

A Quantitative Survey of Knowledge,
Attitudes and Behaviour, related to AIDS/HIV,
among Zulu Speaking Standard Eight High School Students.

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ABSTRACT

AIDS is a serious South African health problem, with HIV infection in KwaZulu-Natal being at the local epidemic's forefront. Adolescents in this province are at additional risk because of their lifestyles. Information on existing risky behaviour and its psychosocial concomitants can provide an important base for educational interventions aimed at reducing further transmission. This study aims to provide baseline information on knowledge, attitudes and reported behaviour, relating to HIV/AIDS, among adolescents in KwaZulu-Natal.

A survey, using an anonymous, self-administered questionnaire with closed-ended questions to collect data, was conducted among standard eight Zulu-speaking students (N = 1511) in five parts of the province. The theoretical framework that informed data collection was drawn from the Health Belief Model and Bandura's Social Cognitive Theory. The data generated were first analysed descriptively, providing percentages for responses to individual items. Secondly, cross-tabulations were calculated for relevant items using three independent biographical variables, namely: Locality (rural/peri-urban), gender and students' reports of sexual activity.

The results showed inadequate knowledge concerning HIV/AIDS to provide a foundation for developing healthier attitudes. Although most students acknowledged the disease's severity, few reported feeling personally susceptible, denying the immediacy of the threat. Additionally, cues to action and the perceived benefits of adopting preventive behaviours were not influential. Barriers preventing condom use were not primarily logistical, with personal concerns being the main barriers to change. Furthermore, perceived self-efficacy in preventive behaviours was low.

Recommendations regarding areas for future research, as well as considerations which will enhance the effectiveness of risk reducing interventions among similar populations, are provided.

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PREFACE

The data used in this study were collected solely by the author as the baseline data for an evaluation of an AIDS/HIV prevention campaign. Some methodological decisions, particularly sampling, which affect the baseline data were made with the evaluation as the primary aim. At these points such considerations will be briefly referred to. Prior to this study, the material used here had not been written up as a baseline survey. Neither had any material grounded in this data, nor the evaluative study carried out by the researcher, been previously submitted for degree purposes to an academic institution.

While biological science tries to unravel the human immunodeficiency virus (HIV), behavioural science has contributed much to our understanding of its prevalence, incidence and distribution, the behaviours most implicated in its transmission, possible strategies and options for disease prevention programmes, and the feasibility, cost and effectiveness of these programmes (Watters, 1994, p.1312).

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1. INTRODUCTION

Over the past decade, Acquired Immunodeficiency Syndrome (AIDS) has emerged as one of the most serious health threats. It has the potential to significantly change population dynamics and stretch health-care resources beyond their capacity (Pattullo, Maloza, Kimani, Muthee, Othieno, Odhiambo, Moses, & Plummer, 1994). Human Immunodeficiency Virus (HIV) is recognised as the cause of AIDS by influential institutions such as Centres for Disease Control and Prevention (CDC) in the United States (DiClemente & Peterson, 1994). By the year 2000, the World Health Organisation (WHO) predicts that between 15 and 20 million people in Africa could be infected with HIV (Lampthey & Goodridge, 1991).

South Africa's current HIV infection levels are not yet as high as the mature epidemics in some East and Central African countries (Nokwane, 1991), although local surveillance studies indicate a rapid increase of infection levels (Swanavelder, 1996). This is particularly evident in KwaZulu-Natal, which has the highest HIV prevalence when seen in relation to other provinces in the country (Irlam & Stuart, 1994).

Currently a proven cure for the disease does not exist. Besides efforts aimed at developing a vaccine, the major public-health policy in most countries has tended towards preventing further HIV infection. This has occurred through attempts to change, or at least reduce, behaviours that may put people at risk of contracting the disease. Education programmes, with an emphasis on preventing the sexual transmission of HIV, are one important component of such prevention programmes. This is particularly so in Africa, where HIV is primarily spread by means of heterosexual intercourse (Piot, Kapita, Were, Laga & Colebunders, 1991).

To increase the effectiveness of educational interventions, aimed at preventing the spread of HIV among specific groups, the interventions should be based on research

(Rosenstock, Strecher & Becker, 1994) of that particular group's existing knowledge, attitudes and behaviour relating to HIV/AIDS. Such research helps to determine both the goals and scope of educational interventions, at the same time establishing the context of the risky behaviours which are to be targeted (Wilson & Mehryar, 1991).

The primarily sexual mode of HIV transmission in Africa poses some challenges in establishing the context and levels of risky behaviour. As it is not possible to directly measure risky sexual behaviour, research is necessarily limited to self-reports from subjects. Self-reports of sexual behaviour open up the possibility of both under-reporting and over-reporting. Although there is no ideal way of collecting such data, surveys have proved to be an effective means of gathering self-reports of sexual behaviour and its psychosocial concomitants among large groups of people (Peterson & DiClemente, 1994), which helps to establish the broad patterns of associated infection risk among populations.

Very little research of knowledge, attitudes and behaviour relating to HIV/AIDS has been conducted among black South African adolescents. Most of the South African survey research has focussed on discrete groups other than the youth, for example: Urban black mothers (Abdool Karim, Abdool Karim & Nkomokazi, 1991), black goldminers (Ijsselmuiden, Padayacchee, Mashaba, Martiny & Van Staden, 1990) and inhabitants of high density informal settlements (Ratsaka & Hirschowitz, 1993).

One study was conducted by Mathews, Kuhn, Metcalf, Joubert & Cameron (1990) among township school students in Cape Town. They found that most students had heard of AIDS but more than half did not know a cure has not yet been found for the disease. The students lacked knowledge about the modes of transmission and misconceptions relating to transmission also existed. Understanding of prevention strategies was found to be superficial, with low reported condom use, together with minimal levels of personal susceptibility. Feelings of intolerance, fear and rejection were

also expressed towards people with AIDS. Adolescents are regarded as a relatively high-risk group for contracting HIV (Lamprey & Goodridge, 1991) and consequently research is needed among this largely neglected group.

Adolescents living in KwaZulu-Natal would appear to face an even greater risk of contracting HIV, because the province has the highest infection rate in the country (Swanavelde, 1996). This points to the need for research of existing knowledge, attitudes and behaviour of this group. Research may also uncover any unique characteristics among this particular population, as the majority live in rural areas, which may limit access to knowledge and account for localised values and beliefs. Research will not only establish a baseline, but importantly, it will increase the likelihood of success of any targeted preventive programmes among this population.

This study aims to provide descriptive research of the existing knowledge, attitudes and behaviours, relating to HIV/AIDS, among rural and peri-urban adolescents in KwaZulu-Natal. A questionnaire based primarily on the theoretical principles of the Health Belief Model (HBM) (Rosenstock et al, 1994) and Cognitive Social Learning Theory (Bandura 1977, 1986, 1994) was constructed. Using this questionnaire, a survey was conducted among Zulu-speaking students in standard eight during 1993. The survey was carried out in schools drawn from the districts of Pholela, Nongoma, Nqutu, Mapumulo and Umzinto, with the aim of establishing the following AIDS/HIV related factors:

- Knowledge
- Perceived personal susceptibility
- Perceived severity of AIDS
- Perceived benefits (focussing on confidence in preventive measures)
- Perceived barriers (including confidence in preventive measures and environmental barriers)
- Cues to action (implying perceived immediacy of threat)
- Self-efficacy in preventive behaviour (including skills)

- Perceived peer norms (including modelling and vicarious influences)
- Attitudes towards people with AIDS (PWAs)
- Reported behaviour

Further sub-goals of this study are to provide an analysis of how gender, location of the school (whether a school was in an urban or peri-urban area) and reported sexual activity influence the responses to the HIV/AIDS related factors listed above.

This report will begin by outlining the *context* which informed the study. The description of the context includes an elaboration of the social conditions which provide the backdrop to the study as well as the main conceptual issues related to the study and the research's grounding in psychological theory.

Having situated the study within its context, details of the research design will be clarified, including a description of the pilot study, the sampling techniques used, the procedure observed and the approach to data analysis. The results will then be presented, followed by a discussion of the study as a whole, and the findings in particular. Finally conclusions will be drawn and recommendations concerning education programmes and future research will be made.

2. THE CONTEXT

2.1 The AIDS Epidemic and Adolescents in South Africa

2.1.1 South African Characteristics

South Africa faces some unique difficulties in its fight against the spread of HIV infection. Many of these are a direct result of apartheid, or alternatively have been exacerbated by many years of apartheid rule. Some of the considerations that have impacted on the development of the South Africa AIDS epidemic include:

Migrant labour, gross deficiencies in education opportunities and medical services, including primary and secondary preventive health services, widespread poverty, civil conflict and political violence (Kuhn, Steinberg & Mathews, 1994, p.161).

Attempts to prevent or control the disease in South Africa are further compounded by the high rates of other sexually transmitted diseases which act as co-factors of HIV transmission (Pattullo et al, 1994); the high rates of teenage pregnancy (Craig & Richter-Strydom, 1983; Preston-Whyte, 1991; Flisher, Ziervogel, Chalton, Leger, & Robertson, 1993) with up to 89% being unplanned (Ross, 1978). There also appears to be mistrust of family planning clinics (Zondi cited in Kuhn et al, 1994), which may have been a potential channel for educational interventions. Furthermore, any efforts by the previous South African government to prevent the spread of HIV tended to lack credibility because of widespread perceptions of the government's illegitimacy among the majority of the population.

2.1.2 The South African Epidemic

The most recent estimate of South African HIV prevalence, based on the 1995 National survey of pregnant 15-49 year old women attending antenatal clinics, suggested an average infection rate of 10.44% (Swanavelder, 1996). As this group of women represent a subgroup of the heterosexually active population, HIV infection among both

groups should be quite similar. Women less than twenty had the third highest infection rate in the 1995 survey, with 9.5% estimated to be HIV positive. The highest infection level was found among the 20-24 year old age group, with approximately 13.12 % of this group estimated to be HIV positive. Regionally, in 1995 KwaZulu-Natal had the highest infection rate in the country, with an estimated 18.23% of antenatal clinic attenders estimated to be HIV positive. Although the estimated percentage of women from KwaZulu-Natal, who are both HIV positive and between the ages of 20 and 24 was not given, one can conceive that this group would almost certainly have had the highest infection rate in the country. Although the above figures are already out of date by the time they are published, they give some indication of the urgency required in the area of AIDS prevention.

It is also important to note the 1993 estimate for HIV prevalence in KwaZulu-Natal, as this figure not only gives some perspective to the 1995 figures, but also represents the HIV infection level at the time the current study was carried out. In 1993 approximately 9.53% of women attending antenatal clinics were thought to be HIV positive (Swanavelder, 1996). The relationship between the existing infection rates at the time of the study, and peoples' responses to the epidemic will be discussed in more detail in section 5.3.2.1 below. Although the comparatively higher HIV infection rate in KwaZulu-Natal increases the chance of people that practice risky behaviour of becoming infected, younger people encounter additional factors which further increase the likelihood of them becoming infected with HIV.

