AIDS prevention.

The severity of HIV/AIDS.

Results for severity of HIV/AIDS supported the hypothesis that experimental group students' perception of the seriousness of HIV/AIDS would increase following the intervention. The experimental group scored a mean difference of .47, and the control group scored .17, revealing that the programme was successful in raising students' awareness that HIV/AIDS is a serious problem (t = 3.44, p = .01, df = 267). Mean difference scores for the experimental and control groups for perceived severity are displayed in Figure 5.

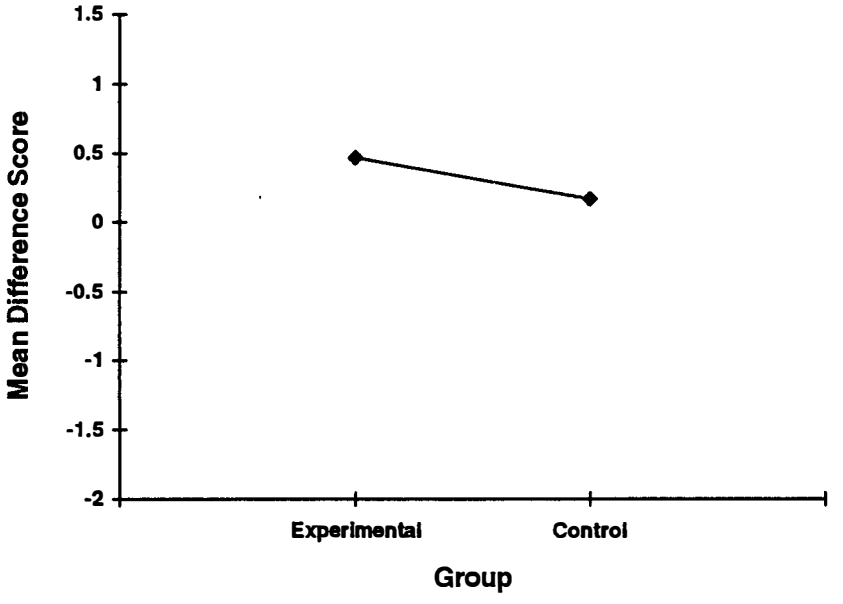


Figure 5. Mean difference scores for perceived severity.

Intention to practice preventive behaviour.

Results for preventive intention did not support the hypothesis that the experimental group would demonstrate stronger intentions to practice preventive health behaviour. The experimental group scored a mean difference of -.09, and the control group scored -.00 (t = -.96, p = .34, df = 267), indicating that the education programme did not impact significantly on preventive intentions. Mean difference scores for the experimental and control groups for preventive intention are displayed in Figure 6.

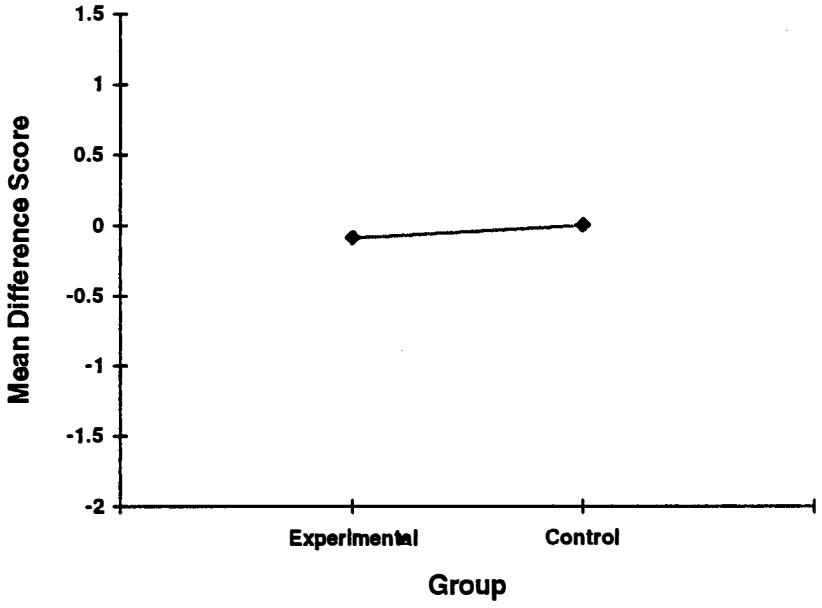


Figure 6. Mean difference scores for preventive intention.

Perceived barriers to preventive actions.

Results for perceived barriers did not support the hypothesis that the experimental group would report fewer barriers to preventive actions following the intervention. With a mean difference score of -.00, students who received the education programme did not identify barriers more frequently than those in the control group, who scored .00 (t = -.08, p = .94, df = 267). Mean difference scores for the experimental and control groups for perceived barriers are displayed in Figure 7.

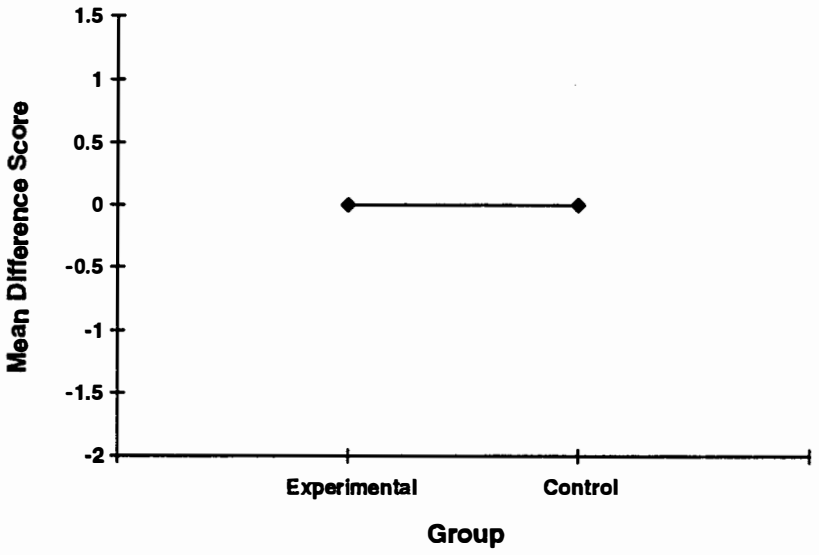


Figure 7. Mean difference scores for perceived barriers.

Perceived pressures which increase AIDS risk.

Results for perceived pressures supported the hypothesis that the experimental group would report fewer pressures contributing to AIDS risk following the intervention. With a mean difference score of -.26, students who received the education programme reported fewer pressures which expose adolescents to the risk of acquiring HIV/AIDS compared to the control group, whose mean difference score was .12 (t = -3.60, p = .00, df - 267). Mean difference scores for the experimental and control groups for perceived pressures are displayed in Figure 8.

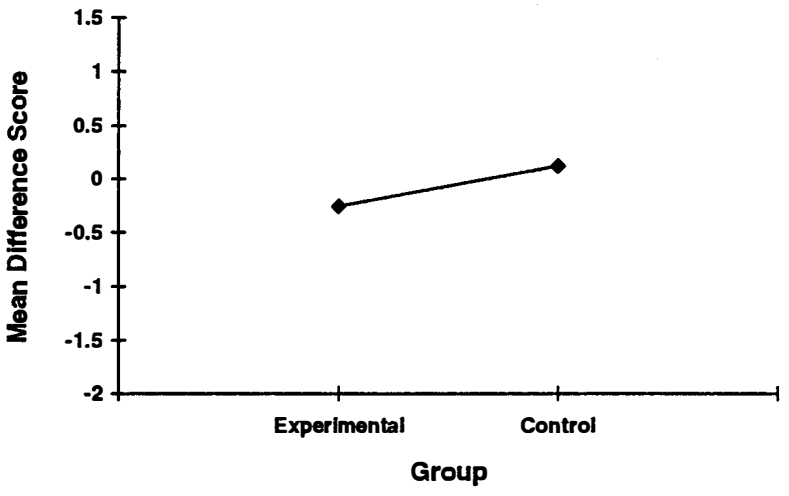


Figure 8. Mean difference scores for perceived pressures.

Summary of Phase 2

In summary, the programme was found to have a significant effect on knowledge of HIV/AIDS, perceived severity, and perceived pressures, but not on knowledge of prevention, preventive intentions, or perceived barriers.

Knowledge Retention Rates

A questionnaire identical to the pre-test and post-test was administered to the experimental group at the conclusion of the intervention. Mean scores for intervention questionnaire and post-test are shown in Table 15.

Table 15

Mean Scores for Experimental Group at Intervention and Post-test

	Intervention questionnaire		Post-test questionnaire	
	M	SD	M	SD
Knowledge of HIV/AIDS	11.57	2.22	11.51	2.19
Knowledge of prevention	4.55	9.35	3.78	.52
Perceived severity	3.13	.57	3.01	.59
Perceived susceptibility	3.58	.45	3.05	.44
Preventive intention	3.46	.97	3.33	.95
Perceived barriers	2.33	.77	2.40	.85
Perceived pressures	1.66	.90	1.53	.74

Paired samples t-tests were used to evaluate retention of knowledge. There were no statistically significant changes in mean scores for knowledge of AIDS ($t = .45$, $p = .65$, $df = 136$), knowledge of prevention ($t = .97$, $p = .33$, $df = 136$), or barriers ($t = -1.17$, $p = .25$, $df = 136$) between the intervention and post-test six weeks later.

However, changes in levels of perceived severity ($t = 2.24$, $p = .02$, $df = 136$), perceived susceptibility ($t = 10.55$, $p = .00$, $df = 136$), and preventive intention ($t = 2.37$, $p = .01$, $df = 136$) were found to be significant. When compared to the intervention, students' perceptions of AIDS as a serious threat had diminished, they felt less susceptible to AIDS, and reported lower levels of preventive intention

Chapter Summary

The study sample consisted of 314 students. The response rate of 88.2% included 137 students from the experimental school, and 132 students from the control school.

Data from the total sample for Phase 1 revealed gaps in knowledge about transmission of the AIDS virus, although the majority of students had a clear understanding of effective preventive actions to protect themselves against HIV. They did not appear to understand the severity of AIDS, reported high levels of fear, and varying degrees of willingness to practice risk reducing behaviours. Although students reported low levels of pressures, the majority identified barriers to preventive actions. There was a significant relationship between knowledge of HIV/AIDS and the following HBM concepts: perceived severity, perceived barriers, and perceived pressures. Schools, television, and magazines were cited as major sources for information about HIV/AIDS.

Results from data analyses for the experimental group in Phase 2 indicate support for hypotheses investigating the effect of the intervention on adolescents' knowledge about HIV/AIDS, how severe they perceive the disease, and their perception of pressures which increase AIDS risk. The study was unable to demonstrate support for the remaining hypotheses. Differences in responses relating to knowledge of the prevention of

HIV/AIDS, preventive intentions, and barriers to preventive intentions, were not statistically significant.

The experimental group demonstrated retention of knowledge of AIDS, and knowledge of prevention, at post-test. In addition, they felt less threatened by AIDS, less susceptible, and reported lower rates of both preventive intention, and pressure to increase AIDS risk. A comprehensive discussion of the findings is presented in the following chapter.

CHAPTER SIX

Discussion

The aims of this study were two-fold: To provide data on students' knowledge, beliefs, and attitudes about HIV and AIDS (Phase 1), and to evaluate the effect of an HIV/AIDS teaching programme on these determinants of behaviour (Phase 2). The baseline data used for Phase 1 was the same as the pre-test data for Phase 2. The Health Belief Model was utilised as the theoretical framework. A sample of 269 students included 137 from the experimental school, and 132 from the control school.

In this chapter, the major findings of the study are interpreted and discussed, followed by a comparison of their relevance to studies described in the literature. Under headings corresponding to the seven variables, the discussion will include data from the total sample (also used as the pre-test), followed by the effect of the intervention. The role of schools as a source of information, and knowledge retention rates in the experimental group are presented. Finally, the relationship of the study findings to the HBM variables are discussed, and the chapter concludes with a summary.

Knowledge, Beliefs, and Attitudes

Knowledge of HIV/AIDS

For the total sample, baseline or pre-test data indicated that 42% of students thought AIDS could be contracted from donating blood. While of great concern, this finding was an improvement on those reported in two earlier American studies. Forty eight percent of students surveyed by Brown, Nassau, and Barone (1990), and Weinstein et al. (1991), and 51%

of those in a sample studied by Siegel et al. (1991) reported blood donation as a mode of HIV transmission.

One possible explanation for the misconceptions found in the present study may be that students are distrustful of, or uncertain about, sterility practices at the blood bank. In addition, confusion may exist about the terms "donating" and "donated". It is obvious from these results that in future education programmes about HIV/AIDS, clarification of transmission of HIV by this route needs to be given additional emphasis.

A second area of confusion was the mistaken belief that there is a vaccine available to prevent AIDS. Thirty-six percent of the total sample believed this to be so. These results support those of Petosa and Wessinger (1990), and Weinstein et al. (1991). One possible reason for this misconception is that students may be confusing the action of drugs used to treat AIDS-related diseases with that of drugs used to prevent disease from occurring. In addition, some students may not understand the action of a vaccine.

Respondents were obviously confused about asymptomatic carriers and symptomatic AIDS sufferers. The baseline, or pre-test, data indicated that almost half of the total sample believed that people who are HIV-positive have symptoms, and 14% were sure that these symptoms are easily recognisable. One quarter believed HIV was not transferable if the infected person was asymptomatic.

Such a superficial understanding of HIV transmission could have a number of undesirable effects on student behaviour. For example, false beliefs can foster fears, and may discourage students from taking appropriate preventive actions. In addition, students who believe HIV can't be caught from someone who does not have visible symptoms may develop a false sense of security and indifference towards safer sex

practices. It is, therefore, important for educators to devote sufficient instructional time to correcting potentially dangerous misconceptions.

The 2½ hour education programme was successful in improving knowledge about HIV and AIDS. With a knowledge increase of 18%, this result is consistent with findings of other investigators concerning adolescents' exposure to health education programmes (Ashworth et al., 1992; Brown et al., 1989; Brown et al., 1991; DiClemente et al., 1989; Hingson, Strunin, & Berlin, 1990; Huszti et al., 1989; Kirby et al., 1991; Miller & Downer, 1988; Rhodes & Walitski, 1989; and Strunin & Hingson, 1987). Miller and Downer (1988) reported a 13% increase in knowledge following a 50 minute education session, whereas Brown et al. (1991) found their students' knowledge improved by 38% after 5 hours of instruction about AIDS.

Although knowledge levels were found to be significantly higher post-intervention, several alarming misconceptions about transmission of the AIDS virus were identified. Despite an improvement in knowledge about heterosexual and homosexual transmission, there was still confusion about transmission of the virus by blood donation, blood transfusion, and oral sex. These results are consistent with those of Anderson and Christenson (1991), and Jones et al. (1991).

Knowledge of HIV/AIDS Prevention

At pre-test, students in the total sample had a sound knowledge of risk-reducing actions. The vast majority knew that preventive actions included abstinence, monogamy, non-sharing of needles, and condom use. However, a small group (2-10%) required additional instruction regarding health-protecting behaviour, particularly in relation to abstinence. The knowledge levels of students in this study were, in fact, higher than their counterparts in Britain (White et al., 1988), and America (Jones et al., 1991; Naughton et al., 1991; Petosa & Wessinger, 1990;

Weinstein et al., 1991). These findings were in direct contrast to those reported earlier by Strunin and Hingson (1987). The majority of students in their sample could not identify specific preventive behaviours.

The expected impact of the intervention on knowledge of preventive actions was not supported, though there was an increase in students' general knowledge of HIV/AIDS. This result may be attributed to the fact that individual item results at pre-test indicated that students' knowledge about risk-reducing behaviours was already high. These levels increased marginally at post-test.

The Severity of HIV/AIDS

The baseline or pre-test data for the total sample demonstrated students' mistaken beliefs that cancer, incurability, and premature death were only partly associated with AIDS. These were consistent with those reported by Petosa and Wessinger (1990).

The education intervention had a significant effect on raising students' awareness of HIV/AIDS as a serious problem. However, even after the education session, individual item scores remained disappointingly low. If 36% think there is a vaccine available to prevent AIDS, and 59% think AIDS can be cured, this must surely impact on preventive intention. Despite the benefit of the education programme, students did not seem to fully understand the severity of AIDS. The unavailability of both the video "Teen AIDS in Focus", and the interview with the person living with AIDS may have contributed to this lack of understanding. The powerful impact of a testimony from someone suffering with AIDS cannot be disputed. Future programmes may also need to further clarify and reinforce the fatal nature and progression of the AIDS virus. Interestingly, contrasting results from a fairly recent Australian study indicated that 70% of homeless youth perceived AIDS as

a very severe current health problem (Matthews, Richardson, Price, & Williams, 1990).

Perceived Susceptibility

In the present study, hypothesis testing was not applied to the variable, perceived susceptibility. Since the students in this study were minors, it was only possible to ask about preventive intention, rather than about actual sexual behaviour. In addition, the researcher considered that some respondents would be less than truthful in their responses, and may not believe the questionnaire to be truly anonymous. It was considered that for students who were not sexually active, susceptibility may not be an issue.

The baseline data for the whole sample revealed that adolescents in both groups felt very susceptible to HIV and AIDS. The majority (83%, N = 223) reported being afraid of contracting AIDS, while only 38% felt they were less likely than most people to get the disease. Over half reported the probability of someone they knew being infected with the virus. These results support the findings of Petosa and Wessinger (1990).

Despite their high knowledge levels, only 6% stated they knew enough to protect themselves from AIDS, and almost half (46%) would be concerned about infection if a classmate had the disease. In comparison to the majority of previous research, these results are surprising. It could possibly be assumed that students lacked confidence in their ability to put their knowledge into action. Furthermore, previously reported misconceptions about transmission of the virus may have influenced feelings of susceptibility.

Baseline results for the whole sample also revealed a significant positive relationship between perceived susceptibility and knowledge of

prevention. Students who were most fearful about AIDS reported a sound knowledge of preventive measures. Susceptibility was also positively correlated with preventive intention, which suggests that a fear of AIDS may motivate students to adopt risk-reducing behaviours.

Intention to Practice Preventive Behaviour

Baseline or pre-test data from the total sample revealed that the majority of students were willing to use condoms, and would refrain from injecting drugs. Of cause for concern, however, were the 20% who disagreed with both of these statements. Unprotected sex and injecting drug use are the vehicles for HIV transmission. Interestingly, while 67% would refrain from having several sexual partners themselves, only 30% looked for the same commitment in their partners, and less than half planned to abstain from sex until they graduated in Year 12. Though disappointing, these results are congruent with those of Dusenbury, Botvin, Baker, and Laurence (1991), and Petosa and Wessinger (1990), although only 24% of students in Petosa's sample intended to refrain from sex until graduation. Compared with results from an earlier American study conducted by Strunin and Hingson (1987), however, these findings are pleasing. Only 10% of their respondents were willing to use a condom, and less than 4% intended to become monogamous. Future studies identifying how adolescents define "monogamous", and "long-term relationship", may help to clarify some of these responses. In addition, future programmes must address the issue of condom use. Do the reported rates of condom use occur primarily for disease prevention, or for contraception?

The study findings did not support the hypothesis that the education programme would result in stronger intentions to practice preventive health behaviour. Although students had a good knowledge about HIV/AIDS and its prevention, they were less inclined to put this knowledge into practice.

This lack of consistency between knowledge and intention, found in the present study, is well documented (Grieco, 1987; Keeling, 1987; Petosa & Wessinger, 1990; Roscoe & Kruger, 1990; Siegel et al., 1991). One possible reason for this relationship is that many adolescents know what they should do, but their personal intention is often influenced by social pressures and situations in which they find themselves. In addition, adolescents' sexual activity is a complex issue, involving biological, social, and personal needs. Moreover, risk taking is an important part of the social transition to adulthood. Any educational programme designed to promote and encourage the adoption of preventive actions must also address these factors that influence adolescent behaviour.

Baseline or pre-test data indicated that students who felt most susceptible to AIDS intended to practice safer sex behaviours. However, this relationship had disappeared at post-test. A possible explanation for this finding may be that with increased knowledge, feelings of vulnerability to AIDS diminished. It is also possible that, with this knowledge increase, adolescents may not see the threat of HIV/AIDS as immediate, or specific to them personally. Furthermore, they may not be sexually active, intravenous drug users, or homosexual, and, therefore, may not perceive themselves at risk for HIV. Most of the people who have died from AIDS are adults. Adolescents may, therefore, perceive AIDS as an adult disease.

The lower levels of preventive intention reported in this study are reflected in the findings from recent studies in Australia and overseas, which indicated that by age 16, almost half of males and over a quarter of females have experienced sexual intercourse (Cubis et al., 1988; Dunne et al., 1992; and Weisberg et al. 1992). In addition, in this study, the relatively high number of "uncertain" responses to questions concerning condom use and sexual activity may indicate support for these findings. It

is crucial that adolescents act on accurate information if they are going to decrease their risk of HIV infection.

