UNIVERSITY OF SOUTHAMPTON

# EVALUATION OF A HEALTH <br> PROMOTION INTERVENTION ON HIV 

## AND AIDS FOR ADOLESCENTS

AGED 14 TO 16 YEARS

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## DEDICATED TO

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#### Abstract

\section*{ABSTRACT}

AIDS has been described as the worst threat to public health and a critical global health problem with serious personal, social, economic and political consequences. In contrast to most health problems which affect either the very young or the very old, HIV can infect anyone young or old as behaviour exposes them to the virus.

Nearly one half of those infected with HIV are under the age of 25years, and about $20 \%$ of all people who have AIDS are in their twenties (WHO AIDS Series 3 1988), thus a large proportion of individuals who have AIDS become infected with HIV during adolescence. Adolescence can be a period of profound physical and psychological change and behavioural experimentation. It was in recognition of this that a health promotion intervention programme on HIV and AIDS called the "Inner Circle" was designed for the prevention and control of spread of HIV and AIDS in the adolescent age group.

The "Inner Cicle" is a play and a workshop with pre-play classroom sessions conducted by the teachers using the 'Action Pack' which consists of extensive background and information notes for the teachers/youth leaders, as well as classroom project work to further invstigate the themes and issues to be raised in the play and the workshop.

The play is structured around the death of a youth who contracted HIV not through sex but through drugs. This raises fears, doubts, and responsibilities among his friends. It portrays the relevance HIV and AIDS can have on the lives of young people, and covers issues such as safer sex. The play moves through the different stages of HIV infection to AIDS-Related Complex (ARC), to AIDS itself and the victim's eventual death by contracting pneumonia. It illustrates the emotional


response of someone discovering that he/she might have been exposed to HIV infection; how someone is able to overcome his/her irrational fear of HIV and AIDS and how fear can be generated by misinformation. Through the play, the audience learns about the possible routes of transmission of HIV and the difference between exposure to HIV and actual AIDS.

After the performance, there is a workshop which brings the relevance home to the audience of 14 to 16 year olds. The workshop is designed to encourage the audience to clarify their thoughts, feelings, and misgivings about HIV and AIDS and other related issues. During the workshop, the victim's three friends return in character to answer questions from the audience.

By bringing the play into the schools, and talking to the school children about HIV and AIDS after the play, the Inner Circle drama group believe that young people can become better informed about HIV and AIDS through increased awareness of the dangers of HIV and AIDS, improved HIV/AIDS-related knowledge, and modified attitudes and beliefs about HIV and AIDS and to people who live with HIV and AIDS.

To evaluate "Inner Circle", a study was undertaken in some secondary schools in Southampton Area of Hampshire County. The purpose of the study was to assess the relative effectiveness of the programme on the HIV/AIDS-related knowledge, attitudes and beliefs, and attitudes to people with HIV/AIDS, of 14 to 16 year old adolescents.

Pretest-Posttests and Posttests only with non-equivalent comparison (control) groups designs were used. The designs involved three groups of students: one group $(A)$ had a pretest and posttest, and a retest at 3 months; another group (B) had a posttest and a retest at 3 months; and the third group (C) was tested on their HIV/AIDS-related knowledge, attitudes and beliefs only 3
months after the students in groups $A$ and $B$ had received the intervention. The sample A consisted of 88 experimental and 57 control students; sample $B$ had 91 experimental and 24 control students; and sample $C$ had 159 students.

Knowledge, attitudes and beliefs of students were measured using a World Health Organisation (WHO) designed Schools KABP Questionnaire on HIV and AIDS. Chi-square tests and t-tests were used to examine respectively, the differences in the percentage of students with correct responses and the differences in the mean scores of students, in pretest-posttest and retest knowledge, attitudes and beliefs, for the experimental and control groups, and for both sexes and school years.

The study has revealed that:

- The pre-intervention level of awareness of HIV and AIDS among the students and the HIV/AIDS-related knowledge levels of the students on knowledge items such as the correct routes of HIV transmission, the asymptomatic status of HIV carriers, diagnosis/prevention of HIV and susceptibility to HIV/AIDS; were high with no statistically significant sex differences.
- In general, the experimental groups that is those groups who received the intervention, made significant gains in HIV/AIDS-related knowledge, and demonstrated more positive HIV/AIDS-related attitudes and beliefs over the control groups that is, those groups who did not receive the intervention.
- Posttest improvements were greater in males than in females for some items measuring knowledge levels on HIV transmission, and the possibility of a cure for those people who have become HIV-infected and have AIDS.
- The female students' posttest attitudes to HIV and AIDS and to people who have HIV and AIDS were more positive than those of the males.
- Knowledge gains were greater in School Year 10 males, while attitude gains were greater in School Year 11 females.
- HIV/AIDS-related knowledge gains, positive modification of HIV/AIDS-related attitudes/beliefs and attitudes to people with HIV and AIDS, were found to have beeen retained over the three months study period.

A multiple linear regression analysis of the data set, revealed that the best predictors of knowledge, attitudes and beliefs were sex and school year.

Based on the findings of the present study, it has been concluded that a health promotion intervention programme which consists of a play and workshop can increase HIV/AIDS-related knowledge, and positively modify HIV/AIDS-related attitudes and beliefs of adolescents, that these gains can be long lasting and that the findings of this study are compatible with the objectives for which the health promotion intervention was designed.

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## CHAPTER 1

## INTRODUCTION

AIDS stands for 'Acquired Immunodeficiency Syndrome'. 'Acquired' means 'Caught from someone'. 'Immunodeficiency' means 'The body's defences against certain infections and tumours are not functioning properly'. 'Syndrome' means 'A collection of features seen in a disease'.

AIDS has been described as the worst threat to public health since the influenza outbreak of 1919, which killed more people than in the first world war (Donnelly, 1987). It is a critical global health problem with serious personal, social, economic and political consequences.

AIDS has produced not one but related worldwide epidemics, namely: HIV infection, ie. Human Immunodeficiency Virus Infection; AIDS itself; and the social, cultural, economic and political reactions to the first two epidemics (WHO AIDS Series 3, 1988). The 'AIDS Epidemics' are often compared with other previous large scale epidemics. These previous epidemics in history have been much shorter; that is, the diseases running their courses and then burning out within a few years. The bubonic plague (black death) ran its course in 3 years (1349-1352) but killed one third of the inhabitants of Europe, and then re-emerged in 1665 in the great plague of London (WHO AIDS Series 3, 1988).

In the past cholera and smallpox have ravaged through Europe (WHO AIDS Series 3, 1988). All these great epidemics were easily contageous (ie. air or faecooral spread) in contrast to AIDS whose causative agent has to enter the blood stream directly and cannot be caught by everyday social contact. AIDS is therefore infinitely less infectious than previous epidemics.

The first epidemic, which began in the 1970's and continues till today, is the silent pandemic of HIV infection. In 1988, between 5 and 10 million people were estimated to be infected with the virus throughout the world, and further spread of the virus is inevitable (WHO Aids Series 3, 1988).

The clinical signs and symptoms of HIV infection are exceedingly complex. They include those of the opportunistic infections as well as those caused by the HIV itself. HIV infection may be divided into four stages, which do not necessarily occur in all infected individuals. These stages consist of: an acute phase; an asymptomatic phase which may include Persistent Generalised Lymphadenopathy (PGL); the AIDS Related Complex; and AIDS.

The second epidemic is that of the Acquired Immune Deficiency Syndrome 'AIDS'. It was first recognised in the United States of America in 1981 but had already appeared in several areas of the world by the late 1970's (WHO AIDS Series 3, 1988).

At the VIlth international conference on AIDS held in Florence in June 1991, James Chin, of the World Health Organisation's global programme on AIDS, outlined sobering figures about the worldwide AIDS pandemic. Over 16,000 cases of AIDS had been reported in Brazil by the end of 1990. In Thailand the prime minister's office estimated that 400,000 people are already infected with HIV. Thousands of prostitutes in Bombay and Madras are infected, portending a disaster in India (Biggar, 1991).

Nowhere is the problem worse than in sub-Saharan Africa, where, Dr. Chin estimated, there were 5 to 6 million people infected with HIV, with half a million cases of AIDS expected each year over the next decade - even without new HIV infections (Biggar, 1991). The World Health Organisation (WHO) estimates that there are currently at least 8 -10 million adults infected with HIV worldwide, or about
one in 400 adults living in the world today. About $10 \%$ of these persons, or 800,000 , are ill with AIDS and it seems likely that, without a cure, most of the remainder will become ill by the year 2000.

According to the Director of the WHO Global programme on AIDS, the current estimate is that by the year 2000 there will be a cumulative total of 15-20 million HIV-infected adults worlwide and 10 million HIV-infected children, and the number of AIDS cases in adults will have risen to at least 5-6 million. The greater majority of those infections will have occurred in the developing world (Meson, 1990).

Recent figures indicating that the prevalence has plateaued among sentinel populations (for example, blood donors and pregnant women) in some parts of Africa do not signal an end of the epidemic. They indicate only that the number of new infections is roughly equal to the number dropping out of such pools because of illness and death.

In reality, AIDS is a collection of 70 or more conditions which result from the damage done to the immune system and other parts of the body by the virus. AIDS is thus more accurately referred to as a 'syndrome', that is, a collection of various symptoms, infections and conditions.

The virus which causes AIDS was first identified in 1983 in France, and in the United States of America in 1984. It is known as the 'Human Immunodeficiency Virus' (HIV) (Coffin et al, 1986). HIV selectively attacks specific white blood cells that are essential for the coordination of the body's immune defence mechanism.

When these white blood cells are destroyed, a process which may take many years, the person infected becomes susceptible to a range of infections and parasitic diseases and cancers to which persons with intact immune systems are
not. These opportunistic infections and cancers (such as Kaposi's sarcoma) are indicators of the underlying immune deficiency caused by the virus (HIV).

In addition, HIV may attack nerve cells causing neurological disturbances. When HIV penetrates a cell, it combines with the host's own genetic materials. The result is an infection which most virologists believe is lifelong, and infected persons are likely to be infectious for life.

The Human Immunodeficiency Virus (HIV) has an incubation period of an average of 8 to 9 years from the time of getting infected with the virus to the time when the clinical signs and symptoms of the full blown AIDS become manifested (WHO AIDS Series 3, 1988). During this period, the virus carriers are healthy looking but infectious.

The long incubation period means that there is a long asymptomatic carrier period, thus giving the virus more opportunity to infect other people. By the end of this century, WHO expects possibly as many as five million people to have died or fallen ill from this second epidemic (Chwalow, 1990).

The third epidemic, that is, the intense global reaction to HIV and AIDS, is not just a matter of the prejudice and intolerance which afflicts nearly all human societies; it has immediate and direct consequences for public health and the spread of HIV infection. The images associated with the term 'AIDS' are lurid, disturbing and not necessarily true. AIDS attacks not just the body but thrives on human ignorance and fear, and threatens the social fabric of society (Wayling, 1988). Fear and ignorance are having severe effects at the personal, family and social levels.

Like the plague, cancer and tuberculosis before it, AIDS in the popular perception has become a metaphor - or rather a cluster of metaphors - and a
vehicle for expressing many of the fears and anxieties of modern life (Helman, 1984).

Over the past few years, particularly in the lurid headlines of the popular press, a number of recurrent images or metaphors of AIDS can be identified. These include: (1) AIDS as a plague (sometimes called 'the gay plague' (Cassens, 1985); (2) AIDS as an invisible contagion - apparently based on older folk models of infectious diseases (Helman, 1987); (3) AIDS as moral punishment - with victims of the disease being divided into two groups; those who are 'innocent' (the recipients of blood transfusions, eg. haemophiliacs and children, and the spouses of those who are bisexual, or who engage in extra marital sex), and those who are 'guilty' (such as homosexual men, bisexuals, promiscuous people, prostitutes and intravenous drug users) (Warwick et al, 1988); (4) AIDS as an invader - an image which usually includes themes of xenophonia and 'foreign invasion' (Helman, 1978); (5) AIDS as war - an image linked to the previous one (Wellings, 1988); and (6) AIDS as a primitive or presocial force or entity (Helman, 1984).

These metaphors, attached in the media and in popular discourse to the very word AIDS, mean that it is no longer only a serious physical disease, but has also become one of the major folk illnesses of modern times. HIV infected persons including those with AIDS are being excluded from the family and community at a time when they most need support and care (WHO AIDS Series 3, 1988).

In surveys throughout the world, about $10 \%$ to $30 \%$ of people still believe that HIV infection can spread through a hand shake and that it is not safe to share a workstation with an infected person. Also, sadly, the twisted bring forward their twisted ideas, spreading their talk of 'secret germ warfare', 'massive cover-up' and 'AIDS conspiracies'.

This is harmful, for an African Minister of Health recently reported a reduction in condom use linked to a rumour that condoms have been contaminated with HIV. Assaults on the rights and dignity of HIV infected persons continue to arise involving work, education, housing and travel, even in countries which have thus steadfastly resisted such discrimination (Mann, 1989).

Thus the three worldwide epidemics remain unstable, volatile and dynamic, for they are compounded of many elements of human behaviour; individual and collective (Mann, 1989). The long period before the effects of the virus are manifest, the speed of modern travel, the impossibility of global quarantine even if it were desirable, the virus's lack of class, race or wealth consciousness, the imperative but infinitely diverse nature of sexual desire and practice combine to impose international cooperation on what needs to be done to curtail the spread of HIV infections and the number of AIDS cases arising from those that would be infected with HIV (Frankenberg, 1988).

## CHAPTER 2

## BACKGROUND TO STUDY

### 2.1 Historical Review

In June 1981, the Centers for Disease Control (CDC) in Atlanta, Georgia began to receive its first reports of what had until then been a relatively rare form of pneumonia in young men - Pneumocystis carinii pneumonia (PCP) (Masur et al, 1981). Simultaneously, reports were also received of an increase in the occurrence of a rare form of skin tumour, Kaposi's sarcoma (KS), also amongst men in their twenties and thirties (Friedman-Klein, 1981).

Before this, both PCP and KS had been rare except amongst those whose immune systems had been weakened in some way. PCP for example had been common amongst those liberated from concentration camps in Europe at the end of the Second World War, and the incidence of Kaposi's sarcoma had hitherto been confined to elderly men in southern Europe and those dwelling in rural areas of central Africa (Aggleton \& Homans, 1987).

But what made these two new outbreaks of PCP and KS particularly significant were two things. First, most of those infected were homosexual men. Second, within this population, the course of infection was more severe than hitherto had been recorded. Many died or were severely debilitated within twelve months of their initial diagnosis (Aggleton \& Homans, 1987).

For some time prior to this, physicians working in San Francisco, New York and other American cities had begun to encounter otherwise healthy, homosexual men with persistently swollen lymph glands - Persistent Generalised Lymphadenopathy (PGL) (Metroka et al, 1987; Abrams et al, 1984) - or who had
fallen prey to one of a number of opportunistic infections caused by protozoa such as Toxoplasma gondii (Hauser, 1982), bacteria such as Mycobacterium avium intercellulare (Zakowski et al, 1982), viruses such as Cytomegalovirus (Macher et al, 1983), and fungi such as Cryptococcus neoformans (Payne et al, 1983).

In the case of patients with PGL, the prognosis seemed relatively benign, whilst some went on subsequently to acquire opportunistic infections, the majority seemed relatively healthy for months and even years after being first diagnosed.

For those with acquired opportunistic protozoal, bacterial, viral or fungal infections, on the other hand, the future looked rather more bleak. Many failed to respond to conventional forms of treatment or suffered unusually debilitating sideeffects. Others experienced repeated bouts of opportunistic infections and often died.

In late 1981, a series of articles were published in the New England Journal of Medicine linking the occurrence of these opportunistic infections to consistent immunological changes within the individual concerned. In particular, amongst many of those who acquired opportunistic infections there seemed to be marked depletion of a particular sub-set of T4 lymphocytes (those which carried a T4 surface marker).

At about the same time as researchers began to identify the changes in immunology which seemed to accompany the onset of opportunistic infection, the first cases of PCP were diagnosed in heterosexual intravenous drug users in New York as well as amongst members of the Haitian communities in Miami and Brooklyn (Aggleton \& Homans, 1987).

In 1982, the Centers for Disease Control formally defined the Acquired Immune Deficiency Syndrome (AIDS) as, '... A reliably diagnosed disease that is at least moderately predictive of a defect in cell-mediated immunity, occurring in
a person with no known cause of diminished resistance to the disease. Such diseases include Kaposi's sarcoma (KS), Pneumocystic carinii pneumonia (PCP), and other serious opportunistic infections ...' (Centers for Disease Control, 1982a).

Thereafter, the search began in earnest for the factor or factors which might be the cause(s) of this defect in cell-mediated immunity. Initially attention was focussed on the possibility that AIDS might be caused by a single agent, perhaps a virus already known about.

Cytomegalovirus and Epstein-Barr Virus were both identified as early suspects (Johnson \& Ho, 1985) but they were quickly ruled out. Attention next became focussed upon the lifestyle variables that might cause a breakdown within the immune system.

Early analyses, using a case-control interview of regression analysis, suggested that amongst homosexual men at least, those with AIDS could be reliably differentiated from others in terms of their number of sexual partners, their history of repeated infections by sexually transmitted diseases, their preference for receptive anal intercourse and their recreational use of inhalants such as amyl and butyl nitrite.

For a time, therefore, single agent viral explanations were superseded within professional discourse by those emphasising the possibility of immune overload, occasioned perhaps by particular lifestyles. However, in spring 1982, the first cases of PCP were diagnosed in haemophiliacs who had received Factor VIII concentrates as part of their treatment (Centers for Disease Control, 1982b).

Shortly afterwards, AIDS was diagnosed in patients who had been recipients of blood transfusions (Curran et al, 1984). These observations raised once more the possibility that a viral agent similar perhaps in its mode of transmission to Hepatitis $B$ virus might be the factor responsible for AIDS.

In 1983/84, the identification and isolation of a T-lymphotropic retrovirus from a patient with PLG in France (Barre-Sinoussi et al, 1984) and from patients with AIDS in the United States (Gallo et al, 1984) gave added impetus once more to single agent viral explanations of AIDS.

These viruses, which have since been shown to be closely related if not identical, were originally named Lymphadenopathy Virus (LAV) and Human T-cell Lymphotropic Virus, Type III (HTLV-III), respectively. Following considerable deliberation within the international scientific community, agreement was reached in 1986 that they should henceforth be referred to as Human Immunodeficiency Virus (HIV) (Coffin et al, 1986).

Currently, there is widespread acceptance within the medical community concerning the central role which this virus plays in the aetiology of AIDS - indeed, the CDC definition of AIDS was modified in August 1985 to include specific reference to HIV.

It is also believed that the major vehicles by which HIV can be transmitted include blood (Curran et al, 1984), untreated blood products (Centers for Disease Control, 1982b), semen (Stewart et al, 1985), cervical secretions (Vogt et al, 1986), vaginal secretions (Wofsy et al, 1986), and possibly breast milk (Thiry et al, 1985). Whilst the virus has also been isolated from saliva (Groopman et al, 1984), and tears (Fujikawa et al, 1985), there is no evidence of transmission by these routes (Schechter, 1986).

However, because there continues to be some debate about the role that lifestyle variables, intercurrent infection and life events such as pregnancy play in determining whether an individual affected by the virus subsequently develops AIDS, the possibility of multifactorial causation with respect to the syndrome itself cannot be ignored. Additionally, there are health care professional who maintain
that HIV may not be the cause of AIDS, but that it may be a marker of infection by an as yet unidentified 'real' cause (Aggleton \& Homan, 1987).

### 2.2 HIV/AIDS and Young People

In contrast to most health problems which affect either the young or the old, AIDS mainly strikes those in the age group of 20 to 49 years. Nearly one half of those infected with HIV are under the age of 25 years, making AIDS a major concern for youths today. Young people are particularly at risk, and in New York, AIDS is the biggest killer of men and women aged 20 to 30 years (Kapila, 1990). About $20 \%$ of all people who have AIDS are in their twenties (WHO AIDS Series 3, 1988), thus a large proportion of individuals who have AIDS become infected during adolescence.

We know that HIV can infect anyone, young or old, as behaviour exposes them to the virus; however, adolescence can be a period of profound physical and psychological change and behavioural experimentation. Girls and boys, young women and men, are faced with various developmental tasks with which they must come to terms in order to achieve necessary biological and psychosocial progress. As a developmental task, sexuality may entail a potential risk of HIV infection, since young men and women usually change sexual partners before they establish long term partnerships.

Furthermore, a large majority of adolescents gather their initial and subsequent sex experiences without condom protection. Developmental risk taking in some regions, which leads to experimentation with illegal narcotics, may expose a small proportion of the juvenile population to intravenous drug use (IVU), thus serving as a major conduit of the human immunodeficiency virus (HIV) to other groups.

It has been clearly shown that risk-taking is an important factor in the lives of most young people. The problem may be significant; cultural traditions, fears and other barriers may prevent young people from learning about sexual transmission and other modes of transmission of HIV or from acting on what knowledge they have.

Parents and community leaders may not support communication about sexual matters because they may not wish to acknowledge that young people are already sexually active. In areas where there are no cultural barriers to frank discussions, health promotion programmes which address sexuality may not exist because of lack of resources or because the need is not perceived.

In other areas, young people may not have ready access to modes of prevention such as condoms. For some young people living in poverty, sex with many partners in exchange for money or other goods may be seen as one of the few options for making a living.

It was in recognition of all these that the World Health Assembly for 1989 (May 8-9) featured technical discussions on the health of youths, and the World's AIDS Day 1989 (December 1) headlined activities related to youths and AIDS.

AIDS extracts an unprecedented economic toll - directly through medical costs and indirectly through loss of productivity from illness and death - from individuals, families, and even countries (Wayling, 1988). By depriving the community of people in their most productive years, AIDS poses a sericus threat to social and economic development, and even political stability.

In the industrialised countries, the cost of medical care for a person with AIDS is estimated at between $\$ 25,000$ and $\$ 150,000$ (WHO AIDS Series 3, 1988); the direct cost of a disease being the cost of treating those who suffer from it,
while the indirect cost is the value of healthy years of life which the disease steals from society (Over et al, 1988).

In Western society it is evident that adolescents are at risk with respect to HIV and AIDS because they are sexually active, often do not use condoms, may have multiple partners and relax about precautions if they think their relationships will last (Hein, 1987; Sorensen, 1973; Turtle et al, 1989). Other risk factors are misuse of alcohol leading to good intentions not necessarily being carried out, and the significant though relatively small number of adolescents who engage in unsafe intravenous drug use (and who are part of the new sex pool through which HIV infection can spread) (Stall, 1987).

According to a Centers for Disease Control report on AIDS cases by sex, age at diagnosis, and race/ethnicity, through January 1990 in the United States of America, the adolescent population in the United States represents a potential high-risk group for acquiring the human immunodeficiency virus (HIV) and subsequently suffering from acquired immunodeficiency syndrome (AIDS) because of sexual activity and experimentation with illegal drugs.

Although persons aged 13 to 19 years account for less than $1 \%$ of all cases of AIDS in that country, young adults between the ages of 20 and 29 years represent $20 \%$ of all reported cases. As the median interval between infection and onset of AIDS is nearly 10 years (Bacchetti et al, 1989) it is likely that many of these young adults acquired the infection during their teenage years. Information available on the seroprevalence of antibodies to HIV in adolescents is limited.

Studies of groups of youths and young adults have shown seropositivity rates of $0.34 \%$ among $1,141,164$ teenaged youths (younger than 20 years) applying for military service (Burke et al, 1990), $0.41 \%$ among 84,089 Job Corps entrants, and $0.2 \%$ among 12,000 college students (Dondero et al, 1988; Centers
for Disease Control, 1988). Ten ( $0.32 \%$ ) of 3,124 patients tested positive for HIV antibodies at an ambulatory clinic and emergency facility for adolescents in an urban center (D'Angelo et al, 1989).

Thus the epidemic of HIV/AIDS is a world health problem of extraordinary scale and extreme urgency. It represents an unprecedented challenge to the public health services of the world (WHO AIDS Series 3, 1988). It therefore warrants a major campaign of accurate, creatively designed communication to reach both the public and the high risk groups.

## CHAPTER 3

## OBJECTIVES OF THE STUDY

## Broad Objective

The broad objective of the study was to assess the relative effectiveness of a health promotion intervention on HIV and AIDS for 14 to 18 year old adolescents on the:
a) HIV/AIDS-related knowledge;
b) attitudes and beliefs about HIV/AIDS;
c) attitudes to people with HIV/AIDS;
in 14 to 16 year old secondary school adolescents in Hampshire County.

## Specific Objectives

Specifically, the objectives of the study were:
a) to assess the relative effectiveness of the intervention:
(i) in increasing the adolescents' level of knowledge on the routes of transmission of HIV, the asymptomatic carrier status, prevention, diagnosis, cure and vulnerability to HIV and AIDS, by determining whether there were significant difference on the overall HIV/AIDS related knowledge scores as a function of exposure to HIV/AIDS education;
(ii) in modifying positively the attitudes and beliefs of the adolescent about HIV and AIDS in a manner that would remove myths, and promote prevention, and control of HIV/AIDS among the adolescent age group;
(iii) in modifying positively the attitudes of the adolescents towards people who live with HIV and/or AIDS in order to dispel ignorance and fear, and prevent the social prejudice against people with HIV and/or AIDS, by determining whether there were significant increases in the adolescents' positive attitudes towards people with HIV/AIDS following the intervention;
(iv) in fostering life styles conducive to health, and encouraging involvement of adolescents in health education and promotion efforts, by determining the extent to which the educational intervention has affected attitudes towards the quest for more information on HIV/AIDS and promoted innovative risk reduction;
b) to determine the source of information of the adolescents about HIV/AIDS, and the sources mostly preferred, in order to encourage their involvement in health education and promotion efforts for the prevention and control of HIV and AIDS;
c) to assess whether the activities involved in the health promotion intervention were ethically justifiable, by determining whether the results of the intervention warranted the personal expense in terms of some inconvenience and/or discomfort to the adolescent; time, and intrusion into the adolescent's private life.

## CHAPTER 4

## LITERATURE REVIEW

### 4.1 Models of Health Education

Health education involves learning about diseases, the effects they have on our health, how to avoid them and how, if we become diseased, health can be restored. It also includes developing a more sophisticated appreciation of the social factors affecting our health, learning about sexuality and the extent to which diseases may be socially constructed (Aggleton \& Homan, 1987). Some of these latter aspects of health education have also been referred to as health promotion.

In January 1984, the World Health Organisation (WHO, 1984:3), launched a new programme of health promotion with five key underlining principles. Namely that health promotion:

- Involves the population as a whole in the context of their everyday life, rather than focusing on people at risk for specific diseases.
- Is directed towards action on the determinants or causes of health.
- Combines diverse or complementary methods or approaches.
- Aims particularly at effective and concrete public participation, and - Health professionals - particularly in primary health care - have an important role in nurturing and enabling health promotion.

Lussier (1984) has described how health education originally emerged from the distinct disciplines of education and medicine in the nineteenth century as a set of pedagogic practices associated with sanitary reform and hygiene education.

However, health education interventions which aim simply to provide the public with more information about particular issues are likely to be limited in their overall success.

The history of public information campaigns related to smoking, alcohol and drug use suggests that whilst they can do much to raise the general awareness of the risk associated with particular behaviours, there is no guarantee that people will act rationally and sensibly on the basis of the information they receive.

Indeed, as Pearson, Gilman and Mclver's (1985) study of heroin use in Northern England shows, the DHSS campaign against heroin use (with the slogan 'Heroin Screws You Up' and 'How Low Can You Get on Heroin') has been received in different ways by different groups of young people. Whilst the campaign might have succeeded in lowering the social desirability of heroin among those who were unlikely to have ever considered using it, there was some evidence that it might actually have increased heroin's appeal amongst other young people.

It has therefore been suggested that there is much to be gained when official public information campaigns such as these are complemented by other health education interventions which allow people to explore more fully the implications of health-related messages for their own life-styles and behaviour.

Helping people learn about HIV/AIDS is an activity which involves what is broadly termed 'Health Education' (Aggleton \& Homans, 1987).

Worldwide, there is now a substantial body of literature which can be used to help identify the types of health education interventions which are likely to be most successful in educating people about HIV/AIDS. Some of this literature relates to the nature of health beliefs in general and identifies the continued importance of a variety of non-medical lay health beliefs in mediating official health education messages.

Other parts of this literature relate more specifically to the various paradigms or models of health education which might be used to help people learn about AIDS. These differentiate between the different goals that health educational interventions might have, as well as between the means by which these goals might be achieved. Early approaches to health education were largely didactic in their emphasis, and aimed mainly to provide information about disease transmission and containment.

Changing patterns of morbidity and mortality, as well as a growing recognition by the mid twentieth century that personal lifestyles were also implicated in the causation of ill-health, subsequently shifted attention within health education from disease process to personal behaviour. Nevertheless, the emphasis still lay on information giving with the intention of bringing about changes in personal habits and lifestyles.

Based on the above, three types of health education have been differentiated to include one concerned with promoting a 'sense of well being' through providing information about the body; another concerned with providing information about health service provision; and a third type related more closely to the tradition of public health which focuses on the effect that local, regional and national policies can have on creating a healthy environment (Draper et al, 1980).

This typology was subsequently revised to identify two further dimensions education about the politics of health and education about the effectiveness of health education itself (including an evaluation of whether or not health education is effective) (Draper, 1983). Ewles and Simnet (1985) recently differentiated between five rather different models of health education - the medical, the behaviour change, the educational, the client-directed and the social change models.

However, their typology fails to differentiate between those models which are most concerned with the means by which health education can take place and those which are concerned rather more with the outcomes of health education interventions. Both the medical and behaviour change models focus on preventing the spread of disease, and are primarily concerned with end products or outcomes, and a measure of a successful outcome will be a reduction in morbidity and mortality rates. The goals here are to change people's attitudes and behaviour so that they adopt a healthier lifestyle.

A clearer analysis than those offered so far, and one which distinguishes more systematically between the means and outcomes of health education, has been put forward by French and Adams in 1986. They identified three broad paradigms within which health education can take place - the behaviour change, the self-empowerment and the collective action paradigms - and argue that these are '... three phases through which an individual, group or organisation may pass as they become, or seek to help others become, more empowered in their relation to health status ...' (French \& Adams, 1986).

The goals of each of these paradigms are as follows: behaviour change model - 'to improve health by changing people's behaviour'; self empowerment model - 'to improve health by developing people's ability to understand and control their health status to whatever extent is possible within their environmental circumstances'; collective action model - 'to improve health by changing environmental, social and economic factors through community involvement and action'.

In addition to identifying the goals of different models of health education, French and Adams specify the names by which these might be achieved as well
as the criteria by which the success of initiatives within each of these three paradigms might be evaluated.

Recently, Health Education has been described as 'a process with intellectual, psychological, and social dimensions relating to activities which increase people's ability to make informal decisions affecting their personal, family and community well-being' (Candeias, 1991). This process, based on scientific principles, facilitates learning and behaviour change in both health personnel and consumers, including children and youths (Joint Committee on Health Education Terminology, 1977).

It is important to be aware of the legacy of the bio-medical understandings of health and the valuable contributions that these have made to programmes by which the effects of diseases have been severely limited. Bio-medical notions of health frequently emphasise the need for disease prevention, and in terms of learning about and coping with diseases it is sometimes useful to identify three rather different levels at which prevention can take place. These are called primary, secondary and tertiary levels of prevention.

Primary prevention concerns those health education initiatives which aim to change people's behaviour so that they minimise their risks of disease and which focus on the healthy population. Health education activities of this type are most usually carried out by parents, teachers, Health Education Officers, Health Visitors and any other health professionals whose work is largely concerned with the healthy population.

Secondary prevention on the other hand aims to restore sick people to health in order to avoid the possibility that they might become chronically ill. An essential part of prevention at this level is the early detection and treatment of disease, together with advice on how health can be restored. Screening for
cervical cancer and HIV testing might be initiatives which fall into this category of preventive activity. The role of health professionals at this level is to encourage the uptake of screening facilities and to provide information on health restoration.

Tertiary prevention is aimed more directly at people who are chronically or terminally ill, or those who are physically disabled, and is particularly concerned with maximising their remaining potential for living. Health professionals, social workers, relatives and friends who are responsible for the care of the terminally ill are the main health educators at this level of intervention.

In general terms, bio-medical understandings of health and disease have given rise to preventive health education interventions in which particular priority is given to the provision of information and the promotion of screening services. The aim of these interventions is usually to bring about changes in behaviour so that individuals can lead healthier lives.

A mass media approach was thought to be the most appropriate means by which these changes could be brought about. But past evaluation of mass media campaigns in general show that the increase in knowledge they produce is likely to be short-term and the shifts in attitude they engender are likely to be slight. Indeed, as Gatherer et al (1979) have observed, sometimes there may even be 'shifts in attitudes in the opposite direction to that desired'. Evaluation studies also seem to show that the most effective way of spreading information appears to be through word of mouth and personal contact, not through the mass media (Gatherer et al, 1979).

Many HIV/AIDS education initiatives have their origins within the behaviour change model of health education. Recently, much of the discussion about HIV/AIDS education both in Britain and America has focused on the ways in which
people can be encouraged to change their behaviour so that they do not put themselves at risk of infection.

In some literature, people's life styles (being homosexual, 'being promiscuous', being an intravenous drug user, being a prostitute) are said to be the factors which put them at risk of infection. Effort should therefore be made to encourage them to change their lifestyles completely or to change the 'at risk' elements of their behaviour.

The most effective interventions within the behaviour change model of health education tend to be those where the behaviour changes required is a single action. However, any campaign which focuses solely upon bio-medical aspects of the disease at the expense of lay beliefs, using methods that stress impersonal media messages rather than personal networks, is likely to be limited in its overall effectiveness (WHO, 1986).

Some British health education interventions within a behaviour model of health education have tried to operate on a one to one basis. According to Gatherer (1979), the success rate of these vary from 10-36\%. In relation to AIDS education, most of these interventions have taken place within the context of preand post-test counselling and there have been reports that interventions of this type can be relatively effective in bringing about relatively enduring changes in behaviour (Green, 1986 a \& b).