2.1.3 Adolescents and HIV/AIDS

Kirby and DiClemente (1994) note that AIDS' case surveillance data is not a useful marker for evaluating the threat adolescents face from HIV. This is because the latency period, between HIV infection and the clinical diagnosis of AIDS, often obscures the fact that many people now suffering from AIDS became HIV positive during adolescence. Flisher et al (1993) observe that it is likely most people infected with HIV

during adolescence will only be diagnosed as being HIV positive once they reach their twenties. In the early 1990's the World Health Organisation (WHO) estimated that half the people infected with HIV acquired the infection between the ages of 15 and 24 (Lampthey & Goodridge, 1991). This highlights the insidious development of the epidemic among adolescents, which was suggested by the HIV high infection rate among people under 20, mentioned above.

2.1.4 Adolescents and Risky Behaviour

The devastating potential of the epidemic is boosted by characteristics which seem to be fairly typical of adolescents and which also greatly increase their risk of becoming infected with HIV. The adolescent's chance of contracting the disease is intensified by a lifestyle which often may involve "a greater degree of exploration, experimentation and rebellion" (Flisher et al, 1993). These authors add that these traits contribute to adolescent sexual relations often being typified by a pattern of early onset, multiple partners and low incidence of condom use.

Over many years the prevalence of sexually transmitted diseases and the high rate of unplanned pregnancies among this age group (Ross, 1978; Preston-Whyte, 1991; Flisher et al, 1993) appears to confirm the existence of this pattern of sexual relations.

Adolescent sexual relations of the nature described above greatly increase the likelihood of adolescents becoming infected with HIV.

This situation is further exacerbated by the apparent existence of poor communication between black parents and adolescents. In a study of 122 black urban mothers conducted in Lamontville, south of Durban, not a single mother reported having spoken to their teenage children about AIDS (Abdool Karim et al, 1991). Poor communication between parents and their children not only reduces the flow of information, limiting the ability to make informed choices, but also leaves adolescents to discover sex and sexuality without guidance, particularly relating to the dangers associated with

unprotected sexual activity.

The peculiarities of the South African AIDS epidemic, and its relatively more advanced stage in KwaZulu-Natal, places adolescents in this province at a high risk of contracting HIV. This situation is exacerbated by the nature of adolescent sexual relations and poor communication between adolescents and their parents. Previous efforts to prevent the further spread of the disease have been regarded with mistrust. The urgent necessity of interventions aimed at halting the sexual spread of HIV among adolescents is obvious; preferably before or at least soon after they become sexually active. Interventions are most successful when based on prior research of the population to be targeted (Rosenstock et al, 1994). There is a lack of research done among black adolescents in KwaZulu-Natal, which this study aims to address.

2.2 The Need for Baseline Data among Black Adolescents

2.2.1 Interventions in Schools

Schools offer a functional location to deliver such educational interventions aimed at preventing the spread of HIV among adolescents. Both Kirby (1995) and DiClemente (1993) observe that most adolescents attend school at some point *before* any risk-taking behaviour occurs.

During this period adolescents adopt their sexual values and patterns (Mathews et al, 1990), as well as construct and augment important parts of their identity which play a role in sexual behaviour. Johnson, Ostrow & Joseph (1990, p.45) observe that “the behaviours important in HIV transmission may be marked by ‘low changeability’ because of their centrality to the self-identity and daily functioning of at-risk individuals.”

Schools, therefore, present an opportunity to address issues related to risky sexual behaviour before such behaviours occur or become entrenched.

Besides this major benefit, Kirby (1995) lists several advantages that exist when using schools as the site for delivering interventions aimed at changing risk-taking behaviour. Schools are usually an institution that most adolescents attend regularly and schools are also geared towards increasing knowledge and developing skills. As Bandura notes: "School is the place where children develop their cognitive competencies and acquire the knowledge of problem-solving skills essential for participating effectively in society" (1986, p.416). As imparting both knowledge and skills is the aim of most AIDS education interventions, schools provide a conducive and familiar context for such learning. An additional advantage is that schools are also suitable for educating the youth about sexuality and sexually-transmitted diseases, because different concepts can be taught at different and appropriate developmental stages.

2.2.2 South African Schools

Although clearly a useful point to access adolescents, many South African schools face unique problems. Some children from historically disadvantaged groups do not attend school or else leave school after a few years. However, as Flisher et al (1993) encouragingly note, increasing numbers of adolescents attend school and they believe the potential for efficient health promotion programmes does exist. The apartheid era also left behind education systems based along racial lines with a history of disparities in funding, the quality of teaching staff, facilities and other material resources. One of the consequent problems is that levels of organisation and discipline are sometimes lower than they could be which could hinder the delivery of effective interventions.

The apartheid legacy leaves most South African schools at a disadvantage, particularly relative to their first world counterparts when facing up to the AIDS epidemic.

However there are some acknowledged steps that can be applied to ensure that optimal results will be gained from a particular intervention; even when faced with less than ideal circumstances. The two primary considerations are that interventions are based on acknowledged theory as well as prior research conducted among the target population.

2.2.3 Interventions Need Information

The American Centres for Disease Control and Prevention (CDC) recommend (1995) that preventing the spread of HIV requires a comprehensive approach made up of service delivery systems together with effective, sustained health education and health promotion interventions. For the purposes of developing specific health education and risk reduction activities, the Centres for Disease Control (1995) recommend the completion of a targeted needs' assessment as a starting point. Such an assessment assists in establishing appropriate goals and activities, as well as defining the intentions and scope of an intervention programme.

One important aspect of such a needs' assessment is the identification of social and behavioural attitudes, as well as behaviours, and perceptions of the target community. This information is typically gathered by means of surveys, which ultimately facilitates the planning of more effective HIV/AIDS prevention programmes (Rosenstock et al 1994).

2.2.4 AIDS Surveys

Random surveys of knowledge, attitudes, beliefs and practices (KABP) carried out nationally, may overlook the specific characteristics of sub-groups such as adolescents or divergences in values and beliefs found in different sub-regions.

Attitudes towards risks are closely embedded in a system of beliefs, values and ideals that constitute a culture and subculture: thus, different cultures and social groups will emphasize certain risks and minimize others. (Pollak, 1992, p.34)

Pollak adds that distinct groupings will also form different attitudes towards the disease and people with AIDS, as the scientific facts of the disease combine with their particular anxieties, misunderstandings and beliefs.

Kelly and St. Lawrence (1988) argue that without empirical studies, in specific communities, interventions start from nothing. In line with the argument developed above, this study will focus on a specific group, namely Zulu-speaking adolescents, drawn from a particular region, KwaZulu-Natal.

Besides providing a base from which to intervene among specifically targeted populations, KABP surveys can also be used to monitor and adapt existing interventions, as well as provide baseline and follow-up data for programme evaluation (Wilson & Mehryar, 1991). Furthermore, Pollak (1992) believes that KABP surveys can also serve an important function as 'socio-political surveillance instruments', providing useful information about where political controversy might emerge or may have taken place already. As Pollak (1992, p.26) notes: "Understanding public reactions is critically important for designing education programmes, promoting enlightened public policies, and fostering compassion and tolerance for infected persons".

Perhaps most importantly though, surveys can specifically be used to determine the psychosocial concomitants of risky behaviours which public interventions aim to modify (Wilson & Mehryar, 1991). This is significant because DiClemente and Peterson (1994) point out that behaviour change interventions are more likely to be successful if grounded in studies that are based on behavioural-science theory.

2.3 Theoretical Foundations of the Study

The theory adopted to underpin this research, in establishing a baseline of existing knowledge, attitudes, beliefs and practices, uses Smith's (1992) suggestion of delineating factors related to HIV infection into personal (internal) and structural (external) factors as a starting point. Following Smith's distinction, this study will place the major emphasis on internal factors, because within the context of the study the external factors tend to be either constant or already known within the target population.

Johnson et al (1990) note that external or socio-demographic variables have consistently been related to certain health behaviours. In this study economic status, race, access to services, educational standard, and to a lesser extent age, were all fairly constant across the target population (see: *Study Population and Sampling*, section 3.2.3).

Geographic differences in risky behaviour and its psychosocial concomitants can be related to the density of HIV positivity in certain areas. In areas with a high density of HIV positivity, it is more likely that individuals will know people who have AIDS. Accordingly knowledge, attitudes and behaviours relating to HIV/AIDS may differ according to local variations in the levels of infection. For example, knowing a person with AIDS may impact on an individual's knowledge, beliefs and behaviour.

However, epidemiological seroprevalence surveys conducted during the early stages of the epidemic in KwaZulu-Natal showed that the HIV infection rate was reasonably even throughout the region (Irlam and Stuart, 1994). This was so even when comparing HIV infection levels in rural areas, such as Hlabisa, with high-density urban areas around Durban. Should larger pockets of people with AIDS exist in one locality, when seen in relation to most other areas, corresponding differences in people's knowledge, attitudes and beliefs should appear in the survey results.

As these external socio-demographic factors tend to be quite constant across the population it was assumed that their impact on health-related matters surveyed would also be fairly consistent. Furthermore, specific local measures such as slight local variations in HIV seroprevalence are not available in all areas and cannot be taken into consideration. The concomitants of any differences in the prevalence of HIV/AIDS should be evident in the survey results of personal factors. Therefore the primary focus will fall on the personal or internal factors, which are central to ultimately changing or reducing risky behaviour.

The personal factors of the model adopted in this study are primarily drawn from two prominent health-related theories: The Health Belief Model (HBM) (Rosenstock et al, 1994) and Cognitive Social Learning Theory (Bandura 1977, 1986, 1994). The model also integrates some aspects of field experience that have consistently proved important, across varied social, cultural and economic conditions during HIV/AIDS prevention programmes.

2.3.1 The Health Belief Model

The Health Belief Model (Rosenstock et al, 1994) essentially looks at the determinants of health-related behaviours, identifying a number of factors that function to either promote or inhibit the adoption of healthier behavioural options. This model focuses on behaviours which are largely assumed to be under an individual's control and tends to presume that individuals act in order to maximise the benefits of their actions.

The theory places a strong emphasis on the individual's cognitive processes involved in behavioural determination. A main assumption is that when individuals are required to make a health-related decision, they consider both the health and non-health related consequences (such as social or economic) of their actions. One of the main challenges faced by the model is the apparent willingness of people to neglect the potential long-term consequences of their behaviours in favour of more immediate concerns.

The obvious example within the current context is that an individual's concern about contracting HIV may be obscured by other more immediate needs, such as sexual gratification, the need for social approval or peer pressure. Kelly and St. Lawrence (1988) note that the immediate consequences of any behaviour tend to exert a stronger influence than the delayed consequences, even though these might be fatal. This principle offers an explanation as to why maladaptive health behaviours such as smoking or drug abuse are maintained, even though an individual may be aware of the dangers posed.