Barriers to Preventive Actions

Barriers to preventive actions include physical, psychological, and financial demands including pain, inconvenience, and expense. Data from Phase 1 and the pre-test indicated that the majority of students did not find condoms difficult to acquire, or embarrassing to use. This finding, together with the 10% who did report difficulty and embarrassment, may suggest a greater number are sexually active than first thought; a concern expressed in the preceding section. However, a substantial number (38-75) were uncertain about condom use and communicating about past sexual partners. This may well indicate that a considerable number are not yet sexually active.

The results of the study indicated the reporting of barriers to actions which prevent HIV/AIDS was not significantly associated with participation in the education programme. Further analyses on the total sample at pre-test and post-test, however, revealed that students with good HIV/AIDS knowledge reported fewer problems acquiring or using condoms, and asking partners about their sexual history. Those who reported fewer problems also reported fewer pressures from friends to have sex or inject drugs.

In addition, post-test data revealed that those who displayed a sound knowledge about preventive measures also felt confident in their ability to overcome obstacles to protective behaviour. Although students felt highly susceptible to contracting AIDS, they reported confidence about the availability and use of protective strategies.

Following the intervention fewer students reported difficulty discussing sexual history with a partner. However, 51% still identified

problems with direct communication as an important barrier. These results parallel those of Petosa and Wessinger (1990), highlighting the fact that in future education programmes greater emphasis must be placed on areas of interpersonal communication and self-efficacy skills.

Pressures Which Increase AIDS Risk

The expected impact of the intervention on perceived pressures was supported by hypothesis testing. The mean scores for perceived pressures were significantly different at post-test. Students who participated in the intervention reported fewer pressures from peers to indulge in sex and drug use, than those in the control group.

Total sample testing at pre-test and post-test, indicated that students with a sound knowledge of HIV/AIDS and its prevention reported fewer pressures which would increase their risk of acquiring AIDS. In addition, the more susceptible students felt about AIDS, the less likely they were to feel pressured by peers to indulge in risk behaviours.

These findings from the present study contrast with those of Petosa and Wessinger (1990), who found that the issue of peer pressure was of greater concern for students in their study. Twenty four percent of their respondents felt pressured by friends to have sex, compared with 10% in the present study. Similarly, 15% of adolescents in Petosa's sample felt pressured to use needles to inject drugs, compared with only 6% in the present study.

There appears to be a conflict of interest between the promotion of abstinence as a means of preventing the spread of HIV, and the effect of peer influence. On one hand, educators are urging young people to practice abstinence, while at the same time acknowledging the developmental traits of adolescence. Although adolescence is regarded as a time of sexual awakening, exploration and status building, sexual

abstinence is not a status building behaviour among adolescents. In addition, safer sex practices limit the exploratory phase of adolescence. Following his research on the relationship between knowledge of AIDS prevention and risk behaviour practices, Weinstein et al. (1991) stressed that few adolescents were aware of peer accepted alternatives for expressing feelings of intimacy other than through sexual activity. These issues, including the social implications of going through adolescence without sexual activity, need to be addressed in future studies.

The intervention used in the present study highlighted the importance of self-assertiveness and effective interpersonal communication. Although the time allocated to address these strategies was compromised by timetabling restrictions, the number of students who felt pressured to have sex fell by half, and the number who felt pressured to use intravenous drugs fell by two thirds following the intervention. Ideally, educational programmes should be structured to specifically enable students to develop skills to overcome any barriers they identify, and to cope with social pressures. In an earlier report, Petosa (1986) stressed "that enabling students to proactively deal with social forces has proven to be an effective health education approach" (p. 27).

In summary, the results highlighted the importance of identifying gaps in students' knowledge. Students need to pay more attention to methods of transmission of the virus, and to the terminal nature of HIV/AIDS. They do not fully understand that there is no vaccine to prevent or treat AIDS. Although their knowledge of prevention was good, this knowledge did not reflect their preventive intentions.

Knowledge Retention in the Experimental Group

Results from this study revealed that the intervention "Understanding HIV/AIDS" enabled students to significantly increase their knowledge, and to maintain this level over a six week period. Levels of knowledge about AIDS, knowledge of prevention of AIDS, and perceived barriers, were unchanged at post-test. These findings support previous research, verifying that sex education can increase short-term knowledge (Kirby, 1980; Klein, 1984; Moore & Burt, 1982; Thomas et al., 1985; Zelnik & Kantner, 1977).

Conversely, at post-test, levels of susceptibility, severity, and intention to practice preventive behaviours were not maintained. Six weeks after the education programme, AIDS was seen as less of a threat, students felt less susceptible to the disease, and their levels of preventive intention had decreased. Weinstein et al. (1991) described a similar effect. Teenagers in their study reported feeling less threatened by HIV and AIDS, and less inclined to practice safer sex over a 12 week period following their education programme. These findings are reflected in current descriptions of adolescent life-style behaviours. Health educators may need to seriously consider regular HIV/AIDS information updates to counteract this effect, when planning future programmes.

The Role of Schools as a Source of HIV/AIDS information

The findings of this study indicated that schools were the most important source of information about HIV/AIDS for adolescents in both groups. At pre-test, schools (88%) were identified most frequently by respondents, followed by television (76%), and magazines (75%), with similar results at post-test. These results are consistent with those of Wysocki and Harrison (1991), and Carabasi, Greene, and Bernt (1992). Their studies emphasised that while appropriate information about HIV and AIDS must come from a number of sources, schools, parents, television, and magazines should be the main providers. However, this finding contradicts that of an earlier study by Price et al. (1985), who found that schools were among the least-mentioned sources of information.

An additional study finding revealed that 43% of respondents sought information from parents. This may indicate a need for parent education to be included in future planning of school-based education courses. Several researchers reported family members (mainly mothers) as major sources of AIDS information for adolescents (Brown, Nassau, & Barone, 1990; Helgerson & Peterson, 1988; Jones et al., 1991; King et al., 1989, Price et al., 1985).

Another important source of information about HIV and AIDS for adolescents was friends, cited by over half the students in the present study. This finding is congruent with earlier studies which stressed the importance of peers as sex educators (Bell, 1938; Elias & Gebhard, 1970; Lee, 1952; Ramsay, 1943; Thornburg, 1975; Witmar, 1929). However, a later study by Helgerson and Peterson (1988) reflected the relatively recent influence of television and radio education. Fifty seven percent of their students cited these media as their main source of information about sexuality issues.

A surprising result of the study was that concerning the role of the family doctor in AIDS education. Only 20% of students named their doctor as a provider of information about HIV and AIDS. This finding is in direct contrast to that of Manning and Balson (1989). In their study, 189 Louisiana teenagers overwhelmingly preferred to learn about AIDS from their physician. Interestingly, they opted to obtain their information in large groups, rather than on a one-to-one basis.

Relationship of the Findings to HBM Variables

The Total Sample

Since one of the aims of this study was to improve students' knowledge about HIV/AIDS, it was important to examine the relationship between knowledge of AIDS and the HBM variables. Total sample testing revealed significant correlations between knowledge of AIDS, and several HBM variables. Baseline data revealed that students who knew most about HIV/AIDS, also knew most about knowledge of prevention. In addition, these students identified fewer problems with condom use and communication about sex history, and reported less influence from peers to indulge in risk behaviours. Those who had a sound knowledge of HIV/AIDS did not regard the disease as serious. In spite of high levels of susceptibility, there was no significant relationship between knowledge of AIDS, and perceived susceptibility. In the present sample, it is obvious that some factor other than knowledge of AIDS appears to be affecting susceptibility.

The baseline or pre-test data indicated that the most significant indicator for risk-reducing behaviour was perceived susceptibility. This finding supports those of several studies where susceptibility was identified as a indicator for behaviour change (Allard, 1989; Janz & Becker, 1984; McCusker et al., 1989; Rosenstock, 1974). Students who felt more susceptible to HIV infection said they would practice more

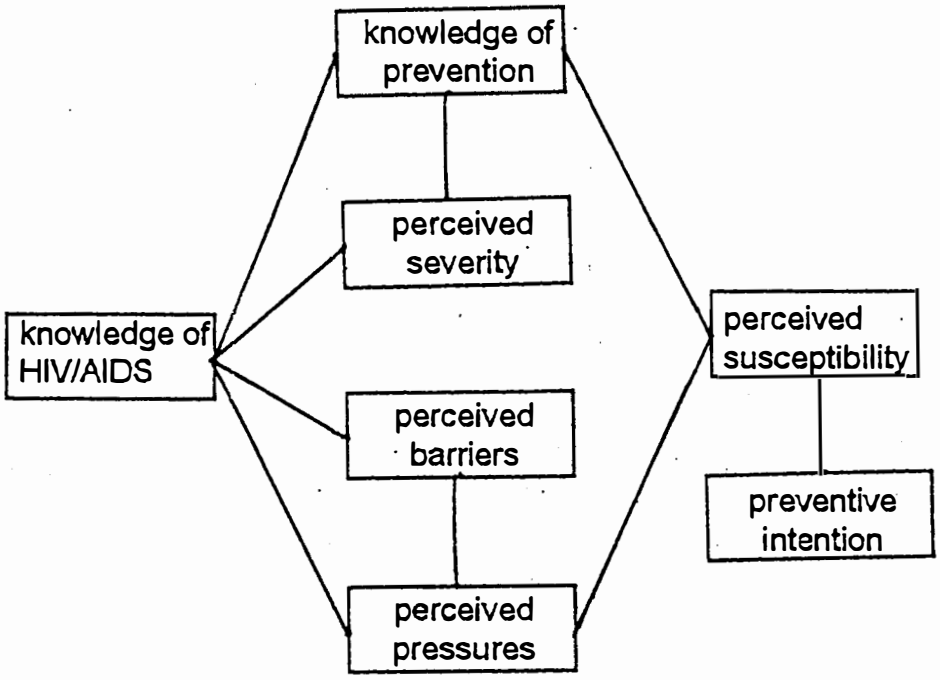


Figure 9. Conceptualisation of the relationships between the HBM variables for the total sample.

The Intervention Group

The Health Belief Model (HBM) describes the elements necessary if knowledge about HIV/AIDS is to be followed by preventive health action (see Figure 1). The model predicts that adolescents are more likely to take action against HIV if they feel susceptible to AIDS, and perceive the disease to be serious. These perceptions can be modified by various cues, such as education programmes, advice from friends, and newspaper articles. In addition, adolescents are more likely to take preventive action if they perceive it as beneficial in reducing the threat of the disease, and if the costs of taking the action do not outweigh the benefits.

The present study included the following variables the HBM incorporates as predictors of HIV/AIDS-related behaviour: perceived severity, perceived susceptibility, preventive intentions, perceived barriers, and perceived pressures. This study evaluated the effect of an educational intervention on Year 10 students' knowledge, attitudes, beliefs about AIDS, with specific reference to these HBM variables. The intervention was successful in increasing knowledge, raising levels of perceived severity, and identifying pressures to increase AIDS risk. In addition, students reported increased levels of perceived susceptibility.

The intervention did not impact significantly on preventive intentions, or barriers to preventive actions. Even though students had a sound knowledge of HIV/AIDS principles, acknowledged the disease as serious, felt susceptible to acquiring it, and recognised sexual and social pressures that placed them at risk, they were not prepared to change their behaviour. As discussed earlier, this failure to translate knowledge into health-protective behaviour is well supported by other researchers. A conceptualised model of the effect of the intervention is shown in Figure 10.

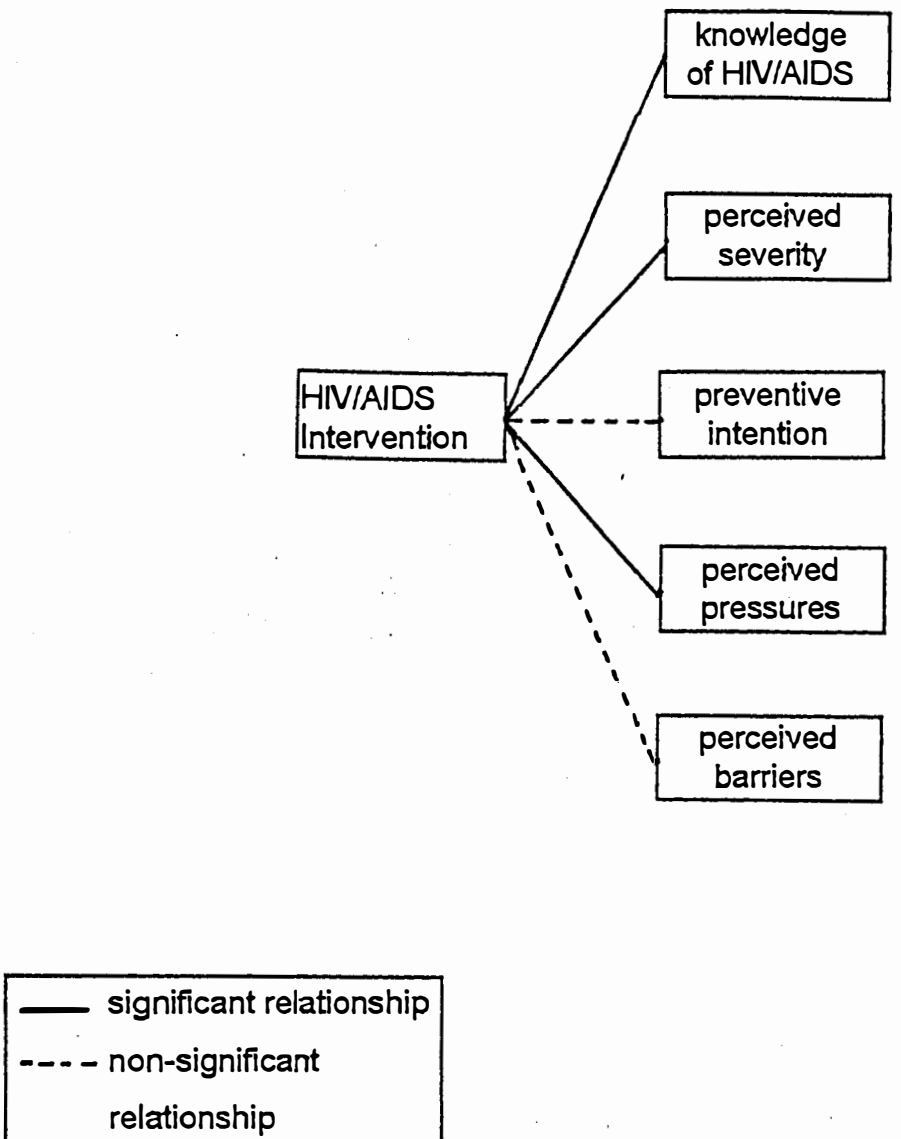


Figure 10. Conceptualisation of the effect of the intervention.

There are three possible explanations for the outcome shown in Figure 10. Firstly, the adolescents in this study may believe that barriers (such as inconvenience, embarrassment, expense, and the need for forward planning) outweigh the benefits of protection against HIV. Factors influencing benefits include peer influence on personal intention, social pressure, and adolescent developmental behaviour such as risk-taking. Secondly, the adolescents in this study may believe that the disease is not relevant to them personally, a factor discussed more fully in preceding sections. Thirdly, students who participated in this study may believe they do not have the skills required to enable them to adopt preventive actions. The intervention programme provided only basic skills in assertive and effective communication, self-esteem building, and promotion of self-efficacy. It is strongly recommended that planners of future programmes allocate sufficient time for the teaching of skill-building and effective interpersonal communication to increase adolescents' social and personal skills.

Chapter Summary

The results of this study contribute important information that lends support to the belief that education can change students' knowledge about HIV/AIDS, and influence their beliefs about health-protecting behaviour. Baseline or pre-test data revealed serious misconceptions about the transmission of HIV, and the terminal nature and treatment of AIDS. The students in this study who received the education programme demonstrated higher levels of knowledge about AIDS, were more perceptive about the seriousness of AIDS, and influenced less by sexual and social pressures which increase AIDS risk. However, they were unlikely to change risk behaviour, a finding supported by previous researchers. Retention of knowledge in the experimental group was maintained over a 6 week period, students felt less threatened by and less susceptible to AIDS, they acknowledged fewer pressures, and were

less inclined to practise preventive health behaviours. Schools were identified as the main provider of HIV/AIDS information. In the final chapter, conclusions of the study are drawn, implications for future practice are discussed, and a summary of recommendations is presented.

CHAPTER SEVEN

Conclusions; Implications for Nursing, Health Education, Planning, and Research; and Recommendations

This descriptive, quasi-experimental study, guided by the Health Belief Model, utilised a sample of 314 Year 10 students from two senior high schools in Perth. The study provided baseline data on adolescents' knowledge, attitudes, beliefs about HIV and AIDS, and evaluated the effect of an education programme on these determinants of behaviour change.

Total sample testing revealed a significant relationship between knowledge of HIV/AIDS and several concepts of the HBM: perceived severity, perceived barriers, and perceived pressures. In addition, adolescents were most informed about AIDS through school, television, magazines, and friends. The results from this study supported the proposal that increasing students' knowledge of HIV and AIDS through teaching programmes is essential in the process of changing their risk-taking health practice. The educational intervention resulted in improved knowledge about HIV and AIDS, greater awareness of its severity, and increased perception of pressures which increase AIDS risk. However, the programme did not impact significantly on preventive intentions, or barriers to preventive actions. At post-test, the experimental group maintained knowledge levels, felt less threatened and less susceptible to AIDS, acknowledged fewer pressures, and were less inclined to practice preventive health behaviours.

The results of this study have important implications for nursing practice, health educators, health education, policy and planning, and research. These implications will be discussed in the following section.

The findings from this study indicate that students' knowledge of HIV/AIDS increased significantly following the education programme. This finding emphasises the importance and urgency of current, relevant information for adolescents. While the present study, and those that preceded it, suggest that the majority of adolescents know a great deal about AIDS in general, further research is needed to determine whether this knowledge has had an impact on risk-taking behaviour. Past reviews of drug and sex education curricula have shown that programmes which focus exclusively on information failed to impact on behaviour. Since the two modes of HIV transmission are intravenous drug use and sexual behaviour, the failure of knowledge-based interventions to impact on these behaviours has major implications for AIDS prevention.

The present intervention programme also highlighted the importance of identifying gaps in students' knowledge. Students were most informed about preventive actions, and least informed about transmission of the virus, especially with regard to blood transfusion and donation. Of great concern were the mistaken beliefs that immunisation against AIDS is possible, and HIV was not transferable if the infected person was asymptomatic. Adolescents were also confused about asymptomatic HIV carriers, and symptomatic AIDS sufferers. Since misconceptions about HIV and AIDS impact forcibly on preventive behaviour, it is obvious that in future programmes, greater emphasis needs to be placed on clarification of HIV transmission.

The vast majority of students in this study knew that abstinence, monogamy, non-sharing of needles, and condom use were important risk-reducing strategies. However, a small group were unaware that abstinence offered the best protection against HIV. This fact needs to be stressed repeatedly in every AIDS education session.

In order to be effective, it is strongly recommended that education about AIDS begin prior to the onset of experimentation with drug use and sexual behaviours characteristic of early adolescence. Policy and programme planners need to ascertain when the onset of these behaviours is most likely to occur, and structure the health education curriculum accordingly. Since community nurses are often involved in the planning and implementation of sex education programmes, they could conduct anonymous surveys of students in primary schools to determine the onset of these risk behaviours. Data from these surveys would provide valuable information and justifiable evidence to present to parents and programme planners. In addition, it is recommended that school-based HIV/AIDS education be a compulsory component of health education, presented within the broader context of health education or human sexuality: AIDS education must be conducted within the context of education about other STDs, drug use, adolescent sexuality, and communication skills. Furthermore, it is recommended that there be national consistency on policy and guidelines concerning school-based HIV/AIDS education.

To ensure information in the curriculum is up-to-date and relevant, ongoing evaluation of knowledge, attitudes, behaviours, skills, and behavioural outcomes is essential. Educational programmes must be evaluated carefully, and information about effective programmes widely disseminated. The effects of face-to-face discussions between persons living with AIDS and students must also be included in these evaluations. It is essential that nurses involved in teaching these programmes ensure that their own knowledge and skills are current. Ongoing professional self-education is recommended. In addition, planners should ensure that time is allocated for adequate training of teachers whose area of expertise is not health education, but who may be called upon to teach the curriculum.

The current sex education programme did not address concerns about the adequacy of education for Aboriginal students, those in educational support schools, and students from non-English speaking backgrounds. Nurses can assist by making sure that future interventions are culturally appropriate and address the diverse needs of different ethnic communities. In addition, the needs of homosexual and lesbian students, those with medically-acquired AIDS, and those whose parent/s may be HIV-positive, are issues of great sensitivity. Nurses must encourage the provision of counselling services in schools, and ensure that their own counselling training is recent, and culturally and behaviourally appropriate.

Although the present intervention was successful in raising students' awareness of the seriousness of AIDS, students did not fully appreciate the severity of the disease. The study identified deficits in knowledge about AIDS and cancer, incurability, and premature death. It is recommended that future sessions include a testimony from a person living with AIDS, and clarification of the fatal nature of the disease.

An interesting finding from this study was the large number of adolescents who felt very susceptible to HIV and AIDS. However, very few felt they knew enough to protect themselves against the virus, despite high knowledge levels. This finding suggests issues of poor self-confidence and ability to perform, and must be addressed in ongoing programmes.