However, the behaviour change models of health education tend to focus too much on the role of the 'expert' whose task it is to 'tell' the client 'what to do'. To be on the receiving end of a health education intervention of this type may be a profoundly disempowering experience for many people. Recent developments within community medicine, community health initiatives and mainstream education, as well as academic debate within spheres of sociology, philosophy,
psychology and health education have of course led to an enhanced consumer awareness of the benefits to be gained from direct in health-related matters.

### 4.2 Theory of Evaluation of Health Education Programmes on HIV and AIDS

Health Education is the term which is broadly used to describe the activities involved in helping others to learn about HIV and AIDS. It involves learning about the disease, its effect on human health, how to avoid it, and how, if one becomes infected with HIV, help can be sought to alleviate the symptoms and signs of the disease (WHO, 1986).

It includes developing a more sophisticated appreciation of the social factors affecting our health, learning about sexuality and the extent to which the disease may be socially constructed. Some of these latter aspects of health education have also been referred to as 'health promotion' (WHO, 1986).

According to Downie et al (1990), "health promotion refers to a radical movement which challenges the medicalisation of health, stresses its social and economic aspects, and portrays health as having a central place in a flourishing human life". Health promotion comprises efforts to enhance positive health and prevent ill-health, through the overlapping spheres of health education, prevention and health protection (Downie et al, 1990).

One of the key concepts for health promotion is that of an attitude. The concept of an attitude is central because it brings together beliefs, emotions, and behaviour (Downie et al, 1990). The bringing about of changes in attitudes, and consequently in lifestyle, is one of the objectives of health promotion. Thus health promotion tends to raise profound questions of moral values, bearing in mind the
fact that the realisation of certain values is necessary for the flourishing of human society and human personality.

Early HIV/AIDS prevention programmes were developed and implemented quickly in response to the crisis, usually before national policies were developed or coordination between different interest groups was possible (Aggleton, 1989). Health education programmes differed with respect to the media used, and the information disseminated. Overall, these programmes addressed the sources (HIV positives) and those susceptible, that is high-risk groups, identified through the routes of transmission (Wayling, 1988), and attempted to provide them with information to prompt positive choices and decisions regarding sexual behaviour.

However, it is necessary to have confidence in the value and effectiveness of health education activities - to be able to show that they are worthwhile, that they contribute to the aims of health education and health promotion, and are consistent with the overall philosophy. Education efforts need systematic evaluations (Strunin et al, 1987).

According to the American Public Health Association's definition, "Evaluations may be defined as the process of determining the value or degree of success in achieving pre-determined objectives" (James, 1962; Suchman, 1967; Tripodi, 1971; Weiss, 1972). It includes: formulation of objectives; identification of the criteria to be used in measurement; and the determination and explanation of the degree of success (Candedias, 1991).

Evaluations can also be a broader process which involves assessing an activity by measuring it against a standard which is not necessarily related to the specific objectives or purpose of the activity. That is, evaluation can be simply defined as the comparison of an object of interest against a standard of acceptability (Green et al, 1980). The standard of acceptability may refer to the
achievement of aims or objectives. It may be the assessment of the ethics of the approach, the cost of the activity, or the reactions of the recipients or participants.

Evaluation, seen not as an end in itself but rather as a means to an end, should be an integral part of health education activities from its initial planning and throughout its implementation. Thus, the purpose of evaluation is that it should demonstrate whether an activity has been successful, or to what degree it has failed to achieve some stated aims.

Despite efforts to design education programmes for adolescents on HIV/AIDS, few controlled studies have evaluated effectiveness (Kelly et al, 1988). Previous research has indicated that a variety of HIV/AIDS educational programmes have been effective in increasing HIV/AIDS-related knowledge; positive HIV/AIDS-related attitudes; and compliance with safer sex practices; with diverse populations including the general public, homosexuals, health care workers, and prostitutes (Kelly et al, 1989; Lehmann et al, 1987; Ngugi et al, 1988; O'Donnell, 1987; Valdiserri et al, 1987; Wertz et al, 1987).

The Centers for Disease Control (CDC) (1988), in specifying guidelines for effective school health education to prevent spread of HIV/AIDS, established the following objectives for programme interventions with young people:

1) to promote and develop a social environment that encourages and supports HIV risk reduction behaviour by exploiting facilitators and breaking down inhibitors to behavioural risk reduction;
2) for those youths who have not engaged in sexual intercourse and who have not injected drugs to:

* delay sexual intercourse until they are ready to engage in a responsible, mutually protected relationship;
* refrain from using or injecting drugs;

3) for those youths who have had sexual intercourse or who have used intravenous drugs to:

* stop engaging in sexual intercourse until they are ready to establish a responsible, mutually protected relationship;
* stop using or injecting drugs;

4) for those youths who do not abstain from sexual intercourse or from IVDU to engage in HIV/AIDS preventive behaviours (that is, condom use, clean needles/syringe, etc.)

It is extremely important to consider previous HIV/AIDS intervention efforts and health risk reduction programmes in order to avoid the errors of previous health intervention programmes and to provide direction for the design of, and implementation of, effective HIV/AIDS interventions.

Education aimed at groups in which the risk of transmission is highest appears to have had a positive effect. Among homosexual males, the rate of sexually transmitted diseases, particularly rectal gonorrhoea, have decreased markedly and studies have reported declines in risky sexual practices (Becker \& Joseph, 1988; Kelly et al, 1989; Klein et al, 1987; McKusick et al, 1985; Valdiserri et al, 1987).

Studies conducted to date on the efficiency of HIV/AIDS education programmes with youths have tended to focus on changes in knowledge and attitudes as opposed to behavioural risk reduction. The results of the studies show varied effectiveness. One study indicated increases in HIV/AIDS related knowledge and tolerance for people living with AIDS, following a 50 -minute lesson plan with United States high school students (Mehryar et al, 1991).

In contrast, a retrospective study of AIDS education in United Stated high schools found no significant difference on overall AIDS-related knowledge scores
as a function of exposure to AIDS education. However, differences were found on items measuring knowledge and transmission of AIDS and risk reduction associated with condom use (Taylor-Nicholson, Wang \& Adame, 1989).

In a study assessing the efficacy of an AIDS education campaign in inducing change in AIDS-related attitudes on a United States campus, change was marginal due to desirable pretest attitudes which created a ceiling effect on attitudinal change (Dommeyer, Marguard, Gibson \& Taylor, 1989).

Miller and Downer (1988) used a 50 minute lesson plan about AIDS and found significant increases in knowledge in high school students.

Huszti, Clopton and Mason (1989) conducted a study to evaluate the relative effectiveness of two educational interventions compared to a no-treatment control, and found significant increases in knowledge and parallel changes in attitudes of tenth grade students. Interventions included watching a video-taped presentation about AIDS and its prevention as compared to didactic presentations. Significant increases in knowledge, immediately after both interventions and at follow-up, were reported. These investigators also discovered that didactic instruction increased knowledge more than the film alone. However, neither educational intervention affected attitudes towards practising preventive behaviour.

Rickert et al (1989) compared the effects of two educational programmes with a no-treatment control provided through an adolescent medical clinic. They found significant increases in knowledge for both intervention groups but no demonstrable effects on attitudes. Coupons were provided that could be exchanged for free condoms to better understand the effects of education on the acquisition of condoms.

No significant differences were found as a result of the educational interventions between groups on condom acquisition, but adolescents who had a
past history of condom purchase who were exposed to lecture information and watched a videotape about condom use were significantly more likely to obtain condoms.

Prior studies focusing on HIV/AIDS education have used adult health care providers. However, the use of peer counsellors has been shown to be effective in a wide variety of settings (Jay et al, 1984; Gagnon \& Simon, 1968; Utech \& Hoving, 1969; Davis et al, 1977; Nadelson et al, 1980; Hamburg \& Varenhorst, 1972; Vriend, 1969; Baldwin, 1978; Alwine, 1974; McAlister et al, 1979).

Peer counselling sessions have also been extended to health-related concerns such as venereal disease (Alwine, 1974), smoking (McAlister et al, 1979) and sexuality (Jay et al, 1984; Baldwin, 1978).

Jay et al (1984) found that the incorporation of a peer counsellor into the health care team was an effective method of increasing adolescents' compliance with an oral contraceptive regimen. The use of peer counselling to provide HIV/AIDS education has just been evaluated.

Vaughn et al (1991) conducted a study to determine the effects of a peercounselled education programme on knowledge, attitudes and satisfaction of adolescents by comparing a peer-led vs. an adult-led AIDS education programme on the knowledge, attitudes and satisfaction of the adolescents with their education. They found that, although both adult and peer counsellors were equally effective in promoting knowledge gains and appropriate attitude changes, more questions were asked of the peer counsellors.

Their data suggested that when education is presented by peer counsellors, adolescents may be more likely to see AIDS as a personal danger and that peer counsellors should be considered when designing comprehensive AIDS education programmes (Vaughn et al, 1991).

Based on previous evaluation studies of the various methods by which health education can be brought about, it is the opinion of the conductor of the present study, that the intervention which is a combination of a play acted by adolescents and a workshop led by the adolescent actors on HIV and AIDS will not only be effective in increasing HIV/AIDSrelated awareness and knowledge in adolescents but will also positively modify the adolescents' HIV/AIDS-related attitudes and beliefs and their attitudes to people who have HIV and AIDS.

A play on HIV and AIDS acted by adolescents for adolescents, will promote and develop a social enviroment that encourages and supports HIV risk reduction behaviour by exploiting facilitators and breaking down inhibitors to behavioural risk reduction. The intervention being evaluated is a two-in-one intervention that is a play and a workshop and it is therefore expected that it will produce a combination of the effects of a play on its own and those of having only the workshop as a single intervention.

The expected effectiveness of the intervention that is being evaluated can be attributed to the similarities in the age and background of the actors and the audience, to the reality and the impact of the live performance, and to the audience's proximity to the actors.

Due to the influence that adolescents have on one another, the use of peercounselling sessions directed toward increasing knowledge and changing attitudes may be an important component in an HIV/AIDS education programme (Vaughn et al, 1991).

Activities in the field of health promotion may be examined in three broad stages. The initial stage involves planning and design, the second the running of the programme, and the third observing the effects. The effects or consequences of a programme may be observed (if they exist) at any stage over a period of time after exposure to or implementation of the programme, and may be distinguished as those observed more or less immediately, that is the impact of the programme, and those that result after a longer period of time, that is the outcome (Green et al, 1980). (The next paragraph continues on page 29b).

In evaluating a programme, the interest of the evaluator may be any or all of the three facets of the programme - that is, the process, impact and outcome, and measures of each of these are needed (Williams, 1987).

### 4.3 Designs for the Evaluation of Health Education Intervention

Health Education works if it is sufficiently adapted to the problems, the population, and the circumstances in which it is implemented (Green, 1977). Most evaluations of health education programmes have employed rather primitive preexperimental and quasi-experimental designs; those that have utilised some rigorous experimental and quasi-experimental designs have usually had only one experimental and one control group, with no provision for variations in the experimental treatment (Green \& Figa-Talamanca, 1974).

The recognition of the need for adaptations of the educational treatment at different points in the implementation of a programme can be accommodated in
advance by the sequential assignment of subjects to cells in a randomised factorial design (Green et al, 1975; Green et al, 1976). If the size of the available population and the total time available for experimental programming are known in advance, a schedule of programmatic variations can be established at the onset without necessarily knowing exactly what the educational variations would be. Each phase of the programme could have its own experimental and control groups, or the control groups could be accumulated during one period of the programme if there is no systematic bias in the order in which subjects are available for exposure to education (Green, 1972).

The design which is selected for evaluation will depend on the primary purpose of the evaluation, and on the most important objective of the design. The primary purpose of the evaluation could be either explanatory or pragmatic, while the most important objective of the design could be to ensure internal or external validity, or to establish accountability.

Measurement and evaluation typically have an explanatory purpose or a practical purpose. A design whose purpose is explanatory would have results that should be meaningful, beyond the immediate circumstances in which the measurement or evaluation is done (Green \& Lewis, 1976). Explanatory results should be useful for assessing the true character or efficacy of the object under study (regardless of the practicality of replicating the study circumstances elsewhere) or for estimating the probable value or effectiveness of the object if and when the study is replicated elsewhere.

For the former, internal validity is required; there must be an accurate estimate of how well the programme or method would perform under optimum circumstances. For the latter, external validity is required; there is a need to know
how the programme or method would perform elsewhere under typical circumstances.

Internal validity is the degree to which it can be said with certainty that the results observed after a programme are attributable to the programme or educational treatment; while external validity refers to the degree to which such results can be expected to recur in other places or at other times, sometimes also referred to as 'generalisability' (Green \& Lewis, 1976).

If the purpose of the design is pragmatic, the primary concern would be the usefulness of the data for pinpointing accountability or indicating how well a programme or method is working; that is, there is no particular interest in certainty or replicability, the concerns being those of performance and allocation of resources.

Two hard realities impinge upon the scientific and practical purposes of evaluation. First, internal validity in most programmes is an elusive goal that cannot be reached without sacrificing some generalisability of results. The laboratory conditions necessary for complete experimental control may create such artificial conditions on methods or programmes that the results cannot be generalised to most operating situations. A study conducted in this manner may thus achieve internal validity at the expense of external validity. The way to reconcile this trade off is to say that external validity can be improved by sacrificing some internal validity, while both external and internal validity can be improved by sacrificing some existing allocation of services or convenience to consumers (Fisher \& Carlow, 1983).

The second reality that must be faced is that neither internal validity nor external validity of research and evaluation can be maximised in most programs without sacrificing some attention or resources that otherwise would have gone
toward service. For the practitioner or administrator, this sacrifice sometimes makes evaluative research seem counter productive. One is thus left to seek a level of evaluation that gives the answers needed immediately while requiring minimal intrusiveness and demands on staff and clients (Green \& Lewis, 1976).

## The Five Elements of Evaluation Designs

The ideal design for the evaluation of anything including health education, is the true experimental design. The true experimental design consists of five elements:

* Representative sample of target population or programme recipients
* One or more pretests (measures preceding the educational intervention)
* Unexposed group for comparison
* Random assignment of the sample to experimental and control groups
* One or more posttests to measure effects after the experimental intervention

Technically, the requirement for an experimental design is experimenter control over all the other things that could influence the outcome of the experiment besides the independent variable or intervention. The best way to approximate such control when the experimental subjects are human beings is to assign them randomly to equivalent experimental and 'control' groups.

The options for economising or simplifying evaluation procedures consist of discretionary compromises on the ideal experimental design. By giving up any of the first four elements of the true experimental design, one can realise certain economies, avoid some sacrifices of services or overcome some complications. For example, in a pretest-posttest design, the pretests could be eliminated to cut the cost of evaluation by half (Green \& Lewis, 1976).

The first four elements of the true experimental design can be compromised without a total loss of validity. The fifth element - at least one posttest or
observation of educational effects after the experimental programme - is essential to any evaluation, and cannot therefore be eliminated.

Thus, there is at the maximum extreme of the proposed hierarchies of options the true experimental design containing all five of these elements. At the bare minimum end of the hierarchies of options is the design containing only a posttest following an experimental programme and containing none of the other four elements. The question for both evaluators and practitioners then is, "Which of the four dispensable elements can be compromised with the greatest gains and least loss?". This question has three answers, depending on the purpose the evaluation is to serve (Green \& Lewis, 1976).

In an analysis of some early (1960-1966) evaluation in health education (Green \& Figa-Talamanca, 1974), nearly half the studies used the single-group pretest-posttest design $\left(\mathrm{O}_{1} \times \mathrm{O}_{2}\right)$. This design tended to be preferred by many as superior to posttest-only designs with two groups. The other half of the early (1960-1966) studies used a 'pre-post 2' design:

$$
O_{1} \times O_{2}
$$

$\begin{array}{ll}\mathrm{O}_{3} & \mathrm{O}_{4}\end{array}$
with a control group receiving observations $\mathrm{O}_{3}$ and $\mathrm{O}_{4}$, simultaneously with the pretest $\left(\mathrm{O}_{1}\right)$ and posttest $\left(\mathrm{O}_{2}\right)$ in the experimental group. The 'post 3 ' would refer to a similar design with three groups. This design attempts to control the possible effects of history, the effects of maturation and the effect of the pretest. It has the weakness, however, of assuming that the experimental and the control groups were initially identical on all variables not measured by the pretest. In general, this assumption can only be made when the people have been assigned to the groups by a randomisation procedure and when the sample allocated to each group is
large. Random assignment was not used in many early studies but has been used increasingly in more recent evaluations.

Of the thirteen earlier published evaluations of programmes in patient education, community health education, work site health promotion, and school health education, three reported failure to meet their objectives, seven reported partial success in the aims of the programme, and the results of the other three were inconclusive, (Green \& Figa-Talamanca, 1974). Most practitioners recognise that some health education programmes, by their voluntary nature, do not lend themselves easily to tighter designs with random assignment of subjects to experimental and control groups.

### 4.4 Common Designs in Evaluation of Health Education Programmes

The strengths and weaknesses of various design options for evaluating health education lie partly in the threats to validity that they cover of leave uncovered. They also lie partly in the demands some of the designs make on the normal flow of health education that they intend to test (Green and Lewis, 1976).

In the following evaluation designs, the symbol $X$ is used to represent the independent variable of educational input, and $O$ to represent observations on dependent variables collected before (to the left of $X$ ) or after (to the right of $X$ ). The subscripts from left to right indicate points in time when the observation or the educational interventions were made. Each row of $X$ or $O$ represents a different experimental (educated) or control group. If R precedes a line, it means that eligible recipients of the health education were randomly assigned to that group (Green and Lewis, 1976).

## 1. True Experimental Designs with Posttests only

Experimental group: $\quad \mathrm{RXO} \mathrm{O}_{1}$
Control group: $\quad \mathrm{R} \quad \mathrm{O}_{2}$
In this design, which is simple but very powerful, the differences between the posttest results for experimental and control groups ( $\mathrm{O}_{1}$ versus $\mathrm{O}_{2}$ ) can be attributed almost unequivocally to the educational treatment given to the experimental group, assuming that the randomisation procedure has achieved equality of the two groups prior to the participation of one of the groups in the study.

Vaughn et al (1991) in their study to compare a peer-led versus an adult-led AIDS education programme on the knowledge, attitudes and satisfaction of the adolescents with their education, employed the true experimental design with posttests only. In their study, eighty-two male and female adolescents ranging in age from 12 to 18 years, were randomly assigned to a peer $(n=27)$, adult $(n=28)$ and control ( $n=27$ ) group. Intervention consisted of receiving didactic information and viewing a videotape about AIDS transmission and prevention. After the intervention, all subjects completed the AIDS Knowledge Questionnaire Revised, AIDS Attitude Survey, and a measure of consumer satisfaction. The purpose of their control group was to control for prior education and attitudes against which the effectiveness of intervention could be compared.

This design best controls for initial biases between groups and also does not contaminate the effect of the educational intervention due to pretest surveys. That is, pretesting subjects on AIDS attitudes and knowledge would have alerted subjects to what was important and the effects of intervention could not have been assessed accurately; because this contamination cannot be eliminated (Campbell \& Stanley, 1983).

## 2. One-group Pretest-Posttest Design <br> $\mathrm{O}_{1} \times \mathrm{O}_{2}$

This is a simple design whose major weakness lies in the fact that it cannot be said for certain that the observed results in $\mathrm{O}_{2}$ could not have been caused by factors other than $X$ (the programme) itself. Such other factors would include history, that is, extraneous events such as a television programme broadcast between times $O_{1}$ and $O_{2}$; maturation, that is the growth and development of subjects that occurs with the mere passage of time between $O_{1}$ and $O_{2}$; testing, that is, the effects of $\mathrm{O}_{1}$ on $\mathrm{O}_{2}$; instrumentation, that is, changes in the measurement procedures between $\mathrm{O}_{1}$ and $\mathrm{O}_{2}$ and interaction between $\mathrm{O}_{1}$ (the pretest) and $X$ the educational programme).

Hastings et al (1987) in their study of some experiences from Scotland on AIDS publicity, employed a one-group pretest-posttest design to evaluate public responses to a government leaflet on AIDS and to explore the public's general knowledge and attitudes on AIDS. Six group discussions, each with seven respondents, were conducted at both research stages.

Copello et al (1989) also used a one-group pretest-posttest design to evaluate changes in the HIV/AIDS knowledge level of secondary school students following a targeted education programme, which involved a minimum of two hours' instruction by trained health teachers, and found that there was an overall gain in knowledge with the mean of correct responses increasing by three points (out of a maximum of 15 ) in posttest scores as compared to pretest scores

McEwan et al (1990) also adopted the one-group pretest-posttest designs, as part of their evaluation methodology to assess the process, effectiveness and acceptability of a theatre-in-education programme on HIV and AIDS . A selfcompletion questionnaire was administered in one school one week before the
programme (the baseline survey), and again immediately after the programme (the follow-up survey). The responses of those who completed both baseline and follow-up questionnaires were then compared to determine the effects of the programme.

Hill et al (1987) in their telephone survey to evaluate an AIDS leaflet campaign, used a one-group pretest-posttest design in which telephone calls were made by two skilled female interviewers before and after the campaign to a sample of households, which were randomly selected from the local telephone directory, in and outside the City of Oxford. The responses to questions before and after distribution of the leaflets were then compared.
3. Non-Equivalent Comparison Group, Pretest-Posttest Design
$\mathrm{O}_{1} \times \mathrm{O}_{2}$
$\mathrm{O}_{3} \quad \mathrm{O}_{4}$
In this design, there is a control group, which is not equivalent to the experimental group. Often times it is difficult or impossible to obtain a true control group, either because a true control group is ethically unacceptable, or as a way of reducing the cost or inconvenience of interrupting the usual management of consumers or clients in the programme, which may compromise the normal flow of health education that is being evaluated.

This design can be extended in the same way as the staggered designs, adding additional posttests for the two groups or adding additional experimental groups ( $X_{2}, X_{3}$ and so on) to examine variations in the education programme or both. The additional groups may be added:
i) with simultaneous educational programs (if there are sufficient educational personnel and facilities); or
ii) on a staggered basis:
(1) $\mathrm{O}_{1} X_{1} \mathrm{O}_{2} \quad \mathrm{O}_{1} X_{1} \mathrm{O}_{2}$

$$
\begin{array}{llll}
\mathrm{O}_{3} X_{2} \mathrm{O}_{4} & \text { or } & \mathrm{O}_{3} & \mathrm{O}_{4} \\
\mathrm{O}_{5} X_{3} \mathrm{O}_{6} & & \mathrm{O}_{5} X_{2} \mathrm{O}_{6}
\end{array}
$$

(2) $\mathrm{O}_{1} X_{1} \mathrm{O}_{2}$

$$
\begin{aligned}
& \mathrm{O}_{3} \mathrm{X}_{2} \mathrm{O}_{4} \\
& \quad \mathrm{O}_{5} \mathrm{X}_{3} \mathrm{O}_{6}
\end{aligned}
$$

Stephens and his colleague (1991) in their attempt to study the effects of an Intervention Programme on AIDS-Related Drug and Needle Behaviour among Intravenous Drug Users, employed a non-equivalent comparison group, pretestposttest design, because a true control group was ethically unacceptable. Their methodology consisted of an education and intervention session, and a follow-up assessment three months after the intervention. Pretest and posttest data were obtained on 402 subjects. The educational intervention was conducted by a health educator in a one-on-one format and provided information about AIDS and strategies for reducing risk of infection. Risks were assessed prior to the intervention and were compared to a follow-up assessment obtained approximately three months later.

N'Galy et al (1989), in trying to evaluate the effectiveness of a specially designed campaign on the HIV-related beliefs, knowledge and behaviour of secondary school students in Kinshasha, Zaire, also employed the non-equivalent comparison group, pretest-posttest design.

Flaskerud et al (1990), in order to study the effects of an AIDS education programme on the knowledge, attitudes and practices of low income black and latino women, used a pretest-posttest non-equivalent control group design, with a 2-3 month retest of the experimental group.

## 4. Time-Series Trend Analysis on One Group/Multiple Groups

The issues and techniques in this kind of evaluation are the same as those in previous designs. The only thing special about the time series designs is that more observations are made before and/or after the educational program.

In this design, some statistics would be routinely monitored from routine records over a period of time, before the educational programme, and then followed for a period of time after the programme.

Using multiple groups helps the evaluator rule out secular trends and sessional variations as competing explanations for changes observed. Groups to be compared can be randomly assigned, matched on some other basis, or selfselected in order of decreased desirability for scientific purposes.

Zeugin et al (1989) in their study to evaluate the impact of the Swiss AIDS prevention campaign on the sexual behaviour of young adults, used the TimeSeries Trend Analysis on One group design. Using telephone interviews and standardised questionnaire, they contacted a relatively large sample of the resident population of Switzerland (ages 17 to 30 years), selected on a quota sampling basis stratified by place of resident ( $N=3$ times 1,200 ).

Data was collected at three points in time: February $1987\left(\mathrm{t}_{0}\right)$ before the launch of the first STOP AIDS campaign; October $1987\left(\mathrm{t}_{1}\right)$ nine months later; and October $1988\left(t_{2}\right)$ eighteen months thereafter.

Wellings et al (1990), in their evaluation of the Health Education Authority (HEA) AIDS Press Campaign, December 1988 to March 1989, employed the TimeSeries Trend Analysis on Multiple groups. Their focus was on variables within the survey which measure public response to the campaign in particular, while knowledge, attitudes, and behaviour continued to be measured throughout the
period of the campaign through the British Market Research Bureau (BMRB) AIDS Strategic Monitor.

According to Green and Lewis (1976), the hierarchy of options to maximise internal and external validity, will depend on the purpose of the evaluation. When the purpose of the evaluation is to determine the efficacy of a health education method, to ensure a given level of achievement, or to compare the relative effectiveness of two or more methods in a given population of consumers, then generalisability is not of paramount importance, and the evaluation can be conducted with an unrepresentative sample. The issues of internal validity in correctly relating the programme elements to their desired outcomes, in this case, are more important than the external validity of whether the results can be replicated or generalised elsewhere.

If, however, the evaluation is intended to provide evidence of a programme or educational method, then generalisability of the results, that is, external validity, is paramount. For example, to determine whether to continue using a given educational technique in a programme or to recommend it to others, the technique must be tested on a representative sample of the people with whom the technique will be used. They must be similar to people in a variety of settings in which the technique might be recommended - an approach that is equivalent to field-testing, or the clinical testing of drugs or medical procedures.

Under these circumstances, the element other than posttests that cannot be sacrificed is representativeness of the subject sample (Green and Lewis, 1976). A general rule is that the larger and more heterogeneous the sample, the more it can serve as a valid case from which to generalise to other settings (Green et al, 1976).

## CHAPTER 5

## RESEARCH DESIGN

The research design consisted of two main parts, namely:
a) the pilot study;
b) the main study.

### 5.1 The Pilot Study

The pilot study was an essential part of the research project which helped to identify potential problems at the beginning of the study period, when the necessary revisions were made.

The questionnaire which was the instrument used for data collection in the present study had been pretested in a study conducted in February 1990 in some secondary schools and sixth form colleges in Southampton (U.K.) on the pretesting of the KABP questionnaire on HIV and AIDS designed for use in schools by the World Health Organisation (WHO) (Ingham, 1990).

The purpose of the pretesting study was to provide a full pretesting and evaluation of the WHO Schools KABP questionnaire; and at that time, the objectives of the pretesting were:
a) to assess the levels of comprehension of both the wording of the questions and the instructions with regard to completing the questionnaire at each of six age levels (which included the age range covered by my present study);
b) to conduct the questionnaire under realistic conditions with groups of appropriately aged young people and to note any particular problems which may arise in the subsequent use of the instrument;
c) to note aspects relating to the issue of gaining access to groups of young people through schools and colleges, in particular the reaction of staff and parents (where applicable) to conducting surveys of that nature.

In addition to detailed consideration of the structure and content of the questionnaire, some preliminary analyses of the data produced from the pretesting were conducted.

The samples used for the pretesting were selected such that a balance of sample was achieved in terms of the types of area of residence, and social characteristics of students attending the schools; some of which were urban density schools, the others being more rural in their locations. Five schools/colleges took part in the pretesting; two were sixth form colleges (one in Southampton, and the other in a small city about 12 miles from Southampton); the other three were secondary schools, two in Southampton and one about 10 miles from Southampton.

Although the pretesting was designed in such a way as to emphasise the need to pay attention to pupils and students at the 'lower ability' range, some of the older students were very much on the 'higher ability' scale, and this turned out to be an advantage in the sense that some of the older students were able to spot ambiguities in the wording of certain questions which were not spotted by some of the younger and less able respondents (Ingham, 1990). During the pretesting, three different types of sessions were held. These included:
a) Individual Sessions in which an interviewer introduced the purposes of the study to each student and proceeded through the questionnaire, asking the respondents to read out the questions and make any comments that he or she wished to with regard to the wording, instructions and so on. The
interviewer then jotted down these comments on a special sheet constructed for that purpose (Appendix A).
b) Group Sessions in which three groups were arranged for each of the age groups - an all male, an all female, and a mixed group. These sessions were carried out in the schools/colleges at the same time as the classroom sessions; or in the home of one of the members of each group. The sessions involved reading out the questions by each member of the group in turn, thereby creating a sense of belonging and commitment. This was then followed by discussions amongst group members on the issues of clarity of the meaning of questions and instructions. The comments made by the groups were then recorded on the same type of special sheet constructed for the purpose and used during the individual sessions (Appendix A).
c) Classroom Sessions, during which the students completed the questionnaire on an individual bașis, that is there were no interviewers. The questionnaires were made anonymous to gain the confidence and cooperation of the students as much as it was possible, especially on the sensitive items of the questionnaire.

The WHO Schools KABP questionnaire was pretested in exactly the same format that it was received from the World Health Organisation (WHO), but with a few minor alterations to some of the wordings.

The alterations were local and were made to ensure that the wording was appropriate for English speaking pupils (as opposed to American English) (Ingham, 1990).

### 5.2. The Main Study

The main study consisted of an Experimental Design using Non-equivalent Comparison groups with pretests and posttests in a convenience sample; and it was carried out in three stages at intervals of one week before the intervention was administered to the students, one week after, and three months after the administration of the intervention. The entire study period was approximately four months.

The design was experimental in the sense that some of the students were intentionally exposed to the intervention, and for the purpose of this study have been referred to as cases; while some other students, herein referred to as the control, were deliberately excluded from receiving the intervention. The design consisted of non-equivalent comparison groups because random assignment of the students into experimental and control groups was not possible for logistic reasons, so that the two groups of students were assumed to be non-equivalent (Green \& Lewis, 1986).

It was therefore, in the course of this study, mandatory to have pretests and posttests to adjust for any initial differences between the groups when comparing their scores. Here, the notion of a convenience sample was a way of reducing the usual management of students in the intervention programme, disrupting the normal flow of health education activities, and thus compromising the very effectiveness of health education being tested.

## 5.2(i) The Target Population

The target population for the study was the population of 14 to 16 year old adolescents who were enrolled in schools in the South West Hampshire Education Division at the time of study, and who formed a segment of the age group for
which the health promotion intervention was originally designed, that is 14 to 18 years.

Adolescents attending Independent schools, and special schools such as schools for physically or mentally handicapped/retarded children were excluded from the study.

Although the health education intervention is designed for the age group 14 to 18 years, the choice of the age range 14 to 16 years for this study was based on the consideration that age 14 coincides with the middle of puberty in most contemporary societies (WHO, 1990). An increasing number of girls would have experienced their first menstrual bleeding at this age level and thus become conscious of their physical readiness for sex, and reproduction. Many boys also experience changes in their physical appearance and sexual functioning around this time, although most of them reach full sexual maturity a few years later (Mehryar et al, 1990).

Moreoever, age 14 corresponds with the middle of the secondary level of education in most contemporary societies, and children reaching this age are generally considered to have reached a stage of formal schooling where they can be regarded as literate and capable of responding to self-administered questionnaires. In many societies, this is also the age at which children are regarded as being mature enough to start learning about the so called 'facts of life', that is sex and reproduction (WHO, 1990).

The upper age level for this study, that is 16 years, was mainly determined on the pragmatic basis that the majority of young people above this age would have left school and merged into the general adult population (except those of them who proceed to the sixth form colleges) addressed by community level surveys and health promotion campaigns aimed at the general adult population.

## 5.2(ii) Sampling Strategy

The ultimate goal of sampling was to represent the population as closely as possible, that is, with the least amount of bias, so that the data obtained from the sample could be used to describe the population.

In almost all situations, a probability sample is both desirable from the scientific perspective of estimable sampling error; provision of the only technically legitimate basis for generalisation of information obtained from the sample to the larger population; calculation of sample size needed to stay within an established error bound; specification of confidence interval around sample estimates; provision of basis for legitimate use of inferential statistics; and feasible, from the administrative perspective of the people to be measured, or the program to be evaluated.

In this present study, however, it was not possible to obtain a probability sample; and, for logistical reasons, non probability samples obtained by sampling on particular sets of variables in the population of students, were used for the evaluation study. Sampling units were selected to obtain assumed target cases in the population of students; the objective being to include certain subjects within the sampling frame which were thought to represent the various elements, strata and factions of the population.

To obtain a heterogeneous purposive sample, the samples were obtained within a broader range on one variable represented, that is age. Thus the samples obtained had probabilities equal to 0 or $100 \%$ of being selected.

The use of non-probability samples for this study was justified for the following reasons:

1) the sampling units, that is, the schools which received and did not receive the health promotion interventions, were not identified well in advance of the
study, so that all the elements to be sampled from the population were not potentially identifiable in order to generate a random list from the elements;
2) based upon the fact that the intervention was designed for adolescents aged 14 to 18 years, probability sampling of all secondary school adolescents would not have yielded the most sensitive measurement. The choice was between gathering more adequate information from a nonrepresentative sample of the age group for which the intervention was designed, or less adequate information from a probability sample of all secondary school adolescents aged 11 to 18 years (including students in Sixth Form Colleges);
3) the study was carried out under restricted resources, the most stringent of which was time. Due to the limitations of time, staff, finance and access to respondents, probability samples could not be generated, and so the choice was between obtaining information that does not allow generalisability, or not obtaining information at all;
4) as the samples themselves were the total population of interest, the purpose of the evaluation study was not to generalise the results; but the information obtained from the study was limited to describing the current study samples.