The Health Belief Model (HBM) has evolved over four decades, after it was initially developed in the 1950s by social psychologists to explain why people tended not to take part in programmes to prevent or detect disease (Rosenstock et al, 1994). Since that time the model has continually been applied to explain and predict responses to a wide variety of health care recommendations. The most recent version of the Health Belief Model (Rosenstock et al, 1994) remains a psycho-social model to explain health-related behaviours, although its explanatory power and applicability have been broadened in the light of AIDS.

2.3.1.1 Theoretical roots of the HBM

A brief description of the model's foundations in psychological theory helps to clarify its underlying rationale, together with its strengths and limitations (Rosenstock et al, 1994). The Health Belief Model's roots can be traced to two main learning theories. First, stimulus-response theories, whose main proponents included theorists such as Watson and Thorndike. Essentially stimulus-response theorists argued that learning results from consequences of events (reinforcements) which result in a reduction of the physiological drives that are believed to activate behaviour. From such a perspective notions such as thinking or reasoning are not necessary to explain behaviour (Rosenstock et al, 1994). This view then tends to disregard the person as both a sentient and reflective being.

The second learning theory is broadly referred to as cognitive theory. Cognitive theorists tend to focus more on the individual's own beliefs or expectations. Rosenstock et al argue that from this perspective behaviour is seen as "... the function of a subjective value of an outcome and of the subjective probability or expectation that a particular action will achieve that outcome" (1994, p.6). These theories are generally referred to as value-expectancy theories.

Although mental processes are more central within cognitive theories, these theorists do not entirely disregard the role played by reinforcements. Rosenstock et al (1994) note that cognitive theorists differ from the stimulus-response approach by arguing that reinforcement operates by influencing *expectations* about a given situation, rather than by directly influencing behaviour.

The Health Belief Model combines aspects drawn from these two theoretical traditions. As a value-expectancy theory, the model's value and expectancy components evolved over time with the model's application in the context of health-related behaviour. The *value* is regarded as the wish to avoid illness and to maintain good health. The *expectancy* is that certain behaviours will prevent or at least alleviate illnesses. The expectancy is further divided into an individual's perception of their personal susceptibility relating to the severity of the illness and their belief in the likelihood of being able to reduce the chance of contracting the illness through personal action.

Built on the earlier versions, the current Health Belief Model (Rosenstock et al, 1994), has been developed into a more comprehensive model of health-related behaviours. The components of the Health Belief Model, when related to HIV/AIDS, will be outlined below.

2.3.1.2 Six Components of the Health Belief Model

A. Knowledge

Knowledge of health risks and health promoting behaviours, specifically what constitutes high-risk behaviour and what preventive steps can be taken, are essential prerequisites for health-promoting behaviour change. Johnson et al (1990) note that knowledge about AIDS has been found to play a role in motivating initial behaviour changes, especially among people who perceive themselves as being at low risk and who were previously poorly informed about the disease. It would seem that the potential to achieve these initial behaviour changes among adolescents does exist in KwaZulu-Natal, as educational

efforts up until the time the study was conducted had been very limited and generally access to the various media is poor.

However, knowledge alone is not always enough to bring about sustained adoption of healthier behaviour options. Johnson et al (1990) cite a case where individuals who initially adopted safe practices later reverted to risky behaviour despite being well informed of the disease and its implications. In the field of AIDS/HIV prevention authors argue that it is widely acknowledged that educational interventions, aimed solely at increasing knowledge, are limited in their ability to induce and maintain sustained health-promoting behaviour change (Mathews et al, 1990; Ratsaka & Hirschowitz 1993; Kirby, 1995). Nonetheless, having knowledge of HIV/AIDS and methods of preventing its transmission is an important starting point in the behaviour change cycle.

B. Perceived Personal Susceptibility

It is clear that people must know about a disease and its prevalence before they can personally feel susceptible. Perceived susceptibility refers to an individual's subjective perception of their chance of contracting a given illness. Once an individual accepts that they may be susceptible to a specific disease, they have taken a crucial, initial step in the process of adopting the necessary personal precautions to reduce the threat. It is unlikely that many students among the target population will feel personally susceptible. Besides the generally poor access to media, people infected with HIV, prior to the onset of clinical AIDS, are a largely hidden group. This is a challenge faced by educators when attempting to increase feelings of personal susceptibility. Perceived susceptibility is very closely related to perceived severity.

C. Perceived Severity

This factor concerns an individual's personal evaluation of the costs of being infected with HIV and of having AIDS, together with the possible medical, social or financial ramifications. Rosenstock et al argue that this construct may be reflected by the "life

changes involved in an increasingly debilitating disease” (1994, p.16). This would include both the physical suffering related to an AIDS related complex, together with the emotional consequences relating to interpersonal relationships and facing one’s own emotional pain and mortality. However, because AIDS is a fatal disease, the types of concerns relating to severity listed above, tend to be neglected during an initial personal assessment of the possible impact of the disease. The fact that AIDS can kill therefore seems to become the predominant focus of people uninfected with the disease. Consequently, the fatal nature of the disease should play a central role in assessing perceived severity.

Perceived susceptibility is very closely linked to perceived severity. Rosenstock et al (1994) note that individuals may not necessarily separate these two elements when considering a potential threat. Rosenstock et al have come to call a combination of perceived susceptibility and severity as “perceived threat” (1994, p.8). Perceived threat is essentially quite similar to “cues to action” which will be discussed in more detail below. Acknowledging the existence of a threat is regarded as an essential cognitive step in the process of taking the recommended action to reduce a given threat.

D. Perceived Benefits

Perceived benefits refers to the positive outcomes of adopting a certain behaviour. Although perceived threat is important, any health promoting behaviour eventually carried out will depend on the beliefs that an individual holds regarding the effectiveness their own ability to reduce the risks of an illness; once they have accepted both their own susceptibility and seriousness of the illness. As AIDS is usually regarded as a fatal disease, the perceived benefit of adopting a healthier behavioural option is self evident, representing a ‘value of an outcome’ aspect of the Health Belief Model.

However, people will only carry out health promoting actions if they believe such behaviour will actually reduce their own chances of becoming infected. Although the

focus is on the positive outcome of the action, the belief in the efficacy of the action itself is central. Therefore, the adolescents' confidence in the effectiveness of acknowledged preventive behaviours is an important measure of the perceived benefits of adopting healthier behavioural options.

E. Perceived Barriers

As opposed to perceived benefits, perceived barriers are what are perceived as the negative outcomes or prohibiting factors when faced with the potential option of adopting a health promoting behaviour. Here the individual encounters factors related to the adoption of a healthier option, which may be perceived as being negative in the sense that they may be painful, expensive, unpleasant, dangerous and so on. When an individual encounters such a situation, the model assumes that she or he carries out a cost-benefit type analysis. Here she or he evaluates the given behaviour in terms of their subjective perceptions of the negative and positive aspects that may accompany it. This represents another 'value of an outcome' aspect of the model. Johnson et al (1990) note that we need to acknowledge the potential stress, tension and loss that may be experienced in making behavioural changes. The most weighted side of this sort of cost-benefit type analysis may contribute towards swaying an individual's decision.

Although the Health Belief Model is primarily concerned with internal factors, structural or external barriers can influence attitudes significantly at this point. Of particular interest in this context are individuals' beliefs regarding the availability of condoms. In KwaZulu-Natal, the region of the target population, clinics do exist fairly close to each community selected, and all are supposed to provide family planning services, which includes condoms. Even though this is related to delivery of health services, the beliefs held can influence the adoption of healthy behaviours. Furthermore, these beliefs may not necessarily reflect the situation 'on the ground'. It is therefore important to uncover any existing misconceptions that relate external barriers which may be prohibiting the adoption of healthier behaviours.

F. Cues to Action

Cues to action are seen as trigger mechanisms which are believed to instigate action. Rosenstock et al (1994) observe that the notion of ‘cues to action’ was more prominent in earlier formulations of the Health Belief Model and has tended to be neglected in more recent applications of the model. They argue that this may be the case because cues to action have never been systematically studied, both generally and in particular within the field of HIV/AIDS.

In an extensive review of Health Belief Model based studies relating to HIV/AIDS, Rosenstock et al (1994) noted that only two studies examined cues to action. Some examples from these studies asked whether the respondents knew anybody with AIDS, or anybody that had died of AIDS and if they had ever discussed AIDS with anybody. Cues to action are obviously important factors in bringing home the reality of the disease; giving it a human face and promoting change. Gathering data on cues to action among adolescents, similar to those mentioned by Rosenstock et al (1994), would help to determine the existing influence such cues already have. The influence of such cues to action increases as the epidemic develops and more people come into direct personal contact with the disease.

2.3.1.3 Application of the Health Belief Model

The constructs of the Health Belief Model as outlined above combine to determine the promotion or inhibition of HIV/AIDS health-related behavioural choices. Rosenstock et al (1994) observe that the precise manner in which the various constructs interact during this process is not clear, although this will be discussed in more detail in the ‘Discussion’ below. Although the interactions between constructs may not yet be clear, the relevance of the individual constructs in health related decision making is well established.

Rosenstock et al (1994, p.10) note that “considerable empirical support” was found for the constructs of the Health Belief Model, among studies listed in the 1974 edition of the

Health Education Monographs which was devoted to examining the model. The nature and complexity of the issues surrounding HIV and AIDS necessitated the further refinement and extension of the Health Belief Model, allowing it to encompass more factors which influence a person's ability or inability to exert some control over their behaviour and social environment.

2.3.1.4 New Additions to the HBM: 'Self-efficacy'

By including aspects of Bandura's Social Cognitive Theory (1977, 1986, 1994) the Health Belief Model can take into account a wider range of both personal and social determinants of health-related behaviours. The concept of self-efficacy, which in essence refers to an individual's conviction that they can successfully adopt a behaviour necessary to achieve a desired outcome, has been included in the most recent version of the Health Belief Model (Rosenstock et al, 1994). Originally developed by Bandura, self-efficacy is dealt with in detail below. Additional aspects of Bandura's model, which are particularly relevant to adolescents, have also been included in this study. This further broadens the theoretical base guiding the data collection, and consequently increases the descriptive power of this study.

Bandura's contributions, such as self-efficacy, were not necessary in earlier versions of the Health Belief Model. Previously the model had tended to focus on fairly simple and circumscribed preventive actions in the health field. Often the behaviour monitored prior to HIV/AIDS was a one-off action, such as undergoing a screening for tuberculosis, which was fairly easy for most people to perform.

The challenges facing the model increase when applied to more complex behaviours, some of which may have also become habitual. Rosenstock et al (1994) and Bandura (1994) point to a growing body of research, in a number of health-related spheres such as smoking, nutrition, exercise, which suggest that the concept of self-efficacy is an important factor in initiating and maintaining behavioural change.