An important outcome of the study was the failure of the intervention to influence students' preventive intentions. While past research supported this study's findings that knowledge does not automatically lead to behaviour change, further study is needed to determine why this is so. Bandura (1987) observed that even if adolescents accurately perceive their susceptibility to developing AIDS,

and perceive the consequences as severe, behaviour change will not occur unless individuals believe they can alter their behaviours. Furthermore, they need to believe their efforts will result in positive consequences, and that they have the personal power to not only control their own actions, but also to influence those of others.

Future effective programmes must be based on a comprehensive framework that emphasises education within this context of self-efficacy. It is essential that nurses lobby programme planners so that sufficient lesson time is available to include training to provide adolescents with these personal and social skills. In the present study, this programme was only able to provide basic skills, due to restrictions with timetabling. Until the threat presented by AIDS is lessened, through the discovery of a vaccine or cure, enhancing adolescents' sense of perceived efficacy is critical to preventing the spread of HIV.

Susceptibility and severity provide the impetus for motivating behaviour change. While the HBM focuses on the role of these motivating factors, it does not address the concept of self-efficacy, behaviours resulting from economic necessity, or controlled by drug addiction. In addition, the HBM does not address adolescents' needs for acceptance, esteem, affection, or the need to feel like an adult, all of which influence preventive intention. It is recommended that future studies of adolescent health behaviour incorporate a broader theoretical model that expands upon the HBM. Future education programmes should include strategies that encourage students to carefully consider how these factors influence their behaviour, and to explore a variety of alternatives that meet their particular needs without compromising their health risk.

Students in the present study identified barriers to preventive actions associated with the acquisition and use of condoms, and communication with partners about past sexual history. Adolescents need

to be competent and confident enough to practice a new behaviour, whether it is using a condom, avoiding multiple sexual partners, or remaining abstinent from sexual intercourse or intravenous drug use. There are also implications for those responsible for economic and legal policy to ensure that adolescents have access to necessary supplies and services, such as condoms, and blood testing facilities. Young people need to live in an environment where safer behaviour is made easy and acceptable, while risk behaviour is made more difficult. During discussion, students in this study indicated their appreciation for the provision of a list of resources giving information about HIV, blood testing, counselling, legal issues, and support. Schools, and school nurses, have the potential to address all these issues. Nurses should ensure that education programmes include information about access to supplies and services, and legal ramifications of HIV infection.

Following the intervention, students reported higher levels of peer pressure to engage in drug use, and sex. Adolescents are strongly motivated to conform to the standards set down by their peer group. Since peers are an important source of information and influence about sexual behaviour, selected peers could be used as peer educators to alter high risk behaviour. Particular attention must be given to adolescents' emotional responses, especially with regard to anxiety about peer influence and social pressures.

Results from the study revealed that students maintained their levels of knowledge over a 6 week period. It is strongly recommended that knowledge retention testing be an integral part of the evaluation process. The impact of HIV/AIDS education could be delayed because students may need months, or even years, to incorporate the information into their value and belief systems. Some effects of the education programme may not be apparent until they become sexually active, and

other effects might diminish over time as their behaviour is influenced by more recent events.

An additional finding from this study was that students perceived that schools have an important role in addressing the AIDS epidemic, and are an appropriate place to learn about HIV/AIDS. The media, friends, and parents, were also cited as providers of information. Since students consider parents an important source of AIDS information, future programmes may need to incorporate parent education into their curricula. Besides allaying fears and myths about HIV, these programmes need to provide accurate information so that parents can answer students' questions effectively. Community nurses are well qualified to conduct these classes. In addition, school nurses, as health professionals, could work with educators to ensure that accurate information is readily available to teachers, counsellors, parents, or other adults who may need to respond to students' questions about AIDS.

Another interesting study finding revealed that many students are having difficulty communicating effectively about the issue of HIV. As adolescents age, they rely less on family, church, and schools, and more on peers. In future planning, thought must be given to how such individuals and institutions can be brought back into the adolescent's support network.

Finally, a clearer understanding of issues related to youth and HIV/AIDS may be achieved by undertaking national research to provide baseline data. A national sample of youth should be monitored regularly, so that changes can be identified. Results from this study can be used to inform educational bodies with regard to programme evaluation and policy development.

Summary of Recommendations

Based on the findings from this study, it is recommended that:

1. HIV/AIDS education should be a compulsory component of health education in every school, and should begin prior to the onset of risk behaviours.
2. More time should be allocated for HIV/AIDS education, and programmes should be evaluated constantly.
3. The inclusion of basic training in personal and social skills to increase self-efficacy, and an increase in time allocated to teaching these concepts, are essential for future education programmes.
4. The inclusion of a parent education component in future HIV/AIDS education courses is strongly advised.
5. Future education programmes need to address the special needs of ethnic, intellectually disabled, HIV positive, homosexual, and lesbian students.
6. Further school-based research is warranted to enable comparison with the present study and to improve upon some of its limitations. A longer interval post-test after the intervention is necessary to determine whether knowledge levels are sustained over time.
7. Further research should be undertaken to investigate the specific effect of different teaching methods, i.e lecture, video, discussion, interview with person living with AIDS, demonstration of condom use, on HBM variables.
8. Future studies are necessary to determine the impact of knowledge on risk-reduction behaviour.
9. Given the importance of peer influence, a comparison of the effect of peer versus teacher education on adolescents' knowledge about AIDS and their risk reduction behaviours, needs to be undertaken.
10. Future studies should include representative samples from all education sectors in Western Australia.

REFERENCES

Allard, R. (1989). Beliefs about AIDS as determinants of preventive practices and support for coercive measures. American Journal of Public Health, 79, 448-452.

Analyse des Comportements Sexuels en France. (1992). AIDS and sexual behavior in France. Nature, 360, 407-409.

Anderson, D. M., & Christenson, G. M. (1991). Ethnic breakdown of AIDS-related knowledge and attitudes from the National Adolescent Student Health Survey. Journal of Health Education , 22, 30-34.

Anderson, J. E., Kann, L., Holtzman, D., Arday, S., Truman, B., & Kolbe, L. (1990). HIV/AIDS knowledge and sexual behavior among high school students. Family Planning Perspectives, 22, 252-255.

Ashworth, C. S., DuRant, R. H., Newman, C., & Gaillard, G. (1992). An evaluation of a school-based AIDS/HIV program for high school students. Journal of Adolescent Health, 13, 582-588.

Baldwin, J., & Baldwin, J. (1988). Factors affecting AIDS-related sexual risk-taking behavior among college students. Journal of Sex Research, 25, 181-196.

Bandura, A. (1987, September). Perceived self-efficacy in the exercise of control over AIDS infection. Paper presented at the National Institute for Mental Health and Drug Abuse Research Conference on Women and AIDS: Promoting Health Behaviors. Bethesda, Maryland.

Beardslee, W. R., & Mack, J. E. (1983). Adolescents and the threat of nuclear war: The evolution of a perspective. Yale Journal of Biological Medicine, 52, 79-91.

Becker, M. H. (Ed.). (1974). The health belief model and personal health behavior. Health Education Monograms, 2, 324-508.

Becker, M., & Joseph, J. (1988). AIDS and behavioral change to avoid risk: A review. American Journal of Public Health, 77, 685-689.

Becker, M. H., & Maiman, L. A. (1980). Strategies for enhancing patient compliance. Journal of Community Health, 6, 113-135.

Becker, M. H., & Maiman, L. A. (1983). Models of health-related behavior. In D. Mechanic (Ed.), Handbook of health, health care, and the health professions (pp. 539-568). New York: Free Press.

Befver, M. (1988). AIDS in children and adolescents. Journal of the Academy of Children and Adolescent Psychiatry, 27, 145-151.

Bell, H. M. (1938). Youth tell their story. Washington, DC: American Council on Education.

Bennett, D. L. (Ed.). (1984). Adolescent health in Australia. Health Education and Promotion Monograph (Australian Medical Association). Sydney: Ambassador Press.

Brown, L. K., Barone, V. J., Fritz, G. K., Cebollero, P., & Nassau, J. H. (1991). AIDS education: The Rhode Island experience. Health Education Quarterly, 18, 195-206.

Brown, L. K., Fritz, G. K., & Barone, V. J. (1989). The impact of AIDS education on junior and senior high school students: A pilot study. Journal of Adolescent Health Care, 10, 386-392.

Brown, L. K., Nassau, J. H., & Barone, V. J. (1990). Differences in AIDS knowledge and attitudes by grade level. Journal of School Health, 60, 270-275.

Brown, L. K., Nassau, J. H., & Levy, V. (1990). "What upsets me most about AIDS is...": A survey of children and adolescents. AIDS Education and Prevention, 2, 296-304.

Burns, A. C. (1992). The expanded health belief model as a basis for enlightened preventive health care practice and research. JHCM, 12, 32-45.

Carabasi, J. M., Greene, W. H., & Bernt, F. M. (1992). Preliminary findings from the survey about AIDS for seventh and eighth graders (SASEG). AIDS Education and Prevention, 4, 240-250.

Carmel, S., Green, M. S., Slepon, R., Tsur, S., & Vardi, D. (1992). Gender differences in AIDS-related behavioral changes among 18-19 year olds in a low-incidence country. Health Education Research, 7, 217-228.

Carroll, L. (1988). Concern with AIDS and the sexual behavior of students. Journal of Marriage and the Family, 50, 405-411.

Catania, J. A., Coates, T. J., Stall, R., Turner, H., Peterson, J., Hearst, N., Dolcini, M. M., Hudes, E., Gagnon, J., Wiley, J., & Groves, R. (1992). Prevalence of AIDS-related risk factors and condom use in the United States. Science, 258, 1101-1106.

Catania, J. A., Dolcini, M. M., Coates, T. J., Kegeles, S. M., Greenblatt, R. M., Puckett, S., Corman, M., & Miller, J. (1989). Predictors of condom use and multiple partnered sex among sexually-active adolescent women: Implications for AIDS-related health interventions. Journal of Sex Research, 26, 514-524.

Centers for Disease Control. (1991, October). HIV/AIDS Surveillance Report, Atlanta, 1-18.

Crawford, J., Turtle, A., & Kippax, S. (1990). Student-favoured strategies for AIDS avoidance. Australian Journal of Psychology, 42, 123-137.

Cubis, J., Lewin, T., & Raphael, B. (1985). Correlates of pregnancy and sexual experience in Australian adolescents. Journal of Psychosomatic Obstetrics and Gynaecology, 4, 237-254.

Cubis, J., Lewin, T., & Raphael, B. (1988). Adolescent pregnancies: A community survey of prevalence and characteristics. In D. Llewellyn Jones and S. Abraham (Eds.). The young, the pregnant, and the elderly. Sydney: Ashwood.

Curtis, H., Lawrence, C., & Tripp, J. (1989). Teenage sexuality: Implications for controlling AIDS. Archives of Diseases in Childhood, 64, 1240-1245.

DiClemente, R. J. (1989). Prevention of HIV infection among adolescents. AIDS Education and Prevention, 1, 70-78.

DiClemente, R. J., Boyer, C. B., & Morales, E. S. (1988). Minorities and AIDS: Knowledge, attitudes, and misconceptions among black and latino adolescents. American Journal of Public Health, 78, 55-57.

DiClemente, R. J., Pies, C. A., Stoller, E. J., Strait, S. C., Oliva, G., Haskin, J., & Rutherford, G. (1989). Evaluation of school-based AIDS education curricula in San Francisco. Journal of Sex Research, 26, 188-198.

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.

Dunne, M., Donald. M., Lucke, J., Nilsson, R., & Raphael, B. (1992). HIV Risk and Sexual Behaviour Survey in Australian Secondary Schools. Final Report. Canberra: Department of Health, Housing and Community Services.

DuRant, R. H., Ashworth, C. S., Newman, C. L., & Gaillard, G. L. (1992). High school students' knowledge of HIV/AIDS and perceived risk of currently having AIDS. Journal of School Health, 62, 59-63.

Dusenbury, L., Botvin, G. J., Baker, E., & Laurence, J. (1991). AIDS risk knowledge, attitudes, and behavioral intentions among multi-ethnic adolescents. AIDS Education and Prevention, 3, 367-375.

Eiser, C., Eiser, J. R., & Lang, J. (1990). How adolescents compare AIDS with other diseases: Implications for prevention. Journal of Pediatric Psychology, 15, 97-103.

Elias, J., & Gebhard, P. (1970). Sexuality and sexual learning in childhood. Phi Delta Kappan, 50, 401-406.

Emmons, C. A., Joseph, J. G., Kessler, R. C., Wortman, C. B., Montgomery, S. B., & Ostrow, D. G. (1986). Psychosocial predictors of reported behavior change in homosexual men at risk for AIDS. Health Education Quarterly, 13, 331-345.

Farley, T. A., Pomputius, P. F., Sabella, W., Helgerson, S. D., & Hadler, J. L. (1991). Evaluation of the effect of school-based education on adolescents' AIDS knowledge and attitudes. Connecticut Medicine, 55, 15-18.

Feldman, P., Corber, J. L., & Quinn, S. T. (1985). Health concerns and health-related behaviors of adolescents. Canadian Medical Association Journal, 134, 489-493.

Fennell, J. (1990). Knowledge, attitudes, and beliefs of students regarding AIDS: A review. Health Education, 21, 20-26.

Fife-Schaw, C. R., & Breakwell, G. M. (1992). Estimating sexual behavior parameters in the light of AIDS A review of recent U.K. studies of young people. AIDS Care, 4, 187-201.

Ford, N., & Morgan, K. (1989). Heterosexual lifestyles of young people in an English city. Journal of Population and Social Studies, 1, 167-182.

Friedman, M. M. (1986). Family nursing: Theory and assessment (2nd ed.). Norwalk, Connecticut: Appleton-Century-Crofts.

Gallois, C., Kashima, Y., Terry, D., McCamish, M., Timmins, P., & Chauvin, A. (1992). Safe and unsafe sexual intentions and behaviour: The effects of norms and attitudes. Journal of Applied Social Psychology, 22, 1521-1545.

Giblin, P. T., & Poland, M. L. (1985). Health needs of high school students in Detroit. Journal of School Health, 55, 407-410.

Gillies, P. A., & Wilcox, B. (1984). Reducing the risk of smoking in the young. Public Health, 98, 49-54.

Goldman, R., & Goldman, J. (1988). Show me yours: Understanding children's sexuality. Melbourne: Penguin Books.

Goodman, E., & Cohall, A. T. (1989). Acquired immunodeficiency syndrome and adolescents: Knowledge, attitudes, beliefs, and behaviors in a New York City population. Pediatrics, 84, 36-42.

Grieco, A. (1987). Cutting the risks for STDs. Medical Aspects of Human Sexuality. 21, 70-84.

Hayes, J. A. (1991). Psychosocial barriers to behavior change in preventing human immunodeficiency virus (HIV) infection. The Counseling Psychologist, 19, 585-602.

Health Department of Western Australia. (1991). AIDS: The facts. (Health Promotions Services Publication No. HP2621). Perth: Government Printing Office.

Helgerson, S. D., & Peterson, L. R. (1988). AIDS education study group. Acquired immunodeficiency syndrome and secondary school students: Their knowledge is limited and they want to learn more. Pediatrics, 81, 350-355.

Henzell, J M. (1979). Self-referral of adolescents to school health centres. Education, 28, 9-11.

Herold, E. S. (1983). The health belief model: Can it help us to understand contraceptive use among adolescents? Journal of School Health, 53, 19-21.

Hingson, R. W., Strunin, L., & Berlin, B. M. (1990). Acquired immunodeficiency syndrome transmission: Changes in knowledge and behaviors among teenagers. Massachusetts statewide surveys, 1986-1988. Pediatrics, 85, 24-29.

Hingson, R. W., Strunin, L., Berlin, B. M., & Heeren, T. (1990). Beliefs about AIDS, use of alcohol and drugs, and unprotected sex among Massachusetts adolescents. American Journal of Public Health, 80, 295-299.

Hirschorn, M. W. (1986). AIDS is not seen as a major threat by many heterosexuals on campus. The Chronicle of Higher Education, 33, 32-33.

Huszti, H. C., Clopton, J. R., & Mason, P. J. (1989). Acquired immunodeficiency syndrome educational program: Effects on adolescents' knowledge and attitudes. Pediatrics, 84, 986-994.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. Health Education Quarterly, 11, 1-47.

Jones, H., Ellis, N., Tappe, M., & Lindsay, G. (1991). HIV related beliefs, knowledge and behaviors of ninth and eleventh grade public school students. Journal of Health Education, 22, 12-18.

Joseph, J. G., Montgomery, S. B., Emmons, C. A., Kessler, R. C., Ostrow, D. G., Wortman, C. B., O'Brien, K., Eller, M., & Eshelman, S. (1987). Magnitude and determinants of behavioral risk reduction: Longitudinal analysis of a cohort at risk for AIDS. Psychology and Health, 1, 73-96.

Kann, L., Anderson, J., Holtzman, D., Ross, J., Truman, B. I., Collins, J., & Kolbe, L. J. (1991). HIV related knowledge, beliefs and behaviors among high school students in the U. S: Results from a national survey. Journal of School Health, 61, 397-401.

Karniski, M. (1978). The effect of increased knowledge of body systems and functions on attitudes toward the disabled. Rehabilitation Counseling Bulletin, 21, 16-26.

Keeling, R. P. (1987). Effects of AIDS on young Americans. Medical Aspects of Human Sexuality, 21, 22-33.

Keeling, R. P. (1988). Effective responses to AIDS in higher education. The NEA Higher Education Journal, 4, 5-22.

Keeter, S., & Bradford, J. B. (1988). Knowledge of AIDS and related behavior change among unmarried adults in a low-prevalence city. American Journal of Preventive Medicine, 4, 146-152.

King, A. J., Beazley, R. P., Warren, W. K., Hankins, C. A., Robertson, A.S., & Radford, J. I. (1989). Highlights from the Canada youth and AIDS study. Journal of School Health, 59, 139-145.

Kirby, D. (1980). The effects of school sex education programs: A review of the literature. Journal of School Health, 50, 559-563.

Kirby, D. (1985). Sexuality education: A more realistic view of its effects. Journal of School Health, 55, 421-424.

Kirby, D., Barth, R. P., Leland, N., & Fetro, J. V. (1991). Reducing the risk: Impact of a new curriculum on sexual risk-taking. Family Planning Perspectives, 23, 253-263.

Kirscht, J. P. (1974). The health belief model and illness behavior. Health Education Monograms, 2, 387-408.

Klein, D. (1984). Knowledge, attitude, and behavioral changes as a result of sex education: A retrospective examination. Journal of Sex Education and Therapy, 10, 26-30.

Konetzny, T. K., Konetzny, A. H., & Pifer, L. L. (1987). Knowledge and attitudes of Memphis parochial school adolescents about Acquired immune deficiency syndrome. Journal of the Tennessee Medical Association, 80, 529-532.

Kraft, P. (1991). Age at first experience of intercourse among Norwegian adolescents: A lifestyle perspective. Social Science and Medicine, 33, 207-213.

Lee, M. R. (1952). Background factors related to sex information and attitudes. Journal of Educational Psychology, 43, 467-485.

Mabe, P. A., Riley, W. T., & Treiber, F. A. (1987). Cancer knowledge and acceptance of children with cancer. Journal of School Health, 57, 59-63.

Manning, T. D., & Balson, P. M. (1989). Teenagers' beliefs about AIDS education and physicians' perceptions about them. The Journal of Family Practice, 29, 173-177.

Manning, T. D., Barenberg, N., Gallese, L., & Rice, J. C. (1989). College students' knowledge and health beliefs about AIDS: Implications for education and prevention. Journal of American College Health, 37, 254-260.

Matthews, B. R., Richardson, K. D., Price, J., & Williams, G. (1990, July). Homeless youth and AIDS: Knowledge, attitudes, and behaviour. The Medical Journal of Australia, 153, 20-23.

Mayer, P. A., & Bauman, K. A. (1986). Health practices, problems, and needs in a population of Micronesian adolescents. Journal of Adolescent Health Care, 7, 338-341.

McCusker, J., Zapka, J. G., Stoddard, A. M., & Mayer, K. H. (1989). Responses to the AIDS epidemic among homosexually active men: Factors associated with previous behavior. Patient Education and Counseling, 13, 15-30.

McKinney, K. P., & Vogel, J. (1987). Development theories. In J. B. Van Hasselt & M. Hersen (Eds.), Handbook of adolescent psychology. New York: Pergamon Press.

McKusick, L., Wiley, J., Coates, T. J., Stall, R., Saika, G., Morin, S., Charles, K., Horstman, W., & Conant, M. A. (1985). Reported changes in the sexual behavior of gay men at risk for AIDS, San Francisco 1982-1984: The AIDS behavioral research project. Public Health Reports, 100, 622-629.

Miller, L., & Downer, A. (1988). AIDS: What you and your friends need to know--a lesson plan for adolescents. Journal of School Health, 58, 137-141.

Montgomery, S. B., Joseph, J. G., Becker, M. H., Ostrow, D. G., Kessler, R. C., & Kirscht, J. P. (1989). The health belief model in understanding compliance with preventive recommendations for AIDS: How useful? AIDS Education and Prevention, 1, 303-323.