Students who were recruited into the evaluation were selected by the Personal and Sex Education (PSE) teachers, or other designated school personnel, in each of the schools that received the health promotion intervention. The selection was on the pragmatic basis of either a keenness to learn more, or demonstration of certain behaviour patterns (by the students) which the teachers thought might increase the vulnerability of the students to HIV infection and AIDS
(informal discussion with a PSE teacher from one of the schools that received the intervention).

Because the main objective of the present study is to evaluate the effectiveness of the health promotion intervention, the samples used for the study were thus confined to those students already chosen by the schools authorities to receive the intervention, that is the cases; and students in the same environment as those who received the intervention, but who did themselves receive the intervention, that is the control.

## 5.2(iii) School Structure in South West Division of Hampshire

In order to provide some context of the educational system in the area in which the evaluation study was conducted, it is important to give a brief description of the School Structure.

The South West Division of Hampshire covers the City of Southampton, Totton, the Waterside and the New Forest (to the borders of Wiltshire and Dorset) (Appendix B). There are four Local Education Officers who have responsibility for the schools within specific geographical 'areas'.

In the United Kingdom, children begin school at the age of 5 years (or during the term before they reach 5 years old). Two separate systems are in operation in Hampshire. There is one system in which children change schools at the age of 8 years from the First School on to the Middle School and again at the age of 12 years on to the Secondary School. In the other system, children remain in the same Primary School until they are aged 11 years, when they change on to the Secondary School (Ingham, 1990).

The pattern of school organisation is as follows: in the Southampton, Totton and Hardley areas: 'first' schools cater for the $5-8$ years age range; 'middle'
schools cater for the 8-12 years age range; and 'secondary' schools cater for the 12-16 years age range. In the Hythe/Dibden and Forest areas: 'infant' schools cater for the 5-7 years age range; 'junior' schools cater for the $7-11$ years age range; and 'secondary' schools cater for the 11-16 years age range.

The compulsory school leaving age is 16 years. On leaving secondary school, students may decide to study at a Sixth Form or Tertiary College, a College of Further Education, take up employment, or join a training scheme.

Secondary education in Hampshire is organised on comprehensive lines, meaning that all schools provide a full curriculum including courses leading eventually to examinations in a wide range of subjects for the General Certificate of Secondary Education (GCSE). There are at present 23 secondary schools serving the South West Division; 21 of these are 'County' schools while 2 are Roman Catholic secondary schools. Of the 21 'County' schools, 16 are coeducational, and 5 are single sex schools. By 'County' schools is meant schools set up and maintained by the local education authority - that is, Hampshire County Council, often referred to as 'Hampshire'.

Every County school has a geographical area called a 'catchment area' from which it takes the majority of its pupils. Children living in a school's catchment area normally gain admission to that school. The definition of a 'catchment area' rests on a child's home address, but not the junior or middle school currently attended. Each secondary school has curricular links with a group of middle, junior or 5-11 primary schools within the 'catchment area', which form a pyramid of schools and, in most cases, attendance at the local secondary school will follow attendance at one of its associated primary/middle schools. Thus, close connections would have been established not only in terms of the curriculum, but also in terms of staff and social contact.

There are two single sex Roman Catholic comprehensive day schools in Southampton. St. George Roman Catholic School caters for boys in the 11-16 years age range; and students wishing to continue their studies beyond the age of 16 years may transfer to Sixth Form or Tertiary Colleges, or Colleges of Further Education.

St. Anne's Convent School caters for girls in the 11-18 years age range. Students may either either proceed into the school's own sixth form after the age of 16 years, or transfer to Sixth Form or Tertiary Colleges, or Colleges of Further Education.

Pupils in the Southampton area normally transfer at the age of 12 years. Both Catholic schools admit pupils from other parts of Hampshire at the age of 11 years where this is the official age of transfer to secondary education. As Voluntary Aided Church Schools St. Anne's and St. George Schools serve a wide area.

All schools have Governing Bodies. Their role is to serve as a link between the school and the community on the one hand, and between the school and the Education Authority on the other. The membership of the Governing Body depends on the size of the school, but includes representatives of the community, the local authority, parents, and teaching staff, and, in the case of Roman Catholic ('voluntary aided') schools, the Church.

All schools are visited regularly by one of a team of Educational Welfare Officers (EWO). The EWO acts as a direct link between schools and homes, identifying any problems which may prevent children from receiving the full benefits of an education, and will offer help, guidance and support when and where necessary. Assistance with other problems, either within the family or at school, and advice and guidance on other support services, are also available.

All schools are visited regularly by one of a small team of Educational Psychologists, who advise teachers, parents, Education Officers and other professionals in Education, Health, and Social Services as to the best ways of meeting the needs of all children by contributing to policy development, to the inservice education of teachers, and by advising schools on possible ways of helping groups of children who are experiencing similar difficulties.

Careers advice is offered at the appropriate time through the careers staff in the schools, working in close co-operation with the Authority's careers officers.

## Schools where the evaluation study was conducted

The study was conducted in schools located in the Southampton and Hardley areas, where the pattern of school organisation is the same in terms of the school structure; that is, 'first', 'middle' and 'secondary' schools, serving the 5-8 years, 8-12 years, and 12-16 years age ranges; and the same ages for transfer from the 'first' to the 'middle', and from the 'middle' to the 'secondary' schools. The exception was the St. George Roman Catholic School which, as stated before, is a Voluntary Aided Church School, and where pupils are admitted at the age of 11 years as against age 12 years in the 'County' schools.

In terms of HIV/AIDS education, schools vary with regard to the way sensitive issues are raised with the pupils. Recently there has been a change in the constitution of school governing bodies by the Government, whereby a greater number of parent representatives and local people have become involved in these governing bodies. Also as a result of this change, a greater responsibility has been placed on the school governing bodies in respect of the ways 'sensitive issues' are being introduced and dealt with in the School Curriculum (Ingham, 1990).

The ways in which HIV and AIDS are being dealt with within the 'National Curriculum' varies in the schools where the study was conducted. In some of the schools, I gathered (through informal discussions with the teachers) that the issues are dealt with in the context of the main subject areas; that is, biological aspects of the subject of HIV and AIDS are dealt with in Biology, while the geographical aspects are covered in Geography lessons. In some other schools, a specialist member of staff who deals with Personal and Social Education, usually conducts special lessons on HIV/AIDS and related issues for all the children in the school. Thus, students from this latter group of schools may be expected to demonstrate a higher level of familiarity and ease with the subject of HIV and AIDS, than students from the former group.

For this present study, a total of six schools were recruited for the evaluation study. Out of these six schools, five are County controlled schools while one is a Voluntary Aided church school. Also four are co-educational schools while two are single sex schools. Of the two single sex schools, one is a boys only school, and the other a girls only school.

Only four out of the six schools used in this study actually received the health promotion intervention, and these schools were among the seven secondary schools (including three sixth form colleges) where the intervention was presented.

The four schools in this study that received the intervention were Cantell Secondary School, which is situated in the Portswood area of Southampton; Millbrook Community School in the Lordshill area of Southampton; Woodlands Secondary School in the Bitterne area of Southampton; and Hounsdown Secondary School in the Totton area (Appendix B and C).

The remaining two schools were Regents Park Girls School, which is a girls only school, controlled by the Hampshire County and situated in the Shirley area
of Southampton; and St. George Boys School, which is a Voluntary Aided Catholic Church controlled school situated in the Bassett area of Southampton.

In all the schools used in this study the students spend a total number of five years in the secondary schools from Year 8 to Year 12; Year 8 being the equivalent of the first year of secondary school, while Year 12 is the last year of secondary school. Students who were involved in this study were mainly from Year 10 and Year 11.

The health promotion intervention which is now being evaluated was sponsored by the Hampshire Health Education Services, and the number of schools that received the intervention, and which seven schools out of the total of 23 received the intervention, were policy decisions of the Health Education Services. The four schools that were actually used in this present study were those who indicated their willingness through the Headteachers and/or the Personal and Social Education (PSE) teachers to participate in the study.

Consequently only those four schools were used for the evaluation study.

## 5.2(iv) The Intervention

The intervention was in three parts, namely:
a) the Action Pack;
b) the Play;
c) the Workshop.

## The Action Pack

The Action Pack consisted of extensive background information and guidance notes for the teachers/youth leaders, as well as classroom project work including research, questionnaires, creative writing, discussions, roleplay/drama to further investigate the themes and issues to be raised in the play and the workshop.

The questionnaires in the pack provided the background information on the students' HIV/AIDS related knowledge, attitudes and beliefs.

## The Play

How do you get to Britain's schoolchildren before HIV and AIDS does? It is a question that was growing increasingly urgent as the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) sweep their inexorable way towards an ever younger and wider range of people.

In California, where they are several years ahead both in terms of spread of the virus and the ways of coping with it, a youth theatre director had the bright and brave idea of getting children to do the educating. Through two years of workshops, San Francisco's New Conservatory Children's Theatre Company developed 'The Inner Circle' - a play which pulls no punches in its portrayal and analysis of the world's fastest-spreading epidemic.
'The Inner Circle', a project originally developed in San Francisco to educate the increasingly vulnerable teenage population, has been brought over to Britain by the London Central YMCA. Written by Patricia Loughrey, the play has had rave reviews as a unique AIDS awareness project. In Britain, the play is directed by Nigel Townsend and, like the original American production, the carefully anglicised version is performed by a young cast brought together through an intensive process of workshop auditions in which acting ability was given equal importance with a genuine concern for AIDS. There was a three week rehearsal period, which included visits to hospitals to meet AIDS sufferers, and discussion with doctors and counsellors.

The play itself is uncompromisingly structured around the death of a youth who contracted HIV not through sex, as it happens, but through drugs. All the
same, his illness raises fears, doubts, and responsibilities among his friends that cannot easily be shrugged off.

It does cover issues such as safer sex, which the more conservative believe have no place in classroom discussions. It hits the issue head-on, looking at death and loss, which are a taboo area, especially for young people.

Young people often do not see the relevance HIV and AIDS can have on their lives. Thus, by bringing the play into the schools, and talking to schoolchildren about HIV and AIDS after the play, the Inner Circle drama group believe that they can make youngsters more aware of the dangers of HIV and AIDS than the Government television advertisements.

The play is about the story of four friends, all secondary school students, and their responses when one of them, Mark, becomes infected by HIV.

In the opening scene of 'The Inner Circle', Mark has just died of AIDS. His three friends aim to put a memorial time-capsule for him. The mood is tense and eerily cold. The play tells about Mark and the people he left behind; Sarah, his friend and occasional lover; Danny, his best friend since they were kids; and Kathy, Danny's girlfriend. When Mark tells Danny that he has found out that he is HIV positive, Danny is angry and appeals to the audience for sympathy.

Mark deals with his anguish by making aggressive jokes. Sarah, being Mark's girlfriend, has had sex with Mark a few times and once, under the influence of alcohol, with Danny (Mark's best friend). Thus, all the other three, that is Danny, Sarah and Kathy have something to fear from Mark's news about being HIV positive, and the play illustrates some of the misconceptions about HIV and AIDS.

The presence of HIV in their lives strains their relationship as the two couples find out they have all been sharing each other's sexual partners. They express clearly the feelings of fear, anger, confusion and sadness.

The play moves through the different stages of the HIV infection, to AIDS Related Complex (ARC), to AIDS itself and the victim's (Mark's) eventual death by contracting pneumonia.

Through Danny's memories of what happened to his best friend Mark, the audience learns about the possible routes of transmisssion of HIV and the difference between exposure to HIV and actual AIDS.

Through Sarah's memories of her boyfriend Mark, the audience learns about heterosexual modes of transmission of HIV, and the emotional response of someone who discovers she may have been exposed to HIV infection.

Through Kathy's memories of Mark (her boyfriend's best friend) the audience learns how someone is able to overcome her irrational fear of HIV/AIDS and how fear can be generated by misinformation.

## The Workshop

After the performance, there is a workshop which brings the relevance home to the audience of 14 to 18 year olds.

The workshop gives the audience the opportunity to challenge the characters as to why they responded to Mark's dilemma in the way they did; and it is designed to encourage the audience to clarify their thoughts and feelings about HIV/AIDS and related issues.

During the workshop, the victim's (Mark's) three friends return in character to answer questions from the audience. The students in the audience are divided into three groups for ease of communication, discussion and interaction, with the actors rotating between the three groups. Also, an AIDS education officer who is an expert on the subject of HIV and AIDS is on hand to explain facts about the subject.

## 5.2(v)

 The Study InstrumentThe study instrument consisted of a self-completed anonymous questionnaire designed by the Social and Behavioural Research Unit Global Programme on AIDS of the World Health Organisation (WHO) for surveys of Knowledge, Attitudes, Beliefs and Practices (KABP) of young people aged 12 to 18 years (Appendix C).

Although the original WHO questionnaire was prepared in two somewhat different forms, one form being for children aged 12 to 14 years and the other for adolescents aged 15 years and above, the main difference in the two forms was the inclusion of certain items and scales in the version for older age groups which did not seem appropriate for children aged below 15 years. The questionnaire used for this study was a modified version of the form for 12 to 14 years age group. The reason for this modification stemmed from the fact that those items and scales in the version for the older age group, that is 15 years and over, which did not seem appropriate for children aged below 15 years (by the WHO), did not also meet with the approval of the Hampshire County Council Education Authority.

Also, the total time required for completion of the 12 to 14 year old questionnaire was too long by the standards of the Education Authority, and since the approval and cooperation of the Education Authority was paramount in the administration of the questionnaire in the schools, the original WHO questionnaire had to be modified.

The main topics covered in the questionnaire were:-
a) Socio-demographic information on each respondent and his/her family. The items of this section asked for information on respondents' sex, age, school year, living environment (both material and social), and education, occupation, religion and ethnicity of respondents' parents.
b) Leisure time activities - this section enquired about how the young people spend their free time during the school term, with whom, and where. Answers to these questions were expected to shed some light on respondents' social network outside ordinary school hours and their various social encounters, some of which expose them to opportunities of engaging in risky behaviours. Information collected is expected to provide a better understanding of the interests and lifestyles of young people.
c) Knowledge of HIV and AIDS - this was a three part section enquiring:
(i) whether respondents had heard of AIDS before the study;
(ii) about their commonest source of information on HIV and/or AIDS. Information collected was used in developing a media exposure scale for the young people,
(iii) about the students' knowledge about HIV and AIDS. Questions in this part covered vital information areas, such as routes of transmission of HIV, asymptomatic status of HIV carriers, prevention, diagnosis, cure, and vulnerability to HIV and AIDS

In order to cover both facts and myths about HIV/AIDS, the questionnaire included some incorrect statements on HIV/AIDS, and its modes of transmission. The students responded with NO, Don't Know or YES to the questions, and their responses were assigned the values 1 if incorrect, 2 if don't know, or 3 if correct.

Correct or incorrect responses were added together to form scales indicative of HIV/AIDS knowledge, AIDS misconception, and these were utilised in various forms of multivariate analyses.
d) Attitudes and Beliefs about HIV and AIDS - the nine items of this section were designed to collect information on the adolescents' reactions to and
beliefs about HIV and AIDS as a health problem, by asking them how much they agreed or disagreed with the nine different statements, which corresponded directly to some of the knowledge questions. The main constructs covered were perceived vulnerability, perceived seriousness including fear and shame, and desire for further information in terms of education on HIV and AIDS. The students responded to each of these statements on a five-point scale that ranged from Strongly Agree to Strongly Disagree. The responses were assigned the values $1,2,3,4$ or 5 , depending on whether the responses to the five statements were positive or negative; in which case they were assigned 5 or 1 respectively, with an undecided response having a median value of 3 .

The results obtained from this section were used to expore their interaction with such other variables as age, sex, media exposure, and HIV/AIDS knowledge.
e) Attitudes to People with HIV and/or AIDS - the ten items of this section aimed at elucidating respondents' reactions to people with HIV and/or AIDS. The main topics covered in this section were: willingness to maintain contact with people who have HIV/HIV and AIDS; normalisation of people with HIV/HIV and AIDS; and attributions of blame for people with HIV/HIV and AIDS. The students were expected to respond to the statements with responses of Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree. These responses were also assigned the values of $1,2,34$ or 5 , depending on whether the statements were held positive or negative views about people with HIV and AIDS, with the positive having the highest value (5), negative having the lowest value (1), and an 'undecided' response having the middle value (3).

Responses to these items were added together to form an 'AIDS prejudice' scale. In view of the issues of basic human rights raised by the AIDS epidemic, and the need for counteracting prejudice and discrimination against people with HIV and/or AIDS, information collected in this section could be of much practical value in developing educational programmes aimed at reducing public prejudice and discrimination against HIV and AIDS. The overall prejudice score derived from this section was used as one of the variables in multivariate analyses of the background/knowledge/attitude interactions referred to above.
f) Preferred Source of Information on HIV/AIDS - this section dealt with the students' preferred sources of information on HIV/AIDS. A list of possible sources were given and the students were expected to circle one of these to indicate their most preferred source of information. Information collected through this section could be of much value in planning and implementation of AIDS education campaigns aimed at young people, by encouraging involvement of youth in health education and promotion efforts.

In order to effectively prevent HIV infection, sexually transmitted diseases and other important health problems in young people, and in developing tactical projects with the goal of prevention in mind, it was essential to understand the preference of the students.

## CHAPTER 6

## RESULTS

### 6.1 Procedure for Data Analysis

The evaluation study was conducted in three stages, using three study groups. Each of the three stages of the evaluation study involved mainly data collection.

The first stage of the main study took place one week before the health promotion intervention was administered in the chosen schools; and it involved the administration of the self-completed HIV/AIDS questionnaire to students in two of the six schools selected for the study; and completion of same by students already chosen by the Personal and Sex Education (PSE) teachers or other designated school personnel to receive the intervention, who for the purpose of this study are hereafter referred to as belonging to the experimental group; and students not chosen to receive the health intervention, who are referred to as belonging to the control group.

Both these subgroups of students, that is, the experimental and the control subgroups, were designated as Group A students, meaning that there was an Experimental subgroup in Group A and a Control subgroup in Group A.

The second stage of the main study took place approximately one week following the administration of the health promotion intervention to the students selected for the study in their respective schools. This was at approximately two weeks interval from the first completion of the HIV/AIDS questionnaire by the Group A students.

The second stage involved completion of the same HIV/AIDS questionnaire (used in the first stage) by the Group A students as well as students from two other schools where the intervention had also been administered, but no HIV/AIDS questionnaire had been completed. The students recruited into the study for the very first time as this stage of the study were designated as Group B students; and included students in schools where the intervention was administered, and who themselves received the intervention, and were therefore referred to as Experimental students; and students who did not receive the intervention, but were from schools where the intervention had been administered, and were referred to as control students for the purposes of reporting the study results and later discussions.

As in Group A, there were two subgroups of students in Group B, namely experimental and control subgroups.

The third and final stage of the evaluation study took place approximately three months after the health promotion intervention had been administered in the chosen schools. It involved the administration of the HIV/AIDS questionnaire to the students in Group A for the third time; to students in Group B for the second time; and to another group of students referred to as Group C students for the first time. The Group C students were recruited into the study only at the last stage of the study. Thus three groups of students were identified and recruited for the evaluation study at the three different stages of the study and different levels of involvement. A summary of the number of students who completed the HIV/AIDS questionnaire by Group, subgroup, school year, sex and time of study is given in Table 1 in Appendix E.

## Group A

This group consisted of two categories of students, the first being those students who completed the HIV/AIDS questionnaire one week before receiving the intervention; one week after receiving the intervention; and three months after receiving the intervention. This category of students were referred to as the 'Experimental subgroup $A$ ' for the purpose of discussion. The second category of students were those from the same schools as the students in the experimental group $A$; but they differ in that they did not receive the intervention, although they too completed the HIV/AIDS questionnaire one week before the intervention, one week after the intervention, and three months after the intervention. This second category of students were referred to as the 'Control subgroup A' for the purpose of discussion, which will follow shortly.

## Group B

This group was also made up of two categories of students, from the same schools. The first category comprised of students who had received the intervention one week earlier, and completed the HIV/AIDS questionnaire one week later, and three months later, and who were referred to as 'Group B Experimental Subgroup' for the purpose of discussion; while the second category comprised of students who did not receive the health promotion intervention, but had completed the HIV/AIDS questionnaire one week and three months after the intervention had been administered in their schools, and this category of students were referred to as 'Group B Control Subgroup' for the purpose of discussion. The purpose of having the Group B students in the study was to use them as 'control' for the Group A students. That is, without the Group B students, one could not say for certain that the observed post-intervention results of Group A students could not have been caused by factors such as 'testing' other than the

The Rationale for the Present Study Design:-
The inclusion of the three groups of students in the study design was to maximize internal validity (that is the degree to which it can be said with certainty that the results observed after a programme are attributable to the programme or educational treatment) by obtaining explanatory results useful for assessing the true efficacy of the programme under study, regardless of the practicality of replicating the study circumstances elsewhere. By this is meant an attempt to give an accurate estimateof how well the programme would perform under optimum circumstances.

Unlike some other designs for evaluation of health education programmes employing rigorous experimental and quasi-experimental designs, with only one experimental and one control group, in the present study, it was possible to use two experimental and three control groups with parts of groups $A$ and $B$ as controls, and the whole of group $C$ as controls.

Although it was impossible at the onset of the study to establish a schedule of programmatic variations, each phase of the evaluation had its own experimental and control groups. Because the students could not be randomly allocated to experimental and control groups, it was necessary to simplify the evaluation design to consist of discretionary compromises on the ideal experimental design.

Thus, in the present study, two of the different common designs in the evaluation of health programmes, pretestposttest design and one group pretest-posttest design have been employed.
intervention itself. By 'testing' is meant the effects of the pretesting on the posttesting results of the Group $A$ students.

## Group C

This group consisted of students from schools where the health promotion intervention had not been administered, but who had completed the HIV/AIDS questionnaire 3 months after the intervention was received in the other schools. The introduction of the Group C students into the study at the last stage of the study was to establish the long-term effects of the intervention. That is, the Group C students were used to determine whether the HIV/AIDS-related knowledge of the Group $A$ and $B$ students was higher, and whether their attitudes and beliefs about HIV/AIDS and to people with HIV/AIDS were more positive at the 3 -months postintervention testing, than those of their counterparts (in terms of age, school year and sex) in Group C who had not received the intervention in their schools. (The next paragraph continues on page 64b).

In summary, students in both Group A Experimental and Control subgroups completed the HIV/AIDS questionnaire thrice; those in Group B Experimental and Control subgroups completed the HIV/AIDS questionnaire twice; and those in Group C completed the HIV/AIDS questionnaire only once.

## Criteria for inclusion of data in analysis

Students were included in the analysis if they completed at least 21 of the 23 items ( $91 \%$ ) in the knowledge scale; at least 8 out of the 9 items ( $89 \%$ ) in the attitudes and beliefs scale; and at least 9 out of 10 items (90\%) in the social anxiety scale (that is, attitudes to people with HIV/AIDS).

Where one or two values were missing in the knowledge or belief or attitude sections, the mean values of the remaining items were substituted. A stratified
analysis of students' responses to factual information questions, by sex, school year and study group, was done.

## Part I - About Yourself and Your Family

The part I of the questionnaire about the respondents and their family, was analysed according to the items contained in this part. The sex, age at last birthday, school year, adults with whom the respondents were living, religious background, tribe/ethnic background, were all analysed as they appeared in the questionnaire. The items on the father's, mother's and future occupation were modified by recategorising the answers to the questions. Alternatives 1, 2, 4, 6 and 9 were recategorised as non-manual; alternatives 3,5 and 7 were recategorised as manual; and alternatives 8 and 10 as 'other' category.

## Part II - Leisure Time Activities

Items contained in this part of the questionnaire were analysed as they appeared and were intended to be.

## Part III - Knowledge of HIV/AIDS

The awareness section of this part of the questionnaire was analysed accordingly.

The sources of information section, and the preferred sources of information section, were also analysed as they appeared on the questionnaire.

For the purposes of analysis, the 23 items in the section measuring the knowledge levels of the students were categorised into six, namely:
a) Correct routes of transmission of HIV
b) Incorrect routes of transmission of HIV
c) Asymptomatic status of HIV carriers
d) Diagnosis/Cure of HIV/AIDS
e) Prevention/Cure of HIV/AIDS

The category on the correct routes of transmission of HIV consisted of five items (Ba to $3 e$ ) in the part III of the questionnaire.

The category on the incorrect routes of transmission of HIV consisted of six items ( $3 f$ to 3 k ) in the Part III of the questionnaire.

The category on the asymptomatic status of HIV carriers consisted of two items ( 31 and 3 m ) in the part III of the questionnaire.

The category on the diagnosis/cure of HIV/AIDS consisted of three items ( $3 n$ to $3 p$ ) in the part III of the questionnaire.

The category on the prevention/cure of HIV/AIDS consisted of three items ( $3 q$ to $3 s$ ) in the part III of the questionnaire.

The category on the vulnerability to HIV and AIDS consisted of four items (3t to $3 w$ ) in the part III of the questionnaire.

In this section, percentages of students with correct responses were compared with those with incorrect responses. To ascertain statistical differences in the proportion of students who correctly answered each question, 'don't know' responses were counted as incorrect. Also the mean values of the responses of the students to each of the categories of items were computed for comparison, within and between the groups, subgroups and subsamples of students that took part in the evaluation study.

The differences in the mean scores of the students have been computed and referred to as 'mean scores differences' in the Results sections. Where statistically significant differences were found in mean scores, and the mean scores differences are computed, the confidence intervals for the differences between mean scores have been computed to give estimates of the true population means.

From the normal distribution of sample means around a true mean, expressed by the variate

$$
z=\frac{\bar{x}-\mu}{\sigma / \sqrt{n}}
$$

We know that 95 out of 100 sample means will fall within an interval of 1.96 S.E. units on either side of the population mean.

This probability can be indicated symbolically as:

$$
p\left(-1.96 \preceq \frac{\bar{x} \mu}{S E_{\bar{x}}} \preceq 1.96\right)=.95
$$

It has been shown that this statement is mathematically equivalent to the statement:
$P\left(x-1.96 S E_{x}<\mu<x+1.96 S E_{x}\right)$
In other words, in repeated samples, the probability that the random interval

$$
\left(x-1.96 S E_{x}\right) \quad \text { and } \quad\left(x+1.96 S E_{x}\right)
$$

Lower Confidence limit
Upper Confidence limit
will contain $\mu$ is .95.
These limits can thus be defined as the sample mean minus 1.96 times the Standard Error of the mean and the sample mean plus 1.96 times the Standard Error of the mean.

Student's t-test was also performed on the data set to test for statistical significance of difference in the mean responses of students in each study group, subgroup and subsample.

Part IV and V - Attitudes and beliefs about HIV/AIDS; and Attitudes to People with HIV/AIDS

The same type of analysis performed on the knowledge items was done on the data sets obtained from the parts IV and $V$ of the questionnaire.

For the purposes of analysis of the data generated in these two parts, the items in part IV of the questionnaire were recategorised into three, namely:-
a) Perceived Vulnerability
b) Perceived Seriousness
c) Perceived Need for Education

While the part $V$ items were also categorised into three, but different, subtitles, namely:-
a) Normalisation of people with HIV and AIDS
b) Willingness to maintain contact
c) Attribution of blame for people with HIV and AIDS

The category on the perceived vulnerability to HIV/AIDS consisted of two items ( $a$ and $b$ ) in the part IV of the questionnaire.

The category on the perceived seriousness of HIV/AIDS consisted of four items (c to f) in the part IV of the questionnaire.

The category on the perceived need for education on HIV and AIDS consisted of three items (g to i) in the part IV of the questionnaire.

The category on the normalisation of people with HIV and AIDS consisted of three items (a to $c$ ) in the part $V$ of the questionnaire.

The category on the willingness to maintain contact with the people who have HIV and AIDS consisted of five items (d to $h$ ) in the part $V$ of the questionnaire.

The category on the attribution of blame for people with HIV and AIDS consisted of two items ( $i$ and $j$ ) in the part $V$ of the questionnaire.

Although each item in each of these categories had responses ranging from strongly agree to strongly disagree, and meaning either positive attitude or negative attitude, depending on the content of the items, the percentages of students with responses in the upper two ranks or lower two ranks of the scale were summed up and compared with the percentages of students with responses in the lower three or upper three ranks as the case may be, and these percentages were compared between and within the groups, subgroups and subsamples of students.

The mean of the values assigned to each of the ranks of responses were also compared with Student's t-test, to test for statistical significance of difference in the mean values wherever differences between the mean values existed.

Chi-squared tests were also performed on the data set to test for statistical significance of difference in the proportion/percentages of students with responses indicating positive attitudes and negative attitudes, within and between the groups, subgroups and subsamples of students.

In addition to what had been done to the data set, demographic variables were cross tabulated with knowledge, beliefs, attitudes, and social anxiety scores. Conventional univariate statistical methods were used to screen these variables for inclusion in the multivariate analysis. The multivariate analysis performed on the data was multiple linear regression analysis. The dependent variables were: knowledge scores/attitude and belief scores, and social anxiety scores, after the health promotion intervention had been administered in the schools. The independent variables were: sex, school year, the absence or presence of the intervention, and the time of assessment.

The information on the sex and school year of the students had been collected and coded. Sex was coded as '1' if male and '2' if female. School year
was coded as '1' if school year 10, and '2' if school year 11; and because for each of the variables sex and school year, there were only two alternatives, a dummy variable (D) was created for each of them. Sex was, therefore, 'Sex $D_{0}$ ' if male and 'Sex $D_{1}$ ' if female; and school year was 'Sch Yr $D_{0}$ ' if school year 10 and 'Sch $\mathrm{Yr} \mathrm{D}_{1}$ ' if school year 11.

It was desirable to test the effect of the intervention on the dependent variables, that is, HIV/AIDS-related knowledge, attitudes and beliefs about HIV/AIDS, and attitudes to people with HIV/AIDS; and the effect of time of assessment of these dependent variables on the variables themselves, that is, the effects of time of assessment (as an independent variable) on the dependent variables. However, neither the intervention nor the time of assessment had been designated as variables in the study design, and had not been coded as such. Because of this, it was necessary to create dummy variables for them.

For the 'intervention', which was designated as the 'play', only one dummy variable was created, since there were only two alternatives, ie. the presence or absence of the intervention. So that, for the dummy variable for Play $D=0$ meant that there was no intervention, and Play $D=1$ meant that there was an intervention.

For the 'time of assessment', designated as 'time', there were three alternatives: one week before, one week after, and three months after the intervention, so that three dummy variables were created. Time $\mathrm{D}=0$ meant one week before the intervention, Time $D=1$ meant one week after the intervention, and Time $D=2$ meant three months after the intervention.

Each of these dummy variables were then fitted into the multiple regression model, the purpose of which was to describe the relationship between the dependent and independent variables, and to determine if one dependent variable
dominated the other in the students' knowledge, attitudes and beliefs, and social anxiety about HIV and AIDS upon the administration of the intervention.

The data were analysed using the Statistical Package for Social Sciences (SPSS/PC+).

### 6.2 Presentation of Results

The results of the evaluation study are presented in two forms. One form of the results examines the total groups (that is experimental and control subgroups) responses to the outcome measurement through the instrument of the study, that is, the HIV/AIDS questionnaire. Due to the known heterogeneity of most health education programme participants, the results of the study are also presented in a form that looks at the responses of systematically identified subgroups, after the data has been partitioned according to the factors that might bias comparison of experimental and control groups.

## 6.2(i) General Observations and Response Rates

In general, the HIV/AIDS questionnaires which were the instruments of this study, were completed very successfully by the students. Table 1.9 in Appendix D refers to the number of students in Group A who completed the HIV/AIDS questionnaire.

In the second stage of the study, that is, one week after the health promotion intervention, the response rate was $93 \%$ in the experimental and $95 \%$ in the control subgroups, both of Group A. It was at this stage of the study that the Group B students were recruited into the study. Table 1.9 in Appendix D gives the summary of the number of students in Group B by subgroups who responded to the HIV/AIDS questionnaire.

In the third and final stage of the study, the questionnaire response rate was $100 \%$ in the Group A experimental subgroup, $98 \%$ in the control subgroup; $94 \%$ in the Group B experimental subgroup, and $96 \%$ in the control subgroup. It was at this stage of the study that the Group C students were introduced into the study, and there were 159 students in this group ( $M=80, F=79$ ).

## 6.2(ii) Socio-demographic Information on Students

The tables 2.1 (a), $2.1(\mathrm{~b}), 2.2(\mathrm{a}), 2.2(\mathrm{~b})$ and 2.3 in Appendix D refer to the descriptive results of the study by school year of the students according to their sexes, age at last birthday, the adults with whom they live, father's and mother's occupation, religion in which they were brought up, the ethnic/tribal origin of their parents and their expected future occupation. These tables also contain information on the student's leisure time activities, including where and with who they spend most of their free time during school terms.

In all, a total of 425 students were involved in the evaluation study. The majority of them were males ( $52 \%$ ), 14 years old ( $63 \%$ ) and in the tenth year of secondary school ( $87 \%$ ). The mean age for males was 14.5 years and 14.4 years for females.

With regard to the socio-economic background of the students, the results showed that most of the students lived with both parents (71\%), and were from homes where the fathers/stepfathers had manual jobs ( $53 \%$ for males, $61 \%$ for females). Most of the mothers/stepmothers were in non-manual jobs ( $52 \%$ for the males and $57 \%$ for the females). It was noteworthy that approximately half of the students did not know or have any religious background.