2.3.2 Albert Bandura's Social Cognitive Theory

Although Rosenstock et al (1994) employ the concept of self-efficacy in the Health Belief Model, it seems to have been adopted with little regard for the surrounding framework of the model from which it was derived. This results in the construct appearing without much context or background, and valuable additional aspects of Bandura's Social Cognitive Theory are also consequently largely neglected.

Bandura (1977, 1986) developed Social Cognitive Theory with the aim of presenting an inclusive and integrated model to explain and predict human motivation, thought and action. As a starting point he briefly reviewed some of the dominant psychological theories of the day; including psychodynamic theory, radical behaviourism and trait theory. He argued that the major weakness of most psychological theories was their inability to accurately predict human behaviour, claiming that most theories tended to offer explanations for behaviour after it had occurred. Bandura also believed that most theories focus primarily on either internal or external determinants of behaviour, not giving sufficient weight to both these factors.

Social Cognitive Theory is an interactional model of causation that attempts to understand human functioning using the notion of 'triadic reciprocal causation' (Bandura, 1986). The three determinants that interact are personal factors (including cognitive, affective and biological), behaviour and environmental influences. The assumption that the interactions are reciprocal in nature is the main organising principle of Bandura's model. However, reciprocity as used by Bandura does not necessarily imply equal strength among bi-directional determinants. "The relative influence exerted by the three sets of interacting factors will vary for different activities, different individuals and different circumstances" (Bandura, 1986, p.24). Bandura believed that the key factors in the relationship between the three main determinants are what he called the 'basic human abilities' which are discussed briefly below.

2.3.2.1 Bandura's Five Basic Human Abilities

Firstly, the ability to *symbolise*, which refers to the acquisition of internal symbolic representations, facilitates the creation of meaning as well as continuity of personal experience. These internal representations may be composed of either verbal-conceptual or visual-imaginal codes that may be used to serve as guidelines for future behaviour. The human ability to use symbols is also central to language and consequently our ability to communicate effectively.

The second human ability which mediates the interaction of main determinants is the ability for *forethought*. This capacity primarily relates to our ability to anticipate the consequences of certain behaviours, which in turn encourages and directs our actions. Perhaps one of the most important attributes of forethought is that it clearly illustrates how the future can impact on and even determine current behaviour.

Thirdly, Bandura argued that some theories limit the notion of learning to responses and the experience of their effects. He argues that we do not have to learn solely through our own actions. We can learn both by observing the behaviour of others as well as noting the outcomes of their actions. Bandura called the human capacity to learn in this manner our *vicarious* capability. As a result we do not necessarily have to regard learning as a personally-based trial and error process. Bandura notes that some complex human behaviour, such as language acquisition, can only be successfully mastered vicariously through modelling.

The fourth basic ability is the *self-regulatory* capacity. Here Bandura acknowledges the role played by internal personal standards or values in influencing human functioning. When individuals have formed personal values, they often measure up their own performances in relation to these adopted internal standards. Goal-directed action may therefore include some guidelines that originate from the self.

The final basic human capacity, which mediates the interaction of the main determinants of human functioning, is the *self-reflective* capability. Bandura argues that “if there is any characteristic that is a distinctively human, it is the capability for reflective self-consciousness” (1986, p. 21). In terms of the reciprocal model, people do not only continually evaluate their environment and behaviour, they also evaluate and change their own thinking. People’s subjective assessments of the outcomes of their behaviour affects both their perception of their environment and their self-beliefs which in turn impact on subsequent behaviours.

Bandura argued that these five basic human capabilities are necessary to allow reciprocal interactions between the personal, the behavioural and the environmental determinants, which he applies to explain the acquisition of new behaviours. This approach also implies that people are able to exercise some degree of control over their behaviour and environment by means of symbolisation, forethought, vicarious capability, self-regulatory and self-reflective capacities.

2.3.2.2 Self-efficacy

An individual’s ability to reflect on and evaluate their own thinking includes perceptions of self-efficacy, which refers to an individual’s self-belief that she or he can successfully and consistently adopt and execute a behaviour necessary to achieve a desired outcome.

The concept of self-efficacy was developed by Bandura in an attempt to explain the anomaly that some people seemingly manage to acquire the necessary skills to complete a given behaviour, although they may or may not successfully execute that behaviour at a later point. This discrepancy highlights the essential distinction between possessing certain self-regulative skills and being able to use them productively and consistently even under difficult circumstances. This distinction also signifies the fundamental difference between learning and performance.

The effective performance of a given behaviour requires skills in self-motivation and self-regulation, as well as self belief in one's efficacy to exercise personal control.

Efficacy in dealing with one's environment is not simply a matter of knowing what to do... rather efficacy involves a generative capability in which cognitive, social, and behavioural sub-skills must be organized into integrated courses of action to serve innumerable purposes. (Bandura, 1986, p.391)

Although an individual may believe she or he has the capabilities necessary to plan and carry out certain goal-directed behaviour, she or he may not possess the skills required to do so. Bandura (1986) emphasised that a high level of self-efficacy alone is not a sufficient precondition to predict successful execution of a given task. He notes that the necessary skills and sub-skills are also needed to ensure competent functioning. Particularly relevant to the threat posed by risky sexual behaviour are challenging interpersonal situations which require effective communication skills.

Avoiding risky behaviours often creates conflict within interpersonal situations. The kinds of trials and challenges a person may encounter in these situations include coercive threats, their own desire for social acceptance, fear of rejection and personal embarrassment. The threat of sexually transmitted diseases means that it is necessary for individuals engaging in sexual behaviour to possess both the skill and self-efficacy needed to communicate frankly about sexual behaviour and ensure safer sex practices. Bandura (1994) says that strong self-efficacy beliefs in this area are very strong predictors of the ability to avoid sexual risk taking behaviour.

The concept of self-efficacy adds a further dimension to explaining human functioning. In addition to a person simply believing their situation is potentially threatening, and realising that a given behaviour will be beneficial, the person also has to believe that they are capable of executing the healthy behavioural option.

Bandura (1977) draws a clear distinction between outcome expectation and perceived self-efficacy. Outcome expectation is defined as: “a person’s estimate that a given behaviour will lead to a certain outcome” (Rosenstock et al, 1994, p.9). Outcome judgements are differentiated from self-efficacy because although individuals may believe that a particular course of action will produce a certain outcome, “... they do not act on that outcome belief because they question whether they can actually execute the necessary activities.” (Bandura, 1986, p.392). It is important that these two concepts are not confused as the difference is central to understanding and evaluating self-efficacy.

2.3.2.3 Perceived Self-efficacy

In order to assess self-efficacy we are limited to assessing an individual’s subjective report of their efficacy experience, which is referred to as ‘perceived self-efficacy’. Bandura (1986, p.391) defines perceived self-efficacy as “people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances.”

As such, perceived self-efficacy is concerned with people’s beliefs that they can exercise some degree of control over their “own motivation, thought processes, emotional states and patterns of behaviour” (Bandura, 1994, p.26). He adds that perceived self-efficacy is not directly about possessing skills but with “judgements of what one can do with whatever skills one possesses” (Bandura, 1986, p.391). The essential feature of self-efficacy is that it stems from an individual’s judgement, which is in turn influenced by other factors.

2.3.2.4 Influences on Perceived Self-efficacy

Perceived self-efficacy is both developed and verified through five processes or sources of information (Bandura, 1986). Expanding on these sources again highlights the centrality of reciprocal determinism, which operates as a main theme throughout

Bandura's social cognitive theory. It also further illustrates the mediational role that efficacy plays in shaping human thought and behaviour.

Firstly, *mastery experiences* occur when individuals evaluate the outcome of their own goal-directed behaviour from their direct experience as having been successful. If a given behaviour is evaluated and experienced to have been effective it should contribute towards the person's perception of their self-efficacy relating to that particular behaviour. When a behaviour is regarded as a failure it has the effect of reducing the level of perceived self-efficacy in that domain. Here efficacy is influenced as by consequences of one's actions. "The weight given to new experiences depends on the nature and strength of pre-existing self perception into which they must be integrated" (Bandura, 1986, p.399).

Second, *enactive attainment* is based on a person's past mastery experiences. Here people derive the bulk of their information from what they already know or have experienced. Although essentially derived from mastery experiences, Bandura claims that enactive attainment is the most influential source of self-efficacy because it accesses authentic mastery experiences that have happened. Once established, the person tends to generalise increased feelings of efficacy to other situations and behaviour may be improved across a range of functioning.

Third, *vicarious experience* influences perceived self-efficacy when an individual sees, or even visualises, the effects of other similar people such as peers performing a goal-directed behaviour. "Persons who are similar or slightly higher in ability provide the most informative comparative information for gauging one's own capabilities" (Bandura, 1986, p.403). Once more, if the behaviour is regarded by the observer to have been successful, it will contribute towards their level of perceived self-efficacy. Similarly, if the other's behaviour is regarded as a failure it will not raise the observer's own perceived self-efficacy.

Vicarious experience is not as influential in affecting efficacy levels as enactive attainment, but people who are uncertain about their abilities or inexperienced in a particular area are sensitive to it. In these situations vicarious experiences are able to produce significant and lasting changes. This is where the aspect of vicarious experience referred to as modelling, especially by peers, can play a significant role in either preventing or promoting risky behaviour.

Modelling allows the learner to acquire information about skills on a cognitive level as well as incorporate new patterns of behaviour. Bandura says that effective modelling should ideally transmit information concerning both the nature and predictability of environmental events. Modelled behaviour conveys information to the spectator through observation. Modelling can also activate action by serving as a social cue to initiate similar behaviour in the observer. As Bandura (1986, p.206) notes: "Of the many cues that influence behaviour, at any point in time, none is more common than the actions of others".

Modelling also encourages the necessary disinhibitions or inhibitions that an observer may have possessed in relation to performing a given behaviour. It also facilitates the transmission of new types of behaviour to the observer. Bandura (1986) notes that models may be living people, symbolic models or even verbal descriptions or instructions. Modelling is primarily influential as a source of information to the observer. The role that peers and modelling can play together is especially important in the promotion of healthy behaviour.

The fourth source, *verbal persuasions*, influences perceived self-efficacy via an individual's evaluation of the verbal judgments offered by others, encompassing a further social influence within the current model. Often a significant other will attempt to persuade a person that they possess the necessary capabilities to perform a given behaviour effectively. This tends to be a relatively weak source of self-efficacy

information and rarely results in any lasting increases in self-efficacy.

However, persuasive people can still influence the development of another individual's self-efficacy beliefs, as long as such attempts are within realistic parameters. This is usually most successful with people who stand a reasonable chance at accomplishing the chosen behaviour. Unrealistic persuasion may be responsible for creating or raising unreasonable beliefs. The concept of verbal persuasion suggests how social influences can ultimately impact on the individual.