Moore, K. A., & Burt, M. R. (1982). Private crisis, public cost: Policy perspectives on teenage childbearing. Washington, DC: The Urban Institute Press.

Moore, S., & Rosenthal, D. A. (1991). Adolescents' invulnerability and perceptions of AIDS risk. Journal of Adolescent Research, 6, 164-180.

National Centre in HIV Epidemiology and Clinical Research. (1993, July). Australian HIV Surveillance Report, 5, 6.

Naughton, S. S., Edwards, L. E., & Reed, N. (1991). AIDS/HIV risk assessment and risk reduction counseling in a school-based clinic. Journal of School Health, 61, 443-445.

Novello, A. C. (1992). Health priorities for the nineties: The quest for prevention. Vital Speeches of the Day, 58, 666-672.

Petosa, R. (1986). Emerging trends in adolescent health promotion. Health Values, 3, 22-28.

Petosa, R., & Wessinger, J. (1990). Using the health belief model to assess the HIV education needs of junior and senior high school students. International Quarterly of Community Health Education, 10, 135-143.

Price, J. H., Desmond, S., & Kukulka, G. (1985). High school students' perceptions and misperceptions of AIDS. Journal of School Health, 55, 107-109.

Quackenbush, M., & Sargent, P. (1988). Teaching AIDS: A resource guide on AIDS. Santa Cruz: Network Publications.

Ramsay, G. V. (1943). The sex information of younger boys. American Journal of Orthopsychiatry, 13, 347-352.

Remafedi, G., Resnick, M., Blum, R., & Harris, L. (1992). Demography of sexual orientation in adolescents. Pediatrics, 89, 714-721.

Rhodes, F., & Walitski, R. J. (1989). Perceived effectiveness of fear appraisals in AIDS education: Relationships to ethnicity, gender, age, and group membership. AIDS Education and Prevention, 2, 1-11.

Roscoe, B., & Kruger, T. L. (1990). AIDS: Late adolescents' knowledge and its influence on sexual behavior. Adolescence, 25, 39-48.

Rosenstock, I. M. (1960). What research in motivation suggests for public health. American Journal of Public Health, 50, 295-308.

Rosenstock, I. M. (1974). Historical origins of the health belief model. Health Education Monograms, 2, 328-335.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. Health Education Quarterly, 15,175-183.

Rosenthal, D., Hall, C., & Moore, S. M. (1992). AIDS, adolescents and sexual risk-taking: A test of the health belief model. Australian Psychologist, 27, 166-171.

Rosenthal, D., Moore, S., & Buzwell, S. (1991, November). Homeless youths: Sexual and drug-related behaviour, sexual beliefs and HIV/AIDS risk. Paper presented at the Australian Society for HIV Medicine Conference, Wollongong.

Rotherum-Borus, M. J. (1987, September). Prevention of HIV infection among adolescents. Paper presented at the Women and AIDS conference, National Institute of Mental Health, Washington, DC.

Schinke, S. P., Gordon, A. N., & Weston, R. E. (1990). Self-instruction to prevent HIV infection among African-American adolescents. Journal of Consulting Clinical Psychology, 58, 432-436.

Siegel, D., Lazarus, N., Krasnovsky, P., Durbin, M., & Chesney, M. (1991). AIDS knowledge, attitudes and behavior among inner city, junior high school students. Journal of School Health, 61, 160-165.

Simkins, L., & Kushner, A. (1986). Attitudes towards AIDS, herpes II, and toxic shock syndrome: Two years later. Psychological Reports, 59, 883-891.

Simmons, R. G. (1987). Social transition and adolescent development. In C. E. Irwin, (Ed.). Adolescent Social Behavior and Health (pp. 162-189). San Francisco: Jossey-Bass.

Smilgis, M. (1987, February). The big chill: Fear of AIDS. Time, 50-53.

SPSS for Windows Release 6.0 Student Version. (1994). Chicago: SPSS Inc.

Strunin, L. (1991). Adolescents' perceptions of risk for HIV infection: Implications for future research. Social Science and Medicine, 32, 221-228.

Strunin, L., & Hingson, R. (1987). Acquired immune deficiency syndrome and adolescents: Knowledge, beliefs, attitudes and behaviors. Pediatrics, 79, 825-828.

Taylor, M. E., Wang, M., & Jack, L. (1989). The effects of contraceptive education on adolescent male contraceptive behavior and attitudes. Health Education, 20,12-17.

Thiers, N. (1987). AIDS: Counselors called to the front lines. Guidepost, 30, 1, 6, 10.

Thomas, L. L., Long, S. E., Whitten, K., Hamilton, B., Fraser, J., & Askins, R. V. (1985). High school students' long-term retention of sex education information. Journal of School Health, 55, 274-278.

Thornburg, H. D. (1975). Sources in adolescents of initial sex information. In H. D. Thornburg (Ed.), Contemporary adolescence: Readings (2nd ed.). Monterey: Brooks/Cole.

Thornburg, H. D. (1981, April). Adolescent sources of information on sex. Journal of School Health, 274-277.

Trice, A. D., & Price-Greathouse, J. (1987). Locus of control and AIDS information-seeking in college women. Psychological Reports, 60, 665-666.

Tucker, V. L., & Cho, C. T. (1991). AIDS and adolescents: How can you help them reduce their risk? Postgraduate Medicine, 89, 49-53.

Turtle, A. M., Ford, B., Habgood, R., Grant, M., Bekiaris, J., Constantinou, C., Macek, M., & Polyzoidis, H. (1989). AIDS-related beliefs and behaviours of Australian university students. The Medical Journal of Australia, 150, 371-376.

Valdisseri, R. D., Lyter, D., Leviton, L. C., Callahan, C. M., Kingsley, L. A., & Rinaldo, C. R. (1988). Variables influencing condom use in a cohort of gay and bisexual men. American Journal of Public Health, 78, 801-805.

Webman, D. M., & Alwon, F. J. (Eds.). (1990). Taking action on AIDS: Resource book. Massachusetts: Treischman Centre.

Weinstein, E., Rosen, E., and Atwood, J. (1991). Adolescents' knowledge of AIDS and behavior change: Implications for education. Journal of Health Education, 22, 313-318.

Weisberg E., North P., & Buxton M. (1992). Sexual activity and condom use in high school students. The Medical Journal of Australia, 156, 612-613.

White, D. G., Phillips, K. C., Pitts, M., Clifford, B. R., Elliott, J. R., & Davies, M. M. (1988). Adolescents' perceptions of AIDS. Health Education Journal, 47, 117-119.

Williams, A. B. (1991). Women at Risk: An AIDS Educational Needs Assessment. IMAGE Journal of Nursing Scholarship, 23, 208-213.

Witmar, H. L. (1929). The attitudes of mothers toward sex education. Minneapolis: University of Minnesota Press.

Wysocki, D., & Harrison, R. (1991). AIDS and the media: A look at how periodicals influence children and teenagers in their knowledge of AIDS. Journal of Health Education, 22, 20-23.

Zelnik, M., & Kantner, J. F. (1977). Sexual and contraceptive experience of young unmarried women in the United States, 1976 and 1971. Family Planning Perspectives, 9, 55-71.

Zimet, G. D., Bunch, D., Anglin, T. M., Krowchuk, D. P., Lazebnik, R., & Williams, P. (1989, August). Changes in adolescents' sexual behavior due to AIDS. Paper presented at the annual meeting of the American Psychological Association, New Orleans.

Zimet, G. D., Hillier, S. A., Anglin, T. M., Ellick, E. M., Krowchuk, D. P., & Williams, P. (1991). Knowing someone with AIDS: The impact on adolescents. Journal of Pediatric Psychology, 16, 287-294.

LIST OF APPENDICES

APPENDIX A AND B

A Introductory Letter to Parents - Control School

B Introductory Letter to Parents - Experimental School

(CONTROL SCHOOL)

Dear Parent/Guardian,

As you are already aware, the Health Education curriculum includes a lesson on Acquired Immunodeficiency Syndrome (AIDS). This unit is usually taught early in Year 10, and may include a visit from a person who is HIV-positive. As yet, there is no information available on the effectiveness of HIV/AIDS education programmes in Western Australia. At present, I am undertaking a Master of Nursing programme at Edith Cowan University, and am currently looking at the Year 10 HIV/AIDS lesson.

In order to assess what knowledge Year 10 students have about AIDS, they will be asked to fill in a questionnaire prior to next year's lesson. The questionnaire contains 37 questions about HIV and AIDS. Your child will not be required to write his or her name on the paper.

This information will show us where there are gaps in their knowledge, and allow myself and the Health Education teachers to develop more effective lessons which are specifically suited to students' needs.

Please feel free to contact me on [redacted] if you have any questions.

Paula Hahnel

SCHOOL HEALTH NURSE

(CONTROL SCHOOL)

Dear Parent/Guardian,

As you are already aware, the Health Education curriculum includes a lesson on Acquired Immunodeficiency Syndrome (AIDS). This unit is usually taught early in Year 10, and may include a visit from a person who is HIV-positive. As yet, there is no information available on the effectiveness of HIV/AIDS education programmes in Western Australia. At present, I am undertaking a Master of Nursing programme at Edith Cowan University, and am currently looking at the Year 10 HIV/AIDS lesson.

In order to assess what knowledge Year 10 students have about AIDS, they will be asked to fill in a questionnaire prior to next year's lesson. The questionnaire contains 37 questions about HIV and AIDS. Your child will not be required to write his or her name on the paper.

This information will show us where there are gaps in their knowledge, and allow myself and the Health Education teachers to develop more effective lessons which are specifically suited to students' needs.

Please feel free to contact me on [redacted] if you have any questions.

Paula Hahnel

SCHOOL HEALTH NURSE

(EXPERIMENTAL SCHOOL)

Dear Parent/Guardian,

As you are already aware, the Health Education curriculum includes a lesson on Acquired Immunodeficiency Syndrome (AIDS). This unit is usually taught early in Year 10, and may include a visit from a person who is HIV-positive. As yet, there is no information available on the effectiveness of HIV/AIDS education programmes in Western Australia. At present, I am undertaking a Master of Nursing programme at Edith Cowan University, and am currently looking at the Year 10 HIV/AIDS lesson.

In order to assess how effective the programme has been, and how much the students have learned, next year's lesson will include a questionnaire, which students will fill in before and after the lesson. The same questionnaire will be filled in again six weeks later to assess how much knowledge they still have.

The questionnaire contains 37 questions about HIV and AIDS. Your child will not be required to write his or her name on the paper. The information will be used by myself and the Health Education teachers to develop more effective lessons specifically suited to students' needs.

Please feel free to contact me at the school if you have any questions.

Paula Hahnel

SCHOOL HEALTH NURSE

HIV/AIDS EDUCATION QUESTIONNAIRE

(Petosa & Wessinger, 1990)

PLEASE CIRCLE EITHER TRUE, FALSE, OR DON'T KNOW FOR EACH STATEMENT.

1.	Women with AIDS can infect men.	TRUE	FALSE	DON'T KNOW
2.	A man who only has sex with women cannot get AIDS.	TRUE	FALSE	DON'T KNOW
3.	You can get AIDS from blood transfusions.	TRUE	FALSE	DON'T KNOW
4.	You can get AIDS from donating blood.	TRUE	FALSE	DON'T KNOW
5.	Almost all homosexuals have the AIDS virus.	TRUE	FALSE	DON'T KNOW
6.	You can get AIDS from a person who is infected but does not have symptoms.	TRUE	FALSE	DON'T KNOW
7.	You can get infected with AIDS and not have symptoms.	TRUE	FALSE	DON'T KNOW
8.	You can tell if people have the AIDS virus just by looking at them.	TRUE	FALSE	DON'T KNOW
9.	A woman can infect her baby with AIDS during pregnancy.	TRUE	FALSE	DON'T KNOW
10.	You can get AIDS from shaking hands with or hugging a person who has AIDS.	TRUE	FALSE	DON'T KNOW
11.	You can get AIDS from sharing forks or glasses with a person who has AIDS.	TRUE	FALSE	DON'T KNOW
12.	You can get AIDS from kissing.	TRUE	FALSE	DON'T KNOW
13.	You can get AIDS from oral sex.	TRUE	FALSE	DON'T KNOW
14.	A vaccine is available to prevent AIDS.	TRUE	FALSE	DON'T KNOW
15.	One way of reducing the risk of AIDS is to avoid sex with many people.	TRUE	FALSE	DON'T KNOW
16.	One way of reducing the risk of AIDS is to use a condom during sex.	TRUE	FALSE	DON'T KNOW
17.	One way of reducing the risk of AIDS is not to share needles with drug users.	TRUE	FALSE	DON'T KNOW

18.	One way of reducing the risk of AIDS is to not have sex.	TRUE	FALSE	DON'T KNOW
19.	I am afraid of getting AIDS.	TRUE	FALSE	DON'T KNOW
20.	I am less likely than most people to get AIDS.	TRUE	FALSE	DON'T KNOW
21.	I know enough to protect myself from AIDS.	TRUE	FALSE	DON'T KNOW
22.	Someone I know is likely to get AIDS.	TRUE	FALSE	DON'T KNOW
23.	The number of people with AIDS is increasing.	TRUE	FALSE	DON'T KNOW
24.	I would be fearful of getting AIDS if someone in my class had AIDS.	TRUE	FALSE	DON'T KNOW
25.	People with AIDS usually get cancer.	TRUE	FALSE	DON'T KNOW
26.	People with AIDS die within ten years.	TRUE	FALSE	DON'T KNOW
27.	AIDS can be cured if treated early.	TRUE	FALSE	DON'T KNOW
28.	I would always use a condom when having sex.	TRUE	FALSE	DON'T KNOW
29.	I would not have sex with several people.	TRUE	FALSE	DON'T KNOW
30.	I would not use a needle to inject drugs.	TRUE	FALSE	DON'T KNOW
31.	I would not have sex with someone who had sex with others.	TRUE	FALSE	DON'T KNOW
32.	I do not plan on having sex until I finish high school in Year 12.	TRUE	FALSE	DON'T KNOW
33.	I would not have sex until I had a long-term relationship with one person.	TRUE	FALSE	DON'T KNOW
34.	Condoms are hard to get.	TRUE	FALSE	DON'T KNOW
35.	Condoms are embarrassing to use.	TRUE	FALSE	DON'T KNOW
36.	It is hard to ask if someone has had sex with several people.	TRUE	FALSE	DON'T KNOW

APPENDIX D

The Modified Questionnaire and Scoring Tool

YEAR 10 HIV/AIDS EDUCATION

QUESTIONNAIRE

Dear Student,

The following questionnaire has been designed to evaluate the Year 10 HIV/AIDS education course. The information that you give me is very important. It will help me to identify any areas in the current programme which need to be changed, so that we can make sure future lessons cover areas where there is a specific need.

The questionnaire is *confidential.* Please do not write your name on it. There is a number at the top to help me keep track of the questionnaires. Please read the instructions carefully, and answer all questions truthfully. Remember, I do not need to know who you are. It should take you about 10 minutes to answer ALL the questions.

This is *not a test*, but please do not discuss the answers with anyone else. If you have any problems filling in the questionnaire, your teacher is available to help.

When you have finished the questionnaire, please check that you have answered ALL the questions. Then place your paper in the box at the front of the class, and return to your seat.

I am very grateful to you for taking the time to complete this questionnaire.

Thank you.

Paula Hahnel

SCHOOL HEALTH NURSE

HIV/AIDS EDUCATION QUESTIONNAIRE

(Petosa & Wessinger, 1990)

The following questions are about people with AIDS, and how people get AIDS.

PLEASE CIRCLE EITHER TRUE, FALSE, OR DON'T KNOW FOR EACH STATEMENT.

1.	Women with AIDS can infect men.	TRUE	FALSE	DON'T KNOW
2.	A man who has sex only with women cannot get AIDS.	TRUE	FALSE	DON'T KNOW
3.	Screening procedures at the blood bank make it impossible to get AIDS from blood transfusions.	TRUE	FALSE	DON'T KNOW
4.	You can get AIDS from donating blood.	TRUE	FALSE	DON'T KNOW
5.	Almost all homosexuals have the AIDS virus.	TRUE	FALSE	DON'T KNOW
6.	You can get infected with the AIDS virus and not have symptoms.	TRUE	FALSE	DON'T KNOW
7.	You can tell if people have the AIDS virus just by looking at them.	TRUE	FALSE	DON'T KNOW
8.	A woman can infect her baby with the AIDS virus during pregnancy.	TRUE	FALSE	DON'T KNOW
9.	You can get AIDS from shaking hands with or hugging a person who has AIDS.	TRUE	FALSE	DON'T KNOW
10.	You can get AIDS from sharing forks or glasses with a person who has AIDS.	TRUE	FALSE	DON'T KNOW
11.	You can get AIDS from kissing.	TRUE	FALSE	DON'T KNOW
12.	You can get AIDS from oral sex.	TRUE	FALSE	DON'T KNOW
13.	You can get AIDS from a person who is infected but does not have symptoms.	TRUE	FALSE	DON'T KNOW
14.	A vaccine is available to prevent AIDS.	TRUE	FALSE	DON'T KNOW
15.	One way of reducing the risk of AIDS is to avoid sex with many people.	TRUE	FALSE	DON'T KNOW
16.	One way of reducing the risk of AIDS is to use a condom during sex.	TRUE	FALSE	DON'T KNOW

17. One way of reducing the risk of AIDS is not to share needles with drug users.	TRUE	FALSE	DON'T KNOW	
18. One way of reducing the risk of AIDS is to not have sex.	TRUE	FALSE	DON'T KNOW	
19. People with AIDS usually get cancer.	TRUE	FALSE	DON'T KNOW	
20. People with AIDS die within ten years.	TRUE	FALSE	DON'T KNOW	
21. AIDS can be cured if treated early.	TRUE	FALSE	DON'T KNOW	

The following questions are about <u>how you personally feel</u> about AIDS, and about sex.

PLEASE <u>CIRCLE</u> THE PHRASE THAT <u>BEST DESCRIBES</u> HOW YOU PERSONALLY FEEL ABOUT EACH OF THE FOLLOWING STATEMENTS.

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
22. I am afraid of getting AIDS.	SA	A	U	D	SD
23. I am less likely than most people to get AIDS.	SA	A	U	D	SD
24. I know enough to protect myself from AIDS.	SA	A	U	D	SD
25. The number of people with AIDS is increasing.	SA	A	U	D	SD
26. I would be fearful of getting AIDS if someone in my class had AIDS.	SA	A	U	D	SD
27. I would always use a condom when having sex.	SA	A	U	D	SD
28. I would not have sex with several people.	SA	A	U	D	SD
29. I would not use a needle to inject drugs.	SA	A	U	D	SD
30. I would not have sex with someone who had sex with others.	SA	A	U	D	SD
31. I do not plan on having sex AT LEAST for the next 3 years (that is, until the end of Year 12).	SA	A	U	D	SD

32.	I would not have sex until I had a long-term relationship with one person.	SA	A	U	D	SD
33.	Condoms are hard to get.	SA	A	U	D	SD
34.	Condoms are embarrassing to use.	SA	A	U	D	SD
35.	It is hard to ask if someone has had sex with several people.	SA	A	U	D	SD
36.	It is likely that at least one person I know will get AIDS.	SA	A	U	D	SD
37.	I feel pressure from friends to have sex.	SA	A	U	D	SD
38.	I feel pressure to use needles to inject drugs.	SA	A	U	D	SD

39. Please TICK any of the following which apply to YOU.

I have received information about HIV/AIDS from:

a) Brother or sister [ ]

b) Doctor [ ]

c) Friends [ ]

d) Magazines [ ]

e) Newspapers [ ]

f) Parent [ ]

g) Radio [ ]

h) School [ ]

i) Television [ ]

j) Other, please describe _____

_____

40. Please circle whether you are FEMALE MALE

Thank you for completing this questionnaire.

Please make sure you have answered EVERY question.

Place your paper in the box at the front of the class.

YEAR 10 HIV/AIDS EDUCATION

LESSON EVALUATION

Please **CIRCLE** the word that best describes your answer.

1. The content of this course was

   TOO HARD RIGHT LEVEL TOO EASY

2. This course was

   CLEARLY PRESENTED NOT CLEARLY PRESENTED

3. As a result of this course, my knowledge about HIV/AIDS has

   INCREASED STAYED THE SAME

4. As a result of this course, my attitude towards people with HIV/AIDS has become

   MORE TOLERANT STAYED THE SAME LESS TOLERANT

5. I have read the HIV/AIDS information leaflet given out in Lesson 1.

   YES NO

6. If there is anything you would like to see LEFT OUT of the course, please write it here.

   _____

   _____

   Why? _____

7. If there is anything you would like to see INCLUDED in the course next time, please write it here.

   _____

   _____

   Why? _____

THANK YOU FOR COMPLETING THIS EVALUATION.

HIV/AIDS QUESTIONNAIRE

SCORING TOOL

ITEMS 1-14: KNOWLEDGE OF HIV/AIDS

True = 1, False = 0, Don't know = 0.