On the social network of the students, a greater percentage of them, especially the male students, spent most of their free time with same sex friends from their schools ( $32 \%$ for males; $27 \%$ for females), mostly in their own homes
(44\%). It was found, however, that a small percentage (14\%) of the students had other places of interest where they spent their leisure time; some with their pets, most commonly horses, some doing doing part-time jobs like selling newspapers.

## 6.3(i) General Awareness and Sources of Information on HIV/AIDS

Tables 2.1 (a), 2.1(b), 2.2(a), 2.2(b) and 2.3 give summaries of the general awareness of the Human Immunodeficiency Virus (HIV), and the Acquired Immune Deficiency Syndrome (AIDS), and the sources of information of the students. All the students claimed to be aware of the HIV and AIDS. Their commonest source of information on the subject was the television $60 \%$ of the males and $52 \%$ of the females).

## 6.3(ii) HIV/AIDS-Related Knowledge

A general look at the responses of the students before the health promotion intervention was administered in the schools, which revealed that both the experimental and control subgroup of students had a reasonably high knowledge of HIV and AIDS, with regard to the routes of transmission of HIV, asymptomatic status of HIV carriers, diagnosis, prevention, cure, and vulnerability to HIV/AIDS.

Tables 3.1 a (i) and 3.1 a (ii) in Appendix E refer to the percentage of students in Group A, experimental subgroup and control (subgroup respectively), with 'Correct', 'Incorrect', and 'Don't know' responses to the knowledge items, by sex and school year. The mean scores of the male and female experimental students on knowledge items, by the category of knowledge items; that is, correct routes of transmission, incorrect routes of transmission, asymptomatic status of carriers, diagnosis/cure, prevention/cure, and vulnerability to HIV/AIDS were found to be very similar. Table $3.4 a(i)$ in Appendix $E$ gives a summary of the mean scores of Group A students by subgroup, sex, school year and time of study.

Inspection of these mean scores showed that the mean scores of the experimental students were different from those of the control students; however, Student's t-tests did not establish any statistically significant differences between the two subgroup with regard to their mean knowledge scores. For the students in the control group, the mean scores of the females were higher than those of the males for five of the six categories of knowledge items except for the category of knowledge items on prevention/cure of HIV/AIDS.

Comparative analysis of the students' responses and their mean knowledge scores within subgroups, and between subsamples of males and females, showed that within the experimental subgroup, there were statistically significant differences between the mean scores of males and females in school year 10 on the knowledge category of diagnosis/cure of HIV/AIDS.

Analysis of the data collected during the second stage of the study showed that there were increases and decreases in the percentages of males and females in Group A, within the experimental subgroup, with correct responses to some of the knowledge items. A similar pattern was observed within the control subgroup of Group A. Summaries of the percentages of students with 'Correct', 'Incorrect' and 'Don't know' responses, by groups, subgroups, sex and school years, are given in Tables 3.2a(i), 3.2a(ii), 3.2b(i), 3.2b(ii); and mean knowledge scores are given Table 3.4; all in Appendix E. Comparative analysis of the students' responses and their mean knowledge scores within subgroups and between subsamples of males and females showed that within the experimental subgroup, there were statistically significant differences between the mean scores of males and females in school year 10, on the knowledge category of diagnosis/cure of HIV/AIDS.

Further analysis of the data set, by subsamples, showed that only a few differences existed between the males in the experimental and control subgroups. These differences were found to be statistically significant only when the comparison was made between the students in school year 10. It was observed that, over the two weeks, the differences observed were more peculiar to the males (both experimental and control) than to the females, and more to students in school year 10 than those in school year 11. The mean knowledge scores on correct routes of transmission of HIV, of the males in school year 11, dropped from 3.0 to 2.9, while in general there were increases in the knowledge scores on 'incorrect routes of transmission' and the 'asymptomatic status of HIV-carriers' for both male and females students in school years 10 and 11. A general decrease of mean knowledge scores on these items was found in the controls, and was most noticeable in the females in school year 11.

Analysis of the data collected from the students in Group B showed that, on the average, there was a high level of HIV/AIDS-related knowledge among the students. Tables 3.2a(i), 3.2a(ii), 3.2b(i), 3.2b(ii), in AppendixF give summaries of the students' knowledge levels by the percentage of 'correct', 'incorrect' and 'don't know' responses to HIV/AIDS-related knowledge items.

Further analysis of the data by subgroup, sex and school year, showed that there were statistically significant differences between the mean knowledge scores of the male and the female students in school year 10 on some of the knowledge items. T-tests were used to establish these significant differences, which were found on items measuring knowledge levels on the question of transmission of HIV through receiving HIV-infected blood. Mean scores difference was -0.21, with a confidence interval of 0.03 to 0.37 , and $t=-2.2, \mathrm{p}<0.05$; and discovery of a
vaccine for preventing against HIV infection with a mean scores difference of 0.89 , confidence interval $=0.1$ to $0.9, \mathrm{t}=3.6, \mathrm{p}<0.01$.

At this level, it was desirable to compare the responses of the Group A students with those of Group B. A comparison of the percentage of students with correct responses to knowledge items, and a comparison of mean knowledge scores of students in Group A with those in Group B, showed that a greater percentage of male and female students in Group A were more knowledgeable at the time of testing than those in Group B. This comparison was based on the responses of school year 10 students only, because Group B had no students in school year 11. The difference in percentage of students with correct responses were established with chi-square tests, while t-tests were used for confirming statistically significant differences in the mean scores of knowledge items. For males, these items included:

- Transmission of HIV through kissing a person who has the virus. Mean scores difference was 0.38 , with a C.I. of 0.16 to $0.60, t=3.5, p<0.01$.
- Transmission of HIV through giving (donating blood). Mean scores difference $=0.48, \mathrm{C} . \mathrm{I} .=0.08$ to $0.83, \mathrm{t}=2.5, \mathrm{p}<0.01$.
- Passing the virus to other uninfected people by a person who has the virus but who looks healthy. Mean scores difference $=0.37$, C.I. $=0.14$ to 0.60 , $\mathrm{t}=3.1, \mathrm{p}<0.01$.
- There is no cure for AIDS. Mean scores difference $=0.72, \mathrm{C} . \mathrm{I} .=0.47$ to $0.99, t=5.6, p<0.01$.
- Doctors have discovered a vaccine that can prevent people from becoming HIV-infected. Mean scores difference $=0.24, \mathrm{C} . \mathrm{I} .=0.04$ to $0.44, \mathrm{t}=2.3$, $p<0.05$.
- AIDS can be cured if detected early. Mean scores difference $=0.54$, C.I. $=0.20$ to 0.72 .
- When a person has AIDS his/her body cannot defend itself from certain diseases. Mean score difference $=0.37, \mathrm{C} . \mathrm{I}=0.16$ to $0.58, \mathrm{t}=3.4, \mathrm{p}$ $<0.01$.

For the females the knowledge items included:

- Transmission of HIV by giving (donating) blood. Mean scores difference $=$ 0.88, C.I. $=0.45$ to $1.13, \mathrm{t}=4.0, \mathrm{p}<0.01$.
- A person can become infected with HIV and not show signs of it. Mean scores difference $=0.54, \mathrm{C} . \mathrm{I} .=0.26$ to $0.82, \mathrm{t}=3.7, \mathrm{p}<0.01$.
- There is no cure for AIDS. Mean scores difference $=0.52$, C.I. $=0.14$ to $0.90, \mathrm{t}=3.1, \mathrm{p}<0.01$.
- Doctors have discovered a vaccine that can prevent people from becoming HIV-infected. Mean scores difference $=0.88$, C.I. $=0.47$ to $1.21, \mathrm{t}=4.3$, $\mathrm{p}<0.01$.

The differences between the proportion of females in Group A and Group $B$ were more widespread than in the male students; but comparison between the female control subgroups (of Group A and B) revealed that the females in the control subgroup of Group A demonstrated higher levels of knowledge on the knowiedge items on the discovery of a vaccine for the prevention of HIV, with a mean scores difference of $0.41, \mathrm{C}$.I. of 0.07 to 0.97 , and t value $2.3, \mathrm{p}<0.05$.

Analysis of the third data set, at group level, showed that increases and decreases in the percentages of students (experimental and control) with correct responses to the knowledge items. Summaries of these results are presented in Tables 3.3a(i), 3.3a(ii), 3.3b(i), 3.3b(ii), and 3.3c, in Appendix E.

Data analysis of the Group C students revealed that the students also had a reasonably high level of knowledge of HIV/AIDS. Table 3.3c gives a summary of the students' percentage 'Correct', 'Incorrect' and 'Don't know' responses to the knowledge items.
6.3(iii) Results of Data Analysis of HIV/AIDS-Related Knowledge by

## Group, Subgroup and Subsample

When the knowledge data of Group A male students in school year 10, experimental subgroup before the intervention, was compared to that obtained about three months later, statistically significant differences were found in their mean scores on the question of transmission of HIV through

- Giving blood. Mean scores difference $=0.26, \mathrm{C} . \mathrm{I}=0.08 \mathrm{tp} 0.60, \mathrm{t}=-2.1$, $p<0.05$.
- Bites of mosquitoes that have fed on HIV-infected people. Mean scores difference $=-0.37, \mathrm{C} . \mathrm{I}=0.01$ to $0.75, \mathrm{t}=-2.0, \mathrm{p}<0.05$.

No such differences were found within the male control subgroup of the same school year. On different knowledge items, however, the male students in the control subgroup in school year 10 were found to have significantly different mean scores in the period one week and three months after the health promotion intervention. These knowledge items included transmission of HIV:

- From an infected pregnant woman to her unborn baby. Mean scores difference $=-0.31, \mathrm{C} . \mathrm{I} .=0.03$ to $0.59, \mathrm{t}=-2.1, \mathrm{p}<0.05$.
- Through the bites of mosquitoes which have fed on an infected person. Mean scores difference $=0.59, \mathrm{C} . \mathrm{I}=0.22$ to $0.96, \mathrm{t}=3.0, \mathrm{p}<0.01$. and
- Passing of HIV to other people by an infected person for the rest of his/her life. Mean scores difference $=-0.44$, C.I. $=0.03$ to $0.69, \mathrm{t}=-2.0, \mathrm{p}<0.05$.

Data comparison of male students made between Group A and Group B experimental subgroups, following the three months period, showed that the Group A males scored significantly higher than the Group B males, on a number of knowledge items. Tests for statistical significance of difference showed that the differences cut across five of the six categories of knowledge scales. Transmission of HIV through:

- Having injections with unsterilised needles/syringes. Mean scores difference

$$
=0.30, \text { C.I. }=0.12 \text { to } 0.48, t=2.3, p<0.05
$$

- Wearing the clothes used by an infected person. Mean scores difference $=0.34$, C.I. $=0.13$ to $0.55, t=2.2, p<0.05$.
- Kissing a person who has the virus. Mean scores difference $=0.51$, C.I. $=$ 0.22 to $0.80, \mathrm{t}=2.7, \mathrm{p}<0.01$.
- There is no cure for AIDS. Mean scores difference $=0.54$, C.I. $=0.26$ to $0.82, \mathrm{t}=2.9, \mathrm{p}<0.01$.
- Doctors have discovered a vaccine that can prevent people from becoming infected with HIV. Mean scores difference $=0.59$, C.I. $=0.36$ to $0.82, \mathrm{t}=$ 3.6, $p<0.01$.
- One can tell if a person has the HIV by the way he/she looks. Mean scores difference $=0.51, \mathrm{C} . \mathrm{I} .=0.24$ to $0.78, \mathrm{t}=2.8, \mathrm{p}<0.01$.
- AIDS can be cured if detected early. Mean scores difference $=0.71$, C.I. $=0.43$ to $0.99, \mathrm{t}=3.8, \mathrm{p}<0.01$.
- Having sex with many partners increases a person's risk of getting infected with HIV. Mean scores difference $=0.32$, C.I. $=0.27$ to $0.91, \mathrm{t}=2.3, \mathrm{p}$ $<0.05$.

Within group, subgroup, subsample comparison of male students in Group B experimental subgroup showed that during the period one week and 3 months
after the intervention, the knowledge levels of the males to some of the knowledge items had increased. This was an observation that was also common to the Group B control subgroup males except on a few knowledge items.

Between group, subgroup and subsamples comparison of Group A to Group C, and Group B to C, showed that Group A school year 10 male students demonstrated higher knowledge levels to some of the items as compared to the Group C males of the same school year.

Comparison of female students showed that Group A experimental subgroup females scores significantly higher than their counterparts in Group B. These differences were established to be statistically significant with the t-test. The items on which the females differed significantly included:

- Kissing an infected person. Mean scores difference $=0.58$, C.I. $=0.21$ to $0.95, \mathrm{t}=3.6, \mathrm{p}<0.01$.
- Giving (donating) blood. Mean scores difference $=0.96$, C.I. $=0.56$ to 1.36, $\mathrm{t}=4.7, \mathrm{p}<0.01$.
- There is no cure for AIDS. Mean scores difference $=0.67$, C.I. $=0.25$ to 1.09, $\mathrm{t}=3.1, \mathrm{p}<0.01$.
- Discovery of a vaccine for the prevention of HIV infection. Mean scores difference $=0.63, \mathrm{C} . \mathrm{I} .=0.33$ to $0.99, \mathrm{t}=3.5, \mathrm{p}<0.01$.
- $\quad$ AIDS can be cured if detected early. Mean scores difference $=0.38$, C.I. $=0.04$ to $0.72, \mathrm{t}=3.1, \mathrm{p}<0.01$.
- A person who has AIDS cannot defend his/her body from certain diseases.

Mean scores difference $=0.28, \mathrm{C} . \mathrm{I}=0.02$ to $0.58, \mathrm{t}=2.2, \mathrm{p}<0.05$.
Between group comparison of Group A experimental females and Grup C females also showed that the Group A females in school year 10 scored higher (but not as high when compared to Group B experimental females) than the Group
$C$ females. The highest $t$-value obtained from $t$-tests was $(t=3.2, p<0.01)$ for the question on ability of the body of an infected person to defend his/her self against certain diseases.

Comparison between Group B experimental females and Group C females showed that the Group $C$ females had higher knowledge levels in some of the knowledge items than the Group B experimental females. The items included were:

- Transmission of HIV through giving (donating) blood. Difference in mean scores was 0.86 , with a C.I. of 0.44 to $1.28, t=4.1, p<0.01$.
- $\quad$ There is no cure for AIDS. Mean scores difference $=0.59$, C.I. $=0.18$ to $1.0, \mathrm{t}=2.7, \mathrm{p}<0.01$.
- One can tell if a person has the HIV by the way he/she looks. Mean scores difference $=0.26, \mathrm{C} . \mathrm{I} .=0.02$ to $0.50, \mathrm{t}=2.2, \mathrm{p}<0.05$.


### 6.4 Attitudes and Beliefs about HIV/AIDS

A number of items were included in this part of the study instrument, to generate the data which were used to measure the attitudes and beliefs of the students about HIV and AIDS, on a scale which ranged from 1 to 5 , so that the nearer their scores were to 5 , the more positive was their attitude/belief concerning the particular item.

The summaries of the students' percentage 'Correct', 'Incorrect' and 'don't know' responses are given in Tables $3.1 \mathrm{a}(\mathrm{i}), 3.1 \mathrm{a}(\mathrm{ii}), 3.1 \mathrm{~b}(\mathrm{i}), 3.1 \mathrm{~b}(\mathrm{ii}), 3 \mathrm{a}(\mathrm{i})$, $3.2 a(i i), 3.3 a(i), 3.3 a$ (ii), 3.3 b (i), 3.3 b (ii), and 3.3 c ; and their mean attitude/beliefs scores in Table 3.4b; all in Appendix E.

The first data set generated from the study showed that the students were just about neutral or undecided in their attitudes and beliefs about HIV/AIDS,
except on their perceived need for more education on HIV/AIDS. The mean attitude scores of the Group A experimental students ranged from 3.1 to 4.1.

Within the control subgroup, school year 11 female students were found to be more positive in their attitudes than their male counterparts, while the school year 10 males had more positive attitudes than their female counterparts. T-tests were used to establish statistically significant differences between their mean responses.

Analysis of the data collected during the second stage of the study revealed that mean attitude scores of the experimental students in Group A had increased both sexes (that is, males and females) for items measuring their perceived vulnerability to HIV/AIDS, in both school year 10 and 11, and their perceived need for more education in only female students in school year 11.

Within subsamples comparison of the first and second sets of data showed that on the attitude item measuring the students' ability to say 'No' to friends when asked to do things against their wish, the mean score of the experimental males in Group A school year 11 had increased significantly within one week of exposure to the intervention, while there were significant decreases in the mean attitude scores of experimental females in Group A school year 10 on the items measuring their beliefs that:

- Many of their classmates/friends were worried about HIV/AIDS. Mean scores difference $=0.19$, C.I. $=0.17$ to $0.55, \mathrm{t}=2.0, \mathrm{p}<0.05$.
- They needed to know a lot more about HIV. Mean scores difference $=$ 0.69, C.I. $=0.28$ to $1.10, \mathrm{t}=2.1, \mathrm{p}<0.05$.
- They needed to know a lot more about AIDS. Mean scores difference = 0.92 , C.I. $=0.51$ to $1.33, \mathrm{t}=2.4, \mathrm{p}<0.05$.

The Group A control subgroup data showed that within the same time interval, the mean attitude score of students also increased in both school years 10 and 11, but only on one of the attitude items $(t=3.1, p<0.01)$ and $(t=3.0$, $p<0.01$ ).

When the data sets of Group A were compared to those of Group B, at the subgroup, subsample levels, the mean attitude scores of the Group A students were found to be significantly higher than those of Group B students. The differences were more apparent in the scores of females on some of the items than in the male students. For the females. Overall, the females' mean attitude scores differed more than those of the males.

Within subgroup analysis of data collected three months after the intervention showed that the males and females in the control subgroups (Group A) differed significantly in their mean scores on some of the attitude items.

Comparison of the experimental males in Group A to the males in Group C, on the basis of their school year, revealed that the items measuring beliefs about knowing how to protect themselves from becoming HIV-infected, and being worried about their past activities/behaviour because of AIDS, the Group A school year 11 experimental males were more positive than the Group C males. The mean score difference was -0.73, C.l. $=0.22$ to $1.24, \mathrm{t}=2.8, \mathrm{p}<0.01$, and Mean scores difference $=-1.8$, C.I. $=0.58$ to 1.78 , respectively. There were also two other items measuring beliefs that:

- Their chances of becoming infected with HIV were very small. Mean scores difference $=-0.07, \mathrm{C} . \mathrm{I}=0.37$ to $0.51, \mathrm{t}=-3.4, \mathrm{p}<0.01$.
and
- Young people of their ages should be taught how to protect themselves against sexually transmitted diseases including HIV/AIDS. Mean scores difference $=-0.21, \mathrm{C} . \mathrm{I}=0.00$ to $0.42, \mathrm{t}=-2, \mathrm{p}<0.05$,
on which the Group A experimental males in school year 10 demonstrated more statistically significant positive beliefs than their counterparts in Group C.

The Group A control males were found to be also more positive than the Group C males.

When the Group B males were compared to their counterparts in Group C, the experimental males in Group $B$ were found to be less positive in their attitudes than the Group C males on some of the attitude items. The items included were beliefs that:

- Their changes of becoming HIV-infected were small. Mean scores difference $=0.60, \mathrm{C} . \mathrm{I}=0.21$ to $1.09, \mathrm{t}=2.2, \mathrm{p}<0.05$.
- They know how to protect themselves from becoming HIV-infected. Mean scores difference $=0.60, \mathrm{C} . \mathrm{I}=0.23$ to $0.97, \mathrm{t}=2.0, \mathrm{p}<0.05$.
and
- Many of their classmates/friends were worried about HIV/AIDS. Mean scores difference $=0.60, \mathrm{C} . \mathrm{I}=0.19$ to $1.01, \mathrm{t}=2.0, \mathrm{p}<0.05$.

Similar differences were found between the Group C males and the Group B control males.

### 6.5 Attitudes to People with HIV/AIDS

Tables $3.1 \mathrm{a}(\mathrm{i}), 3.1 \mathrm{a}(\mathrm{ii}), 3.1 \mathrm{~b}(\mathrm{i}, 3.1 \mathrm{~b}$ (ii), $3.2 \mathrm{a}(\mathrm{i}), 3.2 \mathrm{a}(\mathrm{ii}), 3.2 \mathrm{~b}(\mathrm{i}), 3.2 \mathrm{~b}(\mathrm{ii})$, 3.3a(i), 3.3a(ii), 3.3b(i), 3.3(b(ii), and 3.3c, all in Appendix E, give summaries of the students' percentage 'Correct', 'Incorrect' and 'Don't know' responses to items measuring the students' attitudes to people with HIV/AIDS.

Physical inspection of the data collected at the first stage of the study showed that the students generally had neutral (undecided) attitudes. Their mean attitude scores were between 3.0 and 4.0. The attitude of the males were found to be different from those of the females, especially those in subsamples of school year 11. However, statistically significant differences in these percentages could not be established with the chi-square test, and neither could t-tests establish statistical differences in the mean attitude scores of the students.

In the control subgroup, however, the females in school year 10 were found to have higher mean scores than their male counterparts on some of the attitude items. These included items measuring their willingness to main contact with people who have HIV/AIDS by:

- Visiting a friend who has AIDS. Mean scores difference $=-0.5$, C.I. $=0.15$ to $0.85, \mathrm{t}=-2.3, \mathrm{p}<0.05$.
- Going to a dentist who treats people who are HIV-infected. Mean scores difference $=-0.4$, C.I. $=0.21$ to $1.01, \mathrm{t}=-3.1, \mathrm{p}<0.01$.
- Taking care of a relative who has AIDS. Mean scores difference $=-0.6$, C.I. $=0.02$ to $1.22, \mathrm{t}=-2.1, \mathrm{p}<0.05$.
and
- Their attitude to attribution of blame for people with HIV/AIDS. Mean scores difference $=-1.6, \mathrm{C} . \mathrm{I} .=0.02$ to $3.18, \mathrm{t}=-4.8, \mathrm{p}<0.01$.

Analysis of the data collected one week following the intervention showed that the mean attitude scores of students in the control subgroup were different between the subsamples of males and females, and between school year 10 and school year 11 students. The school year 10 females had higher mean attitude scores than their male counterparts. The attitude items included were the same as those on which they differed one week before the intervention though neither
of them had received the intervention. However, the t-value of the difference on the item measuring their attitude to the attribution of blame for people who have HIV/AIDS one week before the intervention had become reduced to -2.8 , with the mean scores difference as -0.89 , and a C.I. of 0.44 to 1.34 . The same differences were found between the female school year 11 students and their male counterparts. It is worthwhile mentioning that it was on the same items that the females (control subgroup) scored higher than the males, one week before the intervention, and that the females also did so one week after the intervention. This means that the differences had persisted over the two week period.

The mean scores of the experimental females in Group A on some attitude items were found to be significantly higher one week after the intervention than one week before the intervention. The items included were those measuring their willingness to maintain contact with people who have HIV/AIDS, by:

- Visiting friends who had HIV. Mean scores difference $=-0.3$, C.I. $=0.06$ to $0.54, \mathrm{t}=-2.1, \mathrm{p}<0.05$.
- Going to a dentist who treats people who are HIV-infected. Mean scores difference $=-0.4, \mathrm{C} . \mathrm{I} .=0.01$ to $0.81, \mathrm{t}=-3.5, \mathrm{p}<0.01$.
and
- Taking care of a relative who has AIDS. Mean scores difference $=-0.3$, C.I.

$$
=0.02 \text { to } 0.62, \mathrm{t}=-2.4, \mathrm{p}<0.05
$$

These differences were found to be peculiar to the school year 10 experimental females. No such differences were observed in the control females in the same school year 10.

Subsamples comparative analysis of the data collected from the Group B showed that experimental females had higher mean attitude scores than the male students, but within the control subgroup no such dissimilarities were observed
between the males and the females. When the Group $A$ and $B$ students were compared to one another, the females were, however, found to differ in their mean scores. The experimental females in Group A had higher scores than those in Group B, and the differences in their scores were established to be statistically significant with the t-tests. The items on which they differed included items measuring their attitude to maintain contact with people with HIV/AIDS:

- That other students should be told if a student with HIV was attending their school. Mean scores difference $=0.36$, C.I. $=0.29$ to $1.01, \mathrm{t}=2.0, \mathrm{p}$ $<0.05$.
- That they would go to dentist who treats people with HIV. Mean scores difference $=0.11, \mathrm{C} . \mathrm{I} .=\mathrm{k} 0.43$ to $0.65, \mathrm{t}=4.0, \mathrm{p}<0.01$. and attribution of blame for people who live with HIV/AIDS:
- That anyone who became infected with HIV/AIDS only had him/her self to blame. Mean scores difference $=0.59, \mathrm{C} . \mathrm{I}=0.10$ to $1.08, \mathrm{t}=2.3, \mathrm{p}$ $<0.05$.

No such differences were found to exist between the females in the control subgroups of Group A and B.

Straightforward analysis of the third set of data has shown that, on the whole, there had not been much change in the mean attitude scores of students. Further data analysis on Group, subgroup and subsamples basis, showed that the experimental female students in Group A scored significantly higher than their male counterparts on some of the attitude items. These included items measuring their attitudes to people with HIV/AIDS leading normal lives by:

- Allowing them to work as teachers. Mean scores difference $=-0.5, \mathrm{C} . \mathrm{I}=$ 0.03 to $0.97, \mathrm{t}=-2.0, \mathrm{p}<0.05$.
and willingness to maintain contact with people who have HIV/AIDS by:
- Visiting a friend who has HIV. Mean scores difference $=-0.5$, C.I. $=0.19$ to $0.81, \mathrm{t}=-3.0, \mathrm{p} 0.01$.
- Being friends with someones who has AIDS. Mean scores difference =$0.60, \mathrm{C} . \mathrm{I}=0.28$ to $0.92, \mathrm{t}=-3.6, \mathrm{p}<0.01$.
- Taking care of a relative who has AIDS. Mean scores difference $=-0.4$, C.I. $=0.06$ to $0.74, \mathrm{t}=-2.1, \mathrm{p}<0.05$.
and
- Attribution of blame for people who have HIV/AIDS. Mean scores difference $=0.7, \mathrm{C} . \mathrm{I} .=0.21$ to $1.19, \mathrm{t}=-2.5, \mathrm{p}<0.05$.

Within Group, subgroup and subsample comparison showed that the experimental females had scored higher than they did one week before and one week after the intervention. The reverse was true of the control females.

Within the Group B students there had been no changes in the mean attitude scores of the experimental males over the three month period. This was also the same in their control counterparts. The mean attitude scores of the experimental females were found not to be any different from the scores they obtained three months back, but their control counterparts scored higher than they did one week after the intervention on the following attitude items measuring their:

- Attitude to people with HIV leading normal lives by being allowed to work as teachers. Mean scores difference $=-1 / 23$. C.I. $=0.54$ to $1.92, \mathrm{t}=-2.2$,

$$
\mathrm{p}<0.05)
$$

and

- Eating in a restaurant where a person with HIV works. Mean scores difference $=-0.88, \mathrm{C} . \mathrm{I}=0.13$ to $1.63, \mathrm{t}=-2.3, \mathrm{p}<0.05$.

The experimental females in Group B had higher mean scores than the experimental females in Group A, but this was not found to be the same in the control subgroups of females in Groups B and A.

Comparative analysis of Group C data on subsamples basis showed that the females in school year 10 had higher mean attitude scores on almost all the attitude items than their male counterparts. The items included were those measuring their attitudes to people with HIV leading normal lives by:

- Allowing them to work as teachers. Mean scores difference $=-0.57$, C.I. $=$ 0.16 to $0.98, \mathrm{t}=-2.7, \mathrm{p}<0.01$.
- Eating in a restaurant where a person with HIV works. Mean scores difference $=-0.99, \mathrm{C} . \mathrm{I} .=0.54$ to $1.44, \mathrm{t}=-4.1, \mathrm{p}<0.01$.
and their willingness to maintain contact with people who have HIV/AIDS by:
- Visiting friends who have HIV. Mean scores difference $=-0.4$, C.I. $=0.14$ to $0.66, t=-3.2, p<0.01$.
- Being friends with someone who has AIDS. Mean scores difference =1.11, C.I. $=0.79$ to $1.43, \mathrm{t}=-4.1, \mathrm{p}<0.01$.
- Taking care of relatives who have AIDS. Mean scores difference $=-0.75$, C.I. $=0.42$ to $1.08, \mathrm{t}=-4.3, \mathrm{p}<0.01$.

It was only on one attitude item that the females in school year 11 were higher in their mean scores than the males in the same school year, and this item was the one measuring their willingness to maintain contact with people who have HIV/AIDS by:

- $\quad$ Visiting a friend who has HIV. Mean scores difference $=-0.68$, C.I. $=0.13$ to $1.13, \mathrm{t}=-2.4, \mathrm{p}<0.05$.

Between subgroup and subsamples, group comparison showed that differences existed between the Group $C$ school year females and school year 10
experimental females in Group B; these differences were in reduced mean attitude scores in Group B. Other subsample, subgroup comparisons did not reveal any subsample, subgroup of Group differences.

### 6.6 Preferred Sources of Information on HIV/AIDS

A general review of the students' most preferred sources of information one week before the intervention revealed that, while the male students mostly preferred television $(40 \%)$, the choices of the females were spread all over the range of other available information sources. The same percentage of males and females (19\%) preferred to have teachers or some other school personnel as their information sources; pamphlets/handouts ( $M=7 \%, F=9 \%$ ); the mother ( $M$ and $F=5 \%$ ); father was common to the males only (5\%); nurse/doctor ( $M=4 \%, F$ $=7 \%$ ); play ( $M$ and $F=2 \%$ ). Tables 2.1, 2.2 and 2.3 in Appendix $D$ give a summary of the preferred soources of information.

One week after the intervention, the most common preferred source of information which the Group A control students chose was television (20\%); this was followed by teachers/school personnel (18\%); videos (9\%); radio, newspapers/magazines, pamphlets/handouts (7\% each); nurses/doctors and health clinics/hospitals (6\% each); movies/films (4\%); books/journals, mother, father, brother ( $2 \%$ each). None of the students chose 'play'.

For the Group A experimental students, their commonest choice was videos $(27 \%)$. This was followed by television (17\%); pamphlets/handouts (15\%); nurses/doctors and other sources ( $8 \%$ each); teachers/school personnel (6\%); newspapers/magazines and health clinics/hospitals (5\% each); mother (3\%); radio, movies/films, only family members, friends/classmates and youth workers (1\% each). None of the students chose 'play'.

In the Group B experimental students, the most popular source of information on HIV/AIDS was the television (24\%); health clinics/hospitals (17\%); videos (10\%); teachers/school personnel (8\%); mother, and nurses/doctors (7\% each); pamphlets/handouts (6\%); books/journals (5\%); only family members $(4 \%)$; radio, brothers, father, and other sources ( $2 \%$ each). Only $1.2 \%$ of the students chose 'play'.

In the Group B control subgroup, students' commonest preferred source of information on HIV/AIDS was also television (23\%); mother (18\%); videos, and health clinics/hospitals ( $14 \%$ each); father, and nurses/doctors ( $9 \%$ each); pamphlets/handouts, movies/films, and teachers/school personnel (5\% each). None of the students chose 'play'.

At the end of the study period, approximately $38 \%$ of the experimental students in Group A preferred to obtain information on HIV/AIDS from the television, $23 \%$ from teachers or school personnel, $7 \%$ from pamphlets or handouts, $6 \%$ from newspapers or magazines, $6 \%$ from nurses/doctors, $3 \%$ from radio, $3 \%$ from health clinics/hospitals, and about $1 \%$ each from books/journals, movies/films, youth workers, and some other sources. Only (approximately) 3\% preferred to have plays.

With the Group A control students, their commonest preferred source of information was teachers/school personnel (26\%); television was the next commonest (23\%); pamphlets/handouts (13\%); nurses/doctors (8\%); newspapers/magazines ( $4 \%$ ); radio, books/journals, mother, health clinics/hospitals, or some other sources, (2\%). Despite the fact that these subgroups of students had not been exposed to the intervention, a greater percentage of them ( $6 \%$ ) than their equals in the experimental group preferred plays.

In the Group B experimental subgroup, the most popular preferred information source was television (22\%); next was teachers/school personnel (20\%); mother (13\%); health clinics/hospitals (7\%); nurses/doctors (6\%); movies/films, only family members, and church/religious leaders ( $4 \%$ each); friends/classmates, and other sources ( $2 \%$ each); and plays (only $2 \%$ of the students).

Within the control students of Group B, teachers/school personnel were chosen as the most preferred source (29\%); newspapers/magazines (19\%); books/journals, and mother ( $10 \%$ each); pamphlets/handouts, television, sisters, only family members, and youth workers (5\% each); plays were not chosen at all.

The most common preferred source of information chosen by the Group $C$ students was the television (36\%); pamphlets/handouts (16\%); teachers/school personnel (12\%); nurses/doctors (6\%); newspapers/magazines (5\%); mother, father, health clinics/hospitals, and youth workers ( $3 \%$ each); friends/classmates $(2 \%)$; church/religious leaders ( $2 \%$ ); radio (1\%); movies/films (less than $1 \%$ ); and play (2\%).

### 6.7 Results of Multivariate Data Analysis

The relationships between the dependent variables: HIV/AIDS-related knowledge $\left(y_{1}\right)$, attitudes and beliefs about $\operatorname{HIV} / \operatorname{AIDS}\left(y_{2}\right)$, and attitudes to people with HIV/AIDS $(y)$; and some independent variables: such as sex $\left(x_{1}\right)$, school year $\left(\mathrm{SCH} \mathrm{YR}=x_{2}\right)$, play (intervention $\left.=x_{3}\right)$, and time of assessment (time $=x_{4}$ ); which are likely to influence a person's HIV/AIDS-related knowledge, attitudes and beliefs about HIV/AIDS, and attitudes to people with HIV/AIDS have been studied. These variables and a myriad of other variables may affect how knowledgeable and liberal a person might be about HIV/AIDS.