The fifth source of perceived self-efficacy relates to the individual's *emotional and physiological condition*. States experienced such as anxiety, stress, arousal, and fatigue also influence prevailing feelings of self-efficacy. The experience of such feelings can result in people believing they are vulnerable, and may impact on the standard of their performance. Bandura says that people are more inclined to expect success when not experiencing these emotions. Similarly, in behaviours which require physical strength and endurance, physical sensations such as pains, cramping and fatigue are often perceived as signs of physical inefficacy.

Information from these five sources of self-efficacy is continually processed and evaluated, although it is not, as Bandura notes, "...inherently enlightening" (1986, p.423). Material from these sources is selected and integrated depending on a variety of factors such as personnel, situational and social influences. This understanding allows the theory to account for the existence of anomalies that may arise, such as a competent performance not resulting in an increase in self-efficacy.

2.3.2.5 Self-efficacy and Behaviour

Bandura (1986) argued that repeated exposures to these five sources usually reinforced existing feelings of self-efficacy, which in turn influence future behaviour. Perceived self-efficacy can influence the choice of behaviour, for example: Most people tend to

engage in goal-oriented behaviours in which they feel competent and confident and avoid those where they believe they may fail.

The level of self-efficacy can also impact upon the quality of an individual's performance, particularly the effort that they are willing to apply. This happens as a result of their judgement of the likelihood of them being successful. "Unless people believe they can master and adhere to health-promoting habits, they are unlikely to devote the effort necessary to succeed" (Bandura, 1986, p.438). Bandura does note that self-doubt and a low sense of self-efficacy can encourage a person to learn, whereas people with high levels of efficacy may feel little need to invest energy in an area where they feel confident. Nevertheless, when it comes to the execution of a given task people with a stronger sense of efficacy tend to exert more effort.

Self-efficacy also influences the persistence individuals are willing to apply, which again is often decided in relation to expected success or failure of their actions. As a consequence, beliefs surrounding self-efficacy tend to be preferable predictors of behaviour than the "actual consequences of their actions" (Bandura, 1986, p.129). Similarly, self-efficacy beliefs are strong determinants and predictors of the level of accomplishment that individuals will finally attain when attempting to carry out a given behaviour.

People with low self-efficacy may even assume that certain tasks are more difficult than a person with higher self-efficacy may believe. Self-referent apprehensions can create stress for the individual, both during anticipation and the execution of a behaviour. These beliefs can result in emotional reactions such as anxiety or feelings of futility, which in turn decrease self-efficacy. On the other hand, a strong sense of self-efficacy encourages a positive approach to given tasks and increases the chances of successful execution of goal-directed behaviours. As Bandura succinctly states: "Self-assured endeavour produces accomplishments" (1986, p.395).

The significance of self-efficacy in attaining given performances, particularly in the acquisition of new behavioural patterns, has been highlighted. It is clear that efficacy goes beyond simply knowing what to do in a given situation. Perceived self-efficacy, as a form of self-referent thought, mediates between knowledge and action influencing what people are able to master.

2.3.2.6 Self-efficacy and Peers

Peers can assist in broadening, validating and making fine discriminations in an observer's feelings of perceived self-efficacy. Peers also provide points of reference for comparative efficacy evaluation and verification. Adolescents, in particular, are very aware of their standing among their peers. Adolescents tend to select peers with whom they share similar interests and values. This selective peer association can promote self-efficacy in directions of mutual interest, although it may also limit the development of self-efficacy in other areas.

Kelly and St. Lawrence (1988) argue that peers can be influential models, helping to specify frameworks of acceptable conduct within their social networks, and also can function as legitimate sources of information.

To the extent that personal friends and acquaintances have altered their risk behaviour, and to the extent that these changes are known to others, modelling influences are present that favour the adoption of lower-risk conduct. (Bandura, 1994, p.37)

It is therefore important to establish what adolescents consider the values and beliefs of their peers to be, as either using or altering these will form an important aspect of any intervention. Healthy attitudes can be reinforced, where as unhealthy attitudes need to be challenged and broken down, allowing for the presentation and hopefully adoption of alternative, healthier points of view.

2.3.2.7 Constraints on Performance

Although individual's may have the necessary self-efficacy and skills, they may be lacking an incentive to perform. In other situations the constraints may take the form of not having access to the necessary external resources, such as the right equipment. These constraints are similar to the 'barriers' as accounted for by the Health Belief Model. Bandura (1986) argues that the inability to influence the environment, particularly when significant events are involved, can lead to feelings of futility and despondency.

Various other constraints, relating more directly to perceived self-efficacy, which may impede performance do exist. These include the effects of a time lapse between an individual's assessment of her or his self-efficacy and the time when they take action, as well as their own faulty evaluation of either their performance, efficacy or skills. These factors can negatively influence perceptions of self-efficacy and consequently the relationship between thought and action.

2.3.3 Theoretical Conclusions

The richness of Bandura's contribution towards understanding health-related behaviours compliments the tried and tested constructs of the Health Belief Model. Specifically it includes determinants of human functioning which the Health Belief Model had previously failed to adequately account for. Perhaps one of the most significant limitations addressed is a move away from regarding people as merely rational decision makers. The model can now incorporate an emotional component and includes the prominent influence of one's social environment, particularly other people. "The salience of social factors is clear when one considers that every sexual risk situation is a social transaction" (Johnson et al, 1990, p.47).

Bandura's theory also highlights the crucial reciprocal nature of the relations between an individual, their behaviour and environment. His contribution, together with the Health

Belief Model allows for a theoretical representation that closer approximates the complexities associated with human functioning, particularly health decisions relating to HIV/AIDS.

These theoretical models can be used to guide the direction of the research into adolescents' knowledge, attitudes and behaviour related to HIV/AIDS. Questions used in a questionnaire-based survey can be tailored to tap into aspects of the theoretical models, which then provides a greater understanding of the factors currently determining the possibility of risk behaviour and associated considerations. Researching and describing the psycho-social concomitants of risk behaviour, within a theoretical context which attempts to explain health-related decision making, ultimately provides a solid foundation on which to base later interventions.

2.3.4 Previous Research

Where both local and international research into AIDS has targeted adolescents, the researchers have tended not to elaborate on the theoretical base used to assess the influences and psychosocial concomitants of health-related behaviours. To some extent this undermines the value of using these studies as worthwhile representatives of related research. Much of the South African research done on knowledge, attitudes and behaviour relating to AIDS has focussed on distinct groups that are not especially comparable with the target population of this study, for example: Urban black mothers (Abdool Karim et al, 1991), black goldminers (Ijsselmuiden, Padayacchee, Mashaba, Martiny & Van Staden, 1990) and inhabitants of high density informal settlements (Ratsaka & Hirschowitz, 1993).

Perhaps the research most relevant to the current study was conducted among township school students in Cape Town by Mathews et al (1990). They found that most students had heard of AIDS but more than half did not know there was no cure for the disease. Students lacked knowledge about the modes of transmission and misconceptions relating

to transmission existed. Understanding of prevention strategies was found to be superficial, with low reported condom use, together with minimal levels of personal susceptibility. Feelings of intolerance, fear and rejection were also expressed towards people with AIDS.

In another study Pattullo et al (1994) surveyed a group of Kenyan secondary school students. Their main finding was that although a fairly high level of knowledge of HIV/AIDS was evident, a large portion of their target population reported extensive sexual activity in conjunction with very limited condom use. Although the results from these two studies begin to give a picture of circumstances among similar research populations, two important points need to be considered. Firstly, the results of any study are going to be affected by the year in which the study was done, particularly by the prevalence of both HIV infection and clinical AIDS at the time of the study. Secondly, when the results from particular questions are aggregated, most of the distinctive variations of the community researched are lost. For this reason specific findings from other research, among fairly similar populations, will be integrated and compared with the specific findings generated by the individual questions of this study throughout the '*Discussion*' (section 5) below.

Besides being under researched, adolescents in KwaZulu-Natal not only face some level of socio-economic deprivation but also a limited access to information which inevitably accompanies such deprivation. In addition the adolescents live in an area with rapidly rising HIV infection levels, at a time when their sexual behaviour is often experimental and erratic in nature, further increasing their chances of becoming infected with HIV. The likelihood of AIDS education interventions being successful, is increased when based on research grounded in established psycho-social theory. The context of the current study did not only pose a challenge in researching this group of adolescents at a relatively high risk of contracting HIV, but also highlighted the urgent need for research and interventions among this group.

3. THE STUDY

3.1 Goals

The aim of this study was to establish the existing AIDS related knowledge, attitudes and behaviours among a relatively high-risk group, namely adolescents. The health-related constructs applied in the research were drawn from the Health Belief Model and Bandura's Social Cognitive Theory. More specifically, a questionnaire-based survey was conducted among Zulu speaking students, attending standard eight in KwaZulu-Natal, to establish the following AIDS/HIV related factors:

- Knowledge
- Perceived personal susceptibility
- Perceived severity of AIDS
- Perceived benefits (focussing on confidence in preventive measures)
- Perceived barriers (including confidence in preventive measures and environmental barriers)
- Cues to action (implying perceived immediacy of threat)
- Self-efficacy in preventive behaviour (including skills)
- Perceived peer norms (including modelling and vicarious influences)
- Attitudes towards people with AIDS (PWAs)
- Reported behaviour

Further sub-goals of this study were to provide an analysis of how gender, location of the school (whether a school was in an urban or peri-urban area) and reported sexual activity influenced the responses to the HIV/AIDS related constructs listed above.

3.2 Research Design

A survey of standard eight students attending schools administered by the former KwaZulu Education Department was carried out between August and November 1993.

The data was collected using an anonymous, structured, self-administered questionnaire. Stevenson, De Moya & Boruch (1993) believe that many issues of distrust and stigmatisation surrounding HIV/AIDS can potentially have a negative effect on AIDS research by making data gathering more difficult. In the light of such difficulties it was decided to use an anonymous questionnaire which would hopefully encourage students to answer the questions as honestly as possible, without fear of any repercussions.

3.2.1 The Questionnaire

The questionnaire comprised 29 questions to be answered by all students and a further 10 questions which were only to be answered by students that reported being sexually active. The final 10 questions were contingent upon the respondent answering “yes” to question 29 and primarily related to reported behaviour. The first 29 questions related to demographic details as well as knowledge, attitudes and behaviour relating to AIDS. Researchers at the Medical Research Council (MRC) in Durban advised against the using scales with finer discriminations, such as Likert type scales, to assess attitudes. They suggested that straightforward questions with a clear positive or negative option had tended to be more effective among similar populations.

All the questions were closed-ended questions, with most having the option of answering either “Yes” or “No” or “Don’t Know” by ticking the appropriate box. Other questions used a rank-ordered response format. The questions were laid out in such a way that the least threatening questions were encountered first. The questionnaire began with demographic characteristics, such as age and gender, followed by knowledge, attitudes and finally the more challenging and personal behavioural questions.