Item	Question	Correct response
1	Women with AIDS can infect men	True
2	A man who has sex only with women cannot get AIDS	False
3	Screening procedures at the blood bank make it impossible to get AIDS from blood transfusions	True
4	You can get AIDS from donating blood	False
5	Almost all homosexuals have the AIDS virus	False
6	You can get infected with the AIDS virus and not have symptoms	True
7	You can tell if people have the AIDS virus just by looking at them	False
8	A woman can infect her baby with the AIDS virus during pregnancy	True
9	You can get AIDS from shaking hands with or hugging a person who has AIDS	False
10	You can get AIDS from sharing forks or glasses with a person who has AIDS	False
11	You can get AIDS from kissing	False
12	You can get AIDS from oral sex	True
13	You can get AIDS from a person who is infected but does not have symptoms	True
14	A vaccine is available to prevent AIDS	False

ITEMS 15-18: KNOWLEDGE OF HIV/AIDS PREVENTION

True = 1, False = 0, Don't know = 0.

Item	Question	Correct response
15	One way of reducing the risk of AIDS is to avoid sex with many people	True
16	One way of reducing the risk of AIDS is to use a condom during sex	True
17	One way of reducing the risk of AIDS is not to share needles with drug users	True
18	One way of reducing the risk of AIDS is to not have sex	True

ITEMS 19-21: PERCEIVED SEVERITY

True = 1, False = 0, Don't know = 0.

Item	Question	Correct response
19	People with AIDS usually get cancer	True
20	People with AIDS die within 10 years	True
21	AIDS can be cured if treated early	False

ITEMS 22-26, 36: PERCEIVED SUSCEPTIBILITY

Item	Question	Strongly Agree	Agree	Un-certain	Disagree	Strongly disagree
22	I am afraid of getting AIDS	5	4	3	2	1
23	I am less likely than most people to get AIDS	5	4	3	2	1
24	I know enough to protect myself from AIDS	5	4	3	2	1
25	The number of people with AIDS is increasing	5	4	3	2	1
26	I would be fearful of getting AIDS if someone in my class had AIDS	5	4	3	2	1
36	It is likely that at least one person I know will get AIDS	5	4	3	2	1

The categories "Strongly agree" and "Agree" were regrouped as "Agree".

The categories "Strongly disagree" and "Disagree" were regrouped as "Disagree".

Items 23 and 24 were "reverse coded" to enable more appropriate scoring for perceived susceptibility.

ITEMS 27-32: PREVENTIVE INTENTION

Item	Question	Strongly Agree	Agree	Un-certain	Disagree	Strongly disagree
27	I would always use a condom when having sex	5	4	3	2	1
28	I would not have sex with several people	5	4	3	2	1
29	I would not use a needle to inject drugs	5	4	3	2	1
30	I would not have sex with someone who had sex with others	5	4	3	2	1
31	I do not plan on having sex AT LEAST for the next 3 years (that is, until the end of Year 12)	5	4	3	2	1
32	I would not have sex until I had a long-term relationship with one person	5	4	3	2	1

The categories "Strongly agree" and "Agree" were regrouped as "Agree".

The categories "Strongly disagree" and "Disagree" were regrouped as "Disagree".

ITEMS 33-35: PERCEIVED BARRIERS

Item	Question	Strongly Agree	Agree	Un-certain	Disagree	Strongly disagree
33	Condoms are hard to get	5	4	3	2	1
34	Condoms are embarrassing to use	5	4	3	2	1
35	It is hard to ask if someone has had sex with several people	5	4	3	2	1

The categories "Strongly agree" and "Agree" were regrouped as "Agree".
The categories "Strongly disagree" and "Disagree" were regrouped as "Disagree".

ITEMS 37-38: PERCEIVED PRESSURES

Item	Question	Strongly Agree	Agree	Un-certain	Disagree	Strongly disagree
37	I feel pressure from friends to have sex	5	4	3	2	1
38	I feel pressure to use needles to inject drugs	5	4	3	2	1

The categories "Strongly agree" and "Agree" were regrouped as "Agree".
The categories "Strongly disagree" and "Disagree" were regrouped as "Disagree".

ITEM 39: SOURCES OF HIV/AIDS INFORMATION

Item	Question	Response	
		Yes	No
a	Brother or sister	1	0
b	Doctor	1	0
c	Friends	1	0
d	Magazines	1	0
e	Newspapers	1	0
f	Parent	1	0
g	Radio	1	0
h	School	1	0
i	Television	1	0

ITEM 40: GENDER

Female = 1, Male = 2

APPENDIX E

The Intervention "UNDERSTANDING HIV/AIDS"

Overhead Transparencies

Resource Sheet

Health Publication HP2621

UNDERSTANDING HIV/AIDS

An AIDS Education Programme

for Year 10

YEAR 10

UNDERSTANDING HIV/AIDS

LESSON ONE

UNDERSTANDINGS

1. Sexuality is an integral part of our total self.
2. Healthy relationships depend on clear and open communication, assertiveness, and sensitivity towards others.
3. Disease and disability are related to factors such as heredity, environment, life-style, and health practices.

PURPOSE

To communicate risk information for AIDS, risk-reduction guidelines, to clarify that the AIDS virus is not spread by casual contact, and to equip students with decision-making, communication, and assertiveness skills.

OBJECTIVES

1. Students will acquire accurate information about AIDS and its transmission.
2. Students will know general risk-reduction guidelines for AIDS.
3. Students will use this knowledge to explore the relevancy of AIDS to their own lives, attitudes, beliefs, and behaviours.

FOCUS QUESTIONS

1. What is Acquired Immune Deficiency Syndrome?
2. How id AIDS spread?
3. Who is at risk of getting AIDS?
4. What high risk behaviours are associated with contracting AIDS?
5. How do you know if you have AIDS?
6. What is the treatment for AIDS?
7. How can you eliminate of minimize the risk of contracting AIDS?

FORMAT

1. Lecture/discussion
2. Overhead transparencies
3. Group activity

TIME

75 minutes

UTILIZATION

Following the given material, present the class with a series of questions, lecture, discussion, and group activity to present accurate information about AIDS, and impress upon the students the relevance of this information. Give out the AIDS pamphlet and resource list at the end of the lesson.

INTRODUCTION (10 minutes)

Today we're going to discuss Acquired Immune Deficiency Syndrome, or AIDS. Before we commence the lesson, I'd like you all to fill in this questionnaire so that I can find out how much you already know about AIDS. It's not an exam, so please don't put your name on the paper. When you've finished, please come up to the front of the classroom and put your questionnaire in this box.

GROUP ACTIVITY (15 minutes)

Purpose: Students often take the attitude that a sexually transmitted disease "won't happen to me". This session helps participants to understand the ease with which STDs can spread, and the issues facing you if you find you have an STD. It will also help to debunk some of the myths about STDs. The group will be reminded that you can't get an STD from shaking hands!

Process: Ask everyone to stand, move around the room and introduce themselves to two other people by shaking their hand. Everyone sits down. Explain that, in this game, shaking hands means having sex.

Name two people (or call for two volunteers) in the group and ask them to stand. Tell them they have just been diagnosed as having an STD. Anyone who has shaken the hands of these two students is to stand.

Repeat the procedure until most of the class is standing.

Discuss what happened with the group. Ask "What does this game tell you about the nature of STDs, and what does it show about the way they can spread?"

Ask everyone to sit down and repeat the process, but this time hand out three or four rubber gloves. Explain that the gloves represent condoms. Choose another STD, and repeat the process as above.

Discuss what happened with the group. Ask "Did the condoms affect people's behaviour? How did the people who had STDs feel? How did the people wearing gloves feel? Was there any difference the second time around?"

CONTENT (Approximately 45 minutes)

Today we're going to discuss AIDS and HIV infection, and these are the areas we'll be covering:

(Put up **Overhead 1: OVERVIEW OF TODAY'S LESSON**)

1. What is Acquired Immune Deficiency Syndrome?
2. How is AIDS spread?
3. Who is at risk of getting AIDS?
4. What high risk behaviours are associated with contracting AIDS?
5. How do you know if you have AIDS?
6. What is the treatment for AIDS?
7. How can you eliminate or minimize the risk of contracting AIDS?

The answers to ALL these questions will be covered in the pamphlet I'll give you at the end of the lesson.

THE NEED FOR AIDS/HIV EDUCATION IN SCHOOLS

There are three main reasons why it is important for us to teach you about AIDS and HIV infection.

1. Although most teenagers are aware of various dangers in the world around them, they frequently feel that they are immune until a problem is experienced first hand. Many young people believe that AIDS can't happen to them. This belief (write "INVULNERABILITY" on the board) coupled with

2. Peer influence, a desire for immediate sexual gratification, a willingness to experiment with drugs, and a high number of sexual partners, puts high school students at a very high risk of contracting the human immunodeficiency virus. (Write "BEHAVIOUR" on the board under "INVULNERABILITY").

3. The third factor relating to the importance of teaching you about AIDS is this. 20% of all people with AIDS are in the 20-29 year age group. Now you are probably wondering what that has to do with you, a 14-15 year old. Because there is a seven to ten year incubation period in which the symptoms of AIDS do not show in people infected with HIV, most of these people were infected when? Right, as adolescents. (Write "HIV IN ADOLESCENCE" on board).

Would you agree or disagree with these factors? (Allow a few minutes for discussion.)

WHAT DO YOU KNOW ABOUT THE TERMS HIV AND AIDS?

Brainstorm each term separately. Give correct names, and write them clearly on the white-board.

HIV: Human Immunodeficiency Virus
AIDS: Acquired Immune Deficiency Syndrome

WHAT IS THE DIFFERENCE BETWEEN HIV AND AIDS AND HOW ARE THEY CAUSED?

HIV, or the Human Immunodeficiency Virus, is what you "catch". It is a virus which enters your bloodstream after you have come in contact with it. Most people, after coming into contact with HIV suffer from a severe flu-like illness about two weeks later. After that they may be perfectly well for perhaps seven to ten years before they develop AIDS itself.

HIV is a foreign substance (an antigen). The body produces special cells (antibodies) which react with and neutralize these antigens in an attempt to get rid of them. The immune system can't fight off HIV because the virus moves into the antibodies and turns them into a "virus factory". For example, the body may come into contact with a simple infection. This will set off the normal immune response, but because the cells are now full of HIV, it is the virus which acts. The result is an increased amount of virus in the body and fewer healthy immune cells to fight infections. When you have an "AIDS test", you are being tested for antibodies to HIV.

AIDS, the Acquired Immunodeficiency Syndrome, is a group of diseases (a syndrome) caused by infection with HIV. These diseases include Karposi's sarcoma (a form of skin cancer), PCP (Pneumocystis carinii pneumonia), and HIV dementia (an Alzheimer's-like condition which involves a gradual loss of memory.) This virus weakens the immune system in your body to such an extent that the body is no longer able to fight against infections and some forms of cancer.

(Put up Overhead 2: "The healthy immune system, and the immune system infected with AIDS", From Teaching AIDS: a resource guide on Acquired Immune Deficiency Syndrome (p. 100) by M. Quackenbush and P. Sargent, 1988. Santa Cruz: Network Publications. Reprinted by permission.)

INCIDENCE AND SPREAD

Can anyone tell me in which country HIV infection was first reported? Yes, that's right - it was first reported in the United States of America in 1981, and since then, cases of AIDS have been diagnosed throughout most of the world.

Let's spend a few minutes looking at the current status of AIDS in the world today. (Put up Overheads 3 and 4 showing the following information.)

* A simple graph showing the number of reported AIDS cases world-wide over the past ten years.

* A simple graph showing the number of reported AIDS cases in Australia over the same period.

* A simple graph showing the number of reported AIDS cases in Western Australia over the same period.

* A table showing the number of new diagnoses of HIV infection in Australia over the last month, including a cumulative total.

(On the three graphs, point out general trends only. From the table, mention WA figures in relation to those in other states, WA total, and the overall total. Stress the number of people with HIV is unknown, figures are best estimates. The aim of this section is to give an overall impression of the incidence and spread.)

HOW DOES THE VIRUS GET INTO YOUR BODY? HOW IS AIDS SPREAD?

(Use Overhead 5 with main headings).

1. The AIDS virus can be passed in body fluids between sexual partners engaging in in either vaginal, anal, or oral intercourse.
   What do we mean by "sexual partners?
   Heterosexual (opposite sex) or homosexual (same sex) sexual intercourse involving penis to vagina, or penis to anus. Oral sex involving mouth to penis, or mouth to vagina.
   What do we mean by "body fluids"?
   Semen, vaginal secretions, and blood.
   Saliva, sweat, urine, and tears - research now suggests that the AIDS virus is present in these fluids, but to date there is no evidence for transmission by these routes.

2. The AIDS virus can enter the bloodstream directly when intravenous (IV) drug users share needles. AIDS may be transmitted by people sharing needles for tattooing or ear-piercing without sterilizing them properly.

3. Women infected with the AIDS virus can pass the virus to newborn children. The children are infected before birth, when they share the mother's blood system.

4. In the past, some people have contracted AIDS from blood transfusions, or from special blood products for people with diseases like haemophilia.Now, blood donations are screened and tested, so the blood supply is quite safe. The medicines for people with haemophilia are heat-treated to destroy the virus.

These are the ways we know the AIDS virus is transmitted. We know it is NOT spread by casual contact. You CANNOT get AIDS by touching or hugging someone, sharing food or drinks, or riding buses. You CANNOT get it from toilet seats, or sinks, or swimming pools, or saunas. You CANNOT get it from drinking fountains. You CANNOT get it by sharing telephones, paper, or pens. You CANNOT get it from someone coughing or sneezing on you. You CANNOT get it from donating blood.

(An understanding of the means by which AIDS can and cannot be transmitted is an essential ingredient for effective decision making and AIDS prevention.)

WHO, THEN, CAN GET AIDS? WHO IS AT RISK?

(Brainstorm, then use Overhead 6)

We are ALL at risk of getting AIDS, especially those of us who engage in high-risk behaviours.

What are the high-risk behaviours associated with catching AIDS?

* unprotected sexual intercourse with any of those mentioned in the high-risk groups
* sharing needles

WHO, THEN IS AT RISK?

* Homosexuals, bisexuals, heterosexuals. (Clarify each group)
* Partners of homosexuals, bisexuals, heterosexuals.
* Intravenous drug users, needle sharers.
* Infants of parents with AIDS
* Those who use drugs or alcohol, where willingness and ability to make a rational decision may be impaired.

(Many students may not be having sexual intercourse, and may not see themselves as being at risk of contracting HIV. However, it should be mentioned that as these students get older, or move to a different location, or engage in new and different behaviours, they may then put themselves at risk.)

RISK CONTINUUM

(Put up Overhead 7. This continuum illustrates behaviours that keep one completely risk free--no sexual intercourse, no IV drug use--at one end of a large arrow, and behaviours that put one at the highest risk--unprotected intercourse, sharing needles--at the other end. In between, behaviours that go from slight to moderate to serious risk are positioned. The arrow is a light colour at the safe end and becomes progressively darker. As you talk about each behaviour, move physically from one end of the arrow to the other. This exercise gives a comprehensive, sobering, visual and verbal confrontation with behaviour,

consequences, and obvious questions: where do you want to place yourself on the continuum? what do your behaviours have to be to keep yourself there?)

HIGHEST RISK (UNSAFE)	MEDIUM RISK (UNSAFE)
Unprotected anal intercourse	Anal intercourse with condom
Unprotected vaginal intercourse	Vaginal intercourse with condom
Sharing needles	Unprotected oral sex
	Oral sex with condom

LOW RISK (PROBABLY SAFE)	NO RISK (DEFINITELY SAFE)
Deep kissing (mouth, French, wet)	Massage
Mutual masturbation	Dry kissing
	Hugging
	No sexual intercourse
	No IV drug use

<u>HOW DO YOU KNOW IF SOMEONE HAS AIDS?</u>

The AIDS virus (HIV), just like many other viruses, can cause a wide range of symptoms. There are basically THREE ways people might show infection with the AIDS virus. (Use Overhead 8.)

1. Many people infected with the virus look and feel perfectly healthy. These people can pass the virus on to others. They are called ASYMPTOMATIC CARRIERS, that is, carriers with NO SYMPTOMS of the disease. They would have had a severe flu-like illness about two weeks after the initial infection with HIV, but are well. They do not look sick, and have no symptoms. They are called HIV POSITIVE.

2. Other people develop SOME SYMPTOMS related to AIDS, but do not have one of the diseases that medical researchers use to diagnose AIDS. These people are said to have AIDS related complex (ARC). They can be fairly healthy or quite sick. They may have persistent unexplained enlarged lymph glands in the neck, armpits, and groin. Some people with ARC may become so ill they die without ever being diagnosed with AIDS.

3. Finally, some people infected with the virus develop full-blown AIDS. This is the most serious form of the disease, and includes fever, night sweats, weight loss, persistent cough, loss of appetite, fatigue, gradual loss of memory, pneumonia, and some forms of cancer. Over half the people diagnosed with AIDS so far have died, and very few have survived seven years.

Because so many people are healthy carriers of AIDS and do not know they are infectious, it has been hard to stop the spread of the disease. The AIDS virus also has a long incubation period, so it can take quite a while between the time a person is

first infected and the time he or she actually gets sick. With AIDS, this might take anywhere from several weeks to seven years or more. This is why it is SO IMPORTANT for us not to expose ourselves to the risk of getting infected with AIDS.

(The emphasis should be on the fact that the "incubation" period is several years, during which the person has no symptoms, and in most cases unknowingly contaminates others. Again, reference may be made to the number of people infected during adolescence, and to the outcome of the "shaking hands" exercise undertaken at the beginning of the lesson.)

If you think you may have the AIDS virus, you can have a test. Please go and see the school nurse, a counsellor, or your doctor, or contact any of the agencies on the resource list I'll give you at the end of the lesson.

THE TIMELINE FOR HIV/AIDS

To give you a clearer idea of what we've just been talking about, let's look at a timeline. (Use Overhead 9 depicting the timeline, labelled as follows.)

HIV Disease Timeline

0	Time of infection
3-6 weeks	"Window period".
6 months	Body develops antibodies for HIV
1 year	Some people develop AIDS; some may have symptoms but not AIDS; most will be healthy
7 years	Current average time for developing AIDS is 7-10 years; some will have symptoms with no diagnosis; some will continue to be asymptomatic
10 years	Many people will have developed HIV-related symptoms or AIDS; most of those with AIDS will be dead

(From Taking Action on AIDS (p. 76) edited by D. M. Webman, and F. J. Alwon, 1990, Massachusetts: The Albert E. Trieschman Center. Reprinted by permission.)

The Window Period: 3-6 weeks after exposure to HIV
During this time, it is impossible to assess whether or not a person has become infected with HIV. If infected and engaging in unsafe behaviours, it is possible for this person to spread the virus during what we call the "window period".

HIV Antibody Diagnosis: 6 weeks to 12 years after exposure
The HIV antibody test for the presence of antibodies to fight HIV in the body.

The Latency Period
The period of time after the person develops antibodies to the virus. The average length of the latency period is seven to ten years, but for some it may be shorter, and for others,

longer. The person is usually healthy, and may not know they carry the virus.

AIDS Diagnosis

The development of symptoms, or a diagnosis of AIDS. The timeline will change as new treatments that prolong life and stop the onset of HIV-related illnesses become available.

WHAT IS THE TREATMENT FOR HIV/AIDS?

(Put up Overhead 10: There is NO CURE for AIDS.

PEOPLE WITH AIDS WILL DIE.

Cover "The best treatment is prevention").

To date, there is no vaccine or any other drug available which can prevent someone from developing AIDS, although in the Sunday Times on the 2nd of May 1993, it was reported that there were synthetic AIDS vaccine trials planned for Perth this year. The aim is to treat the different stages of HIV infection and find out whether it boosts the immune system. It is very difficult to make a vaccine against a specific virus, especially one such as HIV which is continually changing itself.

Doctors sometimes give HIV positive people a drug which they hope will delay the onset of AIDS. The secondary infections of Stage 3 are treated with antibiotics, but unfortunately they do not halt the AIDS virus itself.

Uncover: THE BEST TREATMENT IS PREVENTION

Can you think of some of the ways we can prevent HIV/AIDS, or reduce the risk of catching HIV?

(Brainstorm and write on board. Include the following:)

1. Don't use drugs or alcohol, which may impair your willingness and ability to make a rational decision and to follow through on it.

2. Sexual transmission
   - become informed
   - develop confidence in communication with your partner. Communicate about your feelings, your attitudes, and how you feel about condoms.
   - avoid (100% effective) or postpone intercourse. It's OK to say "No".
   - be assertive. Protect your rights in a relationship. Say no to unprotected sexual intercourse or oral sex. Use a condom
   - stay with one sex partner
   - reduce your number of sex partners
   - know your partner and their sexual history well
   - engage in safer sex practises e.g mutual

masturbation, kissing
- avoid exposure to blood, semen, vaginal fluids, and breast milk

3. **Intravenous drug-related transmission**
   - don't start shooting drugs
   - don't share intravenous needles and syringes
   - don't have intercourse or oral sex with someone who shares intravenous drug needles
   - if you shoot drugs, consider finding help at a drug treatment centre
   - if you are unable to stop shooting drugs or find available treatment, avoid sharing needles
   - if you use or share needles, use the 2x2x2 method to clean your equipment. Fill the syringe with water, then squirt the water through the needle. Repeat. Fill the syringe with bleach and squirt the bleach through the needle. Repeat. Finally, fill the syringe with water, and squirt the water through the needle. Repeat.