In order to analyse the effects of these independent variables on the dependent variables and on themselves, multiple linear regression analysis was performed on the data set. The mean scores of items in each category of the knowledge, attitude, belief, and social anxiety (that is, attitude to people with HIV/AIDS) scales were computed, and used to represent the dependent variables in each case, so that overall there were six mean knowledge scores. (The next paragraph continues on page 93b and 93c).

$$
\text { Mean KNW1 }=y_{1(\mathrm{a})}, \text { Mean KNW2 }=y_{1(\mathrm{~b})}, \text { Mean KNW3 }=y_{1(\mathrm{c})}, \text { Mean KNW4 }=y_{1(\mathrm{~d})} \text {, }
$$ KNW5 $=y_{1(\mathrm{e})}$, and Mean KNW6 $=y_{1(\theta)}$. There were three attitudes/beliefs scores, designated Mean ATB1 $=y_{2(a)}$, Mean ATB2 $=y_{2(b)}$, and Mean ATB3 $=y_{2(a)}$; and there were three attitudes (to people with HIV/AIDS) scores, designated Mean ATT1 $=y_{3(\mathrm{a})}$, Mean ATT2 $=y_{3(\mathrm{~b})}$, and Mean ATT3 $=y_{3(\mathrm{c})}$. Following the procedure of stepwise multiple linear regression analysis, the regression model did not include the dependent variables $y_{1(\mathrm{c})}=$ Mean KNW3, $y_{1(\mathrm{e})}=$ Mean KNW5, $y_{2(\mathrm{a})}=$ Mean ATB1, and $y_{2(b)}=$ Mean ATB2, since they failed to meet the entry criteria.

Table 3.6, in Appendix E, gives a summary of the results of multiple linear regression analysis performed on the evaluation data set. The variables not shown in the table are those for which the value of $t$ are not statistically significant. The results obtained suggest that only $1 \%$ of the observed variability in the dependent variable $y_{1_{(a)}}$ could be explained by the school year in which the students were. $y_{1(a)}$ was positively but weakly correlated with school year (slope $=0.06, \mathrm{t}=2.3$, $p<0.05)$, so that the value of $y_{1(a)}$, that is, the mean knowledge scores of students on the correct routes of transmission of HIV can only be weakly predicted by knowing the school year.

The dependent variable $y_{1(\mathrm{~b})}$, that is, mean knowledge scores of students on the incorrect routes of transmission of HIV, was found to be also positively but

For the multiple regression analysis of the data set on the students' HIV/AIDS-related knowledge, the dependent variable Mean KNW1 which stands for the mean knowledge scores of the students on the correct routes of HIV transmission was designated as y1(a).

The variable Mean KNW2 that is the mean knowledge score of the students on the incorrect routes of transmission HIV transmission was designated as y1(b).

The variable Mean KNW3, the mean knowledge scores of the students on the asymptomatic status of HIV carriers was designated as y1(c).

The variable Mean KNW4 standing for the mean knowledge scores of the students on the diagnosis/cure of HIV/AIDS was designated as $\mathrm{y} 1(\mathrm{~d})$.

The variable Mean KNW5 that is the mean knowledge scores of the students on the prevention/cure of HIV/AIDS was designated as $\mathrm{y} 1(\mathrm{e})$.

While the variable Mean KNW6 which stands for the mean knowledge score of the students on the vulnerability to HIV and AIDS was designated as $\mathrm{y} 1(\mathrm{f})$.

For the multiple regression analysis of the data set on the students' attitudes and beliefs about HIV and AIDS, the dependent variable Mean ATB1 that is the mean scores of the students on their perceived vulnerability to HIV/AIDS was designated as y2(a).

The variable Mean ATB2 which stands for the mean scores of the students on their perceived seriousness of HIV/AIDS was designated as $\mathrm{y} 2(\mathrm{~b})$.

The variable Mean ATB3 that is the mean scores of the
students on their perceived need for education on HIV/AIDS was designated as y2(c).

For the multiple regression analysis of the data set on the students' attitudes to people who have HIV and AIDS, the dependent variable Mean ATT1 which means the average scores of the students on the normalisation of people with HIV and AIDS was designated as y3(a).

The variable Mean ATT2 that is the mean scores of the students on their willingness to maintain contact with people who have HIV and AIDS was designated as $\mathrm{y} 3(\mathrm{~b})$.

The variable Mean ATT3 which stands for the mean scores of the students on the attribution of blame for the people who have HIV and AIDS was designated as y3(c).
weakly correlated (slope $=0.14, \mathrm{t}=3.1, \mathrm{p}<0.01$ ) with school year of students; and only $1 \%$ of the variability in $y_{1(b)}$ could be explained by the variable school year $y_{1(\mathrm{~d})}$, that is, mean knowledge scores of students on the subject of diagnosis/cure of HIV/AIDS. Mean KNW4 was found to be weakly but positively correlated to the play (slope $=0.12, \mathrm{t}=2.3, \mathrm{p}<0.05$ ), which was part of the intervention. Approximately $1 \%$ of the variability in $y_{1(\mathrm{~d})}$ could be explained by the factor of the play. This suggests that those who got the (play) intervention were likely to be more knowledgeable than those who did not, especially on the issue of diagnosis/cure of HIV/AIDS.

The mean knowledge score on vulnerability to HIV/AIDS $y_{1(\oplus)}$ was also found to be weakly but positively correlated with the play (slope $=0.13, \mathrm{t}=2.7, \mathrm{p}=$ 0.01) (which was part of the intervention being evaluated). Approximately $2 \%$ of the total variability in $y_{1(n)}$ could be explained by the absence or presence of the play (intervention). It means that those students who received the play (intervention) could be expected to perform better than those who did not.

Dependent variable $y_{1(H)}$ was also found to be weakly positively correlated with the school year (slope $=0.11, \mathrm{t}=2.5, \mathrm{p}<0.01$ ). This suggests that students were likely to perform better with their mean knowledge scores as their school year increases, and that both school year and the (intervention) play were likely to be interrelated. That is, students who got the intervention (play), and who were in a higher school year were likely to be more knowledgeable than those who did not get the intervention and were in a lower school year.

The mean attitude/beliefs score on the students' perceived need for more education, $y_{2(0)}$, was found to be weakly and negatively correlated (slope $=-0.29$, $t=-3.9, p<0.01$ ), with time of assessment, suggesting that the longer the time of testing the less positive students' attitudes were likely to be. $y_{2(c)}$ was also found
to be weakly and negatively correlated with the play (intervention) (slope $=-0.38$, $t=-2.2, p<0.05)$ and this suggests that the attitude was likely to improve for the better with those students who did not receive the intervention, and vice versa.

The mean attitude score on the willingness of the students to maintain contact with people who have HIV/AIDS, $y_{3(b)}$, was found to be weakly but positively correlated with the female sex (slope $=0.19, \mathrm{t}=3.8, \mathrm{p}<0.01$ ); this suggests that the attitudes of female students were likely to be more positive than those of the males.

The mean attitude score of students on the attribution of blame for those who have HIV/AIDS, $y_{3(c)}$, was found to be positively correlated (slope $=0.61, t=$ $10.2, \mathrm{p}<0.01$ ) with the time of assessment, suggesting that the later the assessment, the more positive the students' attitudes to people with HIV/AIDS should be. It could also be interpreted to mean that the more the number of assessments, the better the attitude of students, so that students who were tested severally should have more positive attitudes.

## CHAPTER 7

## DISCUSSION

Health providers are becoming increasingly aware that adolescents are a population at risk for contracting HIV and AIDS (Hein, 1989; Koop, 1986; Hein, 1988; Strunin et al, 1987; Helgerson et al, 1988; Overby et al, 1989; Rickert et al, 1989). Although adolescent cases reported to the Centers for Disease Control (CDC) account for only about $1 \%$ of the total reported cases, there is increasing evidence that a number of the young adult population might have become infected during their adolescent years (Helgerson et al, 1988).

Prevention education is important to minimise HIV infection along with assisting the adolescent to develop positive health practices (Strunin et al, 1987).

The discussion of the results of this evaluation study will focus on three research questions, namely:

- Do comparison of pretest and posttest scores of HIV/AIDS-related knowledge, attitudes and beliefs about HIV/AIDS, and attitudes to people with HIV/AIDS, provide evidence that the health promotion intervention was successful in increasing knowledge and modifying attitudes in a positive manner among the respondents?
- In the absence of a true control group, can the impact of the intervention be assessed using a non-equivalent comparison group?
- Did the intervention have a sustained effect? (Stephens et al, 1991).

Establishing the effects of HIV/AIDS education is complicated by different programmes having different objectives. Programmes may either seek: to change behaviour through information giving; to empower young people with the skills
and opportunity to make quality decisions about their health, or to galvanise collective action on HIV/AIDS and other related issues (McEwan et al, 1991).

The objective of the intervention now being evaluated was to empower young people to make quality decisions about their health, by increasing their awareness of the health problems associated with HIV/AIDS, in the hope that they would develop a healthy way of living, free of HIV, and from AIDS. In addition to seeking to improve HIV/AIDS-related knowledge, the intervention also sought to reduce myths, dispel fears about HIV/AIDS, and reduce the social anxiety associated with HIV/AIDS.

Based on these, the evaluation study is considered an impact evaluation study, aimed at assessing the overall effectiveness of the intervention, in producing significant changes in knowledge, beliefs, attitudes about, and attitudes to people who live with HIV/AIDS. Change has been found to be a major interest to Health Educators. Research problems, or questions in health education, and other related fields, are frequently phrased in terms of 'change', 'gain', or 'difference'. These terms summarise the desired outcomes of many of the innovative treatments or programmes under investigation, leading to calculation and use of 'change', 'gain' or 'difference' scores in the analysis of the data.

In this study change in percentages of students with correct responses, and in mean scores of students, over the study period, were used to:

- measure differences between and within groups, subgroups, and subsamples of the students in order to distinguish between those individuals, subsamples, subgroups and groups of students who changed a lot and those who changed little;
- identify the correlates of change; and
- infer (treatment) intervention effects from group, subgroup and subsample differences.


### 7.1 HIV/AIDS-Related Knowledge

Judging from the fact that a lot of efforts has been and is still being put into creating awareness of HIV/AIDS in those who had hitherto been unaware, and increasing the level of awareness in those who are already aware (Wellings, 1988; Hill, 1987), and the special attention that has continuously been paid to educating the youths of today about HIV/AIDS (Becker et al, 1987; Hein, 1989; Koop, 1986; Hein, 1988; Strunin, 1987; Helgerson et al, 1988; Overby et al, 1989; Rickert et al, 1989; Yarham, 1990; Di Clemente et al, 1987; Godwin et al, 1988; Turtle et al, 1989; Cinamon, 1990; Ingham, 1990; WHO World Aids Day, 1990; Wenzel, 1990), and the fact that the television, and teachers/school personnel, have been identified in this study as the two commonest sources of information on HIV/AIDS available to the students, it was not surprising, therefore, to find that students' HIV/AIDS-related knowledge was already reasonably high (over $80 \%$ of the students' correct responses to most of the knowledge items), even before the commencement of the health promotion intervention.

In general, the results obtained from the present study suggests that the intervention has been effective in increasing the HIV/AIDS-related knowledge levels of the students on some of the knowledge items. This inference is based on the findings that in almost all the knowledge items on which knowledge levels have increased during and over the study period, the increases had been more in those students who had received the intervention, than in those who had merely been in the same enviroment as those who had received the intervention.

On a number of knowledge items on which the students were tested one week before, one after and three months the intervention, there were statistical significant differences between these groups/subgroups of students. It should however be borne in mind that due to the effects of multiple testing, that is testing of a number of items at the same time, the statistical significant differences might have arisen purely as a result of chance.

There is evidence in my results to suggest that the intervention had not been effective in increasing knowledge levels on certain HIV/AIDS-related knowledge items. This trend was found to be consistent in all the groups of students involved in the study throughout the three stages of the study. Although the general HIV/AIDS-related knowledge levels were found to be high, there were a few of the knowledge items to which the percentages of students with correct responses were rather low.

Of special note was the percentage of 'incorrect', 'don't know' and 'correct' responses to items on the transmission of HIV through the bites of mosquitoes, which was low in all the groups of students irrespective of whether they got the health promotion intervention or they did not.

Other items on which there were low percentages of correct responses included: HIV transmission through the use of unsterilised needles/syringes and through blood donation; the issue of cure for HIV/AIDS patients, vacccine discovery for HIV/AIDS patients, and the question of HIV leading inevitably to AIDS. It was therefore clear from the results obtained that on the students had displayed a certain amount of misapprehension on these areas of the subject of HIV/AIDS.

Before the intervention, the male students were not significantly better than the females as far as their HIV/AIDS-related knowledge was concerned, irrespective of which subgroup they belonged to, that is, whether they were experimental or
control. Even one week after the intervention, the results obtained did not demonstrate that the intervention had been significantly more effective in the males than in females (or vice-versa) in Group A experimental subgroup. Also, when the females in Group A were compared on subgroup basis, there were no statistically significant differences identified. The only positive finding worthy of note was that the HIV/AIDS-related knowledge of the Group A males (both experimental and control) had increased significantly, especially in the school year 10 males, over the one week period following the administration of the intervention in the schools.

This finding in the experimental males may not be too surprising since they had been exposed to the intervention, and the increase in their knowledge was probably the effects of the intervention. But why have the male students been able to increase their knowledge, and the females in the same subgroups have not?

Possible explanations for this would include:

- Testing effects (that is, the problem created by testing the students twice once before and once after the intervention), which was probably more pronounced in the males than in the females. Upon second testing, the males had probably become test-wise, and were able to perform better (than the females) on the postest; since they had taken the same test before, and had been able to engage themselves in debate on the relevant issues through the influence of their social network (Frankham et al, 1991). Testing effect has been found to be especially true of conventional tests of knowledge and skills (Lama, 1969; Rosnas \& Suls, 1970).
- Influence of social network on the pretesting, especially in the males. In this study, approximately $23 \%$ of the males were found to spend most of their leisure time with same sex friends from their schools. During such leisure times, following after the pretests, the males had possibly had more time
than the females to deliberate on the issues and questions raised in the pretest, and were able to perform better than their female counterparts in the posttest.
- The effects of the intervention, and the influence of its main part which was a play, might have been more profound in the males than in the females. The main actor in the play, who had also been a male, had died of AIDS. The male students in the experimental subgroup who watched the play had probably identified more with the actors in the play, become more concerned for the play characters, and had transferred this concern to friends (through their social network), and possibly including friends who were in the control subgroup) and to themselves (McEwan, 1991; Harris, 1991).

The results of the study revealed also that the increase in HIV/AIDS-related knowledge of the male students was even more marked in those of them in school year 10. This was probably as a result of the influence of social network of the males, already mentioned. School year 10 male students were likely to have more leisure time (hours) than those in school year 11, considering the difference in their school work load.

The finding of a high level of HIV/AIDS-related knowledge among the Group B students, both experimental and control subgroups, is in keeping with the facts already mentioned about the generally high level of awareness of HIV/AIDS, in the early part of this section. The fact that the HIV/AIDS-related knowledge of the males in the experimental subgroup was significantly higher than that of their female counterparts may not also be unrelated to the explanations already given above. One other possible explanation with regard to this group (B) of students is that in spite of the intervention (which had possibly raised knowledge levels), the males might be more HIV/AIDS knowledgeable than the females in the first
instance, but because there had been no pretesting of the two subsamples, one could not say for sure what their initial knowledge levels were, this being one of the shortcomings of a posttest only design (Green \& Lewis, 1986) with no previous randomisation of subjects.

The discovery from the results of the study, that a greater percentage of males in the Group A experimental subgroup scored higher, and responded more correctly to knowledge items, and therefore had higher mean scores than their equals in Group B, might not be unconnected with some of the facts already mentioned, such as the effects of testing, and social network effects. Other possibilities include the presence of extraneous events occurring in the Group A males, before the intervention and even after the intervention - a phenomenon also referred to as 'history' (Green \& Lewis, 1986), that could account for some or all the resulting knowledge improvements measured one week after the intervention.

Also, instrumentation might have played a part in the observed differences between the Group $A$ and $B$ experimental males, in addition to the other factors already mentioned, because the posttests in the two groups were not conducted under the same circumstances. The posttests in the groups could not be administered simultaneously to all the groups, so that the possibility of subtle changes in the administration of the posttest could not be ruled out. In view of the fact that there had been no pretest in Group B with which the pretest results of Group A males could have been compared, one can not say for certain that the intervention probably had differing effects on the two groups, that is, A and B.

The finding at one week after the intervention that the female students in the control subgroup of Group A had higher HIV/AIDS-related knowledge might not be unrelated to the effect of testing. The Group A control female students, over the two weeks period (that is, since the pretest) have possibly become test-wise and
able to perform better than those in Group B control subgroup. Also, given the fact that these females were not in the same (total) environment, extraneous events might have been partly the cause of the finding, as during the interval between pretesting and posttesting other programmes on HIV/AIDS might have taken place (to complement the intervention) in some of the schools being attended by Group A control females but not in the other schools.

The results obtained from the study, three months after the intervention, showed that significant differences existed between females and males, especially within Group B experimental subgroup. In the Group A students, however, the percentage of students with correct responses and mean knowledge scores was found to have remained relatively constant over the three months period. The students in the course of testing (pretesting), and retesting (posttest 1 and 2), had all become test-wise so that they were able to maintain a steady performance rate. The possibility of regression artefacts should also be borne in mind. Extreme scores in either direction will tend, over time and independent of any interventions, to regress toward the mean (Green \& Lewis, 1986). The Group C students showed that the HIV/AIDS-related knowledge was generally high (over 80\%) on most of the knowledge items, which is still in keeping with the fact that the general community awareness (especially in the adolescent population) of HIV/AIDS is high. However, the possibility exists of contamination of this group of students by those groups who got the intervention, although it is likely to be very slight, bearing in mind the locations of the other schools, the area of domicile of the students, and the effects of social network, no matter how minimal.

### 7.2 Attitudes and Beliefs about HIV/AIDS

The results obtained from the study on the attitudes and beliefs of the students suggest that in general, the intervention had been effective in positively modifying the attitudes and beliefs of the students about HIV/AIDS. This positive modification had been demonstrated mostly in the area of their perceived seriousness of HIV/AIDS and their perceived need for more education on HIV and AIDS.

Over the study period, most of the students perceived themselves as being less vulnerable to HIV/AIDS that is, they did not see themselves as being at risk of contracting HIV, and therefore having AIDS. The positive attitude/beliefs modification was more in those students who had received the intervention than in those who had not as evidenced by their mean attitudes/beliefs scores and the percentages answering favourably to the attitudes/beliefs items.

In general terms, the pre-intervention attitudes and beliefs of students were equivocal. Analysis of the first set of data generated from the study revealed that the experimental students, males and females, irrespective of the school year, demonstrated similar attitudes and beliefs about HIV/AIDS, with their mean attitude scores ranging between 3.1 and 4.1. There were a few significant differences within the control subgroups, with females in school year 11 being more positive than their male counterparts, and school year 10 males being more positive than their female counterparts.

One week following the intervention, there had been increases in the mean attitude scores of experimental students in Group A, for both males and females, but the increases had been more marked in the school year 11 females. The observed increases could have been as a result of the intervention, the effect of which appeared to have been more profound in the females. Female students, especially those in school year 10, had probably identified more with the female
characters in the play which was part of the intervention. They had thus been much more concerned for the actors, as well as for themselves, hence the increase in their mean attitude scores (McEwan, 1991; Harris, 1991).

The fact that they were more mature and identified more with the play actors, and realised the relevance of the health problems associated with HIV/AIDS in the school year 11 male students, was probably the cause of the higher mean attitude scores in them than their younger counterparts in school year 10.

Comparison of the Group A students to those in Group B has revealed that overall, the females had more positive attitudes than the males, one week after the intervention.

In the three months period which followed the intervention, significant differences were found between the male and female students in the control subgroup of Group A, with the females being more positive in their attitudes than the males. The possible explanations for this would include:

- Hawthorne Effects - that is, the change in performance of the females over that of the males attributable to the attention that had been paid to the students (Green \& Harris, 1986).
- Social Desirability Effects - that is, change or response bias attributable to being observed, and the tendency to want to be seen to be doing the right thing; an attempt to demonstrate behaviour that is socially desirable or preferred (Phillips, 1971; Edwards, 1957; Green \& Lewis, 1986).
- Presence of extraneous events, which influence the females more than the males, and cause contamination of the females.

The demonstration of more positive attitudes by the male students in Group A (experimental and control) than the males in Group C should not be seen purely as a result of the intervention (in the case of the experimental males), or
contamination of the control males (Group A). The possibility of effects of testing, and retesting of the Group A students should also be borne in mind, especially as the significant differences also cut across the school years.

The fact that no differences were found in the female subsamples of Group A (experimental and control) and Group C may be in support of the likelihood that the Group A female students already had more positive attitudes by the time of their being tested with the Group $C$ females.

The Group C males were found to be more positive in their attitude than the Group B males, suggesting that the Group $A$ and $C$ students in general, with or without the intervention, had more positive attitudes/beliefs about HIV/AIDS.

### 7.3 Attitudes to People with HIV/AIDS

From the overall results obtained from the students involved in the study, on their attitudes to people with HIV/AIDS, it can be inferred that the intervention was effective in positively modifying the students attitudes to people with HIV/AIDS especially in their willingness to maintain contact with people who have HIV/AIDS.

Over the course of the study period, the students demonstrated an increasingly positive attitudes to people who have HIV/AIDS leading the same type of life as other normal people. The positive modification of of the attitudes of the students who had received the intervention was found to be more than that of the students who had received no intervention. However, by the end of the study period, all the students in group $A$ and $B$ were found to have increased their mean attitudes scores on all the attitudes items so that comparison made over the study period suggest that there had been significant positive changes in the students' attitudes to people with HIV/AIDS.

Because most of the observed (positive) increases in mean attitude scores had been on items measuring the students willingness to maintain contact with those people who have HIV/AIDS, it can be inferred that the intervention was most effective in reducing the social anxiety associated with HIV/AIDS since, over the study period, part of the fears and uncertainties which the students displayed at the beginning of the study appeared to have become reduced by the end of the study period.

The patterns of results obtained in this result are very similar to those in the last section. One week before the commencement of the intervention, the mean attitude scores of the students on the average was between 3.0 and 4.0 . In general, females in Group A, in school year 11, were found to have higher attitude scores than those of their male counterparts. One possible explanation for this might be the effect of maturation of the females more than the males over the three months interval. As opposed to history, maturation involves changes taking place within the individuals themselves, over time, rather than the extraneous (nonprogramme) events or changes taking place in the environment (Green \& Lewis, 1986). It refers to the intrinsic changes associated with growth and development, and has been described as being most dramatically a threat to evaluation of programmes for children and youths, in whom maturational changes are more rapid (Green \& Lewis, 1986).

According to Green \& Lewis (1986), 'attitude changes and physical changes are most dramatically associated with narrow age ranges of maturation in adolescence', and are therefore important threats to the internal validity of evaluation; that is, attempting to relate change in such things as knowledge, attitudes, or skills, to health education or health promotion programmes (Green \& Lewis, 1986).

The general observation from the results obtained in the students' attitudes to people with HIV/AIDS is that much of the change in the percentage of students with more positive attitude over time, within the framework of this study, and the mean attitude scores, had been in the female students. These changes have been statistically significantly more profound in the female students in general than in the male students.

### 7.4 Preferred Sources of Information on HIV/AIDS

The results of the study obtained from the students on their preferred source of information on HIV/AIDS has shown that the majority of the students prefer, in order of priority: sources such as television, teachers/school personnel, videos, pamphlets/handouts, health clinics/hospitals, nurses/doctors, newspapers/magazines, mother, movies/films, father, friends/classmates. On the whole, 'play' as a source of information was among the very least of the students' preferred sources, even among those students who had the intervention, the main part of which was a play.

This finding is in contrast to other studies that had been conducted to evaluate the acceptability of plays and workshops as media for raising HIV/AIDS issues. McEwan et al (1991) conducted a study to evaluate a theatre-in-education programme on HIV and AIDS, and reported on process, acceptability and effectiveness of the initiative. They found, at the baseline, that videos were most likely to be quite or very interesting to pupils, followed by plays, workshops, and leaflets; and that after the programme, interest in plays had increased significantly, as did interest in workshops (McEwan et al, 1991). Frankham and Stronach (199) have also reported that a play and drama workshop on HIV and AIDS was acceptable, and engaged young people in debate on relevant issues.

Also, informal discussions held with some of the recipients of the intervention confirm that the intervention now being evaluated had been acceptable to a majority of them; but it is surprising that it has not been chosen as a popular preference over the other available sources.

### 7.5 Multivariate Analysis of Data

Results of the multivariate analysis of the study data were obtained by building a multiple linear regression model, one of the most versatile data analysis procedures (Norusis, 1988).

It was considered appropriate to perform this procedure on the study data because gender specific differences had been discovered in the mean scores of boys versus girls. Differences have also been found between the students in school year 10 and 11 . These observed differences were not totally surprising due to known heterogeneity of most health education programme participants. Because these differences were found, it was desirable to look at the response of systematically identified subgroups, after partitioning the data according to the factors that might bias comparisons of experimental and control groups.

In multivariate analysis, these variables among others were used as covariates in order to control for their potential effects on the outcome/impact variables of interests, that is, HIV/AIDS-related knowledge, attitudes and beliefs about HIV/AIDS, and attitudes to people with HIV/AIDS.

The relationship between the mean knowledge scores of the students on the six categories of knowledge items, the mean attitudes/beliefs scores - on the three categories of attitudes and beliefs items; and the mean attitudes (to HIV/AIDS people) scores - on the three categories of attitudes to people with HIV/AIDS items; each of these scores being a dependent variable, and sex, school year,
intervention (in form of the play), and time of assessment (testing) as the dependent variables, have been studied.

The results obtained have not been clear cut, in the sense that only very weak relationships have been found between these dependent and independent variables, although most of the relationships were found to positive and linear. Because of the weakness of these relationships, it is very unlikely that increasing the independent factors would produce visible increases in the dependent variables, especially as far as the intervention is concerned; that is, one is unable to predict accurately the effect of modifying any of the (factors) independent variables on the dependent variables, which were derived by direct estimation methods. These are methods designed to elicit from the subject a direct quantitative estimate of the magnitude of an attribute (Streiner et al, 1989). They are, however, pervasive in research involving subjective judgements (Moser et al, 1971) and could become a liability, because the intent of questions framed on a rating scale is often obvious to both research and respondent, so that bias in response can result. Thus, when an item is included on a questionnaire or scale, it is usually under the assumption that the respondent will answer honestly. However, there had been considerable research, especially since the 1950's, showing that there are numerous factors which may influence a response, making it a less than totally accurate reflection of reality (Moser et al, 1971).

These other numerous factors could have interacted with the dependent variables and influenced the relationship between these variables and the dependent (outcome/impact) variables.

### 7.6 Comparison of the Results of the Present Study with a Similar Previous Study

I consider it appropriate to compare the results of my present study with another similar study conducted in a similar enviroment (that is, in secondary schools, youth clubs and colleges) but in a different part of the country.

The main objective of the present study is the same as that of the previous study, that is, to evaluate the effectiveness of a theatre-in-education on HIV/AIDS. In the previous study conducted in February 1990 by McEwan and his colleagues, their aim was to evaluate 'Body Talk', a play and workshop about HIV and AIDS which were undertaken in schools.

The HIV/AIDS health education programme was organised in 26 schools, youth clubs and college venues in the north east of England. The broad objectives of the programme were to promote self determination and ascertiveness in sexual relations, to promote equal reponsibility between partners for safer sex, and to highlight the relevance of HIV infection for the north east teenagers.

In the McEWan et al study, the Body talk was a 35 -minute play between four young people and dealt with the deceit and infidelity of one character who slept with two of the others. The infidelity was discovered, and the possibility of all three being HIV positive was introduced by virtue of a previous sexual encounter. The play also raises issues such as women carrying condoms, and women's sexuality.

A 45-minute workshop for a maximum of 30 people followed the play. The workshop included a question-answer session with the characters in role: roleplaying scenarios in mixed sex groups; discussion of each scenario and the reactions of participants to each situation; and a question-answer session about the programme, and HIV-related issues in general, led by the workshop facilitator.

A 'grafitti board' and display of posters and leaflets accompanied the programmes

To evaluate Body Talk, surveys and focused group discussions were undertaken in schools by McEwan et al. Their evaluation methodology was a 'before-and-after' study. A self-completion questionnaire was administered in one school one week before the programme (the base-line survey), and again immmediately after the programme (the follow-up survey). Questionnaires were completed anonymously, however, respondents record their dates of birth so that base-line and follow-up questionnaires could be matched. The follow-up questionnaire repeated all the questions asked in the base-line one and in addition, sought the respondents' opinions about the play and workshop.

According to McEwan and his colleagues, their results indicated significant changes in the attitudes which were compatible with the programme objectives. They attributed the effectiveness of the play and workshop to the similarities in age and background of the actors and the audience, to the reality and impact of live performance, and to the audience's proximity to the actors.

However, in their report, they failed to recognise the fact that the observed changes in attitudes could also have been as a result of other factors such as 'testing'; 'history'; 'instumentation'; 'Hawthorne effects'; 'social desirability effects'; and not entirely due to the effects of Body Talk on the students.

Also, the fact that their follow-up survey was immediately after the programme makes it possible for one to question their results since they have not acknowledged the possibility that they had evaluated the programme too soon after it, and that the results they obtained might have been observed anyway irrespective of Body Talk. That is their results might have 'borrowed from the future'.

The lack of a true control group in their study design, has lessened the extent to which issues of the internal validity of their results could be adequately addressed.

Although their evaluation methodology was somewhat different from that used in the present study, mainly because their follw-up study (post-intervention) to assess the effects of the intervention on the students' attitudes was done immediately after the programme, so that the long-term effects of the programme could not be ascertained, the results of their study are comparable (to an extent) to those obtained in the present study.

McEwan and his colleagues found that Body Talk had a significant impact on feelings and many young people who took part in the programme changed their opinions in line with the programme objectives. They concluded that 'theatre-ineducation' is useful for influencing emotive issues such as empathy, anxiety and attitudes to sexual roles and relationships.

Contrary, however, to the findings of my present study on the students' most preferred sources of information on HIV/AIDS that only a very small percentage of the students chose 'play' (which was a part of the intervention now being evaluated) as their most preferred source of information, McEwan and his colleagues reported that their students' interest in plays had increased significantly after the programme.

However, they failed to recognise that this finding could also be attributed to the students' identification with the actors of Body Talk, their concern for the characters and transference of this concern to themselves, and to the fact that the students were being asked to make a choice almost immediately after the programme and this was bound to have influenced their choice.

The Body Talk (evalated by McEwan et al ), and the Inner Circle (which is now being evaluated) have individually been rated as very interesting by a high percentage of the students who had watched them.

### 7.7 Limitations of the Study

Scientific experiments demand rigorous conditions, standardisation of environments, and precision of procedure (Downie et al, 1990). For the evaluation of health promotion programmes working with communities such as schools, however, conditions such as these could not be present. Moreover, one could not insist on total experimental rigour in a situation where it was not justified.

The evaluation of health promotion initiatives is far from being straightforward. Indeed, there are difficulties to be encountered at all stages of the evaluation process, from its planning through its execution, to the final stage of making recommendations Green (1977) and Baric (1980) have discussed difficulties relating to the evaluation of health education. These include:

- The difficulty of isolating the effects of a specific health promotion programme. Within the field of health promotion, there are often a variety of initiatives involving the same community, which aim to influence the same health factors and effect the same healthful change; for example, school health education programmes running concurrently with government campaigns via the radio, newspapers, television, pamphlets, and so on. The problem then is to isolate the effects resulting specifically from one of these initiatives. Similarly, in observing a trend in a given index, it is problematical to relate this trend with certainty to a given health promotion input; that is, assessment of the relative contribution of health education, legislative, and fiscal measures to the observed trend.
- The difficulty of integrating different approaches to evaluation. From the broad interpretation of the evaluation process - as the assessment of activities in a variety of ways against a variety of standards, it follows that a range of approaches to evaluation should be adopted. Also workers from a variety of backgrounds may be involved in the evaluation process and in the interpretation of the results.
- Resistance to review and assessment. It is often the case that those who evaluate programmes are not those who actually carry out health promotion initiatives. This situation has one clear benefit in that the evaluations are likely to have a certain amount of objectivity; their lack of personal involvement with the specific service being evaluated may well free them from potential sources of subjective bias.
- Political and vested interests. Political factors affect the evaluation of health promotion in a number of ways. Resource levels also directly affect the scope of evaluation.
- Time factors. There is a problem of when to evaluate, as outcome of an activity will vary at different time periods after the intervention. Some effects of health promotion are immediate whilst others are slow to emerge. Some effects are transient and others longer lasting. In the absence of prohibitively expensive and time-consuming longitudinal studies, various time-related problems in evaluation have to be recognised. These have been described as the dilemmas of long-versus short-term evaluation, and categorised by Green (1971) as:
- delay of impact
- decay of impact
- borrowing from the future
- adjusting for secular trends
- contrast/backlash effect

Several specific limitations of the study are worthy of note:

- The scale of this evaluation has been limited by time, and manpower constraints, which resulted in the use of limited sample, thereby threatening the internal validity.
- The setting of the study in a single geographical area.
- The use of convenience sampling complicated by self-selection bias.
- The lack of a true control group, which lessened the extent to which issues of internal validity could be adequately addressed (Cook \& Campbell, 1979).
- The use of non-equivalent comparisons group, pretest-posttest design, which, because of the staggering of the three stages of the evaluation study with respect of time, increased the possibility of extraneous historical events, affecting the groups differently. Also pretests and posttests could not be administered simultaneously to all the groups, so that the possibility of subtle changes in the administration of pretests and posttests could not be ruled out.
- The limited sample size might have affected the ability of this study to detect more differences between intervention groups on knowledge, attitudes and beliefs measures.
- Additionally, the effects of history, maturation, and regression artefacts could have influenced posttest results. This latter phenomenon may have been noted in posttest changes in practices for the control group, so that the internal validity of the evaluation study has become highly threatened.
- The problems of 'before-and-after' studies should also be borne in mind, one of which is the interpretation of the results. According to Christie
(1979), 'before-and-after' studies may be quite misleading in their results, and the further apart the 'before' and 'after' periods, the greater the risk.
- The use of 'change/gain scores' to express the dependent variables. A number of problems have been associated with the 'change or gain scores'. A major statistical problem with gain scores is a psychometric problem of low reliability (Burckhardt et al, 1982). As other people (Bereiter, 1963; Linn and Slinde, 1977; Lord, 1963) have described, the reliability of a difference score ( $\mathrm{Y}-\mathrm{X}$, where Y represents Time 2 of measurement 'posttest', and X represents Time 1 - 'pretest') is a function of the reliability of the pretest, and the correlation between pretest and posttest scores. This indicates that the higher the correlation between pretest and posttest scores, the lower the reliability of the difference scores. Given the lowered reliability of the gain scores, an inevitable loss of power had probably occurred in the course of this evaluation study.