The number of questions asked, and consequently the areas covered by the questionnaire, was limited by the requirement that the questionnaire could be completed within 45 minutes. This was done so that the questionnaire could be administered within a standard school session. Furthermore, 45 minutes seemed a reasonable amount of time

to expect the students to apply their attention without a break. The majority of students managed to finish the questionnaire in less than 40 minutes, although a few took up to 50 minutes to finish completing their answers. A copy of the final version of the questionnaire is attached as Appendix 1.

3.2.2 The Pilot Study

A pilot study was carried out at a school that was not going to be involved in the main study to pretest the questionnaire for both clarity and content. The questionnaire was pre-tested on a group of 34 standard eight students at this school. The questionnaire was administered in a classroom to make sure there were no difficulties in using this as a future venue. Two versions of the questionnaire were administered, half with closed-ended questions and the other half with the same questions but with space provided, so that the students could regard them as an open-ended questions. It seemed that the concise nature of the questions resulted in the students who filled in the open-ended version being satisfied to simply answer “yes” or “no” most of the time. Often when they chose to write more in the space provided it pointed to the presence of some ambiguity in the question.

The written pre-tests were complimented by two separate focus-group discussions that took place afterwards. Focus groups, when used for pre-testing are valuable to facilitate effective communication, especially identifying comprehension problems among under-researched groups (Catania, Turner, Pierce, Golden, Stocking, Binson & Mast, 1993). These groups primarily focussed on the questionnaire although invariably other AIDS related issues did arise. The one discussion group consisted of ten female students and was facilitated by a nurse based at a local hospital involved with AIDS work. The second focus group was held among ten male students and was conducted by the researcher. It was felt that single gender discussions might limit any possible inhibitions created by the other presence of the other gender.

The pilot study proved valuable and constructive changes were made following the students' recommendations. Some of the changes made helped to make certain questions clearer and less ambiguous. A number of the students said that they did not understand three of the English words used in the questionnaire. During the focus group discussions they suggested putting the isiZulu equivalent in brackets next to the English word. This solution was adopted for the three words that had given difficulty: cure (*ukulapha*), condom (*ijazi lomkhwenyana*) and embarrassing (*ukuphoxa*).

3.2.3 Study Population and Sampling

The study population was defined as standard eight students attending schools that were formerly administered by the then KwaZulu Education Department. The primary reason for selecting this group was because they represent one of the highest-risk groups in South Africa with regards the possibility of contracting HIV/AIDS. The schools in the sample included both Junior High Schools, which only offer classes from standard six to standard eight and High Schools with classes from standard six to standard ten. The so-called special schools, aimed at those unable to cope adequately with the academic demands of mainstream schools, were excluded. Flisher et al (1993) note that the inclusion of such a group would require major adaptations in the methods used.

Both genders were taught at all the schools making up the sample frame. A target sample size of 1500 was calculated as the necessary baseline for the evaluative study, based on considerations of statistical power relating to estimates of HIV prevalence in the sample (Ostrow, Kessler, Stover & Pequegnat, 1993). An entirely random study was ruled out as the intervention had begun in certain areas before the evaluation started.

A multi-stage approach to sampling (Kalton, 1993) was used to select the final sample. On the first level, purposive sampling was applied to choose five areas which represented various different geographical regions. The areas were Pholela (inland Drakensberg area), Nongoma, (far North) Nqutu (Central - inland), Mapumulo (Central/north)

Umzinto (South).

From this larger population, it was specifically decided to do a convenience sample of standard eight students for a number of reasons:

1. In terms of the methodology adopted, researching one standard would rule out any educational differences as a possible extraneous variable.
2. Considering the problems associated with the history of black education in South Africa, it was speculated that a fairly wide age range would be present among standard eights.
3. Among this age range it was thought that both sexually active and non sexually-active students would be found.
4. The bulk of the questionnaire could be in English, which prevented the possible complications always associated with translating more technical and medical terms into isiZulu.
5. In terms of the evaluative study, the students should still be attending school if the post-intervention data was only going to be collected the following year.

The first four assumptions were proved correct during the pilot study. Out of each region, four schools were selected. The criteria used at this point were primarily determined by the evaluative study which required matched pairs, but at the same time minimal 'cross pollination' between pairs. The intended sample size from each school was approximately 75 students. The final level of sampling was random, where two classes were selected from the total number of standard eight classes at the school using random number tables.

3.2.4 Procedure

Written permission to enter schools in the five regional circuits was first obtained from the relevant education authority. On entering each circuit, the researcher routinely introduced himself at the circuit inspector's office. At the same time valuable

information on the precise locations of schools was gathered. Out of the six or eight schools considered, four were selected to fulfil the sampling requirements.

On entering each school for the first time the researcher would introduce himself to the principal or most senior staff member present and explain the purpose of the visit and negotiate consent. All the schools selected agreed to participate in the study. Having gained consent, a suitable time was arranged to meet with the selected class in a classroom. All the data were collected during regular school hours.

At the agreed time, the principal or a teacher briefly introduced the researcher to the class. Following the introductions, teachers were told that it was not necessary that they remain with their class. If the teacher intimated that she or he wished to remain, it was politely explained that their presence may interfere with the quality of the data to be collected. The initial pre-testing of the questionnaire showed that some teachers, if allowed to remain in the class, were very interested in what the students were answering. Further help from teachers had to be declined after a teacher started paging through a completed questionnaire she had just collected from a student during the pilot study.

It was felt that teachers' presence in the class may be an inhibiting factor - especially regarding answers to the questions relating to sexual practices. School staff were absent in all the schools except one, where the principal insisted on a staff member being present. The teacher concerned turned out to be most cooperative though, and stood at the front of the class looking out the window for the entire period, so this data was not excluded.

Once the teacher had left, the reason for the research was briefly explained to the students and any questions were answered. The idea of a questionnaire was introduced and its importance was emphasized. Following this, the students were told that the question paper had questions relating to sex, and that they might find it challenging to

complete. This was always greeted by hushed giggles and broad smiles, where upon the researcher told the class they could laugh if they wanted to. They always burst out laughing, after which the researcher commented that nobody ever talked openly about sex although it was an important topic.

At this point it was made clear that the questionnaire was anonymous, and that nobody would ever know who answered which question paper. The students were also assured that their teachers and parents would not see their questionnaires, and it was explained that their responses would be aggregated to get an overall impression, and not scrutinised individually.

Furthermore it was stressed that each person had the right to privacy and people were encouraged to 'cover' their work if they felt the need. This also helped to ensure honest answers and minimise cross pollination among friends. The class was then advised of their right to refuse or discontinue participation, and it was made clear that they could leave the classroom at any point. Surprisingly only three students out of the entire sample, each one from a different school, exercised this right, all three opting to leave before the questionnaire was handed out.

Following these instructions, the subjects were each given a pen and a copy of the self-administered questionnaire. To minimise interaction between participants, they were asked to complete the questionnaire under 'examination-like' conditions. It was however emphasised that it was not a test though, and that there were not necessarily 'right' and 'wrong' answers. The students were also encouraged to attempt to answer every question, and do so as honestly as possible.

Finally, a demonstration on how to go about answering the questions was given. Here the chalkboard in the class was used to show students how to tick the box they believed to be most appropriate. An example not used in the questionnaire was illustrated,

followed by the first question, relating to the participants' gender. After this, the students were asked to complete the questionnaire on their own. They were encouraged to ask any questions they may have had while completing the questionnaire.

All the procedures followed and all the instructions pertaining to the administration of the questionnaire, as well as invigilation of the questionnaire, were carried out solely by the researcher. This helped to ensure standardization of this process. When students completed their questionnaire they were asked to hold it up, so that it could be collected and they were then allowed to leave the class quietly so as not to disturb the others who were still busy.

Once all the students at a particular school had handed back their questionnaires, a comprehensive AIDS booklet was given to each of the students to respond to their immediate concerns and correct misconceptions. The researcher also fielded questions that arose spontaneously during and after handing out the booklets. Additional booklets were left at the school to be distributed among those who had not participated in the study.

3.2.5 Data Analysis

The data analysis in the current study was guided both by the conceptual framework provided by the theoretical model adopted, as well as the aims of the study. When analysing data grounded in the most recent version of the Health Belief Model which includes self-efficacy, Rosenstock et al (1994) recommend adopting one of two different strategies depending on the main aim of the study. They make the distinction between applying the model to generate information with specific goals, such as designing an educational intervention, or alternatively, research aimed primarily at testing the model itself. They suggest that manner in which one approaches data analysis should differ accordingly.

When one of the main objectives, such as in the current study, is to provide descriptive information that can be useful for the creation of "...programmes that will contain AIDS prevention messages, analysis of single items can often offer more relevant information than a general grouped construct" (Rosenstock et al , 1994, p.21). In these circumstances items should not be aggregated into broad areas such as knowledge, attitudes and so on, but rather analysed individually. In terms of the aims of the current study, this approach to data analysis was adopted.

The data was double entered into a computer using the programme EpiInfo Version 6. A number of individuals had responded to some, but not all the questions. Where students had left out an answer on a particular item, they were excluded from the analysis of that item. The response rates for the three different sections of the questionnaire were calculated.

All the responses to the knowledge questions were "yes" or "no" or "don't know", which were categorised as "correct" or "incorrect". These responses, together with the questions dealing with attitudes are initially presented as percentages. Where applicable, the results are presented as the mean together with the standard deviation.

In addition to the generation of descriptive statistics, cross tabulations were calculated for relevant items using three biographical variables as independent variables, namely: Locality (rural/peri-urban), gender and the student's self reports of being sexually active. Nonparametric tests, in particular the Chi-square test, were used to test the significance of associations for these cross tabulations. When these tests were used, those items for which a student gave a "don't know" response were excluded, thereby producing 2 X 2 tables. This allows for comparisons that would show both significant differences as well as their direction, should they exist. At the same time it excludes "don't know" responses which are inherently directionless, and therefore would confound the results if included in 2 X 3 cross tabulations.

4. RESULTS

4.1 General

From the 1514 students initially selected to participate in the study, three decided not to participate resulting in a final sample of 1511 students. Females made up 57.5% (n = 859) of the sample and males 42.5% (n = 634) of the sample. This pattern was consistent across all the regions. Eighteen students, or less than 0.1 % did not fill in their gender on the questionnaire. The mean age of the respondents was 17.7 (sd = 1.83) with a median age of 17 years. The ages of the respondents ranged from 13 to 29 years old.

Of the sample, 22.2% lived in a peri-urban setting and 77.9% in rural areas. All the schools were very similar in structure, with rudimentary classrooms, no libraries or science laboratories, and mostly no facilities for extramural activities.

In the first part of the questionnaire, which was answered by all students, the response rate to the questions was 98.4 %. The lowest response on an individual question was 96.8% (n = 1463) and the highest was 99.5% (n = 1503). In the second part of the questionnaire, which was only answered by sexually-active students (n = 519), the response rate was 90.1% with the lowest response to a single item being 87.1% (n = 452) and the highest being 93.6% (n = 486).