This is the end of our session today. However, before we finish there are four points I'd like you to remember.

(Put up the following on **Overhead 11**).

1. AIDS/HIV infection is caused by a virus, not a lifestyle. It is not a "gay" disease.

2. You cannot get AIDS from casual contact.

3. There are several ways that you can protect yourself so that don't run the risk of getting AIDS.

4. AIDS is a chronic illness for which there is no cure.

(Give out the AIDS pamphlet and the Resource sheet.)

YEAR 10

UNDERSTANDING HIV/AIDS

LESSON TWO

PURPOSE

To revise risk information and risk-reduction guidelines for AIDS, and to discuss the personal and societal implications of AIDS.

OBJECTIVES

1. Using knowledge gained in Lesson 1, students will realize that AIDS is a real and serious personal threat.
2. Students will use this knowledge to explore the relevancy of AIDS to their own lives, attitudes, beliefs, and behaviours.
3. Students will demonstrate correct care, application, removal, and disposal of a condom.

FORMAT

1. Discussion
2. Overhead transparencies
3. Video/visit from person living with AIDS
4. Condom demonstration

TIME

75 minutes

UTILIZATION

Following the given material, present the class with a series of questions to review accurate information about AIDS, impressing upon the students the relevance of this information. Using the suggested questions as outlines, facilitate discussion to allow students to explore their own personal response to the epidemic. Please mark the questions you have discussed. Administer the post-test questionnaire, using the instructions given in Lesson 1.

REVIEW OF LESSON ONE (15 minutes)

1. Revise the meaning of the terms HIV and AIDS.

2. Brainstorm the ways in which HIV/AIDS may be spread.

3. Brainstorm the risk groups, emphasizing those in particular which may apply to this age group.

4. Revise the three stages of illness of someone who is HIV positive, with an emphasis on the "not sick, sick, very sick" concept.

5. Brainstorm the preventive measures that can be undertaken, with particular emphasis on the "abstinence, one safe partner, condom use" triad.

CONDOM DEMONSTRATION (10 minutes)

VIDEO (approx. 20 minutes)

"Teen AIDS in Focus" (if possible to locate in W.A.) - a film featuring three teenagers living with HIV.

If no suitable video available, possible visit by a person living with AIDS (PLA) for the last 20 minutes of the session.

DISCUSSION SESSION (25 minutes)

(These questions may be used to stimulate discussion which should focus on students using their knowledge about AIDS to explore its relevancy to their own lives, attitudes, beliefs, and behaviours. The students may well initiate these questions themselves. Please mark the questions discussed, and note any additional material used which is not mentioned in these lesson notes. Some of the questions e.g., A, B, E, F, I, J, K, and L, may come up in Lesson 1.)

A. SUDDENLY, WE SEEM TO BE HEARING A LOT ABOUT AIDS. THERE ARE OTHER SERIOUS DISEASES AROUND, AND SOME ARE SPREAD MORE EASILY THAN AIDS. WHY DO PEOPLE SEEM MORE CONCERNED ABOUT AIDS, AND WHY IS EVERYONE TALKING ABOUT IT NOW?

1. AIDS is a very serious disease that has received a lot of attention. Other diseases might be less serious, or may have received less attention.
2. AIDS is a new epidemic, and it is happening now. The incidence is increasing. Many other diseases have slower rates of increase and incidence. There is no cure for AIDS.
3. People misunderstand or are misinformed about transmission, and believe that AIDS can be spread in a casual way, or

that it is easy to get AIDS.

4. People associate AIDS with death and disability, and these are frightening.
5. Some people have a fear of association: "If you get AIDS, people will think you're gay." Fear causes the facts to get scrambled.
6. Some people are frightened of homosexuality (or IV drug use), and in their minds cannot separate AIDS from homosexuals (or IV drug users).
7. AIDS has some important ramifications for sexual practices. Even for people who are not in a high risk group, concerns about getting AIDS may lead them to change their styles of sexual activity.

B. FOR SOME TIME AFTER AIDS WAS FIRST DETECTED, IT SEEMED UNLIKELY THAT IT WOULD SPREAD IN ANY GREAT WAY BEYOND THE GAY MALE POPULATION. NOW WE KNOW THAT HETEROSEXUAL TRANSMISSION IS ALSO A RISK. WHY DO YOU SUPPOSE AIDS FIRST APPEARED AMONG LARGE NUMBERS OF GAY MEN?

(As a group, gay men tend to have a larger number of sexual partners than heterosexuals. Larger numbers of partners means a faster spread of an STD within any population. Some people have further suggested that AIDS has affected mostly gay men because of the more common practice as anal sex among gay men. It is true that anal sex is an excellent method of spreading AIDS; at the same time, vaginal intercourse is also a means of transmission, and it is important not to forget this fact. In many countries, AIDS appears predominantly among heterosexuals.)

C. WHAT HAS ALL THIS GOT TO DO WITH YOU AND ME? IS THERE ANY WAY YOU CAN SEE YOUR LIFE BEING INFLUENCED BY THE AIDS EPIDEMIC?

1. Learning more about the disease. Staying informed.
2. Recognizing whether you are personally at risk for getting AIDS.
3. If at risk, deciding whether you are genuinely concerned about changing risk behaviours.
4. If not at risk, ensuring you stay that way.
5. May know someone who is HIV positive or who has AIDS. May wish to verbalize how this has affected your life.

D. IN AUSTRALIA, ABOUT 50% OF HIGH SCHOOL STUDENTS REPORT BEING SEXUALLY ACTIVE. WHAT ABOUT THIS SCHOOL - DO YOU THINK THAT NUMBER IS HIGHER OR LOWER?

E. WHAT WOULD KEEP PEOPLE IN THIS SCHOOL FROM MAKING CHANGES TO PROTECT THEMSELVES FROM AIDS?

1. Not knowing about AIDS, or having information about how to prevent AIDS.
2. Not wanting to change.
3. Not believing they are really at risk of getting AIDS.
4. Not being able to react to a disease that might show up five or more years after the time of infection (the consequences of unsafe behaviours are too delayed).
5. Not caring about the future.
6. Not knowing anyone with AIDS, and not being affected in any way by the disease.
7. Having friends or a sexual partner who does not support the idea of changing behaviours.

F. WHAT SORTS OF THINGS MIGHT ENCOURAGE PEOPLE IN THIS SCHOOL TO CHANGE RISK BEHAVIOURS?

1. Knowing about AIDS and how to prevent it.
2. Believing that you are personally at risk for AIDS.
3. Believing that if you do change your behaviours, it will protect you from getting AIDS.
4. Knowing someone who has AIDS.
5. Knowing others who have made changes to their behaviours.
6. Being involved with a sexual partner who wants to practice safer sex.

G. LET'S SAY THERE IS A STUDENT HERE AT SCHOOL CALLED SAMUEL. (CHANGE NAME IF STUDENT WITH SAME NAME PRESENT IN CLASS). SAMUEL GOES TO A PARTY ONE NIGHT, AND HIS MATES URGE HIM TO SHOOT SOME IV DRUGS. HE HAS NEVER USED DRUGS BEFORE, BUT DECIDES HE WILL TRY IT JUST ONCE. HIS MATES SHOW HIM WHAT TO DO. SAMUEL DOESN'T KNOW THIS, BUT ONE OF THE PEOPLE HE IS "SHOOTING" WITH HAS BECOME INFECTED WITH THE AIDS VIRUS. SAM BECOMES INFECTED TOO. (Put up Overhead 12 Diagram 1A)

SAMUEL'S GIRLFRIEND SHARI HAS SEX WITH SAMUEL. SHE BECOMES INFECTED TOO, (Diagram 1B) THOUGH NEITHER OF THEM KNOW THIS.

SEVERAL MONTHS LATER, SAMUEL AND SHARI BREAK UP. SAMUEL BECOMES SEXUALLY INVOLVED WITH MARJORIE, AND HE CONTINUES TO USE IV DRUGS ON SEVERAL OCCASIONS. SHARI STARTS GOING STEADY WITH VICTOR AND IN TIME THEY DEVELOP A SEXUAL RELATIONSHIP TOO. MARJORIE AND VICTOR BECOME INFECTED WITH THE VIRUS, AS DO SOME PEOPLE SAMUEL HAS BEEN USING DRUGS WITH (Diagram 1C).

AS EACH OF THESE INDIVIDUALS CONTINUES, OVER TIME, TO HAVE FURTHER IV DRUG CONTACTS OR UNSAFE SEX WITH OTHERS, THE VIRUS CONTINUES TO SPREAD (Diagram 1D).

IT IS NOW THREE YEARS SINCE SAMUEL WENT TO THE PARTY WHERE HE WAS INFECTED. HE LEFT PERTH SIX MONTHS AGO, AND NOBODY

HAS SEEN HIM SINCE. YOU AND I COME INTO THE PICTURE HERE, WHERE WE MIGHT BECOME INVOLVED WITH ONE OF THESE PEOPLE WHO HAS HAD DIRECT OR INDIRECT CONTACT WITH SAMUEL, SHARI, MARJORIE OR VICTOR (DIAGRAM 1EO. PERHAPS THIS PERSON ONLY EXPERIMENTED WITH SEX OR DRUGS ONCE. BECAUSE THE AIDS INFECTION CAN INCUBATE FOR SEVERAL YEARS, NO ONE EVEN SUSPECTS HIM OR HERSELF TO BE AT RISK. EVERYONE IN THIS PICTURE LOOKS AND FEELS VERY HEALTHY.

WHAT COULD YOU DO IF YOU WANTED TO BE SURE TO PROTECT YOURSELF FROM INFECTION WITH THE AIDS VIRUS?

1. Don't use drugs. Don't share needles.
2. Don't have sex.
3. Have safer sex--use condoms, don't exchange semen, vaginal secretions, blood, urine, faeces during sex.

(From Teaching AIDS: a resource guide on Acquired Immune Deficiency Syndrome (pp. 40-42) by M. Quackenbush and P. Sargent, 1988. Santa Cruz: Network Publications. Reprinted by permission.)

H. DANIEL IS A POPULAR YEAR 10 STUDENT WHO HAS BEEN DIAGNOSED WITH AIDS. HE BECAME ILL IN AUGUST AND WAS AWAY FROM SCHOOL FOR SEVERAL WEEKS. WHEN HE CAME BACK TO SCHOOL, HE WAS VERY TIRED BUT READY TO CONTINUE HIS CLASSES. BECAUSE HE IS WELL-KNOWN AT THIS SCHOOL, MANY STUDENTS NOTICED HIS ABSENCE. HE HAS TOLD PEOPLE THAT HE HAS AIDS.

1. Do you think Daniel should be allowed to continue to come to this school? How would YOU feel if he was in some of your classes? Perhaps he's here in this class.
2. Should any special arrangements be made for Daniel? What do you think about his using the same canteen, gym, pool, and showers as other students?
3. How do you think other students in our school would react to his having AIDS?
4. Let's change the story a bit. Imagine that Daniel became sick at Christmas, so people at school were not aware of his illness. He came back to school in February, looking perfectly healthy. He did not tell anyone he has AIDS. Do you think this would be okay?
5. Would any of your feelings about this change if we were talking about a child in Year 4 instead of a Year 10 student? Or a child in Year 1?
6. Some parents have insisted that they have a right to know if their children are attending school with another child who has AIDS. Do you agree?
7. Imagine the character in the story is a teacher at this school. Should he/she be allowed to teach? How would you feel if I had AIDS?
8. What about other workers at this school (administrators, secretaries, canteen ladies). If they have AIDS, should they be allowed to continue to work here?

I. WHEN WILL THERE BE A VACCINE FOR AIDS?

(To date, a successful vaccine has never been developed for a human retrovirus, which makes finding an AIDS vaccine one of the greatest challenges for medical science so far. There is still no guarantee that a vaccine for AIDS can be produced, but recent developments are promising. In Perth's newspaper, the Sunday Times, on May 2nd 1993, it was announced that there were synthetic AIDS vaccine trials planned for Perth this year. The aim is to treat different stages of HIV infection, and determine if it boosts the immune system.
Once and if a successful vaccine is produced, it will need to be tested very carefully for several years before it is used widely. The only course for preventing AIDS at present is to practice the AIDS prevention guidelines:

1. Abstain from sex.
   If you do engage in sexual activity, do not allow semen, vaginal secretions, blood, urine or faeces of an infected person to enter your body. Use a condom.
2. You cannot tell by looking at a person whether he or she is infected. Follow safer sex guidelines.
3. Do not share IV needles or any other needles under any circumstances.)

J. CAN LESBIANS GET AIDS?

(A few cases have now been reported of sexual transmission of the AIDS virus between lesbians. We recommend lesbians consider partners' sexual histories and any past IV drug use. If there is a possibility of risk, they should practice safer sex. Like everyone else, lesbians are also susceptible to AIDS infection through IV drug use or unsafe sexual contact with infected men.)

K. CAN PEOPLE GET AIDS FROM INSECT BITES?

(Most of the scientists who have studied this subject are well convinced that this is not a mode of transmission. In a recent study, however, some mosquitoes fed AIDS-infected blood were found to be carrying virus as much as two days afterward. Naturally, this information causes concern. It is important to remember that while mosquitoes do withdraw blood from people, they do not exchange blood between people.

Malaria is a widespread disease in Africa that IS spread by mosquitoes. The insects first ingest the parasite which causes malaria by feeding on an infected person, then transmit the parasite through their saliva to another person several days later. People of all ages are infected, including children and older people who may not be sexually active. AIDS, on the other hand, is a disease spread by shared needle use and intimate sexual contact, and the people in both Africa and Australia who are infected or diagnosed with AIDS fall into very specific

categories of risk. They do not represent the more general population of individuals bitten by mosquitoes.)

L. HOW CAN PEOPLE PLAN PREGNANCIES IF THE AIDS VIRUS CAN BE TRANSMITTED BY SEMEN?

(If two people wish to consider pregnancy and they know confidently that neither has a past risk of exposure to the AIDS virus, they can simply proceed with their plans.

In assessing risk, you must consider:

* history of IV drug use
* personal sexual history
* the sexual and drug use histories of any past sexual partners
* any history of blood or blood product transfusion

It is difficult to know confidently about the past history of past partners, and you would want to consider your experience since 1978. You can always have an AIDS antibody test if you are in any doubt.
If one or both partners have been exposed to the virus, we recommend postponing the pregnancy until we have a way to prevent the transmission of the virus to partners or a foetus. Donors providing semen for insemination should be tested for AIDS antibodies.)

M. ALISON AND JIM ARE BOTH 19. THEY HAVE BEEN GOING OUT TOGETHER NOW FOR SEVERAL WEEKS. IT SEEMS LIKELY THAT THEY WILL SOON BEGIN TO HAVE A SEXUAL RELATIONSHIP. ALISON MANAGED TO PRACTICE SAFE SEX WITH HER LAST BOYFRIEND, ALLAN, BY SUGGESTING THEY USE A CONDOM AND SPERMICIDAL JELLY AS THEIR BIRTH CONTROL METHOD. ALISON IS AWARE THAT JIM SEES HIMSELF AS A VERY MASCULINE YOUNG MAN, WHO DOES NOT LIKE HOMOSEXUALS. SHE IS WORRIED ABOUT HOW HE WILL REACT IF SHE BRINGS UP HER WISH TO PRACTICE SAFER SEX BECAUSE OF HER CONCERNS ABOUT AIDS.

1. What sorts of things stop females from bringing up the subject of safer sex with their partners?
2. Do you think males have the same problems?
3. What do you think Alison should do in this situation?
4. How might Alison bring up the topic of safer sex?
5. How might Jim react if she says she wants to practice safer sex? (Says she doesn't trust him; it's an insult to suggest he wear a condom; thinks she's slack).
6. Imagine Alison and Jim talk about safer sex, and Jim says he is absolutely not interested in using a condom. What do you think Alison should do?
7. Imagine Alison has had a past relationship with a bisexual man. She suspects she may have been exposed to the AIDS virus, and part of her concern in her relationship with Jim

is to protect him. Do you think she could tell Jim about this? What might happen if she did?

8. What might make this entire situation easier for both Alison and Jim?

Young people are more at risk for becoming infected with HIV than was previously thought. Because the virus is transmitted almost exclusively by behaviours that you and I can do something positive about, education programmes such as the last two we have shared together can be very effective in preventing the spread of HIV.

(Put up Overhead 13)

IT IS NOT ENOUGH FOR US TO KNOW THE FACTS ABOUT AIDS.

IT'S OUR BEHAVIOUR THAT COUNTS.

REMEMBER:

1. Be assertive: say "NO" to sexual intercourse. Abstinence is 100% effective in preventing the spread of AIDS.

2. If you do decide to have sex, PROTECT YOURSELF. Use a condom. Practice safer sex--don't exchange body fluids.

3. Don't share needles for IV drugs or tattoos EVER.

4. Don't compromise your behaviour by using drugs or alcohol.

ADMINISTRATION OF THE FIRST POST-TEST QUESTIONNAIRE (10 MINS)

Now that we've finished our lessons, I'd like to ask you to fill in this questionnaire again. Remember, it's not a test or an exam, and you don't have to put your name on the paper. It should only take 10 minutes to fill in, and when you've finished, please come up to the front of the classroom and put it in this box. Thank you very much for your contributions to the sessions, and for filling in the questionnaire.

"UNDERSTANDING HIV/AIDS"

OVERHEAD TRANSPARENCIES

OVERHEAD 1A

OVERVIEW OF LESSON 1

1. What is Acquired Immune Deficiency Syndrome?

2. How is AIDS spread?

3. Who is at risk of getting AIDS?

4. What high-risk behaviours are associated with contracting AIDS?

5. How do you know if you have AIDS?

6. What is the treatment for AIDS?

7. How can you eliminate or minimixe the risk of contracting AIDS?

HIV

H	Human
I	Immunodeficiency
V	Virus

AIDS

A	Acquired
I	Immuno
D	Deficiency
S	Syndrome

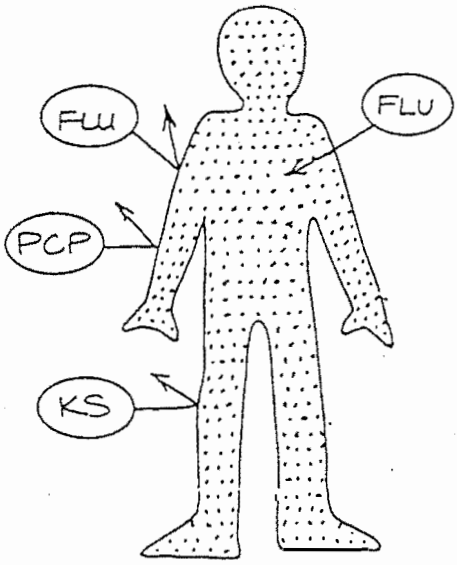
WHAT IS THE

DIFFERENCE BETWEEN

HIV AND AIDS?

OVERHEAD 2A

THE HEALTHY IMMUNE SYSTEM



The body's immune system can always fight off certain diseases, including PCP and KS. It can usually, but not always, fight common colds or flu.

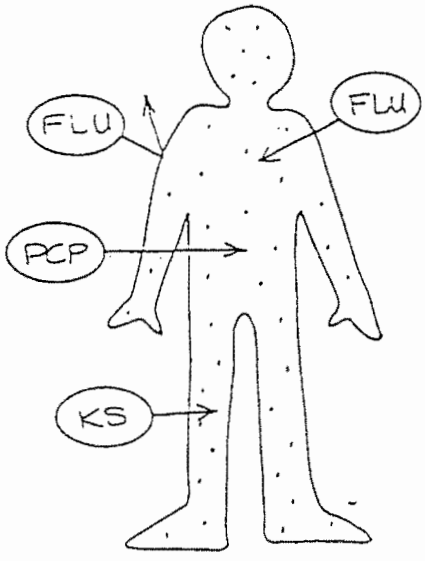
:::: - Helper T-cells: special cells in the immune system which alert the body to invasion by diseases.

FLU - Common viral colds or flus.

PCP - Pneumocystis carinii pneumonia: a disease seen in some people with AIDS.

KS - Kaposi's sarcoma: also seen in some people with AIDS.