## CHAPTER 8

## CONCLUSIONS

Most of the benefits of health education are time dependent, so that these raise problems of behaviour change that must be taken into account in assessing programme effectiveness and benefits (Green \& Lewis, 1986).

The interpretation of the results obtained from the evaluation study demands extreme caution, especially in the light of the limitations of the study, and many problems already identified by early researchers (Green, 1977; Downie et al, 19909; Green \& Lewis, 1986).

Although the pre- and post-intervention HIV/AIDS-related knowledge levels were generally high among the students, indicating a high level of awareness of the subject (Wellings, 1988; Wellings, 1990; Ingham, 1990), knowledge levels on certain measures were found to be inadequate throughout the study period. These included measures on: transmission of HIV via blood donation, and mosquito bites; discovery of a vaccine for the prevention of HIV/AIDS; and the possibility of a cure for AIDS patients.

Following the intervention, there had been a positive shift in the attitude of students about HIV/AIDS, and to people with HIV/AIDS. It therefore appears that the intervention was successful, by sensitising the students to the realities of HIV/AIDS, and dispelling their fears and anxiety about HIV/AIDS. The positive changes that were observed from the results of the study should not be seen as permanent because of the possibility of delay of impact, also known as the 'sleeper effects'. The changes, particularly those observed in the students' attitudes, might in fact have been underestimated; this is likely to be true
especially where the audience must go through a process of attitude change between the education exposure and the actual change in attitude.

According to Mustard (1945), health education is an undertaking that produces its results very slowly, and these results are difficult to measure. Some effects of health education programmes are immediate and temporary; others are slower to develop but longer lasting; and because of this, even the magnitude of the observed changes could have been underestimated. Because the knowledge, attitudes, and beliefs measures were taken at the times they had been taken, and not at some other times, the possibility of decay of impact must be borne in mind.

Similarly, care must be taken not to overestimate the effects of the intervention, as these might in the real sense be mere trigger effects; that is, the intervention was only a trigger to the observed changes that would have occurred in the students eventually anyway, probably as the result of some other health promotion initiatives. The intervention in this sense would be regarded as having hastened the inevitable. This is, however, unlikely since the observed gains in one week after the programme had not been offset by three months later.

Also, the possible influence of history is worth mentioning, since it is likely that there were some other health education programmes on HIV/AIDS involving the same community of secondary school adolescents; for example, school health education might have been running concurrently with some other government campaigns, via the radio, newspaper, television, pamphlets and so on, so that the observed gains in HIV/AIDS-related knowledge, attitudes and beliefs could have been those that occurred as part of a general trend or extraneous events (Green \& Lewis, 1986), in spite of the fact that control groups have been used in the research design.

Despite the problems associated with the interpretations of this study, the results of the study seem compatible with some of the programme objectives. The intervention was partially successful in meeting its goal. Although the intervention resulted in gains on some of the knowledge items that were retained overtime, there still existed some misapprehension about HIV transmission, prevention, and AIDS cure. The intervention was effective in positively modifying the adolescents' attitudes and beliefs about HIV/AIDS, and their attitudes to people with HIV/AIDS.

## Recommendations

For the enhancement of the future world, the youth of each and every country is an irreplaceable resource; for each day, whether formally or informally, youths absorb knowledge, values, and skills which will add to their health, or in the long- or short-term lead to the depletion of their health. Therefore, the need to ensure an improved quality of life for the adults of tomorrow cannot be overemphasised.

In order to effectively prevent HIV infection, sexually transmitted diseases, and other important related health problems, efforts must be focused on the youths. Not withstanding a miracle cure, the overriding objective is to inhibit the further spread of HIV infection and the fear associated with HIV and AIDS. The entry to prevention is information and education. Educational programmes and health campaigns need to be directed towards adolescents, with the main aim of encouraging change towards safer sexual and lifestyle behaviour.

Adolescents can bring their unique attribute to bear on education to prevent HIV infection. They are a very important group to educate and, by learning at an early age, future problems can be prevented; and it is therefore a good investment to start early. Effective intervention aimed at influencing knowledge, attitudes,
beliefs, and sexual practice in this age group could have a considerable impact on further spread of the disease. Comprehensive HIV/AIDS education is likely to be most effective when presented early during adolescence; that is, at times and developmental stages when sexual roles and behaviours are still in the making and may be more easily influenced than later on.

Based upon the results of this study, the following recommendations are being made:

- That health promotion intervention programmes which incorporate peerbased theatre-in-education on HIV and AIDS should be used only to influence affective rather than cognitive factors, which are important for limiting the spread of HIV infection among the adolescent population. Although the success of such programmes is likely to depend a great deal on the context of the drama, it has been identified that, being a live performance, the age parity and homogeneity of backgrounds of the actors and audience are both likely to be important ingredients for generating empathy with theatre-in-education health education programmes. Not withstanding the cost of theatre-in-education per person reached, compared with other educational programmes and mass media campaigns, where the programme objectives are to impact information, theatre-in-education may be justified in programmes which seek to empower young people to change their attitudes, and should therefore be used only to complement other educational programmes on HIV and AIDS.
- That school-based health education programmes on HIV/AIDS should be seen as the most cost-effective and sustainable effort in health education on HIV and AIDS. Currently, HIV/AIDS education in schools is haphazard and too little. According to White (1991), pupils are taught the mechanics of reproduction in
biology; but personal and social education, the classes in which sex education, HIV and AIDS are often covered, is not mandatory.

Meanwhile, secondary schools have been identified as particularly good places to provide accurate (correcting misconceptions), factual and thorough information about HIV infection and AIDS. There, students may be taught without difficulty or expense, and information about their understanding of HIV/AIDS may assist educational efforts towards the control of further spread of HIV/AIDS. That is to say, children who are in school often go home to look after younger siblings; they can introduce healthy practices to their families and communities; they can, and often do, serve as effective relays of adult information within the community. Moreover, literate children often set the pace of change for those not fortunate enough to go to school.

Thus, schools offer an excellent opportunity for labour-intensive efforts to educate for positive health, simultaneously with attention to health hazards and available preventive services, especially as far as HIV infection AIDS are concerned. Much research has shown school based health education to be capable of producing positive effects on beliefs, attitudes and behaviour, both long- and short-term (Downie et al, 1990).

The school as a whole must become a health-promoting environment, in terms of ethos, policies, and provision; teachers must not only instruct, but must serve as role-models, and advocates for health. Also, school health promotion must be linked to efforts to influence the broader social environment. In developing tactical projects with the goal of preventing HIV infection, it is essential to focus strategies; that is, to identify within the community the unifying features and shared values, and to use them to transmit positive messages in the hope of changing group norms in the process. So that when this has been achieved,
through public opinion, politicians can be invoked to formalise policies in support of the control of further spread of HIV infection, and AIDS especially, among the adolescent population.

- That the HIV/AIDS campaign must get across a complete message. Partial communication is likely to cause more problems than it solves. For example, if the risk from HIV infection and AIDS to the general public is emphasised in isolation from the other information, then people's inclination to dissociate themselves from the sexual side of HIV/AIDS will encourage the interpretation that the only risk is through social contact.
- Because adolescents who may be at greater risk may not attend school, the message must be carried to youth groups, health clinics, and other places where adolescents congregate. Every youth old enough to engage in sexual relations, or to experiment with intravenous drugs, needs to have been already educated. - That further exploratory research, with different audiences in different settings, should be conducted to establish the acceptability, costs and effectiveness of the intervention in different contexts.


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## APPENDICES

The Figures shown in Tables 2.1 to 2.3 in Appendix D, and Tables 3.1 to 3.3 in Appendix $E$, are the percentages of respondents within each school year who answered according to the particular item shown.

These percentages are based on the number of respondents who provided valid answers. Because of this, the base number (on which the percentages are based) vary between items and school year. In each case, however, the amount of missing data is negligible.

## RECORDING SHEET FOR PROBLEMS

DURING PRETESTING OF HIV/AIDS QUESTIONNAIRE

Recording sheet for problems arising during sessions

Name of School/College:
Year:

Date:
Time:
Condition: INDIVIDUAL

Interviewer's name: ........................... Sex of Respondent ......

| Item No | Nature of problem |  |
| :--- | :--- | :--- | :--- |
|  |  |  |
|  |  |  |
|  |  |  |

## APPENDIX B

## MAPS

B1 Sketch Map showing the location of secondary schools in Southampton Areas

B2 Sketch Map showing the location of secondary schools in New Forest, Totton, and Waterside Areas

## B1 Sketch Map showing the location of

 secondary schools in Southampton Areas
## LOCATION OF SECONDARY SCHOOLS

 (SOUTHAMPTON ‘AREAS’)

B2 Sketch Map showing the location of secondary schools in New Forest, Totton, and Waterside Areas

## LOCATION OF SECONDARY SCHOOLS (FOREST AND TOTTON AND WATERSIDE 'AREAS')



## A KABP QUESTIONNAIRE

FOR YOUNG PEOPLE AGED 14, 15 AND 16 YEARS

## APPENDIX C

## A KABP QUESTIONNAIRE

FOR YOUNG PEOPLE AGED 14, 15 AND 16 YEARS

## INTRODUCTION TO STUDENTS

This questionnaire is designed to collect information on what young people like you know and how they think about ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS) and certain other topics that are known to be associated with this disease. The information you give us will help us better understand the educational needs of the young people and to improve the quality of education about AIDS and related health problems.

This is not a test; we are only interested in your own ideas and opinion. There are 6 parts to this questionnaire. Your task is to read each question carefully and to indicate your answer by putting a circle around the appropriate responses in front of that question.

Note that we are not asking for your name. Your answers to this questionnaire will not be seen by anyone from your school, neighbourhood, friends or your family. Please read all instructions carefully and answer each question as honestly as possible.

## With many thanks

## Research Group on AIDS <br> Health Education Unit and <br> University of Southampton

## PART I: ABOUT YOURSELF AND YOUR FAMILY

## PLEASE READ EACH QUESTION CAREFULLY. ANSWER EACH QUESTION BY CIRCLING ONE NUMBER WHICH IS RIGHT FOR YOU.

1. Are you a boy or a girl?
2. Boy
3. Girl
4. How old were you on your last birthday?
5. 12 years or younger
6. 13 years
7. 14 years
8. 15 years or older
9. Which school year are you in?
10. [10]
11. [11]
12. [12]
13. Which adult do you live with?
14. Mother and father
15. Mother only
16. Father only
17. Mother and stepfather
18. Father and stepmother
19. Other ( specify.......)
20. Father's (Stepfather's) Occupation

Please indicate by circling the number of the most appropriate category. (If he is currently retired or unemployed, use his occupation before retirement or becoming unemployed)

1. Professional (e.g. doctor, nurse, accountant, lawyer, engineer, army officer, high level government employee).
2. Business (e.g. owner, manager, executive officer)
3. Factory (or farm worker, miner, labourer, waitress, cook, truck driver, domestic servant)
4. Secretary (sales clerk, real estate, automobile or insurance sales person).
5. Skilled worker (e.g. electrician, plumber, carpenter).
6. Policemen (soldier, lower level government employee).
7. Farmer (owner of a farm or fishing boat).
8. Homemaker (e.g. housewife).
9. Other
(specify) .)

## 6. Mother's (Stepmother's) Occupation

Please indicate by circling the number of the most appropriate category. (If she is currently retired or unemployed, use her occupation before retirement or becoming unemployed).

1. Professional (e.g. doctor, nurse, accountant, lawyer, engineer, lecturer, teacher, army officer, high level government employee).
2. Business (e.g. owner, manager, executive officer).
3. Factory (or farm worker, miner, labourer, waitress, cook, truck driver, domestic servant).
4. Secretary (sales clerk, real estate, automobile or insurance sales person).
5. Skilled worker (e.g. electrician, plumber, carpenter).
6. Policewoman (soldier, lower government employee).
7. Farmer (owner of a farm or fishing boat).
8. Homemaker (e.g. housewife).
9. Other (specify............................)
10. In what type of religion were you brought up?
11. Catholic
12. Protestant
13. Islam
14. Hinduism
15. Sikh
16. Other (specify $\qquad$
17. Don't Know
18. None
19. To which tribe or ethnic group
20. White British
do your parents belong?
21. Black British
22. Afrocaribbean
23. Black African
24. Asian
25. Other (specify...............)
26. What job or occupation do you expect to have in the future? Please write down the name of the job or the type of work you expect to do in the future.

## PART II: LEISURE TIME ACTIVITIES

1. With whom do you spend most of your free time during the school term (e.g. weekends, evenings?)
2. Where do you spend most of your free time during the school term?
3. Parents
4. Brothers or sisters
5. Other family members or relatives
6. Same sex friends from school
7. Opposite sex friends from school
8. Same sex friends from outside school
9. Opposite sex friends from outside school
10. A boyfriend
11. A girlfriend
12. With myself or on my own
13. Other (specify
14. At own home
15. At relative's home
16. At friend's home
17. In the street
18. In father's or mother's place of work
19. At a youth club or sports club
20. In a discotheque or dance hall
21. In amusement arcades or game centres
22. Other
(specify $\qquad$

## PART III: KNOWLEDGE OF AIDS

1. Have you ever heard of:-
'ACQUIRED IMMUNE DEFICIENCY SYNDROME' (AIDS)? 1. Yes
2. No
3. Don't Know
4. Sources of information

Circle where you have heard the most about AIDS (Circle only one answer)

1. Radio
2. Newspaper or magazine
3. Pamphlets or handouts
4. Books or journals

## 2. Sources of Information (continued)

5. Television
6. Movies
7. Videos
8. Plays
9. Mother
10. Father
11. Brothers
12. Sisters
13. Other family members
14. Friends or classmates
15. Teachers or school personnel
16. Nurse or doctor
17. Health clinic or hospital
18. Church or religious leader
19. Youth worker
20. Other (specify. $\qquad$
21. None
22. Please read the following statements carefully. Show whether you think the statements are correct or not by circling only one number after each statement as follows:

$$
\begin{aligned}
& 1=\mathrm{No} \text { (incorrect) } \\
& 2=\text { Yes } \\
& 3=\text { Don't Know }
\end{aligned}
$$

HIV: means 'Human Immunodeficiency Virus' $\begin{array}{lll}\text { NO } & \text { YES } & \text { DON'T KNOW } \\ 1 & 2 & 3\end{array}$
b. A person can become infected with HIV by having sex with someone who has the virus.

133
c. A person can become infected with HIV by receiving blood which has been infected by the virus.

123
3. (Continued)
d. A person can become infected with HIV by having injections with needles and/or syringes which have not been properly cleaned (sterilised).
e. A pregnant woman who has the HIV can can pass it on to her unborn baby.

2
3
f. A person can get infected with the HIV by shaking hands with someone who has the virus.
g. A person can become infected with HIV by wearing clothes used by someone who has the virus.
h. A person can become infected with HIV by hugging someone who has the virus
i. A person can become infected with HIV by kissing someone who has the virus
j. A person can get AIDS by giving blood.
k. A person can become infected with HIV by being bitten by a mosquito which has already fed on a person with the virus.
I. A person can become infected with HIV virus and not show signs of the disease.
m. A person who looks healthy but has the HIV can pass it on to other people.

12
3
n. There are tests that can show if a person has the HIV.
o. Once infected with HIV a person can infect other people for the rest of his/her life.
p. There is no cure for AIDS.
q. Doctors have discovered a vaccine that can prevent people from becoming infected with HIV.
r. One can tell if a person has the HIV by the way he or she looks.

NO YES DON'T KNOW

## N

123
3. (Continued)

NO YES
s. AIDS can be cured if detected early.

123
t. Having sex with many partner increases a person's risk of getting infected with HIV. 1
u. Most people with HIV will develop AIDS $1 \begin{array}{llll} & 2 & 3\end{array}$
v. When a person has AIDS, his/her body cannot defend itself from certain diseases. 1223
w. Most people with AIDS will die as a result of it.

123

## PART IV: ATTITUDES AND BELIEFS ABOUT AIDS

I would like to have your opinion on a number of statements about AIDS.
Please indicate how strongly you agree or disagree by circling one number after each statement as follows:

1 = you strongly agree
2 = you agree
3 = you are undecided
4 = you disagree
5 = you strongly disagree
Strongly
Agree Agree Undecided Disagree Dsagree
a. My chances of becoming infected with HIV are very small
b. I know how to protect myself against becoming infected with HIV.

1
2
3
4
5
c. I would feel ashamed
if I had AIDS.
d. I have difficulty saying no to friends when they ask me to do something against my wishes.

1
2
3
4
5
e. Many of my classmates and/or friends are worried about HIV/AIDS 1 2 3 4 5

Strongly
Strongly
Agree
f. Because of HIV/AIDS I worry about what I had done in the past
g. Young people of my age should be taught how to protect themselves against sexually transmitted disease including HIV and AIDS.
h. I need to know a lot more about HIV.

1
2

1
2
3
4
5

## PART V: ATTITUDES TO PEOPLE WITH AIDS

a. Children with the HIV virus should be allowed to attend school with other children.
b. People with the HIV should be allowed to work as teachers.

1
c. I would eat in a
restaurant even if one of the people working there had the HIV.

1
d. Other students should not be told if a student with the HIV is attending their school.

1
e. I would visit a friend if

I knew that he or she has the HIV.

1
2
3
4
5
f. I would go to a dentist who treats people who are infected with the HIV. 1

2
3
4
5
g. I would be friends with someone who has AIDS. 1 2 3 45
Strongly
Agree Agree Undecided Disagree Disagree
h. I would be willing to help look after a relative who has AIDS. 1

| 1 | 2 | 3 | 4 | 5 |
| :--- | :--- | :--- | :--- | :--- |

i. Anyone who gets infected only has himself/herself to blame.

1
2
3
4
5
j. I do not feel sorry for $\begin{array}{cllllll}\text { people who have AIDS. } & 1 & 2 & 3 & 4 & 5\end{array}$

PART VI: PREFERRED SOURCES OF INFORMATION ABOUT AIDS
Where would you prefer to get information about HIV/AIDS?
(Circle only your FIRST choice)

1. Radio
2. Newspaper of Magazine
3. Pamphlets or Handouts
4. Books or Journals
5. Television
6. Movies or Films
7. Plays
8. Videos
9. Mother
10. Father
11. Brothers
12. Sisters
13. Other Family Members
14. Friends or Classmates
15. Teachers or School Personnel
16. Nurses or Doctors
17. Health Clinic/Hospital
18. Church or Religious Leader
19. Youth Worker
20. Others (specify $\qquad$
21. None

## APPENDIX D

Table 1.a $\begin{aligned} & \text { Number of Students who completed the HIV/AIDS } \\ & \text { questionnaire by Group, Subgroup, School Year, sex and time } \\ & \text { of study. }\end{aligned}$

Figure 1.b $\quad X-Y$ Graph of respondents who took part in the study.

Table 2 Sociodemographic Information on:
2.1(a) Group A - Experimental Subgroup
(b) Group A - Control Subgroup
2.2(a) Group B - Experimental Subgroup
(b) Group B - Control Subgroup
2.3 Group C

Table 1.a Numbers of students who completed the HIV/AIDS Questionnaire by group, subgroup, school year, and sex

| Sample Descri ption | School Year | Sex | One Week Before |  | One Week After |  | Three Months After |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases | Cont <br> rol | Cases | $\begin{aligned} & \text { Cont } \\ & \text { rol } \\ & \hline \end{aligned}$ | Cases | $\begin{aligned} & \text { Cont } \\ & \text { rol } \\ & \hline \end{aligned}$ |
| Group A | Year 10 | Male | 38 | 25 | 36 | 22 | 36 | 21 |
|  |  | Female | 38 | 15 | 36 | 15 | 36 | 15 |
|  | Year 11 | Male | 4 | 14 | 6 | 14 | 6 | 15 |
|  |  | Female | 8 | 3 | 4 | 3 | 4 | 3 |
| Group$B$ | Year 10 | Male |  |  | 64 | 6 | 59 | 6 |
|  |  | Female |  |  | 26 | 18 | 26 | 18 |
| Group C | Year 10 | Male |  |  |  |  |  |  |
|  |  | Female |  |  |  |  |  |  |
|  | Year 11 | Male |  |  |  |  |  |  |
|  |  | Female |  |  |  |  |  |  |

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|  |  |  | Schoo | 11 |
| :---: | :---: | :---: | :---: | :---: |
|  | Female | Non Manual | 73 | 57 |
|  |  | Manual | 8 | 29 |
|  |  | other | 19 | 14 |
| 6. | In what type of religion were you brought up? |  |  |  |
|  | Male | Catholic | 11 | 0 |
|  |  | Protestant | 54 | 0 |
|  |  | Islam | 0 | 0 |
|  |  | Hinduism | 0 | 0 |
|  |  | Sikh | 0 | 0 |
|  |  | Others | 35 | 0 |
|  |  | Don't Know | 0 | 67 |
|  |  | None | 0 | 33 |
|  | Female | Catholic | 14 | 0 |
|  |  | Protestant | 73 | 43 |
|  |  | Islam. | 0 | 0 |
|  |  | Hinduism | 0 | 0 |
|  |  | Sikh | 0 | 0 |
|  |  | Others | 3 | 39 |
|  |  | Don't Know | 8 | 14 |
|  |  | None | 3 | 14 |
| 8. | Tribe or Ethnic background of Parents |  |  |  |
|  | Male | White British | 97 | 75 |
|  |  | Black British | 0 | 0 |
|  |  | Afro Caribbean | 0 | 0 |
|  |  | Black African | 0 | 0 |
|  |  | Asian | 0 | 25 |
|  |  | Other | 3 | 0 |
|  | Female |  |  |  |
|  |  | Black British | 0 | 0 |
|  |  | Afro Caribbean | 0 | 0 |
|  |  | Black African | 0 | 0 |
|  |  | Asian | 0 | 0 |
|  |  | Other | 3 | 0 |
| 9. | Expected Future Occupation |  |  |  |
|  | Male | Non Manual | 91 | 100 |
|  |  | Manual | 9 | 0 |
|  |  | Other | 0 | 0 |
|  | Female | Non Manual | 94 | 100 |
|  |  | Manual | 6 | 0 |
|  |  | Other | 0 | 0 |

Table 2.1(a)

## Group A - Experimental

1. What sex are you?

|  | Male |  |  |
| :--- | :--- | ---: | ---: |
|  | 14 years | 79 | 0 |
|  | 15 | years | 21 |
|  | 0 |  |  |
|  | 16 years | 14 years | 0 |
|  | 15 years | 87 | 0 |
|  | 16 years | 13 | 0 |
|  |  | 0 | 100 |

3. Which adult do you live with?

Male
Female
$\begin{array}{rr}72 & 75 \\ 3 & 25 \\ 0 & 0 \\ 16 & 0 \\ 5 & 0 \\ 5 & 0 \\ 79 & 57 \\ 11 & 14 \\ 0 & 0 \\ 5 & 29 \\ 0 & 0 \\ 5 & 0\end{array}$
2. How old were you on your last birthday?

Male
Female
Male
Mother and father
Mother only
Father only
Mother and stepfather Father and stepmother
Other

Mother and father
Mother only

Mother and stepfather
Father and stepmother Father and stepmother
Other

Female
in $\stackrel{n}{N} \stackrel{n}{N}$ tion




| $\mathrm{MNO}_{\mathrm{N}}$ | $\begin{aligned} & 9 \\ & \hline \end{aligned}$ | $\bigcirc$ | $\bigcirc$ | 00000 | $9 \times 0$ | \% | $\bigcirc$ | $\bigcirc$ | 00000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{0}{\sim}$ | $\underset{N}{10}$ | ๑ | $\cdots$ | OOOL | $\infty \underset{\sim}{\infty} 0$ | $\underset{\sim}{ \pm}$ | $\cdots$ | $\cdots$ | $0 \sigma O \underset{\sim}{\infty} \mathbb{N}$ |


| $8000$ | 0 | 0 | 0 | 00 |
| :---: | :---: | :---: | :---: | :---: |
| $\stackrel{\ln }{\forall} ल \underset{N}{N}$ | 0 | $\bigcirc$ | 0 | 00 |

1. With whom do you spend most of your
Female Other

[^0]




| Female | Radio <br> Newspaper/Magazines <br> Pamphlets/Handouts <br> Books/Journals <br> Television <br> Movies/Films <br> Videos <br> Plays <br> Mother <br> Father <br> Brothers <br> Sisters <br> Other family members <br> Friends/classmates <br> Teachers/School personnel <br> Nurse/Doctor <br> Health Clinic/Hospital <br> Church/Religious leader <br> Youth worker <br> Other <br> None |
| :---: | :---: |
| Which would infor | the following sources prefer most to receive ion about HIV/AIDS? |
| Male | Radio <br> Newspaper/Magazines <br> Pamphlets/Handouts <br> Books/Journals <br> Television <br> Movies/Films <br> Plays <br> Videos <br> Mother <br> Father <br> Brothers <br> Sisters <br> Other family members <br> Friends/classmates <br> Teachers/School personnel <br> Nurse/Doctor <br> Health Clinic/Hospital <br> Church/Religious leader <br> Youth worker <br> Other <br> None |

OWONONOOOOOOOONNONOO


Table 2.1(b)
Group A - Control




$$
\begin{aligned}
& \text { NoONOO NMONOOO } \\
& \text { NONOO NNOOON NNN NOON }
\end{aligned}
$$

4. Father's (stepfather's) most recent occupation

5. Mother's (stepmother's) most recent occupation


| School Year |  |  |
| :--- | :--- | :--- |
| 10 | 11 |  |
| 67 | 33 |  |
| 0 | 33 |  |
| 13 | 0 |  |
| 0 | 33 |  |
| 0 | 0 |  |
| 0 | 0 |  |
| 0 | 0 |  |
| 0 | 0 |  |
| 20 | 0 |  |

Female At own home
At relative's home
At friend's home
In the street
In father's/mother's
place of work
At a youth club/
sports club
In a discotheque or
dance hall
In amusement arcades or
games centres
Other
Part III: Sources of Information
From which of the following sources
have you heard the most about HIV/AIDS?
Male
Radio
Newspaper/Magazines
Pamphlets/Handouts
Books/Journals
Television
Movies/Films
Videos
Plays
Mother
Father
Brothers
Sisters
other family members
Friends/classmates
Teachers/School personnel
Nurse/Doctor
Health clinic/Hospital
Church/Religious leader
Youth worker
other
None


|  |
| :---: |

With whom do you spend most of your
free time during the school term
(eg. weekends, evenings)
Male
Parents
Brothers or sisters
other family members
Same sex friends from
school
0pposite sex friends
from school
Same sex friends from
outside school
Opposite sex friends
from outside school
A boyfriend
A girlfriend
Withmyself or on my own
Other
Parents
Brothers or sisters
Other family members
Same sex friends from
school
Opposite sex friends
from school
Same sex friends from
outside school
opposite sex friends
from outside school
A boyfriend
A girlfriend
With myself or on my own
0ther
.
Where do you spend most of your
free time during school term?
Male At own home
At relative's home

$\dot{\sim}$

000080000000008000000 ONmMNNONOONOOOONOOOO



Female

$N \infty N O M O O$


サOFn O $\quad$ O O O N


| Female | Parents |
| :--- | :--- |
| Brothers or sisters |  |
| other family members |  |
| Same sex friends from |  |
| school |  |
| opposite sex friends |  |
| from school |  |
| Same sex friends from |  |
| outside school |  |
| opposite sex friends |  |
| from outside school |  |
| A boyfriend |  |
| A girlfriend |  |
| With myself or on my own |  |
| Other |  |


がゥ

 Tribe or Ethnic background of Parents Catholic
Protestant
Istam
Hinduism
Sikh
others
Don＇t Know
None

$\begin{array}{ll}\text { Male } & \text { Catholic } \\ & \text { Protestant }\end{array}$
Islam
Hinduism
Sikn
Don＇t know
None
None

Female | Catholic |  |
| :--- | :--- |
|  | Protestant |
|  | Islam |
|  | Hinduism |
|  | Sikh |
|  | Others |
|  | Don＇t Know |
|  | None |

 $\square$
$\underset{\sim}{\infty}$
$\underset{\sim}{\infty}$ $\begin{array}{ll}\text { Female } & \text { White British } \\ & \text { Black British } \\ & \text { Afro Caribbean } \\ & \text { Black African } \\ & \text { Asian } \\ & \text { Other }\end{array}$ 9．Expected Future Occupation Non Manual
Manual
Other
Non Manual
Manual
Other $\infty$
 $\infty$
Table 2．2（b）

めNO NNo
ヘONNOO よNOMON
4．Father＇s（stepfather＇s）most recent occupation 67
33
0
$\stackrel{9}{-\infty}$
5．Mother＇s（stepmother＇s）most recent occupation
83
17
0
$\xrightarrow[\sim]{\sim}$
00000000000000000000

Female | At own home |
| :--- |
| At relative's home |
| At friend's home |
| In the street |
| In father's/mother's |
| place of work |
| At a youth club/ |
| sports club |
| In a discotheque or |
| dance hall |
| In amusement arcades or |
| games centres |
| Other |
| Part III: Sources of Information |
| From which of the following sources |
| have you heard the most about HIV/AIDS? |
| Male |
| Radio |
| Newspaper/Magazines |
| Pamphlets/Handouts |
| Books/Journals |
| Television |
| Movies/Films |
| Videos |
| Plays |
| Mother |
| Father |
| Brothers |
| Sisters |
| other family members |
| Friends/classmates |
| Teachers/School personnel |
| Nurse/Doctor |
| Health clinic/Hospital |
| Church/Religious leader |
| Youth worker |
| Other |
| None |

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adio
/Magazines Newspaper/Magazine
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0
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$>$
Plays
Female

Which of the following sources would you prefer most to receive


Pamphlets/Handouts
 Movies/Films
ideos
Brothers
Sisters 0 ther family members
Friends/classmates

| 0 |
| :--- |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |

Health Clinic/Hospital
Church/Religious leader
Youth worker
Other
None

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1. With whom do you spend most of your
free time during the school term
(eg. weekends, evenings)
Male $\quad$ Parents
Brothers or sisters
other family members
Same sex friends from
school
opposite sex friends
from school
Same sex friends from
outside school
opposite sex friends
from outside school
A boyfriend
A girifriend
With myself or on my own
other
Parents
Brothers or sisters
Other family members
Same sex friends from
school
opposite sex friends
from school
Same sex friends from
outside school
opposite sex friends
from outside school
A boyfriend
A girlfriend
With myself or on my own
other

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Radio
Newspaper/Magazines
Pamphlets//handouts
Books/Journals
Television
Movies/Films
Plays
Videos
Mother
Father
Brothers
Sisters
Other family members
Friends/classmates
Teachers/School personnel
Nurse/Doctor
Health Clinic/Hospital
Church/Religious leader
Youth worker
Other
None



Female


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## APPENDIX E

Tables 3.1
HIV/AIDS-Related Knowledge, Attitudes/Beliefs, and Attitudes to People with HIV/AIDS - 1 week Before the intervention, of students in:

Tables 3.1a(i) Group A - Experimental subgroup
3.1a(ii) Group A - Control subgroup

Tables 3.2 HIV/AIDS-Related Knowledge, Attitudes/Beliefs, and Attitudes to People with HIV/AIDS - 1 week After the Intervention, of students in:

Tables 3.2a(i) Group A - Experimental subgroup
3.2a(ii) Group A - Control subgroup
3.2b(i) Group B - Experimental subgroup
3.2b(ii) Group B - Control subgroup

Tables 3.3 HIV/AIDS-Related Knowledge, Attitudes/Beliefs, and Attitudes to People with HIV/AIDS - 3 months After the Intervention, of Students in:

Tables 3.3a(i) Group A - Experimental subgroup
3.3a(ii) Group A - Control Subgroup
3.3b(i) Group B - Experimental subgroup
3.3b(ii) Group B - Control subgroup
3.3c

Group C

## Tables 3.4 Mean Scores of Students

Table 3.4a(i) Categorised Mean Knowledge Scores of Group A Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4a(ii) Categorised Mean Knowledge Scores of Group B Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4a(iii) Categorised Mean Knowledge Scores of Group C Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4b(i) Categorised Mean Attitudes/Beliefs Scores of Group A Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4b(ii) Categorised Mean Attitudes/Beliefs Scores of Group B Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4b(iii) Categorised Mean Attitudes/Beliefs Scores of Group C Students by Subgroup, School Year, Sex, and Time of Study

Table 3.4c(i) Categorised Mean Attitudes (to People with HIV/AIDS) Scores of Students in Group A by Subgroup, School Year, Sex, and Time of Study

Table 3.4c(ii) Categorised Mean Attitudes (to People with HIV/AIDS) Scores of Students in Group B by Subgroup, School Year, Sex, and Time of Study

Table 3.4c(iii) Categorised Mean Attitudes (to People with HIV/AIDS) Scores of Students in Group C by School Year, and Sex