4.2 Knowledge

The results of the questions relating to knowledge about HIV/AIDS are presented in *Table 1*, below. This table illustrates the results reflecting the students' knowledge as an homogenous group. The "correct" answers are presented in bold type. On aggregate across all the knowledge questions, 53.1% of the responses were correct.

Table 1 - Knowledge relating to HIV/AIDS

<u>Question</u> ("correct" responses are given in bold type)	<u>Response</u>			n
	Yes	No	Don't know	
Do you think that a pregnant mother with AIDS can give AIDS to her baby?	87.6%	7%	5.4%	1497
Do you think that somebody with the AIDS germ can look and feel healthy for many years?	32.2%	45%	22.8%	1463
Do you think that it is possible to get or catch AIDS by mosquito or insect bites?	33.3%	35.5%	31.3%	1483
Do you think that you can get AIDS by sharing a cup with somebody who has AIDS?	26.1%	57.2%	16.7%	1499

4.3 Attitudes

4.3.1 Perceived Personal Susceptibility

The responses to the questions regarding perceived personal susceptibility are presented in *Table 2*, below. The results provided only represent the answers of students that reported being sexually-active.

Table 2 - Perceived Personal Susceptibility

<u>Question</u> (Sexually-active students only)	<u>Response</u>			n
	Yes	No	Don't know	
Do you think that you could get a sexually transmitted disease?	38.9%	27.2%	33.8%	452
Do you think that you could get AIDS?	39.4%	33.9%	26.6%	372

4.3.2 Perceived Severity

Reflected in *Table 3*, below, are the respondents' attitudes regarding the perceived severity of AIDS. From the total sample, 58.9% of the students believed that doctors could not cure AIDS.

Table 3 - Perceived Severity

<u>Question</u>	<u>Response</u>			n
	Yes	No	Don't know	
Can doctors cure (ukulapha) AIDS?	13.8%	58.9%	27.3%	1488
Do you believe AIDS can kill?	83.5%	8.9%	7.6%	1503

4.3.3 Perceived Benefits, focussing on Confidence in Preventive Measures

The total samples' attitudes relating to the perceived benefits of adopting preventive behaviours, in particular regarding their confidence in the preventive measures, are presented in *Table 4*, below.

Table 4 - Perceived Benefits, focussing on Confidence in Preventive Measures

<u>Question</u>	<u>Responses</u>			n
	Yes	No	Don't know	
Do you think that one can help prevent AIDS by only having sex with one uninfected partner?	42%	22.7%	35.3%	1475
Do you think that not having sex before marriage can help to prevent getting AIDS?	49.7%	25.8%	24.5%	1487
Do you think that condoms can break during sex?	36.1%	25.3%	38.6%	1488

4.3.4 Perceived Barriers (including Environmental Barriers)

The students' attitudes relating to perceived barriers to healthier behaviours are represented in *Table 5*, below. Of the sexually-active students, 73.7% believed that it was easy to get condoms.

Table 5 - Perceived Barriers (including Environmental Barriers)

<u>Question</u>	<u>Response</u>			n
	Yes	No	Don't know	
Do you think that condoms would be embarrassing (ukuphoxa) to use?	14.7%	62.7%	22.6%	1493
Do you think that condoms are for "loose" or "bad" girls only, and not for steady girlfriends?	28.1%	31.8%	40%	1482
(Sexually-active students only) Is it easy to get condoms?	73.7%	10.5%	15.8%	486
Do you think that condoms can slip off into a girl's body and make her sick?	37.7%	25.8%	36.6%	1487

4.3.5 Cues to Action, implying Perceived Immediacy of threat

Table 6, below, represents the students' attitudes regarding cues to action. From the total sample, 18.6% of the students believed that anyone at their school could have HIV/AIDS.

Table 6 - Cues to Action, implying Perceived Immediacy of Threat

<u>Question</u>	<u>Response</u>			n
	Yes	No	Don't know	
Do you think anyone at your school could have AIDS?	18.6%	39.7%	41.7%	1502
Do you know anybody who has AIDS?	8.6%	82%	9.4%	1493
Do you know anybody that has died from AIDS?	19.8%	70.2%	10%	1503

4.3.6 Self-efficacy in Preventive Behaviour (including Skills)

The students' perceived self-efficacy relating to certain preventive behaviours, which include an element of skill, are presented in *Table 7*, below. The results are presented for either the total sample, or else the subgroups of sexually-active students or non sexually-active students, depending on the question.

Table 7 - Self-efficacy in Preventive Behaviour (including Skills)

<u>Question</u>	<u>Response</u>			<u>n</u>
	<u>Yes</u>	<u>No</u>	<u>Don't know</u>	
Do you think that you could teach or show a classmate how to use a condom? (Non sexually-active students only)	35.2%	39.1%	25.7%	1479
Could you tell your boyfriend or girlfriend that you would only have sex after you were married? (Sexually-active students only)	57.6%	28.6%	13.8%	823
Do you think that you could tell your partner that you would only have sex with a condom? (Sexually-active students only)	43.9%	39.1%	17%	481
Do you think that you would leave your sexual partner if you found out they were having sex with somebody else?	45.5%	22%	32.5%	477

4.3.7 Perceived Peer Norms (including Modelling and Vicarious Influences)

The students' perceptions of their peers' norms, for the total sample, are represented in *Table 8*, below.

Table 8 - Perceived Peer Norms (including Modelling and Vicarious Influences)

<u>Question</u>	<u>Response</u>			<u>n</u>
	<u>Yes</u>	<u>No</u>	<u>Don't know</u>	
Do any of your classmates use condoms (ijazi lomkhwenyana)?	21.8%	17.2%	61%	1494
Do any of your classmates say they will not have sex until they are married?	38.7%	35%	26.3%	1495
Do many girls have sex when they don't really want to?	29.6%	23.4%	47%	1484
Do most people have sex before they are married?	56.2%	25.5%	19.3%	1483
Do most unmarried people have many sexual partners?	47.2%	14.9%	37.9%	1482
Do many of your classmates have more than one sexual partner?	30.6%	21.1%	48.3%	1477

4.3.8 Attitudes towards People with AIDS (PWAs)

The results regarding the respondents' attitudes towards people with AIDS for the total sample are presented in *Table 9*, below.

Table 9 - Attitudes towards People with AIDS (PWAs)

<u>Question</u>	<u>Response</u>			<u>n</u>
	<u>Yes</u>	<u>No</u>	<u>Don't know</u>	
Should people with AIDS be locked up?	20.2%	37.9%	41.9%	1447
Would you sit next to someone, you know to have AIDS, in your classroom at school?	23.1%	58.4%	18.5%	1494

4.4 Differences According to Reported Sexual Activity

Table 10, below, shows statistically significant differences between responses of students that reported being sexually active (SA) and those that did not report being sexually active (NSA).

Table 10 - Significant Differences across Sexually-active (SA) and Non Sexually-active (NSA) Respondents

<u>Question</u>	<u>Response Direction</u>		Significance level	Chi-square
	SA	NSA		
<u>Knowledge</u>				
Do you think that you can get AIDS by sharing a cup with someone who has AIDS?	No	Yes	p = 0.004	x ² = 8.13
<u>Perceived Personal Susceptibility</u>				
Do you think that you could get AIDS?	Yes	No	p = 0.002	x ² = 9.69
<u>Perceived Benefits</u>				
Do you think not having sex before marriage can help to prevent getting AIDS?	No	Yes	p = 0.005	x ² = 7.71
<u>Cues to Action</u>				
Do you know anybody who has AIDS?	Yes	No	p = 0.008	x ² = 7.07
Do you know anybody who has died from AIDS?	Yes	No	p = 0.021	x ² = 5.37
Do you think anyone at your school could have AIDS?	Yes	No	p < 0.0001	x ² = 15.41
<u>Self-efficacy in Preventive Behaviour</u>				
Do you think you could teach or show a classmate how to use a condom?	Yes	No	p < 0.0001	x ² = 35.74
<u>Perceived Peer Norms</u>				
Do any of your classmates say they will not have sex until they are married?	No	Yes	p = 0.016	x ² = 5.81
Do most unmarried people have many sexual partners?	Yes	No	p = 0.016	x ² = 5.77
Do many of your classmates have more than one sexual partner?	Yes	No	p < 0.0001	x ² = 27.46
Do any of your classmates use condoms?	Yes	No	p = 0.0001	x ² = 14.46
<u>Attitudes towards People with AIDS</u>				
Would you sit next to someone, you know to have AIDS, in your classroom at school?	Yes	No	p = 0.030	x ² = 4.68

4.5 Locality Differences

Statistically significant differences in the proportions of the responses, given by students living in the rural and the peri-urban areas, are presented in *Table 11*, below.

Table 11 - Significant Differences between the responses of Peri-urban and urban students

<u>Question</u>	<u>Response Direction</u>		Significance level	Chi-square
	Peri-urban	Rural		
<u>Knowledge</u>				
Do you think that it is possible to get or catch AIDS by mosquito or insect bites?	No	Yes	p = 0.009	$\chi^2 = 6.71$
<u>Perceived Peer Norms</u>				
Do many of your classmates have more than one sexual partner?	Yes	No	p = 0.0467	$\chi^2 = 3.95$
<u>Reported Behaviour</u>				
Have you ever had sex?	Yes	No	p = 0.056	$\chi^2 = 7.67$

4.6 Gender Differences

Table 12, below, shows the results of the questions where statistically significant differences emerged between the proportions of female and male responses.