THE IMMUNE SYSTEM INFECTED WITH AIDS



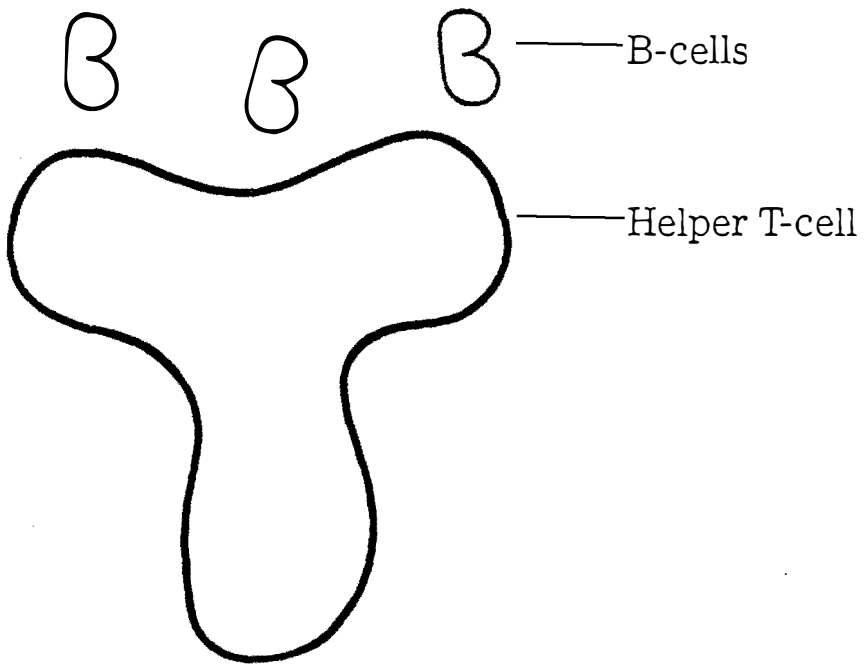
The AIDS virus has destroyed most of the helper T-cells.

The body cannot fight off diseases like PCP and KS. It can sometimes, but not always, fight common colds and flu.

(From Teaching AIDS: a resource guide on Acquired Immune Deficiency Syndrome (p. 100) by M. Quackenbush and P. Sargent, 1988. Santa Cruz: Network Publications. Reprinted by permission.)

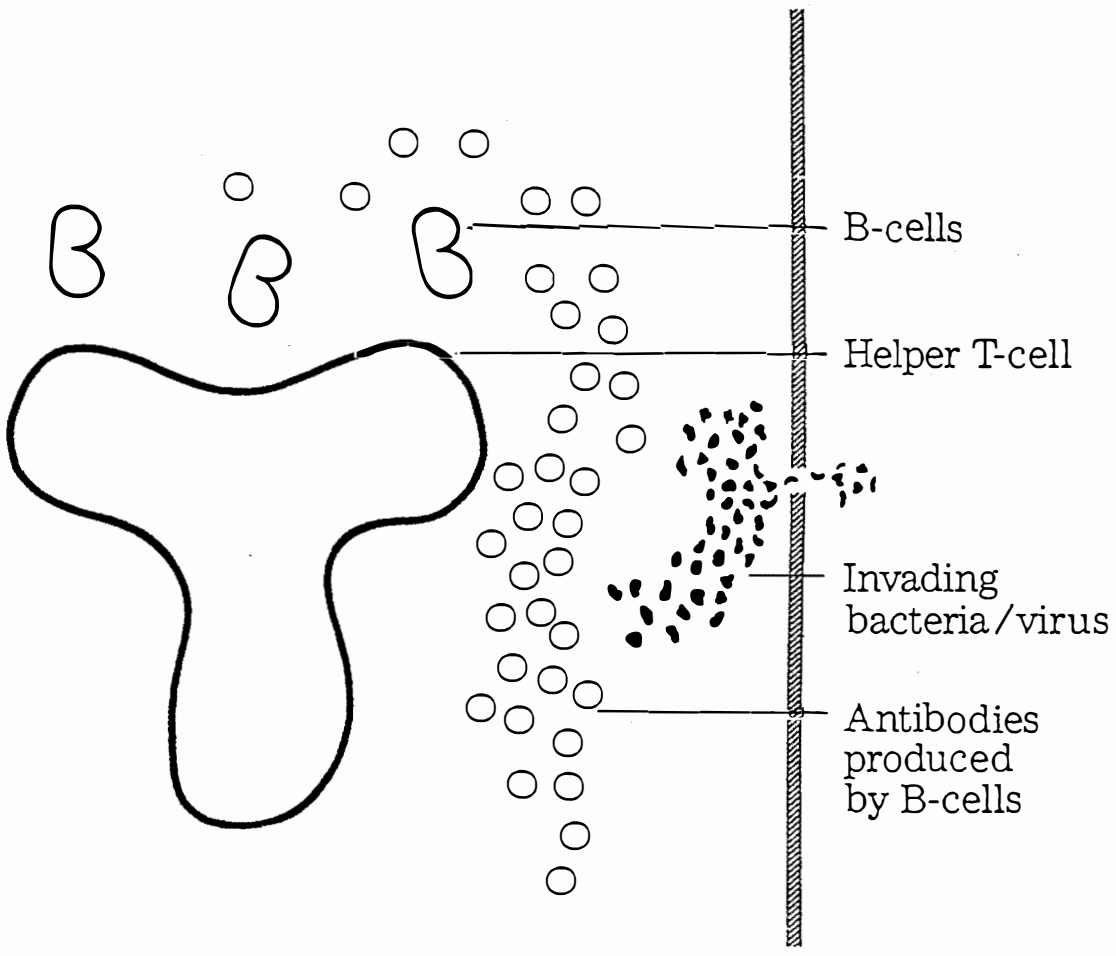
Normal Functioning of the Immune System

B-cells and helper T-cells work together to fight viruses and bacteria that cause disease.



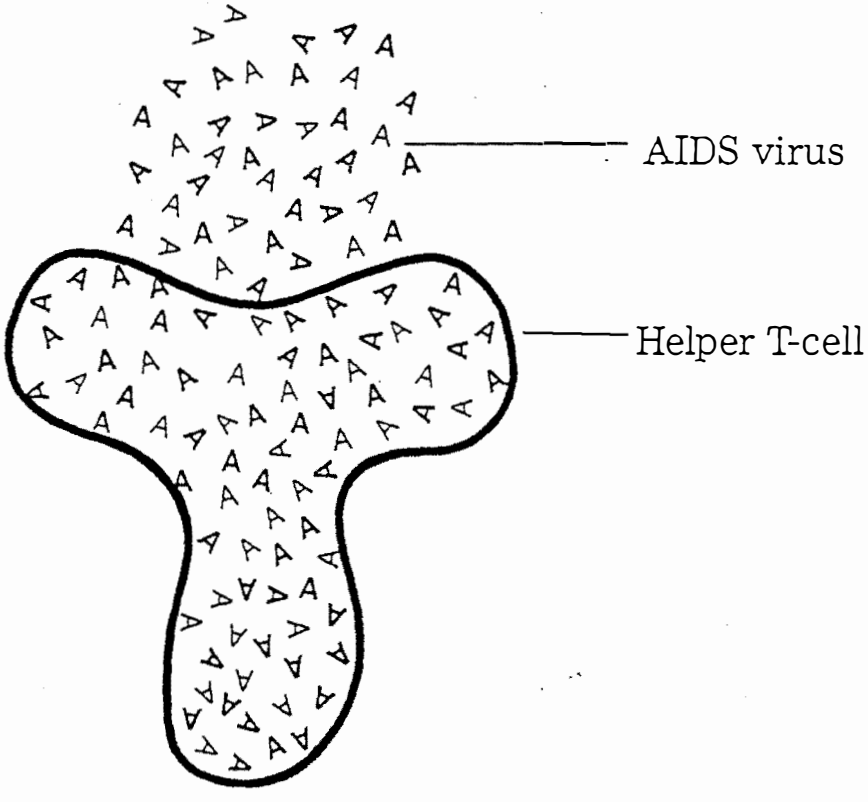
Normal Functioning of the Immune System

When helper T-cells discover something harmful in the body, they activate B-cells to produce antibodies, which stop the spread of infection.



Effect of HIV on the Immune System

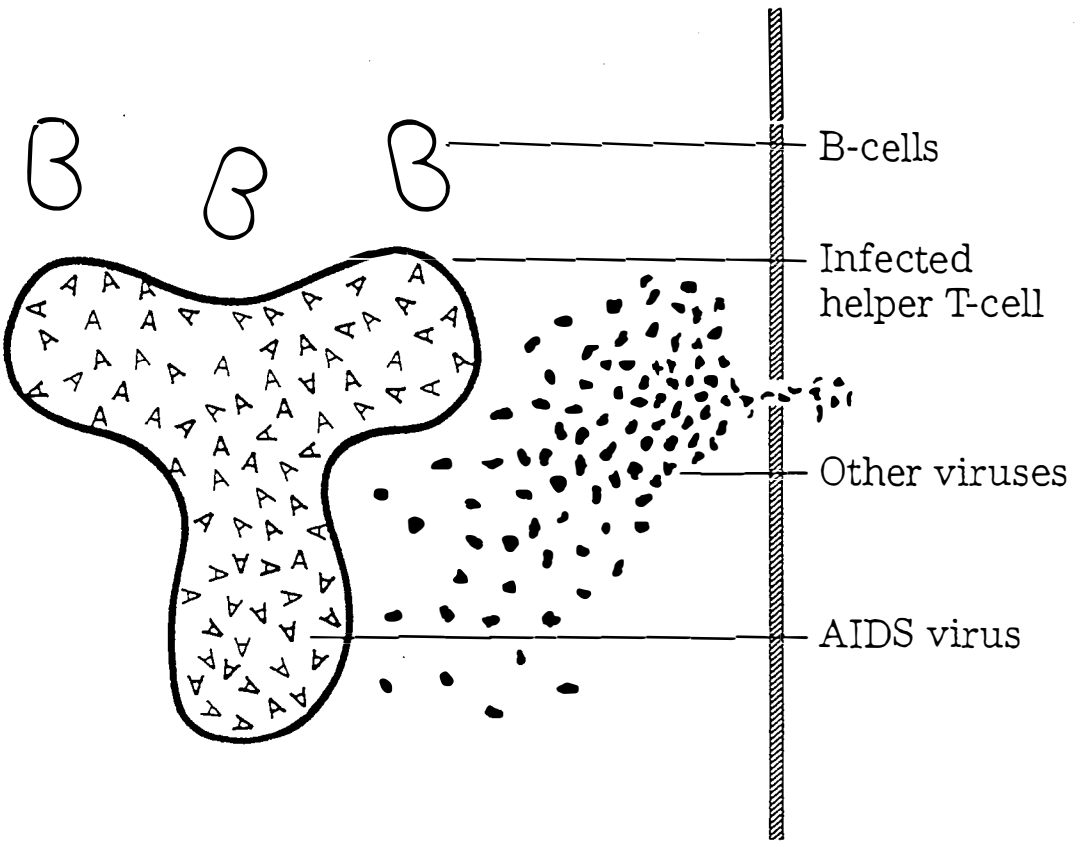
HIV seeks out and invades the helper T-cells.
The helper T-cells then produce more HIV.



Effect of HIV on the Immune System

When another virus or organism infects the body, the helper T-cells can no longer activate the B-cells to produce antibodies.

The infection spreads unchecked through the body.



INCIDENCE OF AIDS/HIV IN AUSTRALIA

A. AIDS

DECEMBER 1989	1,596
FEBRUARY 1990	1,760
MAY 1991	2,602
FEBRUARY 1992	3,192

2,044DEAD

B. HIV (REPORTED CASES)

DECEMBER 1990	14,100
JUNE 1991	15,200
FEBRUARY 1992	16,075

I.E., 1,000NEW HIV CASES EVERY 6 MONTHS

SYDNEY – NEW CASE OF AIDS EVERY DAY, DEATH EVERY 2ND DAY

HOW THE VIRUS GETS INTO YOUR BODY

1. IN BODY FLUIDS BETWEEN SEXUAL PARTNERS

   Semen, vaginal secretions, blood

2. VIA THE BLOODSTREAM

   Intravenous drug use, sharing needles, tattoos, ear piercing

3. MOTHER TO BABY

   In utero, via breast milk

You CANNOT get AIDS from

casual contact	touching	hugging	sharing food/drinks
riding buses	saunas	sinks	toilet seats
drinking fountains	telephones	coughing	swimming pools

DONATING BLOOD

Transmission of HIV Infection

Anyone who is infected – even if he/she has no symptoms – is infectious and can pass the virus on to others.

AIDS is *not* transmitted by:

- insects or animals

or through:

- ordinary exposure to germs (e.g., coughing or sneezing)
- casual body contact (e.g., handshakes)
- food
- dishes or glasses
- pools, saunas, or bathtubs
- toilet seats, doorknobs, playground equipment
- telephones or drinking fountains
- handkerchiefs

AIDS is *not* spread by casual contact.

HIV (the AIDS virus) is easily destroyed outside the body by using a solution of one part household bleach to nine parts water.

WHO, THEN, CAN GET AIDS?

We are ALL at risk, especially those of us who engage in high-risk behaviours.

WHAT ARE THESE HIGH-RISK BEHAVIOURS?

1. Unprotected sexual intercourse with any listed in the high-risk groups
2. Sharing needles

WHO, THEN IS AT RISK?

1. Homosexuals, bisexuals, heterosexuals
2. Partners of homosexuals, bisexuals and heterosexuals
3. Intravenous drug users, needle sharers
4. Infants of parents with AIDS
5. Those whose ability to make a rational decision is impaired by alcohol or drugs

Risk Continuum for HIV

HIGHEST RISK

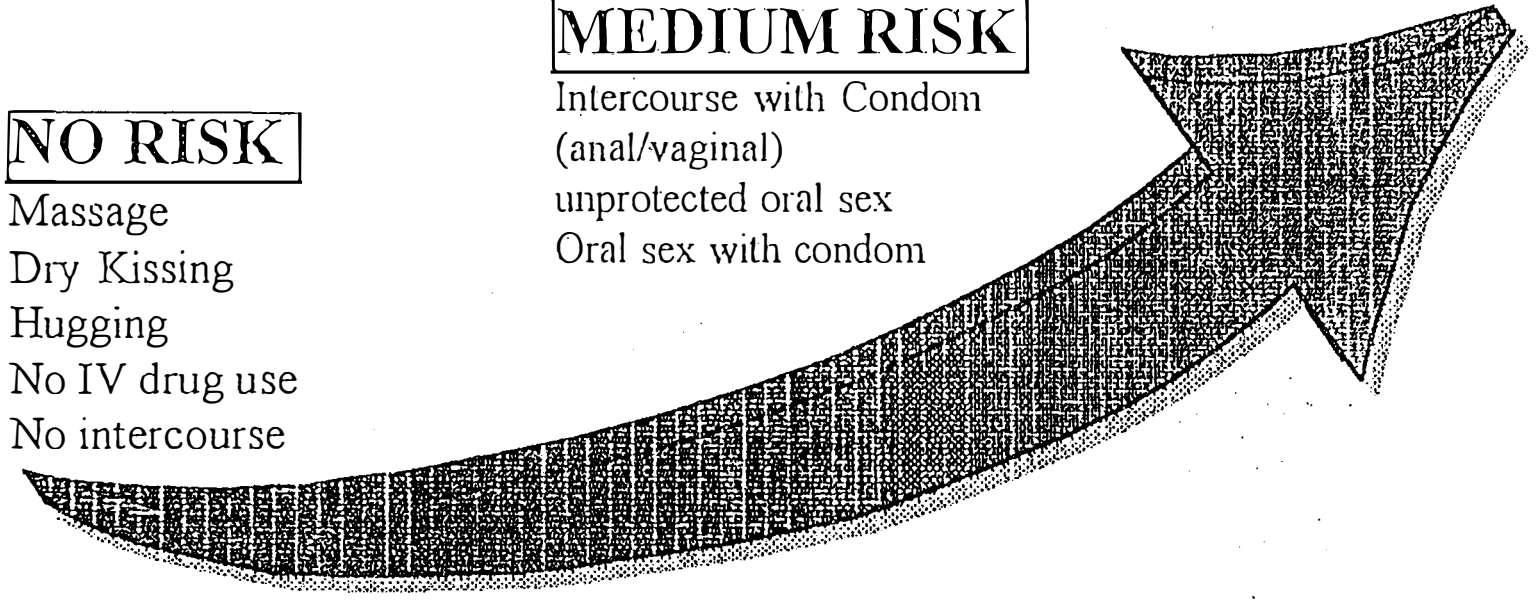
Unprotected intercourse
(anal/vaginal)
Sharing needles

MEDIUM RISK

Intercourse with Condom
(anal/vaginal)
unprotected oral sex
Oral sex with condom

NO RISK

Massage
Dry Kissing
Hugging
No IV drug use
No intercourse



LOW RISK

Deep kissing
Mutual Masturbation

Where are you?

OVERHEAD 7

OVERHEAD 8A

HOW DO YOU KNOW IF SOMEONE HAS AIDS?

STAGES OF AIDS VIRUS INFECTION

Group 1 -- Acute viral illness

Two weeks after being infected with HIV

Group 2 -- No symptoms *(HIV positive)*

Look and feel perfectly healthy
Can pass virus on to others

Group 3 -- Some symptoms

Including enlarged lymph nodes

Group 4 -- AIDS

Fever, night sweats, weight loss, persistent cough, loss of appetite, fatigue, loss of memory, pneumonia, some forms of cancer.

Symptoms of HIV Infection

Some people have:

- headache
- fever
- body pain
- chills
- rash
- swollen glands

Others have no symptoms.

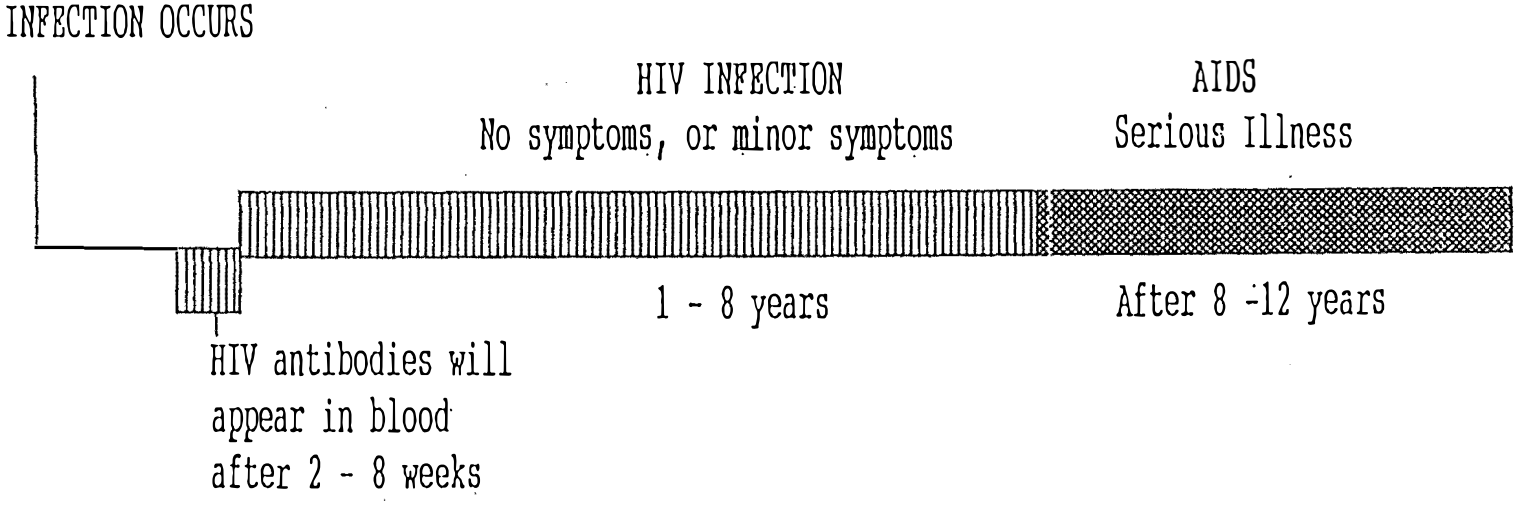
Symptoms of AIDS

- Unexplained bleeding
- Weight loss
- Persistent fever and diarrhea
- Shortness of breath
- Dry cough
- Sore throat
- Repeated infections
- White spots on mouth
- Purplish bumps on any part of body
- Neurological disorders

Symptoms of AIDS-Related Complex (ARC)

- Swollen glands
- Prolonged fever
- Persistent night sweats
- Severe fatigue
- Weight loss
- Diarrhea
- Neurological disorders
- White coating on tongue
- Sore throat

The Spectrum of HIV



There is NO CURE

for AIDS.

People with AIDS

will DIE.

The best treatment for AIDS

is

PREVENTION.