## Figures $3.5 \quad$ X-Y Graphs of Mean Scores

Figure 3.5a X-Y Graphs of Mean Knowledge Scores of Students on:
(i) Correct Routes of Transmission
(ii) Incorrrect Routes of Tranmission
(iii) Asymptomatic Status of HIV Carriers
(iv) Diagnosis/Cure of HIV/AIDS
(v) Prevention/Cure of HIV/AIDS
(vi) Vulnerability to HIV/AIDS

Figure 3.5b

Figure 3.5 c
X-Y Graphs of Mean Attitudes/Beliefs Scores of Students on:
(i) Perceived Vulnerability to HIV/AIDS
(ii) Perceived Seriousness of HIV/AIDS
(iii) Perceived Need for Education on HIV/AIDS

X-Y Graphs of Mean Attitudes Scores of Students on:
(i) Normalisation of People with HIV/AIDS
(ii) Willingness to maintain contact with people who have HIV/AIDS
(iii) Attribution of Blame for people who have HIV/AIDS

Table 3.6 Summary Results of Multivariate Data Analysis

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## Table 3.1a(i)

Group A - Experimental - 1 week Before the Intervention

| General Awareness |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Have you ever heard about HIV and AIDS? |  | School Year |  |  |
|  |  | 10 | 11 | 2 |
| Male | Yes | 100 | 100 |  |
|  | No | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Female | Yes | 100 | 100 |  |
|  | No | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Routes of Transmission |  |  |  |  |
| Correct Routes |  |  |  |  |
| A person can become infected with HIV by: |  |  |  |  |
| a) sharing needles/syringes with aperson who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 95 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | Yes, correct | 95 | 100 |  |
|  | No, incorrect | 5 | 0 |  |
|  | Don't know | 0 | 0 |  |
| b) Having sex with a person who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 100 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Female | Yes, correct | 100 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| C) Receiving HIV-infected blood |  |  |  |  |
| Male | Yes, correct | 92 |  |  |
|  | No, incorrect | 3 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | Yes, correct | 95 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 5 | 0 |  |





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b）One can tell if a person has the
HIV virus by the way he／she looks

| Male | No，correct <br> Yes，incorrect <br> Don＇t know |
| :--- | :--- |
| Female $\quad$No，correct |  |
| Yes，incorrect <br> Don＇t know |  |
| c）AIDS can be cured if detected early |  |
| Male | No，correct |
|  | Yes，incorrect <br> Don＇t know |
| Female | No，correct <br> Yes，incorrect <br> Don＇t know |
|  |  |

Vulnerability to HIV and AIDS
a）Having sex with many partners
increases a person＇s risks of
getting infected with HIV
Male Yes，correct
No，incorrect
Don＇t know
Female Yes，correct
b）Most people with HIV will
develop AIDS
Male Yes，cor
Yes，correct
No，incorrect
Don＇t know
Female Yes，correct
c）When a person has AIDS his／her body
$\dot{\circ}$

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##  <br> Agree Strongly Agree

a）Young people of my age should be
taught how to protect themselves
against sexually transmitted diseases
including HIV and AIDS

## Perceived Need for Education

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Table 3.1a(ii)



| d) Kissing a person who has the virus |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 10 |  | 12 |
| Male | No, correct | 96 | 93 |  |
|  | Yes, incorrect | 4 | 0 |  |
|  | Don't know | 0 | 7 |  |
| Female | No, correct | 79 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 21 | 0 |  |
| e) Giving (donating) blood |  |  |  |  |
| Male | No, correct | 50 | 58 |  |
|  | Yes, incorrect | 38 | 21 |  |
|  | Don't know | 12 | 21 |  |
| Female | No, correct | 65 | 100 |  |
|  | Yes, incorrect | 21 | 0 |  |
|  | Don't know |  | 0 |  |
| f) Being bitten by mosquitoes which have already fed on a person who has the virus |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Male | No, correct | 86 | 43 |  |
|  | Yes, incorrect | 28 | 14 |  |
|  | Don't know | 36 | 43 |  |
| Female | No, correct | 36 | 33 |  |
|  | Yes, incorrect | 7 | 0 |  |
|  | Don't know | 57 | 67 |  |
| Asymptomatic Status of Carrier |  |  |  |  |
| a) A person can become infected with HIV and not show signs of it |  |  |  |  |
| Male |  |  |  |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 20 | 14 |  |
| Female | Yes, correct | 80 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 20 | 0 |  |
| b) A person who looks healthy, but has the HIV virus, can pass the virus to other people |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 88 | 86 |  |
|  | No, incorrect | 8 | 0 |  |
|  | Don't know | 4 | 14 |  |

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| :---: | :---: | :---: | :---: |
| $\underset{\sigma}{N} \nabla \nabla$ | OMN | $\mathscr{C}_{\circ}^{\infty}$ | $\dot{v}^{\infty} \infty$ |

b）One can tell if a person has the
HIV virus by the way he／she looks $\begin{array}{ll}\text { Male } & \begin{array}{l}\text { No，correct } \\ \text { Yes，incorrect } \\ \text { Don＇t know }\end{array} \\ \text { Female } & \begin{array}{l}\text { No，correct } \\ \text { Yes，incorrect } \\ \text { Don＇t know }\end{array} \\ \text { c）AIDS can be cured if detected early } \\ \text { Male } & \begin{array}{l}\text { No，correct } \\ \\ \\ \text { Yes，incorrect } \\ \text { Don＇t know }\end{array} \\ \text { Female } & \begin{array}{l}\text { No，correct } \\ \text { Yes，incorrect }\end{array}\end{array}$ Vulnerability to HIV and AIDS to systa s，uosjad e saseajout
sjauzjed Kuew utim xas butaeh（e getting infected with HIV Male Yes，correct No，incorrect
Don＇t know Female Yes，correct No，incorrect
Don＇t know

Female

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c）When a person has AIDS his／her body cannot
disease

Male Yes，correct



| Willingness to Maintain Contact |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 10 | 11 | 12 |
| a) Other students should not be told if a student with HIV is attending school |  |  |  |  |
| Male | Strongly Agree | 28 | 15 |  |
|  | Agree | 16 | 15 |  |
|  | Undecided | 16 | 39 |  |
|  | Disagree | 32 | 23 |  |
|  | Strongly Disagree | 8 | 8 |  |
| Female | Strongly Agree | 27 | 0 |  |
|  | Agree | 20 | 67 |  |
|  | Undecided | 26 | 0 |  |
|  | Disagree | 7 | 0 |  |
|  | Strongly Disagree | 20 | 33 |  |
| b) I would visit a friend if I knew that he/she has the HIV virus |  |  |  |  |
| Male | Strongly Agree | 36 | 31 |  |
|  | Agree | 52 | 54 |  |
|  | Undecided | 8 | 15 |  |
|  | Disagree | 4 | 0 |  |
|  | Strongly Disagree | 0 | 0 |  |
| Female | Strongly Agree | 79 | 100 |  |
|  | Agree | 14 | 0 |  |
|  | Undecided | 7 | 0 |  |
|  | Disagree | 0 | 0 |  |
|  | Strongly Disagree | 0 | 0 |  |
| c) I would go to a dentist who treats people who are HIV-infected |  |  |  |  |
| Male | Strongly Agree | 12 | 17 |  |
|  | Agree | 24 | 25 |  |
|  | Undecided | 28 | 33 |  |
|  | Disagree | 24 | 12 |  |
|  | Strongly Disagree | 12 | 8 |  |
| Female | Strongly Agree | 7 | 0 |  |
|  | Agree | 33 | 67 |  |
|  | Undecided | 47 | 0 |  |
|  | Disagree | 13 | 0 |  |
|  | Strongly Disagree | 0 | 33 |  |
| d) I would be friends with someone who has AIDS |  |  |  |  |
| Male | Strongly Agree | 16 | 23 |  |
|  | Agree | 60 | 39 |  |
|  | Undecided | 16 | 31 |  |
|  | Disagree | 8 | 7 |  |
|  | Strongly Disagree | 0 | 0 |  |

$\dot{\sim}$
$\frac{\text { School Year }}{10} 11 \quad 12$
Attitudes to People with HIV and AIDS


|  |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 10 | 11 | 12 |
| Female | Strongly Agree | 64 | 67 |  |
|  | Agree | 29 | 33 |  |
|  | Undecided | 7 | 0 |  |
|  | Disagree | 0 | 0 |  |
|  | Strongly Disagree | 0 | 0 |  |
| e) I would be willing to take care |  |  |  |  |
| Male | Strongly Agree | 12 | 23 |  |
|  | Agree ${ }^{\text {a }}$ | 52 | 46 |  |
|  | Undecided | 20 | 23 |  |
|  | Disagree | 12 | 8 |  |
|  | Strongly Disagree | 4 | 0 |  |
| Female | Strongly Agree | 50 | 33 |  |
|  | Agree | 21 | 67 |  |
|  | Undecided | 29 | 0 |  |
|  | Disagree | 0 | 0 |  |
|  | Strongly Disagree | 0 | 0 |  |
| Attribution of Blame for People with HIV/AIDS |  |  |  |  |
| a) Anyone who gets infected with HIV only has him/herself to blame |  |  |  |  |
|  |  |  |  |  |
| Male | Strongly Disagree | 20 | 39 |  |
|  | Dosagree | 40 | 8 |  |
|  | Undecided | 20 | 38 |  |
|  | Agree | 16 | 15 |  |
|  | Strongly Agree | 4 | 0 |  |
| Female | Strongly Disagree | 33 | 33 |  |
|  | Disagree | 40 | 33 |  |
|  | Undecided | 20 | 33 |  |
|  | Agree | 7 | 0 |  |
|  | Strongly Agree | 0 | 0 |  |
| b) I do not feel sorry for people with AIDS |  |  |  |  |
| Male | Strongly Disagree | 28 | 39 |  |
|  | Disagree | 44 | 23 |  |
|  | Undecided | 24 | 30 |  |
|  | Agree | 0 | 8 |  |
|  | Strongly Agree | 4 | 0 |  |
| Female | Strongly Disagree | 40 | 33 |  |
|  | Disagree | 27 | 33 |  |
|  | Undecided | 33 | 33 |  |
|  | Agree | 0 | 0 |  |
|  | Strongly Agree | 0 | 0 |  |


$\dot{\sim}$
Table 3.2a(i)

| Knowledge about HIV and AIDS |  |  |  |
| :---: | :---: | :---: | :---: |
| General Awareness |  |  |  |
| Have you ever heard about HIV and AIDS? |  | Scho | 1 Ye |
|  |  | 10 | 11 |
| Male | Yes | 100 | 100 |
|  | No | 0 | 0 |
|  | Don't know | 0 | 0 |
| Female | Yes |  | 100 |
|  | No | 0 |  |
|  | Don't know | 0 |  |
| 1. Routes of Transmission |  |  |  |
| 1. Correct Routes A |  |  |  |
| A person can become infected with HIV by: |  |  |  |
| a) sharing needles/syringes with a |  |  |  |
| Male | Yes, correct | 100 | 100 |
|  | No, incorrect | 0 | 0 |
|  | Don't know | 0 | 0 |
| Female | Yes, correct | 94 | 100 |
|  | No, incorrect | 6 | 0 |
|  | Don't know | 0 | 0 |
| b) Having sex with a person who |  |  |  |
| Male | Yes, correct | 100 | 100 |
|  | No, incorrect | 0 | 0 |
|  | Don't know | 0 | 0 |
| Female | Yes, correct |  |  |
|  | No, incorrect | 0 | 0 |
|  | Don't know | 0 | 0 |
| C) Receiving HIV-infected blood |  |  |  |
| Male | Yes, correct | 100 | 100 |
|  | No, incorrect | 0 | 0 |
|  | Don't know | 0 | 0 |
| Female | Yes, correct | 97 |  |
|  | No, incorrect | 0 3 | 0 0 |



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non
d）Kissing a person who has the virus

$$
\begin{aligned}
& \text { d) Kissing a person who } \\
& \text { Male } \quad \text { No, correct } \\
& \text { Yes, incorrect }
\end{aligned}
$$

> Female No，correct

e）Giving（donating）blood
Male No，correct
$\begin{array}{ll}\text { Female } & \text { No，correct } \\ \text { Yes，incorrect }\end{array}$
f）Being bitten by mosquitoes which have already fed on a person who has the virus Male No，correct Yes，incorrect

Don＇t know
Female $\quad \begin{aligned} & \text { No，correct } \\ & \text { Yes，incorrect }\end{aligned}$ Yes，incorrect
Don＇t know

Asymptomatic Status of Carrier
a）A person can become infected with
HIV and not show signs of it
HIV and not show signs of it
Male Yes，correct
Yes，correct
No，incorrect
Don＇t know
Female Yes，correct
b）A person who looks healthy，but
has the HIV virus，can pass the
virus to other people
Male Yes，correct
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b) One can tell if a person has the
HIV virus by the way he/she looks
 Vulnerability to HIV and AIDS




| a) I would feel ashamed if I had AIDS |  |
| :---: | :---: |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| b) I have difficulty saying No to my friends when asked to do things against my wish |  |
|  |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| c) Many of my classmates/friends are worried about HIV and AIDS |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| d) Because of HIV/AIDS, I worry about what I had done in the past |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree Strongly Agree |
|  | Strongly Agree |


| Willingness to Maintain Contact |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 10 | 11 | 12 |
| a) Other students should not be told if a student with HIV is attending school |  |  |  |  |
| Male | Strongly Agree | 9 | 33 |  |
|  | Agree | 35 | 17 |  |
|  | Undecided | 29 | 50 |  |
|  | Disagree | 18 | 0 |  |
|  | Strongly Disagree | 9 | 0 |  |
| Female | Strongly Agree | 9 | 25 |  |
|  | Agree | 17 | 0 |  |
|  | Undecided | 49 | 50 |  |
|  | Disagree | 14 | 25 |  |
|  | Strongly Disagree | 11 | 0 |  |
| b) I would visit a friend if I knew that he/she has the HIV virus |  |  |  |  |
| Male | Strongly Agree | 46 | 50 |  |
|  | Agree | 51 | 17 |  |
|  | Undecided | 0 | 17 |  |
|  | Disagree | 3 | 17 |  |
|  | Strongly Disagree | 0 | 0 |  |
| Female | Strongly Agree | 66 | 75 |  |
|  | Agree | 34 | 25 |  |
|  | Undecided | 0 | 0 |  |
|  | Disagree | 0 | 0 |  |
|  | Strongly Disagree | 0 | 0 |  |
| c) I would go to a dentist who treats people who are HIV-infected |  |  |  |  |
| Male | Strongly Agree | 9 | 17 |  |
|  | Agree | 14 | 17 |  |
|  | Undecided | 40 | 33 |  |
|  | Disagree | 29 | 33 |  |
|  | Strongly Disagree | 9 | 0 |  |
| Female | Strongly Agree | 20 | 25 |  |
|  | Agree | 23 | 0 |  |
|  | Undecided | 43 | 50 |  |
|  | Disagree | 11 | 25 |  |
|  | Strongly Disagree | 3 | 0 |  |
| d) I would be friends with someone who has AIDS |  |  |  |  |
| Male | Strongly Agree | 29 | 17 |  |
|  | Agree | 53 | 33 |  |
|  | Undecided | 18 | 33 |  |
|  | Disagree | 0 | 17 |  |
|  | Strongly Disagree | 0 | 0 |  |

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 Agree

Disagree
Disagree
Strongly Disagree
Female Strongly Agree
Children with HIV should be allowed
to attend school with other children Male Strongly Agree

Agree
Undecided
Disagree
Strongly Disagree
Female Strongly Agree Agree
Undecided

Disagree
Strongly Disagree
b) People with HIV should be allowed
to work as teachers

$$
\text { Male } \begin{aligned}
& \text { Strongly Agree } \\
& \text { Agree }
\end{aligned}
$$

Agree

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|  |  | School Year |  |
| :---: | :---: | :---: | :---: |
| Female | Strongly Agree | 43 | 50 |
|  | Agree | 54 | 25 |
|  | Undecided | 3 | 0 |
|  | Disagree | 0 | 25 |
|  | Strongly Disagree | 0 | 0 |
| e) I would be willing to take care |  |  |  |
| Male | Strongly Agree | 47 | 17 |
|  | Agree | 44 | 33 |
|  | Undecided | 9 | 33 |
|  | Disagree | 3 | 17 |
|  | Strongly Disagree | 0 | 0 |
| Female | Strongly Agree | 43 | 25 |
|  | Agree | 40 | 50 |
|  | Undecided | 17 | 25 |
|  | Disagree | 0 | 0 |
|  | Strongly Disagree | 0 | 0 |
| Attribution of Blame for People with HIV/AIDS |  |  |  |
| a) Anyone who gets infected with HIV only has him/herself to blame |  |  |  |
| Male | Strongly Disagree | 21 | 5 |
|  | Disagree | 24 | 50 |
|  | Undecided | 27 | 50 |
|  | Agree | 24 | 0 |
|  | Strongly Agree | 6 | 0 |
| Female | Strongly Disagree | 14 | 25 |
|  | Disagree | 51 | 50 |
|  | Undecided | 31 | 0 |
|  | Agree | 0 | 25 |
|  | Strongly Agree | 0 | 25 |
| b) I do not feel sorry for people with AIDS |  |  |  |
| Male | Strongly Disagree | 44 | 17 |
|  | Disagree | 24 | 17 |
|  | Undecided | 15 | 50 |
|  | Agree | 18 | 0 |
|  | Strongly Agree | 0 | 17 |
| Female | Strongly Disagree | 29 | 25 |
|  | Disagree | 37 | 50 |
|  | Undecided | 34 | 25 |
|  | Agree | ${ }^{0}$ | 0 |
|  | Strongly Agree | 0 | 0 |


| d) Having injections with School Year |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| unst | lised needles/syringes | School Year |  |  |
| Male | Yes, correct | 86 | 100 |  |
|  | No, incorrect | 5 | 0 |  |
|  | Don't know | 9 | 0 |  |
| Female | Yes, correct | 75 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 25 | 0 |  |
| e) A pregnant woman who has the virus can pass it to her unborn baby |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 73 | 100 |  |
|  | No, incorrect | 9 | 0 |  |
|  | Don't know | 18 | 0 |  |
| Female | Yes, correct | 94 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 6 | 0 |  |
| Incorrect Routes |  |  |  |  |
| A person can become infected with HIV by: |  |  |  |  |
| a) Shaking hands with a person who |  |  |  |  |
| has the virus |  |  |  |  |
| Male | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Female | No, correct |  |  |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| b) Wearing clothes used by a person who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | No, correct | 96 | 100 |  |
|  | Yes, incorrect | 4 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| c) Hugging a person who has the virus |  |  |  |  |
| Male | No, correct | 86 | 100 |  |
|  | Yes, incorrect | 9 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |

Table 3.2a(ii)




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a）I would feel ashamed if $I$ had AIDS
Male Strongly Disagree

| 0 |
| :--- |
| 0 |
| 0 |
| $\square$ |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |

Agree
Strongly Agree
Female Strongly Disagree
Undecided
Strongly Agree
b）I have difficulty saying No to my against my wish

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## Table 3.2b(i)


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d）Kissing a person who has the virus Male No，correct

Male $\quad$| No，correct |
| :--- |
| Yes， |
| Don＇t know |

inct
f）have already fed on a person who
has the virus
Male No，correct
Yes；incorrect
Don＇t know
Female $\quad$ No，correct
Yes，incorrect
Don＇t know
Asymptomatic status of Carrier
a）A person can become infected with HIV and not show signs of it Male Yes，correct No，incorrect
Don＇t know
Female Yes，correct No，incorrect
Don＇t know b）A person who looks healthy，but
has the HIV virus，can pass the virus to other peopla
Male Yes，correct Male No，incorrect
No NOM

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Perceived Seriousness
a）I would feel ashamed if I had AIDS
Male
Female Strongly Disagree
Strongly Disagree
Disagree
indagrided
Agree
Strongly Agree
Undecided
Agree
Strongly Agree
b）I have difficulty saying No to my against my wish Male Strongly
Strongly Disagree
Disagree
Undecided
Undece
Strongly Agree
Female Strongly Disagree
Disagree
Agree
Strongly Agree
c）Many of my classmates／friends are
worried about HIV and AIDS

$$
\begin{aligned}
& \begin{array}{ll}
\text { Male } & \begin{array}{l}
\text { Strongly Disagree } \\
\\
\text { Disagree } \\
\\
\text { Undecided }
\end{array} \\
& \text { Agree } \\
\text { Strongly Agree }
\end{array} \\
& \text { d) Because of HIV/AIDS, I worry about } \\
& \begin{array}{l}
\text { Strongly Disagree } \\
\text { Disagree }
\end{array} \\
& \text { Uisagree } \\
& \text { Strongly Agree } \\
& \text { Male }
\end{aligned}
$$

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 Male No, correct


Female No, correct
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Table 3.2b(ii)





| d) Kissing a person who has the virus |  |
| :---: | :---: |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| e) Givi | (donating) blood |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| f) Bein have has | bitten by mosquitoes which already fed on a person who virus |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| Asymotomatic Status of Carrier |  |
| a) A person can become infected with HIV and not show signs of it |  |
| Male | Yes, correct No, incorrect Don't know |
| Female | Yes, correct No, incorrect Don't know |
| b) A person who looks healthy, but has the HIV virus, can pass the virus to other people |  |
| Male | Yes, correct No, incorrect Don't know |




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| a）Other students should not be told if a student with HIV is attending school |  |
| :---: | :---: |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| b）I wo that | visit a friend if I knew ／she has the HIV virus |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| c）I would go to a dentist who treats people who are HIV－infected |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| d）I would be friends with someone who has AIDS |  |
| Male | Strongly Agree Agree <br> Undecided <br> Disagree <br> Strongly Disagree |

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Attitudes to People with HIV and AIDS
1．Normalisation of People with HIV／AIDS
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| Normalisation of People with HIV／AIDS |  |
| :---: | :---: |
| a）Chi to | en with HIV should be allowed end school with other children |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| b）Peop to | with HIV should be allowed as teachers |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| c）I would eat in a restaurant even if one of the people working there has the HIV virus |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |

$\frac{\text { School Year }}{1011}$

గnnocoo | Male | Strongly Agree | 40 |
| :--- | :--- | ---: |
|  | Agree | 20 |
|  | Undecided | 20 |
|  | Disagree | 20 |
|  | Strongly Disagree | 0 |
| Female | Strongly Agree | 77 |
|  | Agree | 0 |
|  | Undecided | 18 |
|  | Disagree | 6 |
|  | Strongly Disagree | 0 |
| Attribution of Blame for People with HIV/AIDS |  |  | a) Anyone who gets infected with HIV 0

60 60
40
0
0
 b) I do not feel sorry for people with AIDS 암ㅇNㅇ
Female $\begin{gathered}\text { Strongly Agree } \\ \\ \text { Agree } \\ \text { Undecided } \\ \\ \text { Disagree } \\ \text { Strongly Disagree }\end{gathered}$
e) I would be willing to take care
of a relative who has AIDS
Female $\begin{aligned} & \text { Strongly Agree } \\ & \text { Agree } \\ & \text { Undecided } \\ & \\ & \text { Disagree } \\ & \text { Strongly Disagree }\end{aligned}$
e) I would be willing to take care
of a relative who has AIDS
Female $\begin{gathered}\text { Strongly Agree } \\ \\ \text { Agree } \\ \text { Undecided } \\ \\ \text { Disagree } \\ \text { Strongly Disagree }\end{gathered}$
e) I would be willing to take care
of a relative who has AIDS
e) I would be willing to take care
of a relative who has AIDS

$$
\begin{aligned}
& \text { Disagree } \\
& \text { Strongly Disagree }
\end{aligned}
$$

Undecided
Strongly Disagree
Disagree
Agree
Strongly Agree
Strongly Disagree
Disagree
Strongly Agree
Male Strongly Disagree
Undecided
Strongly Agree
0
0
2
0
0
0
-1
0
2
2
-1
0
0
Undecided
Strongly Agree
Female
Female

| d) Having injections with |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
| unst | ilised needles/syringes | 10 | 11 | 12 |
| Male | Yes, correct | 97 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 3 | 0 |  |
| Female | Yes, correct | 87 | 100 |  |
|  | No, incorrect | 3 | 0 |  |
|  | Don't know | 10 | 0 |  |
| e) A pregnant woman who has the virus can pass it to her unborn baby |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 92 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 8 | 0 |  |
| Female | Yes, correct | 93 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 7 | 0 |  |
| Incorrect Routes |  |  |  |  |
| A person can become infected with HIV by: |  |  |  |  |
| a) Shaking hands with a person who |  |  |  |  |
| has the virus |  |  |  |  |
| Male | No, correct | 97 | 100 |  |
|  | Yes, incorrect | 3 | 0 |  |
|  | Don't know | 0 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| b) Wearing clothes used by a person who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | No, correct | 97 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 3 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| c) Hugging a person who has the virus |  |  |  |  |
| Male | No, correct | 100 | 83 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 17 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |

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Table 3.3a(i)
Group A - Experimental - 3 months After the Intervention

| School Year |  |  |
| :---: | :---: | :---: |
| 10 | 11 | 12 |
| 100 | 100 |  |
| 0 | 0 |  |
| 0 | 0 |  |
| 100 | 100 |  |
| 0 | 0 |  |
| 0 | 0 |  |




| $\underset{\sim}{\sim}=$ | ¢NO | 800 |  | ¢Nへ | 800 |  | 8べm | へom |  |  | 800 | 800 |  | 800 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
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| $\stackrel{n}{c}$ |  |  |  |  |  | $\begin{aligned} & \frac{5}{0} 0 \\ & \underset{5}{5} \end{aligned}$ |  |  |  | $\begin{aligned} & \stackrel{F}{4} \\ & \underset{3}{2} \end{aligned}$ |  |  | ＋ |  |
| $\stackrel{\oplus}{ \pm}$ |  |  |  |  |  | is |  |  | ¢ | － |  |  | －is |  |
| ® |  |  |  |  |  | ＋ |  |  | 5 | － |  |  | 年运 |  |
| $=$ |  | $\pm$ | \％ |  | $\pm$ | － |  |  | 9 | ．둗 |  |  | 区 ¢ |  |
| $\frac{0}{3}$ | ＋ | ＋ | $\stackrel{-1}{8}$ | $\begin{array}{r}\text { O } \\ + \\ \hline\end{array}$ | $\begin{array}{r}\text { O } \\ + \\ \hline\end{array}$ | － | ＋ | ＋ | 4 | －¢ | ＋ | ＋ | ¢0응 | ＋ |
|  | － | －${ }_{0}^{2}$ | － | － | 怘言 | ${ }^{\circ}$ | － | － | 0 | 8 | 으ㄴㅡㅡㅇ | ¢ ${ }_{\text {¢ }}^{\text {L }}$ | 등릉 | $\bigcirc$ |
| \％ | 는읃 | 든읃도 | ． | 는읃도 | 든둗 | 2－${ }^{\text {¢ }}$ | 约足空 |  | 5 | ® | ¢ | ¢ | － | ¢ |
| $\stackrel{\square}{\square}$ | $0^{-1}+$ | $\mathrm{O}_{0}{ }^{-1}$ | $\stackrel{+}{*}$ | $\stackrel{O}{\circ}^{-1}+$ | $\mathrm{O}^{-1+}$ | －＞${ }^{5}$ | $8^{\circ} \mathrm{H}+$ | ${ }^{\circ} \mathrm{F}+$ | ＋ | － | － | －${ }_{\text {－}+~}^{\text {＋}}$ |  |  |
| \％ | on | "~" | 듬 | $\stackrel{-n}{0-5}$ | on in |  | on | 옹ㄷㅇ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ |  |  |  |  |  |
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| － | $\underset{\sim}{\mathbb{N}}$ |  |  | $\frac{\pi}{2}$ |  |  | $\frac{\pi}{2}$ |  | $\underset{\sim}{\infty}$ | ส | $\frac{\pi}{2}$ |  |  | $\stackrel{\text { T}}{2}$ |

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| Normalisation of People with HIV／AIDS |  |
| :---: | :---: |
| a）Chil | with HIV should be allowed nd school with other children |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| b）Peop | with HIV should be allowed as teachers |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| c）I would eat in a restaurant even if one of the people working there has the HIV virus |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree Agree <br> Undecided <br> Disagree <br> Strongly Disagree |


|  |  | School Ye |  |
| :---: | :---: | :---: | :---: |
| Female | Strongly Agree | 48 | 83 |
|  | Agree $\begin{aligned} & \text { Undecided }\end{aligned}$ | 48 | 17 |
|  | Disagree | 0 | 0 |
|  | Strongly Disagree | 0 | 0 |
| e) I would be willing to take care of a relative who has AIDS |  |  |  |
| Male | Strongly Agree | 18 | 17 |
|  | Agree | 63 | 17 |
|  | Undecided | 13 | 67 |
|  | Disagree | 5 | 0 |
|  | Strongly Disagree | 0 | 0 |
| Female | Strongly Agree | 45 | 67 3 |
|  | Agree | 45 | 33 |
|  | Undecided | 7 | ${ }_{0}$ |
|  | Disagree | 3 | 0 |
|  | Strongly Disagree |  |  |
| Attribution of Blame for People with HIV/AIDS |  |  |  |
| a) Anyone who gets infected with HIV only has him/herself to blame |  |  |  |
|  |  |  |  |
| Male | Strongly Disagree | 16 | 17 |
|  | Disagree | 35 | 50 |
|  | Undecided | 32 | 17 |
|  | Agree | 8 | ${ }^{\circ}$ |
|  | Strongly Agree | 8 | 17 |
| Female | Strongly Disagree | 38 | 67 |
|  | Disagree | 41 | ${ }^{0}$ |
|  | Undecided | 15 3 | - |
|  | Strongly Agree | 3 | 0 |
| b) I do not feel sorry for people with AIDS |  |  |  |
| Male | Strongly Disagree | 26 | 33 |
|  | Disagree | 37 | ${ }^{33}$ |
|  | Undecided | 24 11 | \% |
|  | Strongly Agree | , | 0 |
| Female | Strongly Disagree | 23 | 17 |
|  | Disagree | 26 48 | 33 50 |
|  |  | 3 |  |
|  | Strongly Agree | 0 | 0 |


| d) Havin | injections with | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
| unst | ilised needles/syringes |  | 11 | 12 |
| Male | Yes, correct | 80 | 78 |  |
|  | No, incorrect | 10 | 22 |  |
|  | Don't know | 10 | 0 |  |
| Female | Yes, correct | 100 | 50 |  |
|  | No, incorrect | 0 | 50 |  |
|  | Don't know | 0 | 0 |  |
| e) A pregnant woman who has the virus can pass it to her unborn baby |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 95 | 100 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | Yes, correct | 100 | 75 |  |
|  | No, incorrect | 0 | 0 |  |
|  | Don't know | 10 | 25 |  |
| Incorrect Routes |  |  |  |  |
| A person can become infected with HIV by: |  |  |  |  |
| a) Shaking hands with a person who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | No, correct | 95 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know |  | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |
| b) Wearing clothes used by a person who has the virus |  |  |  |  |
|  |  |  |  |  |
| Male | No, correct | 95 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | - | 0 |  |
|  | Don't know | 0 | 0 |  |
| c) Hugging a person who has the virus |  |  |  |  |
| Male | No, correct | 95 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 5 | 0 |  |
| Female | No, correct | 100 | 100 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 0 | 0 |  |

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## Table 3.3a(ii)

aroup A - Control - 3 months After the Intervention





$\frac{\text { School Year }}{10}{ }_{11}^{11}$

One can tell if a person has the
HIV virus by the way he/she looks

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800 $\begin{array}{ll}\text { c) AIDS can be cured if detected early } \\ \text { Male } & \begin{array}{ll}\text { No, correct } \\ & \text { Yes, incorrect } \\ \text { Don't know }\end{array} \\ \text { Female } & \begin{array}{l}\text { No, correct } \\ \\ \\ \\ \text { Yes, incorrect }\end{array} \\ \text { Don, }\end{array}$ Male
Female
Male $\quad$ No, correct

Yes, incorrect
Don't know
$\begin{array}{ll}\text { Female } & \text { No, correct } \\ & \text { Yes, incorrect } \\ & \text { Don't }\end{array}$
Don't know
Vulnerability to HIV and AIDS
a) Having sex with many partners
increases a person's risks of
getting infected with HIV
Male Yes, correct
No,' t know
Female Yes, correct
No, incorrect
Don't know
b) Most people with HIV will
develop AlDS

| Male | Yes, correct |
| :--- | :--- |
|  | No, incorrect |

Female Yes, correct
Yes, correct
No, incorect
Don, know
cannot
disease
$\stackrel{9}{\frac{\pi}{2}}$


|  | M®O\％ | 80000 | FF－moo | $\bigcirc \sim_{N} 0$ No | NMF＝ |
| :---: | :---: | :---: | :---: | :---: | :---: |
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| a）I would feel ashamed if I had AIDS |  |
| :---: | :---: |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree <br> Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| b）I have difficulty saying No to my friends when asked to do things against my wish |  |
|  |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided Agree |
|  | Strongly Agree |
| c）Many of my classmates／friends are worried about HIV and AIDS |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| d）Because of HIV／AIDS，I worry about what I had done in the past |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |

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| a）Othe if a schoo | students should not be told tudent with HIV is attending |
| :---: | :---: |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| b）I would visit a friend if I knew that he／she has the HIV virus |  |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| c）I wo peop | go to a dentist who treats who are HIV－infected |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| d）I would be friends with someone who has AIDS |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |



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| :---: | :---: |
|  |  |


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## Table 3．3b（i）

Group B－Experimental－ 3 months After the Intervention
Knowledge about HIV and AIDS
Group B－Experimental－ 3 months After the Intervention
Knowledge about HIV and AIDS


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General Awareness about HIV
Have you ever heard about HIV and AIDS？