1. AIDS/HIV infection is caused by a virus not a lifestyle, It is not a "gay" disease.

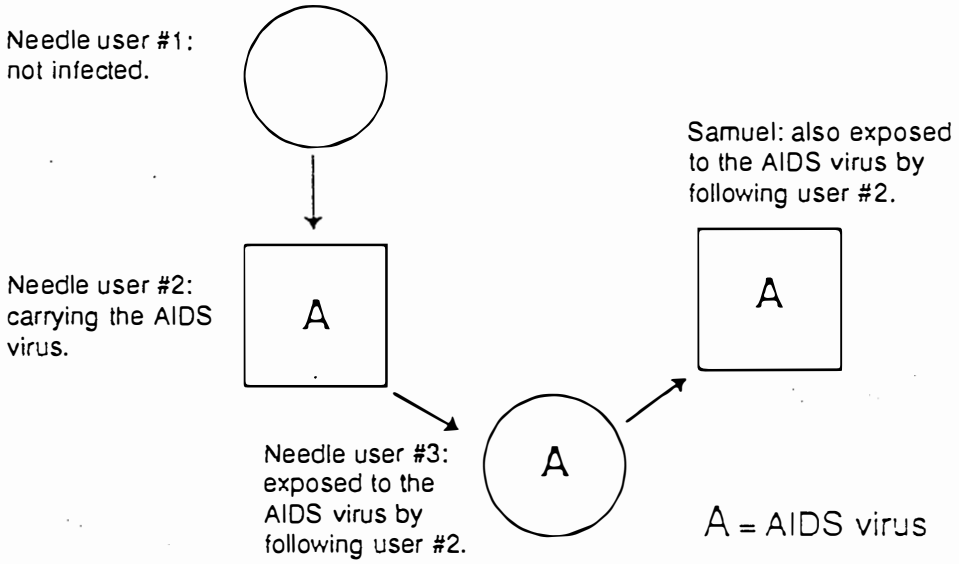
2. You cannot get AIDS from casual contact.

3. There are several ways you can protect yourself so that you don't run the risk of getting AIDS.

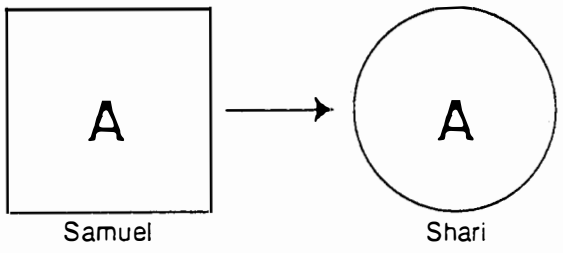
4. AIDS is a chronic illness for which there is NO CURE.

OVERHEAD 12A

1-A: SAMUEL GOES TO A PARTY AND IS INFECTED WITH THE AIDS VIRUS BY SHARING A NEEDLE FOR IV DRUG USE.

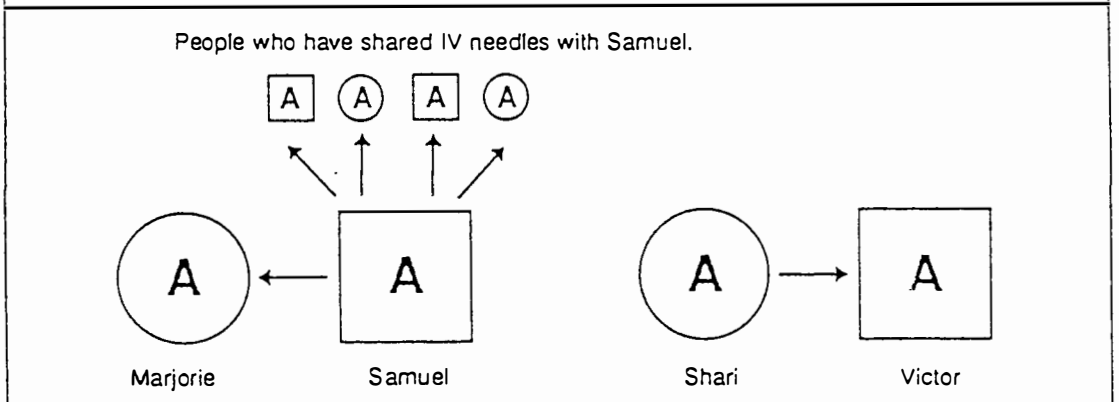


1-B: SAMUEL TRANSMITS THE VIRUS TO HIS GIRLFRIEND SHARI THROUGH UNSAFE SEXUAL CONTACTS.

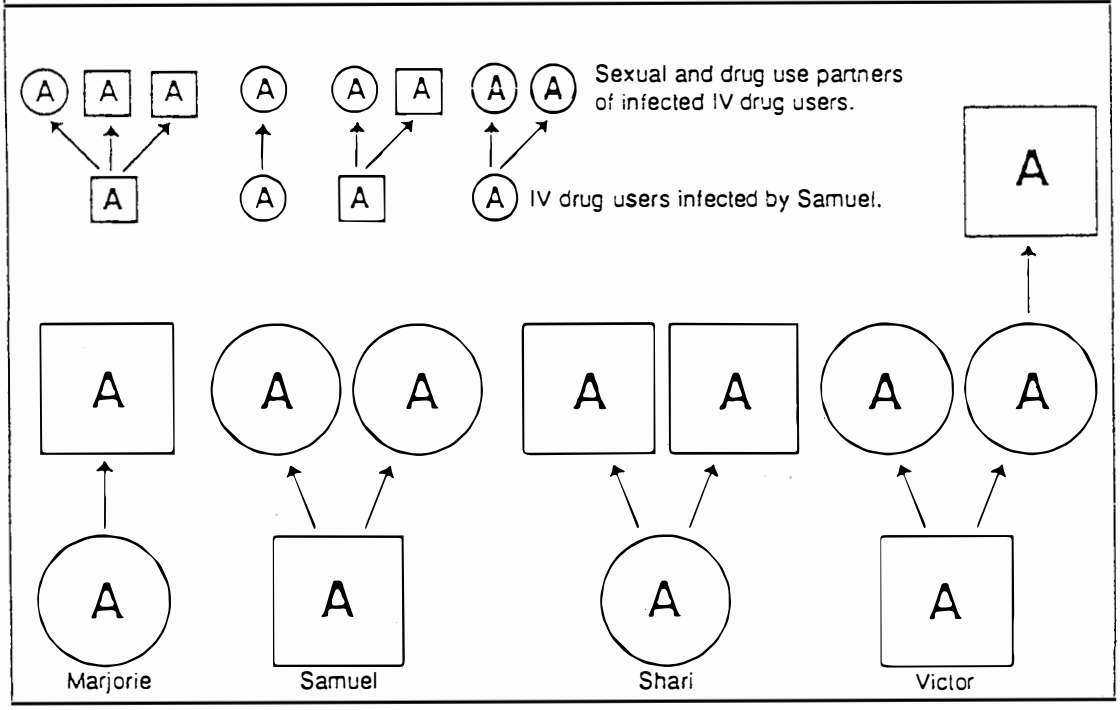


OVERHEAD 12B

1-C: SAMUEL AND SHARI BREAK UP. SAMUEL BECOMES SEXUALLY INVOLVED WITH MARJORIE. SHARI BECOMES SEXUALLY INVOLVED WITH VICTOR. SAMUEL SHARES NEEDLES WITH OTHERS.

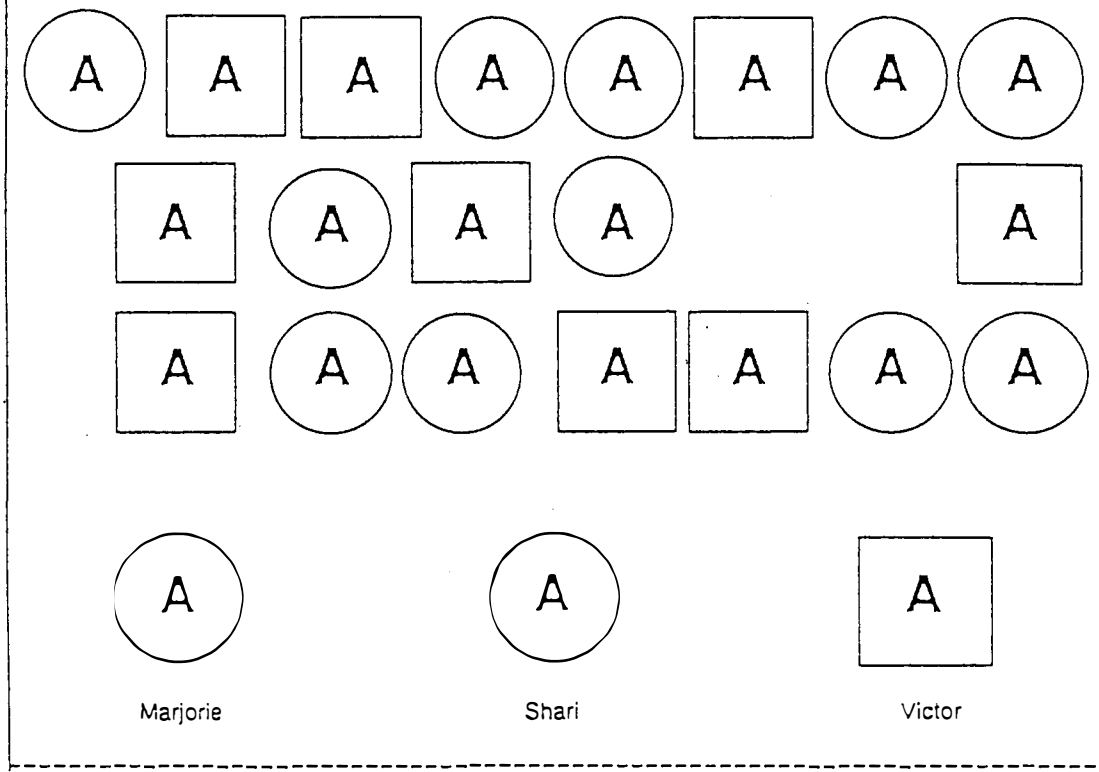


1-D: OVER TIME, EACH OF THESE INDIVIDUALS CONTINUES TO HAVE SEXUAL OR IV NEEDLE CONTACT WITH OTHERS. THE VIRUS CONTINUES TO SPREAD.



OVERHEAD 12C

1-E: WHAT CAN YOU DO TO PROTECT YOURSELF IF *YOU* COME INTO THE PICTURE?



(From Teaching AIDS: a resource guide on Acquired Immune Deficiency Syndrome (pp. 40-42) by M. Quackenbush and P. Sargent, 1988. Santa Cruz: Network Publications. Reprinted by permission.)

IT IS NOT ENOUGH FOR

US TO KNOW THE FACTS

ABOUT AIDS.

IT'S OUR

BEHAVIOUR

THAT COUNTS.

HIV/AIDS RESOURCE LIST

ABORIGINAL MEDICAL SERVICE
154 Edward Street,
Perth WA 6000
Ph: 09 227 3888
Fax: 09 227 7296

Free medical clinic, doctors consultations, nurses, welfare officers, Aboriginal dialect interpreter service.

AIDS/STDs INFORMATION LINE
Suite 5, 85 Stirling Street,
Perth, WA 6000
Info line: 09 11642
Admin: 09 222 5051
Fax: 09 227 5060

Information on AIDS - related matters.

AIDS COUNCIL
107 Brisbane Street,
Perth WA 6000
Ph: 09 227 8355
Helpline: 09 429 9944
Toll free: 1 800 199 287
Youthline: 09 429 9933

Information, resource, and support centre for all matters concerning HIV and AIDS. Information about HIV testing.

AIDS YOUTHLINE
Ph: 09 227 9622
Helpline: 09 227 8619
Tollfree: 1 800 199 287

Telephone information and counselling.

ALCOHOL & DRUG INFORMATION SERVICE
Ph: 09 481 1088
Ph: 09 426 7280
Tollfree: 1 800 198 024

Information relating to all matters concerning drug use and HIV/AIDS.

FAMILY DOCTOR

HIV testing and counselling.

FAMILY PLANNING ASSOCIATION
70 Roe Street,
Northbridge, WA 6003
Ph: 09 227 6177
Info line: 09 227 6178
Fax: 09 227 6871
Tollfree: 1 800 198 205

Sexual health care, contraception, sex education, counselling.
HIV counselling and testing.

GAY & LESBIAN COUNSELLING SERVICE
79 Stirling Street,
Perth WA 6000
Ph: 09 328 9044
Fax: 09 328 1345

Counselling, information, and referral service for people with issues relating to homo-sexuality, HIV and AIDS education and counselling.

MEN'S HEALTH CENTRE
Ph: 09 429 9902

HIV testing and counselling.

MULTICULTURAL ACCESS UNIT
189 Royal Street,
East Perth WA 6004
Ph: 09 222 2020

Health information in community languages other than English.

PASTORAL CARE
Fremantle Hospital
Ph: 09 431 3333
Catholic Church
Ph: 09 470 4931

Pastoral counselling for people affected by HIV and AIDS, and their families and caregivers.

PEOPLE LIVING WITH AIDS
257 Walcott Street,
North Perth WA 6005
Ph: 09 242 5511

Formed by and for people who are HIV-positive, their families, friends, and lovers.

POSITIVE WOMEN
PO Box 211,
Maylands WA 6057
Ph: 09 429 9900
Fax: 09 429 9901

Peer support group for women with HIV and AIDS.

RED CROSS BLOOD TRANSFUSION SERVICE
290 Wellington Street,
Perth WA 6000
Ph: 09 325 3333

Offers counselling to people who have received blood products between 1979 and 1985.

SEXUALLY TRANSMITTED DISEASES CONTROL SERVICES
HDWA
PO Box 8172 Stirling Street,
Perth WA 6849
Ph: 09 222 2045

Information on HIV, AIDS, Hepatitis, STDs.

SPECIAL CLINICS
RPH Communicable Diseases Service
Ph: 09 224 2178
Fremantle Hospital Sexual Health Service
Ph: 09 431 2149
Perth Aboriginal Medical Service
Ph: 09 328 388

HIV testing and counselling.

Where do I get further information?

HEALTH DEPARTMENT OF
WESTERN AUSTRALIA

AIDS Bureau
5/85 Stirling Street
PERTH WA 6000
Telephone: (09) 227 5051

AIDS Information Line (recorded
message) (09) 11642

WA AIDS COUNCIL
GPO Box T1872
PERTH WA 6001
Telephone: (09) 227 8355

Help Line (counselling and advice)
Telephone: (09) 227 8619 or
(008) 199 287

AIDS Youth Line: (09) 328 2644

Where can I have
an AIDS assessment?

A GENERAL PRACTITIONER
OF YOUR CHOICE

MURRAY STREET CLINICS
70-74 Murray Street
PERTH WA 6000
Telephone: (09) 220 1122
(No appointment needed but
an appointment is preferred.)

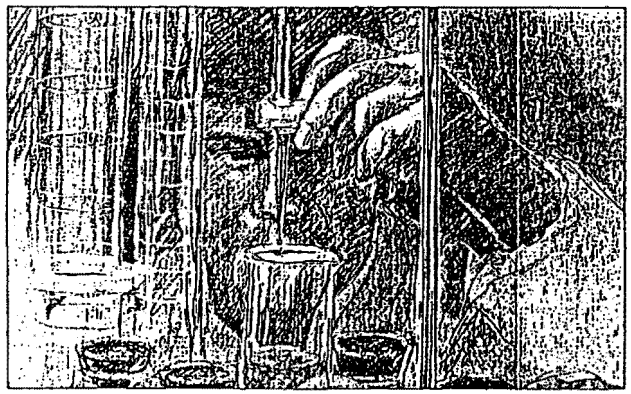
FREMANTLE HOSPITAL STD CLINIC
Telephone: (09) 431 2149
(Appointment needed)

Produced by Health Promotion Services Branch
Health Department of Western Australia
Block C, 189 Royal Street, EAST PERTH WA 6004

AIDS
The Facts

AIDS - The Facts

- AIDS (Acquired Immune Deficiency Syndrome) is a disease which can destroy the body's immune system.
- It is caused by the Human Immunodeficiency Virus (HIV).
- Without a strong immune system, the body cannot adequately defend itself against infections and cancers.
- All people are at risk of becoming infected if infected blood, vaginal secretions, semen, or breast milk enters their body.
- Although HIV has been found in all body fluids there is no evidence that saliva, tears or sweat are infectious.
- A person with the virus is infected and infectious for life.
- There is no vaccine or cure.



Progression of the disease

- People carrying HIV may appear healthy and show no symptoms for up to 10 years. There is a blood test that will show whether they have come in contact with the virus.
- As the virus continues to attack the immune system a person may develop signs and symptoms of the disease:
  - persistent fatigue
  - swollen lymph glands
  - rapid weight loss
  - night sweats
  - memory loss
  - persistent diarrhoea.

  These symptoms persist over a length of time.
- When the immune system is severely damaged, certain cancers, infections and brain disorders can occur.

Unsafe behaviours

- The greatest risk for both males and females is from unprotected anal intercourse.
- Anal sex even with a condom and a lubricant is still a risk.
- Unprotected vaginal intercourse is also a high risk for males and females.
- Sharing needles or syringes can introduce HIV directly into the blood stream. Sexual partners of people who are sharing needles are also at risk.
- Unprotected oral sex is a possible risk. The risk is increased if there are cuts or sores in or around the mouth or genital area.
- An infected woman can pass HIV to her baby during pregnancy, childbirth or later through breastfeeding.

Play safe stay safe

- Social contact such as hand shaking, hugging, kissing, playing sport or sharing work equipment with an infected person is safe.

- People who do not have sex at all are safe unless they share needles or syringes.
- A one-to-one sexual relationship with an uninfected person is safe, *provided* neither of you has sex outside the relationship, or shares intravenous drug equipment with anyone.
- Vaginal sex with a condom, is safer than unprotected sex. Condoms used properly will help protect you against AIDS.
- There is now no risk from donating or receiving blood in Australia. The Australian Blood Transfusion Service is one of the safest in the world.

If you use needles and syringes ...

- The safest choice is to always use new, sterile needles and syringes. You can get new needles and syringes from pharmacists, the PSST van and needle exchanges. Ring (09) 227 8619 for details.
- Keep your own equipment and don't ever share it.
- Needles and syringes can be cleaned. The PSST van will have information on cleaning methods.
- Use condoms to protect your sex partner.

APPENDIX F

Letter of Approval from Edith Cowan University
Committee for Conduct of Ethical Research

EDITH COWAN
UNIVERSITY
PERTH WESTERN AUSTRALIA
CLAREMONT CAMPUS

Office of Research and Development

Goldsworthy Road, Claremont
Western Australia 6010
Telephone (09) 383 0333
Facsimile (09) 383 1786

15 December 1993

Ms Paula Hahnel
(Address supplied)

Dear Paula

Further to my telephoned advice I am pleased to confirm that your research project "Evaluation of an HIV/AIDS Program for Year 10 students" has been cleared by the Committee for the Conduct of Ethical Research for implementation.

With best wishes for success in achieving worthwhile outcomes.

Yours sincerely

Rod Crothers
Executive Officer
Committee for the Conduct of Ethical Research
Ref: 93-100/11

cc: Dr Patricia Percival (Supervisor)
Gerrie Sherratt (Faculty Administrative Officer)

APPENDIX G AND H

Letter of Approval from Principal - Control School

Letter of Approval from Principal - Experimental School

(Name supplied) SENIOR HIGH SCHOOL

Principal: R.S. MURPHY Telephone:

FAX TRANSMISSION

FAX No.

TO: Ms P. HANNEL FROM: R. MURPHY

SCHOOL NURSE (Name supplied) SHS PRINCIPAL

Fax No. _____

Date: 15-9-93 NUMBER OF PAGES (including cover) 1

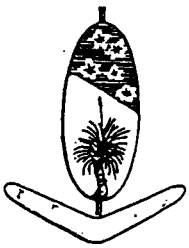
MESSAGE:

Dear Paula

You have my approval to use a group of students from Senior High School as a control group in your research.

Please liaise with or when required.

R.S. MURPHY
PRINCIPAL.



Strive to Succeed

(Name supplied) *Senior High Specialist Computing School*

PRINCIPAL B.J. DENNIS B.A. M.A.C.E.

Mrs. P. Hahnel
(Address supplied)

Dear Mrs. Hahnel,

Thank you for your letter requesting permission to conduct a research study on the evaluation of the Year 10 HIV/AIDS education programme.

I am happy to give permission for the study, and would appreciate a report of your findings on completion.

Yours sincerely,

B. J. Dennis
PRINCIPAL

15th September, 1993

APPENDIX I

Letter of Permission to use Health Publication HP2621

Western Australia

Health Department of Western Australia

Health Promotion Services

Paula Hahnel

Dear Paula,

Thank you for your enquiry relating to the use of the Health Department of Western Australia publication "AIDS The Facts".

The following copyright requirements will need to be observed.

The Department owns the copyright on all the material it produces and this copyright is protected by Crown Law. Its release may be authorised on a once only basis. Any other use or reproduction requires the Department's express authorisation , and the **resulting publications cannot be sold**. All amendments need to be submitted to the Department for approval and credits must remain unchanged.

However, should you decide to include the text of the publication in your thesis, Health Promotion Services, Health Department of Western Australia should be acknowledged as the source of the information.

Should you have any further queries please do not hesitate to contact me.

Thank you once again for your interest.

Yours sincerely.

MANAGER
PUBLICATION AND INFORMATION
HEATH PROMOTION SERVICES

24 November 1995

Ground Floor C Block 189 Royal Street East Perth Western Australia 6004
Correspondence PO Box 8172 Perth Stirling Street Western Australia 6849
Telephone (09) 222 2000 Facsimile (09) 222 2088

How HIV Is Transmitted

The virus is carried in blood, semen, and vaginal fluids. For a person to become infected, the virus must pass directly into his/her bloodstream.

The virus reaches the bloodstream most often through sexual intercourse.

The virus can also be transmitted through contaminated needles or syringes.

The virus can pass from an infected mother to the fetus during pregnancy.