Male Yes
Don＇t know
Female Yes
No
1．Boutes of Iransmission

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7


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A person can become infected with HIV by：
a）sharing needles／syringes with a
person who has the virus
Male Yes，correct No，incorrect
Don＇t know
Female Yes，correct No，incorrect
Don＇t know
oum uosjed e पitm xos butaeh（a
Male Yes，correct No，incorrect
Female Yes，correct No，incorrect Don＇t know
pootq peqoəfut－＾IH buṭitooəy（o Male Yes，correct No，incorrect
Don＇t know
Yes，correct
No，incorrect
Don＇t know

$$
2
$$

Female Yes，correct


Don't know


No，correct
Don＇t know

$$
\begin{aligned}
& \text { Vulnerability to HIV and AIDS } \\
& \text { a) Having sex with many partners } \\
& \text { increases a person's risks of } \\
& \text { getting infected with HIV } \\
& \text { Male } \begin{array}{l}
\text { Yes, correct } \\
\text { No, incorrect } \\
\text { Don't know } \\
\text { Female Yes, correct } \\
\\
\text { No, incorrect } \\
\text { Don't know }
\end{array}
\end{aligned}
$$

b）Most people with HIV will
develop AIDS
Male Yes，correct
Yes，correct
No，incorrect
Don＇t know
c）When a person has AIDS his／her body
cannot defend itself from certain
$\dot{\varphi}$

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| Normalisation of People with HIVIAIDS |  |
| :---: | :---: |
| a) Chi to | n with HIV should nd school with oth |
| Male | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |
| Female | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |
| b) People with HIV should be allowed to work as teachers |  |
| Male | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |
| Female | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |
| c) I would eat in a restaurant even if |  |
| one of the people working there has the HIV virus |  |
|  |  |
| Male | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |
| Female | Strongly Agree |
|  | Agree |
|  | Undecided |
|  | Disagree |
|  | Strongly Disagree |

$\frac{\text { Scheol Year }}{10} \frac{11}{12}$

Female $\begin{aligned} & \text { Strongly Agree } \\ & \text { Agree }\end{aligned}$ Undecided Disagree
Strongly
e) I would be willing to take e) I would be willing to take care Male Strongly Agree
Undecided
Disagree
Strongly Disagree
Female Strongly Agree
Undecided
Attribution of Blame for People with HIV/AIDS
a) Anyone who gets infected with HIV
Strongly Disagree 19

| Strongly Disagree | 19 |
| :--- | ---: |

$\begin{array}{ll}\text { Undecided } & 19 \\ \text { Undee } & 35\end{array}$
Undecided
Agree
Strongly Agree
Female Strongly Disagree
$\begin{array}{ll}\text { Strongly Disagree } & 31 \\ \text { Disagree } & 23\end{array}$
$\begin{array}{ll}\text { Disagree } & 23 \\ \text { Undecided } & 16\end{array}$
Undecided
Agree
Strongly
Strongly Agree
b) I do not feel sorry for people with AIDS

| Strongly Disagree | 35 |
| :--- | :--- |
| isagree | 15 |

Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Strongly Disagree
Uisagree

Male
Female

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Table 3.3b(ii)
Group 8 - Control - 3 months After the Intervention
Knowledge about HIV and AIDS

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| Willingness to Maintain Contact |  |
| :---: | :---: |
| a）Othe if a scho | students should not be told tudent with HIV is attending |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| b）I wo that | d visit a friend if I knew e／she has the HIV virus |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| c）I would go to a dentist who treats people who are HIV－infected |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| d）I would be friends with someone who has AIDS |  |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |

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| Normalisation of People with HIV／AIDS |  |
| :---: | :---: |
| a） Ch | en with HIV should be allowed end school with other children |
| Male | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| Female | Strongly Agree Agree Undecided Disagree Strongly Disagree |
| b）Peo to | with HIV should be allowed $k$ as teachers |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| c）I would eat in a restaurant even if one of the people working there has the HIV virus |  |
| Male | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |
| Female | Strongly Agree <br> Agree <br> Undecided <br> Disagree <br> Strongly Disagree |


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| d) Having injections with |  | School Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
| unst | ilised needles/syringes | 10 | 11 | 12 |
| Male | Yes, correct | 88 | 62 |  |
|  | No, incorrect | 5 | 10 |  |
|  | Don't know | 7 | 28 |  |
| Female | Yes, correct | 77 | 83 |  |
|  | No, incorrect | 11 | 0 |  |
|  | Don't know | 11 | 17 |  |
| e) A pregnant woman who has the virus can pass it to her unborn baby |  |  |  |  |
|  |  |  |  |  |
| Male | Yes, correct | 86 | 71 |  |
|  | No, incorrect | 2 | 5 |  |
|  | Don't know | 12 | 24 |  |
| Female | Yes, correct | 83 | 88 |  |
|  | No, incorrect | 3 | 0 |  |
|  | Don't know | 14 | 12 |  |
| Incorrect Routes |  |  |  |  |
| A person can become infected with HIV by: |  |  |  |  |
| a) Shaking hands with a person who |  |  |  |  |
| Male | No, correct | 95 | 86 |  |
|  | Yes, incorrect | 3 | 5 |  |
|  | Don't know | 2 | 10 |  |
| Female | No, correct | 97 | 98 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 3 | 2 |  |
| b) Wearing clothes used by a person who has the virus |  |  |  |  |
| Male | No, correct | 90 | 91 |  |
|  | Yes, incorrect | 3 | 5 |  |
|  | Don't know | 7 | 5 |  |
| Female | No, correct | 97 | 98 |  |
|  | Yes, incorrect | 0 | 0 |  |
|  | Don't know | 3 | 2 |  |
| c) Hugging a person who has the virus |  |  |  |  |
| Male | No, correct | 95 | 95 |  |
|  | Yes, incorrect | 2 | 5 |  |
|  | Don't know | 4 | 0 |  |
| Female | No, correct | 97 | 98 |  |
|  | Yes, incorrect | 3 | 0 |  |
|  | Don't know | 0 | 2 |  |

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Table 3.3c


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Group C
Knowledge about HIV and AIDS
Correct Routes
a) sharing needles/syringes with a
person who has the virus
Male
Yes, correct
No, incorrect
Female Yes, correct No, incorrect
b) Having sex with a person who
has the virus
Male Yes, correct Nes, incorrect
Non't know
Female Yes, correct Female $\begin{gathered}\text { No, incorrect } \\ \text { Don't know }\end{gathered}$
c) Receiving HIV-infected blood
Yes, correct
No, incorrect
Female Yes, correct Yes, correct
Don't know
General Awareness $\quad$ Have you ever heard about HIV $\stackrel{\oplus}{\stackrel{\pi}{0}}$

## Non't know

Female Yes


1. Routes of Transmission No, incorrect Male Yos, correct c) Receiving HIV-infected blood Male



| d) Kissing a person who has the virus |  |
| :---: | :---: |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| e) Givi | (donating) blood |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| f) Bein have has | bitten by mosquitoes which lready fed on a person who e virus |
| Male | No, correct Yes, incorrect Don't know |
| Female | No, correct Yes, incorrect Don't know |
| Asymptomatic Status of Carrier |  |
| a) A person can become infected with HIV and not show signs of it |  |
| Male | Yes, correct No, incorrect Don't know |
| Female | Yes, correct No, incorrect Don't know |
| b) A person who looks healthy, but has the HIV virus, can pass the virus to other people |  |
| Male | Yes, correct No, incorrect Don't know |


| $\stackrel{\sim}{\sim}$ |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  |  |  |  |
| $>=$ |  | $\infty_{\infty} 0 \text { N }$ | $\operatorname{Ln}_{0} \sim N$ |
| $0$ |  |  |  |
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| $0 \cdot$ | $\omega \sim$ | 0 | $\infty$ |


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| a) I would feel ashamed if I had AIDS |  |
| :---: | :---: |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| b) I have difficulty saying No to my friends when asked to do things against my wish |  |
|  |  |
|  |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| c) Many of my classmates/friends are worried about HIV and AIDS |  |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| Female | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |
| d) Because of HIV/AIDS, I worry about |  |
| wha | had done in the past |
| Male | Strongly Disagree |
|  | Disagree |
|  | Undecided |
|  | Agree |
|  | Strongly Agree |


| Willingness to Maintain Contact | School Year |  |  |
| :---: | :---: | :---: | :---: |
|  | 10 | 11 | 12 |
| a）Other students should not be told if a student with HIV is attending school |  |  |  |
| Male Strongly Agree | 25 | 5 |  |
| Agree | 23 | 42 |  |
| Undecided | 20 | 21 |  |
| Disagree | 18 | 11 |  |
| Strongly Disagree | 14 | 21 |  |
| Female Strongly Agree | 14 | 33 |  |
| Agree | 11 | 16 |  |
| Undecided | 37 | 23 |  |
| Disagree | 9 | 19 |  |
| Strongly Disagree | 29 | 9 |  |
| b）I would visit a friend if I knew that he／she has the HIV virus |  |  |  |
| Male Strongly Agree | 43 | 37 |  |
| Agree | 43 | 32 |  |
| Undecided | 13 | 16 |  |
| Disagree | 0 | 11 |  |
| Strongly Disagree | 2 | 5 |  |
| Female Strongly Agree | 69 | 65 |  |
| Agree | 31 | 28 |  |
| Undecided | 0 | 5 |  |
| Disagree | 0 | 0 |  |
| Strongly Disagree | 0 | 2 |  |
| c）I would go to a dentist who treats people who are HIV－infected |  |  |  |
| Male Strongly Agree | 25 | 0 |  |
| Agree | 20 | 16 |  |
| Undecided | 25 | 42 |  |
| Disagree | 23 | 21 |  |
| Strongly Disagree | 7 | 21 |  |
| Female Strongly Agree | 6 | 12 |  |
| Agree | 20 | 9 |  |
| Undecided | 29 | 44 |  |
| Disagree | 29 | 16 |  |
| Strongly Disagree | 17 | 19 |  |
| d）I would be friends with someone who has AIDS |  |  |  |
| Male Strongly Agree | 29 | 26 |  |
| Agree | 30 | 37 |  |
| Undecided | 38 | 26 |  |
| Disagree | 0 | 11 |  |
| Strongly Disagree | 4 | 0 |  |

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| :---: | :---: |
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|  |  | School Ye |  |
| :---: | :---: | :---: | :---: |
|  |  | 10 |  |
| Female | Strongly Agree | 54 | 40 |
|  | Agree | 40 | 37 |
|  | Undecided | 6 | 21 |
|  | Disagree | 0 | 0 |
|  | Strongly Disagree | 0 | 3 |
| e) I would be willing to take care of a relative who has AIDS |  |  |  |
| Male | Strongly Agree | 18 | 37 |
|  | Agree ${ }^{\text {a }}$ | 41 | 26 |
|  | Undecided | 34 | 37 |
|  | Disagree | 5 | 0 |
|  | Strongly Disagree | 2 | 0 |
| Female | Strongly Agree | 57 | 42 |
|  | Agree | 29 | 40 |
|  | Undecided | 14 | 16 |
|  | Disagree | 0 | 2 |
|  | Strongly Disagree | 0 | 0 |
| Attribution of Blame for People with HIV/AIDS |  |  |  |
| a) Anyone who gets infected with HIV only has him/herself to blame |  |  |  |
| Male | Strongly Disagree | 16 | 21 |
|  | Disagree | 43 | 42 |
|  | Undecided | 23 | 21 |
|  | Agree | 14 | 5 |
|  | Strongly Agree | 4 | 11 |
| Female | Strongly Disagree | 29 | 28 |
|  | Disagree | 34 | 33 |
|  | Undecided | 31 | 21 |
|  | Agree | 6 | 7 |
|  | Strongly Agree | 0 | 12 |
| b) I do not feel sorry for people with AIDS |  |  |  |
| Male | Strongly Disagree | 30 | 37 |
|  | Disagree | 48 | 26 |
|  | Undecided | 14 | 32 |
|  | Agree | 2 | 5 |
|  | Strongly Agree | 5 | 0 |
| Female | Strongly Disagree | 20 | 47 |
|  | Disagree | 40 | 28 |
|  | Undecided | 29 | 21 |
|  | Agree Strongly Agree | 6 | 5 |

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Table 3.4a(i)
Group A - Categorised Mean Knowledge Scores

| Category of Knowledge Items | Scnool Year | Sex | 1 Weak Before |  |  |  | 1 Weak After |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Cases |  | Control |  | Cases |  | Control |  |
|  |  |  | Mean | S. D. | Mean | S.D. | mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Correct Routes of Transmission | 10 | M | 2.9 | . 19 | 2.9 | . 17 | 2.9 | . 13 | 2.9 | . 17 | 3.0 | . 06 | 2.9 | . 17 |
|  |  | F | 2.9 | . 19 | 2.9 | . 18 | 2.9 | . 18 | 2.9 | . 10 | 2.9 | . 15 | 3.0 | 13 |
|  | 11 | M | 3.0 | . 00 | 2.9 | . 19 | 2.9 | . 33 | 3.0 | . 00 | 3.0 | . 00 | 2.9 | 18 |
|  |  | F | 3.0 | . 00 | 3.0 | . 00 | 3.0 | . 00 | 3.0 | . 00 | 3.0 | . 00 | 2.8 | . 30 |
| Incorrect Routes of Transmission | 10 | $M$ | 2.7 | . 28 | 2.7 | . 26 | 2.8 | . 18 | 2.7 | . 26 | 2.7 | . 27 | 2.6 | . 37 |
|  |  | F | 2.7 | 26 | 2.8 | . 21 | 2.8 | . 22 | 2.7 | . 17 | 2.8 | . 14 | 2.7 | 17 |
|  | 11 | M | 2.8 | . 16 | 2.7 | . 27 | 2.8 | . 20 | 2.7 | . 23 | 2.7 | . 39 | 2.8 | 17 |
|  |  | F | 2.8 | . 13 | 2.9 | . 10 | 2.9 | . 10 | 2.8 | . 22 | 2.9 | . 09 | 3.0 | . 08 |
| Asymptomatic Status of Carriers | 10 | $M$ | 2.9 | . 34 | 2.8 | . 35 | 2.9 | . 20 | 2.7 | . 51 | 2.9 | . 25 | 3.0 | . 11 |
|  |  | F | 2.8 | . 36 | 2.8 | 41 | 2.9 | . 28 | 2.8 | . 40 | 2.8 | 37 | 2.9 | . 33 |
|  | 11 | M | 3.0 | . 00 | 2.9 | . 31 | 2.8 | 42 | 2.9 | . 20 | 3.0 | . 00 | 3.0 | 00 |
|  |  | F | 2.9 | . 19 | 3.0 | . 00 | 2.8 | . 50 | 2.7 | . 45 | 2.5 | . 84 | 3.0 | . 00 |
| Diagnosis/Cure | 10 | M | 2.9 | . 27 | 2.7 | . 31 | 2.9 | . 18 | 2.6 | . 44 | 2.9 | 23 | 2.9 | 25 |
|  |  | F | 2.7 | . 27 | 2.8 | . 35 | 2.9 | . 20 | 2.7 | . 35 | 2.9 | . 28 | 2.6 | . 34 |
|  | 11 | M | 2.8 | . 33 | 2.7 | . 38 | 2.8 | . 28 | 2.8. | . 33 | 2.8 | . 34 | 2.9 | . 22 |
|  |  | F | 2.9 | . 38 | 2.6 | . 39 | 2.6 | . 42 | 2.7 | . 58 | 2.6 | . 27 | 2.9 | . 17 |

Table 3.4a(i)
Greup A - Categorised Mean Knowledge Scores (Continued)

| Category of Knowledge Items | School Year | Sex | 1 Weak Betore |  |  |  | 1 Week ATter |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Cases |  | Contral |  | Cases |  | Control |  |
|  |  |  | Mean | S.D. | mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S. D. | Mean | S.D. |
| Prevention/cure | 10 | $M$ | 2.7 | 40 | 2.6 | 41 | 2.8 | . 27 | 2.5 | . 58 | 2.9 | . 30 | 2.6 | 42 |
|  |  | F | 2.6 | . 37 | 2.7 | . 43 | 2.8 | . 39 | 2.7 | . 34 | 2.8 | . 38 | 2.5 | 49 |
|  | 11 | M | 2.7 | . 67 | 2.7 | 40 | 2.7 | . 39 | 2.8 | . 36 | 3.0 | . 00 | 2.7 | . 50 |
|  |  | $F$ | 2.8 | . 26 | 2.4 | . 69 | 2.4 | . 42 | 2.6 | . 55 | 2.8 | . 27 | 2.8 | . 50 |
| Vulnerablifty to HIV/AIDS | 10 | $M$ | 2.8 | . 33 | 2.8 | 25 | 2.9 | . 25 | 2.7 | . 33 | 2.9 | . 27 | 2.8 | . 31 |
|  |  | F | 2.7 | . 28 | 2.8 | . 26 | 2.9 | . 27 | 2.8 | . 26 | 2.8 | . 25 | 2.8 | 26 |
|  | 11 | M | 2.8 | . 29 | 2.8 | . 38 | 2.9 | . 21 | 2.9 | . 23 | 2.9 | . 20 | 2.8 | . 21 |
|  |  | F | 2.9 | . 28 | 3.0 | . 00 | 2.9 | . 13 | 2.6 | . 42 | 3.0 | . 00 | 2.7 | . 38 |

Table 3.4a(ii)
Group B - Categorised Mean Knowledge Scores

| Category of Knowledge Items | School Year | Sex | 1 Weak After |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Cases |  | Control |  |
|  |  |  | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Correct Routes of Transmission | 10 | M | 2.8 | 2.4 | 2.8 | . 13 | 2.9 | .25 | 2.8 | . 15 |
|  |  | F | 2.9 | . 19 | 3.0 | . 09 | 3.0 | . 13 | 2.9 | 26 |
| Incorrect Routes of Transmission | 10 | H | 2.6 | . 33 | 2.6 | 29 | 2.3 | . 30 | 2.7 | 28 |
|  |  | F | 2.5 | . 25 | 2.6 | . 23 | 2.5 | . 30 | 2.7 | 28 |
| Asymptomatic Status of Carriers | 10 | M | 2.5 | 57 | 2.5 | 78 | 2.8 | 44 | 2.7 | . 41 |
|  |  | F | 2.3 | . 53 | 2.7 | . 42 | 2.7 | . 40 | 2.8 | . 39 |
| Diagnosis/Cure | 10 | M | 2.6 | . 41 | 2.8 | . 27 | 2.6 | . 49 | 2.3 | . 56 |
|  |  | F | 2.6 | . 44 | 2.6 | 41 | 2.6 | . 33 | 2.7 | . 31 |
| Prevention/Cura | 10 | M | 2.5 | . 49 | 2.7 | . 37 | 2.2 | . 65 | 2.6 | 25 |
|  |  | F | 2.3 | . 58 | 2.6 | . 33 | 2.4 | . 49 | 2.6 | . 49 |
| Vulnerability to HIV/AIDS | 10 | M | 2.7 | . 32 | 2.7 | 26 | 2.8 | . 30 | 2.7 | 40 |
|  |  | F | 2.8 | . 29 | 2.7 | . 39 | 2.7 | . 35 | 2.7 | . 39 |

Tablo 3.4a(iii)
Group C - Categorised Mean Knowledge Scores

| Category of Knowledge Items | School Year | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Males |  | Females |  |
|  |  | Mean | S.D. | Mean | S.D. |
| Correct Routes of Transmission | 10 | 2.9 | . 18 | 2.9 | 19 |
|  | 11 | 2.8 | . 16 | 2.9 | . 12 |
| Incorrect Boutes of Transmission | 10 | 2.6 | . 33 | 2.7 | . 27 |
|  | 11 | 2.6 | . 44 | 2.7 | . 25 |
| Asymptomatic <br> Status of <br> Carriers | 10 | 2.8 | . 40 | 2.8 | 41 |
|  | 11 | 2.7 | . 32 | 2.8 | 53 |
| Diagnosis/Cure | 10 | 2.9 | . 24 | 2.8 | . 28 |
|  | 11 | 2.7 | . 27 | 2.7 | . 33 |
| Prevention/Cure | 10 | 2.7 | 45 | 2.6 | . 32 |
|  | 11 | 2.6 | 41 | 2.6 | 43 |
| Vulnerability to HIV/AIDS | 10 | 2.8 | . 32 | 2.8 | . 34 |
|  | 11 | 2.7 | . 32 | 2.8 | . 23 |

Table 3.4b(1)
Group A - Categerlsed Mean Attitudes Sceres
Attitudes to People with HIV and AIDS

| Category of Attitude Items | School Year | Sex | 1 Weak Bafora |  |  |  | 1 Wrok After |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Casas |  | Control |  | Cases |  | Control |  |
|  |  |  | Mean | S.D. | Mean | S.0. | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Normalisation of People with HIV/AIDS | 10 | M | 3.4 | 1.2 | 3.8 | 1.0 | 3.7 | . 82 | 3.4 | . 82 | 3.5 | . 84 | 3.4 | 1.2 |
|  |  | F | 3.6 | . 81 | 3.8 | . 79 | 3.5 | . 68 | 3.7 | 1.0 | 3.7 | 71 | 3.8 | . 92 |
|  | 11 | M | 4.3 | 1.1 | 3.9 | . 65 | 3.8 | 1.41 | 3.0 | 1.0 | 3.1 | 1.7 | 3.4 | 1.1 |
|  |  | F | 4.0 | 1.1 | 3.9 | 1.2 | 2.4 | . 69 | 3.9 | . 55 | 4.3 | . 80 | 4.2 | . 64 |
| Willingness to Maintain Contact | 10 | M | 3.4 | . 90 | 3.7 | . 70 | 3.6 | . 79 | 3.5 | . 66 | 3.7 | . 52 | 3.4 | . 93 |
|  |  | F | 3.8 | . 37 | 3.9 | . 91 | 3.8 | . 79 | 4.0 | . 56 | 3.8 | . 54 | 3.7 | . 57 |
|  | 11 | M | 4.1 | . 12 | 3.9 | 74 | 3.6 | 75 | 3.2 | 1.1 | 3.5 | . 24 | 4.1 | . 30 |
|  |  | F | 4.0 | . 43 | 4.0 | . 51 | 3.9 | . 19 | 4.0 | . 32 | 3.8 | . 34 | 3.9 | . 77 |
| Attribution of Blame for HIV/AIDS Peoole with | 10 | M | 3.8 | . 90 | 3.2 | . 83 | 3.6 | . 95 | 3.4 | . 90 | 3.6 | . 81 | 3.6 | 1.1 |
|  |  | F | 3.8 | . 75 | 4.0 | 74 | 3.8 | . 69 | 4.0 | . 59 | 3.9 | . 66 | 3.7 | 45 |
|  | 11 | M | 4.0 | . 91 | 3.4 | 1.1 | 3.3 | . 61 | 3.4 | . 63 | 3.8 | 1.1 | 4.0 | 1.3 |
|  |  | F | 4.3 | 49 | 4.0 | 1.0 | 3.8 | . 65 | 3.8 | . 67 | 4.0 | . 84 | 3.6 | 1.1 |

Table 3.4b(Ii)
Group B - Categorised Mean Attitudes Scores
Attitudes and Beliefs about HIV/AIDS

| Category of Attitude Items | School Year | Sex | 1 Week After |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Cases |  | Control |  |
|  |  |  | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Perceived <br> Vulnerability | 10 | M | 3.8 | . 85 | 3.7 | . 52 | 3.7 | 1.2 | 3.6 | 67 |
|  |  | F | 4.1 | . 77 | 3.8 | . 91 | 3.7 | 0.8 | 4.0 | . 64 |
| Perceived Seriousness | 10 | M | 3.2 | . 78 | 3.3 | . 73 | 3.0 | . 64 | 3.0 | 73 |
|  |  | F | 2.8 | 71 | 3.1 | 70 | 3.1 | . 63 | 3.5 | 42 |
| Perceived Need for Education | 10 | M | 3.7 | . 83 | 3.7 | 1.0 | 3.7 | 1.0 | 3.9 | 77 |
|  |  | F | 4.1 | . 69 | 4.2 | . 60 | 3.7 | . 78 | 3.8 | . 86 |

Table 3.4b(iii)
Group C - Categorised Mean Attludes Scores

| Category of <br> Attitude Items | School <br> Year | 3 Months After |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | Males |  | Females |  |
|  | Mean | S.D. | Mean | S.D. |  |
| Perceived <br> Vulnerability | 10 | 4.3 | .62 | 3.8 | .63 |
|  | 11 | 3.7 | .83 | 4.0 | .79 |
|  | 11 | 3.3 | .64 | 3.6 | .51 |

Table 3.4c(i)
Group A - Categorised Mean Attitudes Scores
Attitudes and Beliefs about HIV/AIDS

| Category of | School | Sex |  | Weor | fore |  |  | 1 We | After |  |  | 3 Mo | Aft |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Con | rol |  |  |  |  |  |  |  | rol |
|  |  |  | Mean | S.D. | Mean | S.D. | Mean | S. D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Perceived Vulnerability | 10 | M | 3.7 | . 83 | 3.8 | 76 | 4.0 | . 66 | 3.7 | . 88 | 4.0 | . 65 | 4.1 | 76 |
|  |  | F | 3.8 | . 58 | 3.6 | . 46 | 4.1 | 71 | 3.8 | . 68 | 3.8 | . 92 | 3.8 | . 53 |
|  | 11 | M | 3.3 | . 87 | 3.5 | . 65 | 44 | . 59 | 3.8 | 1.0 | 4.5 | . 84 | 3.9 | . 70 |
|  |  | F | 3.7 | . 64 | 4.3 | . 76 | 3.6 | . 63 | 4.4 | . 82 | 3.5 | . 89 | 4.4 | 75 |
| Perceived Seriousness | 10 | 1 | 3.4 | . 50 | 3.2 | 67 | 3.3 | 67 | 3.4 | . 66 | 3.4 | . 55 | 3.2 | 73 |
|  |  | F | 3.4 | . 54 | 3.1 | 74 | 3.3 | 48 | 3.2 | . 68 | 3.4 | . 62 | 3.0 | . 58 |
|  | 11 | M | 3.3 | . 61 | 3.1 | 59 | 3.4 | . 35 | 3.0 | . 75 | 3.8 | . 37 | 3.6 | . 33 |
|  |  | F | 2.8 | . 30 | 3.8 | 25 | 2.5 | 25 | 3.6 | . 55 | 3.6 | . 46 | 3.4 | 75 |
| Perceived Need for Education | 10 | M | 4.1 | 72 | 4.0 | 1.0 | 3.9 | 70 | 4.1 | . 77 | 3.8 | . 72 | 3.7 | 52 |
|  |  | F | 4.2 | . 57 | 4.1 | . 54 | 3.7 | . 64 | 4.3 | . 59 | 3.6 | . 92 | 4.2 | . 45 |
|  |  | M | 4.2 | . 00 | 3.9 | . 65 | 4.2 | . 55 | 4.1 | . 50 | 3.3 | . 85 | 3.8 | . 94 |
|  |  | F | 4.0 | . 49 | 4.0 | . 88 | 4.5 | . 43 | 3.9 | . 72 | 4.0 | . 56 | 3.8 | . 88 |

Table 3.4c(ii)
Group B - Categorised Mean Attitudes Scores
Attitudes to People with HIV and AIDS

| Category of Attitude Items | School Year | Sex | 1 Weak After |  |  |  | 3 Months After |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cases |  | Control |  | Cases |  | Control |  |
|  |  |  | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Normalision of People with HIV/AIDS | 10 | M | 3.8 | 1.0 | 4.2 | . 38 | 3.6 | 1.3 | 3.5 | . 62 |
|  |  | F | 3.9 | 1.1 | 3.6 | . 89 | 3.4 | 1.1 | 4.1 | . 82 |
| Willingness to Main Contact | 10 | M | 3.5 | 1.0 | 3.2 | 1.6 | 3.3 | . 90 | 3.8 | . 37 |
|  |  | F | 3.6 | 43 | 3.9 | . 42 | 3.6 | 86 | 3.8 | 42 |
| Attribution of Blame for People with HIVIAIDS | 10 | M | 3.6 | . 75 | 3.9 | . 55 | 3.2 | 1.0 | 3.1 | 1.0 |
|  |  | F | 3.4 | . 74 | 4.1 | 1.0 | 3.8 | . 95 | 3.7 | 73 |

Table 3.4c(iii)
Group C - Categorised Mean Attitudes Scores

| Category of <br> Attitude Items | School <br> Year | 3 Months After |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | Males |  | Females |  |
|  |  | Mean | S.D. | Mean | S.D. |
| Normalisation of <br> People with <br> HIV/AIDS | 10 | 3.4 | 1.0 | 4.0 | .77 |
|  | 11 | 3.7 | .83 | 3.7 | 1.0 |
| Willingness to <br> Maintain Contact | 10 | 3.5 | .85 | 3.8 | .42 |
|  | 11 | 3.2 | .78 | 3.8 | .52 |
| Attribution of <br> Blame for People <br> with HIV/AIDS | 10 | 3.8 | .72 | 3.7 | .72 |

## $\omega$

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& \text { Sub-groups }
\end{aligned}
$$



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| 0 | sion | $\quad$ Study Groups/Sub-groups |
| :--- |
| $\rightarrow$ Grp A Exp |
| + Grp A Con |
| $*$ Grp B Exp |
| $\cdots$ Grp B Con |
| $*$ Grp C Girls |
| $\rightarrow$ Grp C Boys | © 0 $\stackrel{\text { I }}{\geqq}$

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$A=1$ Week Before Intervention
$B=1$ Week After Intervention
$C=3$ Months After Intervention
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 Wledge
Status of HIV
ean Know

| Study Groups/Sub-groups |
| :--- |
| - Grp A Exp |
| + Grp A Con |
| * Grp B Exp |
| - Grp B Con |
| * Grp C Girls |
| - Grp C Boys |


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B C
Time of Study
$A=1$ Week Before Intervention
$B=1$ Week After Intervention
$C=3$ Months After Intervention
Knowledge Scores
Diagnosis/Cure of HIV/AIDs

| Study Groups/Sub-groups |
| :---: |
| - Grp A Exp |
| + Grp A Con |
| * Grp B Exp |
| - Grp B Con |
| * Grp C Girls |
| $\rightarrow$ Grp C Boys |


$A=1$ Week Before Intervention
$B=1$ Week After Intervention
$C=3$ Months After Intervention
M Knowledge Scores
Prevention/Cure of HIV/AIDS

$$
\begin{aligned}
& \text { Study Groups/Sub-groups } \\
& \cdots \text { Grp A Exp } \\
& + \text { Grp A Con } \\
& \text { * Grp B Exp } \\
& \cdots \text { Grp B Con } \\
& * \text { Grp C Girls } \\
& \rightarrow \text { Grp C Boys }
\end{aligned}
$$


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| $\mathscr{1}$ |
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DS
Study groups/Sub-groups - Grp A Exp

+ Grp A Con
* $\operatorname{Grp}$ B Exp
- Grp B Con
$*$ Grp C Girls
- Grp C Boys

$A=1$ Week Before Intervention
$B=1$ Week After Intervention
$C=3$ Months After Intervention
fS ScOreS

| Study Sub-groups |
| :--- |
| - Grp A Exp |
| + Grp A Con |
| * Grp B Exp |
| - Grp B Con |
| * Grp C Girl |
| - Grp C Boys |


| fs Scores |
| :--- |
| HIV/AIDS |
| Study Sub-groups <br> - Grp A Exp <br> + Grp A Con <br> * Grp B Exp <br> - Grp B Con <br> * Grp C Girl <br> - Grp Boys |


$A=1$ Week Before Intervention
$B=1$ Week After Intervention
$C=3$ Months After Intervention

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Study Sub-groups

- Grp A Exp
+ Grp A Con
* Grp B Exp
- Grp B Con
* Grp C Girls
+ Grp C Boys

1 Week Before Intervention
Week After Intervention

|| || ||
$<\infty 0$
Table 3.6
Summary Table of Multiple Linear Regression Analysis

| $y$ | X | Multiple R | $\mathrm{R}^{2}$ | F | Signif F | Slope (B) | Beta | $T$ | Signif T |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MEAN KNW1 | $\begin{aligned} & \text { SCH YR } \\ & \text { TIME } \\ & \text { SEX } \\ & \text { PLAY } \\ & \hline \end{aligned}$ | . 11 | . 01 | 5.06 | . 03 | . 06 | .11 | 2.25 | . 03 |
| MEAN KNW 2 | $\begin{aligned} & \text { SCH YR } \\ & \text { SEX } \\ & \text { PLAY } \\ & \text { TIME } \end{aligned}$ | . 14 | . 02 | 9.54 | . 00 | . 15 | . 14 | 3.09 | . 00 |
| MEAN KNW 4 | PLAY SEX SCH YR TIME | . 11 | . 01 | 5.35 | . 02 | . 12 | .11 | 2.31 | . 02 |
| MEAN KNW 6 | PLAY SCH YR TIME SEX | . 19 | . 03 | 4.0 | . 00 | $\begin{aligned} & .13 \\ & .11 \end{aligned}$ | $\begin{aligned} & .13 \\ & .12 \end{aligned}$ | $\begin{aligned} & 2.68 \\ & 2.46 \end{aligned}$ | $\begin{aligned} & .01 \\ & .01 \end{aligned}$ |
| MEAN ATB3 | $\begin{aligned} & \text { TIME } \\ & \text { PLAY } \\ & \text { SEX } \\ & \text { SCH YR } \end{aligned}$ | . 19 | . 04 | 8.8 | . 00 | $\begin{array}{r} .29 \\ \therefore .38 \end{array}$ | $\begin{array}{r} \because 18 \\ \because .10 \end{array}$ | $\begin{aligned} & -3.88 \\ & -2.18 \end{aligned}$ | $\begin{array}{r} .00 \\ .03 \end{array}$ |
| MEAN ATT2 | SEX <br> TIME <br> SCH YR <br> PLAY | . 18 | . 03 | 14.15 | . 00 | . 19 | . 18 | 3.76 | . 00 |
| MEAN ATT3 | TIME SEX SCH YR PLAY | . 47 | . 22 | 30.37 | . 00 | . 61 | . 44 | 10.17 | . 00 |

** Please refer to pages 93 b and 93 c for the meanings of the aboreviations:
MEAN KNW1, MEAN KNW2, MEAN KNW4, MEAN KNW6
MEAN ATB3, MEAN ATT2, MEAN ATT3.


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    free time
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