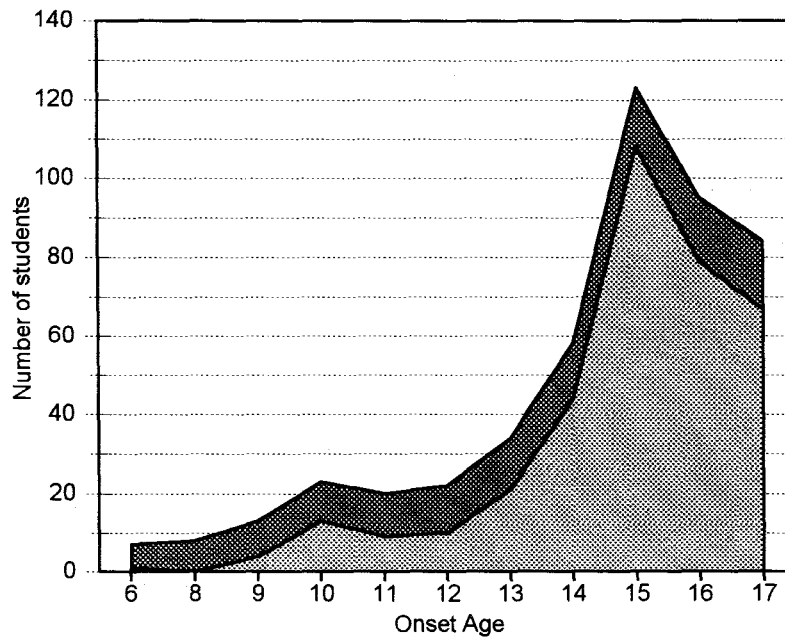
Table 12 - Gender Differences

<u>Question</u>	<u>Response</u>		Significance level	Chi-square
	<u>Direction</u> Female	Male		
<u>Perceived Benefits</u>				
Do you think condoms can break during sex?	Yes	No	p = 0.028	$\chi^2 = 5.27$
<u>Perceived Barriers</u>				
Do you think condoms would be embarrassing (<i>ukuphoxa</i>) to use?	No	Yes	p = 0.003	$\chi^2 = 9.12$
<u>Self-efficacy in preventive behaviour</u>				
Do you think you could teach or show a classmate how to use a condom?	No	Yes	p = 0.0007	$\chi^2 = 11.54$
(Non sexually-active students only)				
Could you tell your boyfriend or girlfriend that you would only have sex after you were married?	Yes	No	p < 0.0001	$\chi^2 = 66.82$
(Sexually-active students only)				
Do you think that you could tell your partner that you would only have sex with a condom?	Yes	No	p = 0.035	$\chi^2 = 4.46$
<u>Perceived Peer Norms</u>				
Do any of your classmates say they will not have sex until they are married?	Yes	No	p = 0.0008	$\chi^2 = 11.28$
Do most unmarried people have many sexual partners?	No	Yes	p = 0.015	$\chi^2 = 5.87$
Do many of your classmates have more than one sexual partner?	No	Yes	p = 0.005	$\chi^2 = 7.82$
<u>Reported Behaviour</u>				
Have you ever had sex?	No	Yes	p < 0.0001	$\chi^2 = 82.56$

4.7 Reported behaviour

More than a third of students (34.9%) reported being sexually active (n = 519). All the results reported in this section are only drawn from this group. The average age of onset for sexual activity was 15.97 years (sd = 2.72), see *Figure 1*. below.

Figure 1. Reported Onset age of Sexual Activity (n = 471)

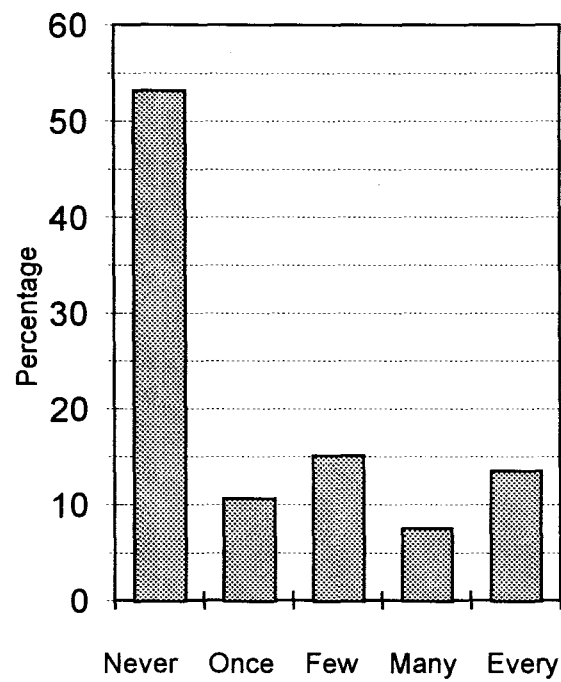


Almost a quarter of the students (23.8%) reported having been treated for a sexually transmitted disease in the past. There were no statistically significant differences between females and males or the locality of those that reported having received treatment for a sexually transmitted disease.

Most students (73.7%) reported that condoms were easy to get, with only 10.5% saying that condoms were not easy to get. There were no significant differences in the proportions of the responses to this question were further analysed by gender. When asked where they would get condoms, almost three quarters of the students (73.2%) said that they would get them from a clinic and 18.1% said they would get them at a hospital. Less than one per cent said they would get condoms from a shop, 4.9% said they would

get them from a chemist, and 3.2% said they would get them somewhere else. *Figure 2*, below illustrates the frequency of reported condom use among the sexually-active students

Figure 2. Reported Condom use among Sexually-active students (n = 483)



5. DISCUSSION

5.1 Discussion of Results

When discussing the results of the current study, it is important to bear in mind that attempts to make comparisons with other surveys are fraught with difficulty because of the many variations that come into play. The target populations may vary in religion, culture or age, behavioural norms, as well as the psycho-social differences found across different regions and continents. Furthermore, local variations in the epidemiology and seroprevalence are often not provided in most surveys and can also vary greatly. In addition, a problem which Ostrow et al (1993) note, is the frequent comment made by peer reviewers, often pointing to the lack of theory or model to frame the study under review. Beside being a major flaw in those studies, this also makes it difficult to compare studies when the theoretical grounding is not made explicit. These factors suggest that any comparisons made at all should only be made with much caution and circumspection.

As anticipated, the sample in this study provided a wide range of ages. The internal consistency of the sample can be clearly seen in the ratio of males to females, which remained very similar across all the regions. The high rate of participation, with only three of 1514 students refusing to participate, is significant because as Catania et al note:

The largest source of bias in AIDS-related surveys is not necessarily related to the sensitive nature of the question topics, but reflects the general proclivities of various segments of the population to participate in surveys of any type (p.134, 1993).

The large sample size and the high percentage of the sample, which agreed to participate in this study, together with the high response rates, contribute to the integrity of this study by increasing both to the validity and reliability of the results.

5.1.1 Knowledge

When the responses to all the questions assessing knowledge relating to HIV/AIDS were aggregated, exclusively correct answers were given for just over half the items.

Research conducted in Kenyan secondary schools, by Pattullo et al (1994), found that more than three quarters (77.1%) of the students they surveyed answered knowledge questions asked in their study correctly. This score may have been higher as the Kenyan epidemic is more advanced than the South African epidemic (Nkowane, 1991), and there may also have been more educational efforts in that country.

Aggregate scores in such a study are not very useful, as for instance, one cannot say from the aggregate knowledge score in the current study whether half the respondents were lacking in any knowledge while the other half were well informed, or whether all the respondents knew half the answers. Therefore, as recommended by Rosenstock et al (1994), a clearer picture of strengths, weaknesses as well as local variations can best be established by analysing and discussing the scores of individual questionnaire items separately.

The question which most students answered correctly (90%) asked whether it was possible for a pregnant mother to transmit HIV/AIDS to her child. Although some mothers that have been found to be HIV positive during their pregnancy have not passed on the disease to their infants, the question in itself does not necessarily exclude this possibility (Abdool Karim & Abdool Karim, 1996). There are a number of factors that may offer some explanation for this relatively high score, when considered in the absence of AIDS education programmes in the region and relatively poor access to media.

Firstly, common knowledge of the transmission modes of other infectious diseases may have influenced some students, because of the shared body fluids before birth and the possibility of breast feeding after birth, as well as the close physical contact that occurs between mother and child. Secondly, the common connections between sexual

intercourse, AIDS and pregnancy, cannot be underestimated and may have influenced some students. Finally, the existence of a myth, which was reported after the data had been collected, could have also played a role.

The myth suggests that if a woman is infected with HIV/AIDS, and subsequently falls pregnant and has a child, the AIDS will be passed on to the baby leaving the mother free of HIV/AIDS. This myth is particularly alarming as one might find women with HIV/AIDS actually having unprotected sexual intercourse with the aim of falling pregnant in the belief that bearing a child will save them. This myth may also have influenced some respondents, and would need to be addressed by any intervention among similar populations.

When asked whether somebody with HIV/AIDS can look and feel healthy for many years, nearly half the respondents (45%) answered “no” to this question. This is the same result that was obtained in a study conducted in Zimbabwe, quoted by Carael et al, (1991). Mathews et al (1990) found that about a quarter (24.3%) of the students they questioned did not believe one could get HIV/AIDS from somebody who looks healthy. Almost twice as many students in the current study appeared to lack this similar basic knowledge when compared with those surveyed by Mathews et al (1990). This not only illustrates the fundamental lack of knowledge, but it also represents a perilous state; with almost half the students believing they would be able to recognise somebody with HIV/AIDS. This once more highlights the need for HIV positive people to come forward and be involved in educational interventions.

Exactly a third of the students believed that HIV/AIDS could be transmitted by mosquitos or insects. This result is fairly similar to other surveys that have been conducted in Africa: Kuhn et al (1994) found almost exactly the same result among their pre-intervention survey of students in the Western Cape. In their Kenyan study, Pattullo et al (1994) found that slightly fewer of the secondary school students surveyed (22%)

believed mosquitos could transmit HIV. In addition they cite studies done in Zaire and Zimbabwe in which 44% of the students believed that HIV/AIDS could be transmitted by mosquitos.

A significantly greater proportion of rural students in the current study believed that HIV/AIDS could be transmitted by insects or mosquitos ($p = 0.009$). Once more this difference seems to represent limited access to information, possibly resulting in the adoption or acceptance of more familiar modes of disease transmission, to make sense of the threat of HIV/AIDS. None of the regions chosen for the study fall into endemic malaria areas. Pollak (1992) notes that the fear of contracting HIV/AIDS by mosquito bites still affects popular beliefs, even though this possibility has been discussed and rejected at scientific conferences.

The majority of the students surveyed (57.2%) believed that one could not get HIV/AIDS from sharing a cup. A significantly larger proportion of these students who reported that they were not sexually active ($p = 0.004$) believed that one could contract HIV/AIDS by sharing a cup. This could be related to a naivety concerning sexual matters generally and sexually transmitted diseases in particular. This difference may also point to the tendency among students that reported being non sexually-active to make sense of HIV/AIDS in terms of notions of infectious disease transmission that are already familiar to them. Pattullo et al (1994) found that 86% of their respondents knew that HIV could not be transmitted by sharing eating utensils.

The questions from both studies address similar common misconceptions surrounding modes of transmission, but the higher Kenyan result seems to suggest that educational programmes have been reaching the students surveyed there. Pollak (1992) estimates that in most populations between 15% and 40% of people falsely believe that everyday situations present a risk of contracting HIV, which often leads to erroneous fears and stigmatisation.

As one may have expected, there were no statistically significant differences between males and females on any of the knowledge questions. As noted above, only one significant difference was found between peri-urban and rural students. It may represent the even more limited access to information that is faced by the rural students. This seems to result in the students adopting more familiar modes of transmission that apply to infectious diseases that are already fairly well known. Similarly, only on one knowledge question was a significant difference found among students that reported being sexually-active and non sexually-active. The significant response may represent an unfamiliarity with the notion of a sexually transmitted disease, among the non sexually-active students, possibly again leading to the adoption of more familiar methods of disease transmission to make sense of HIV/AIDS.

On the whole the differences between the sub-groups of the sample are not thought to represent any major contradiction that might need to be addressed separately in an intervention. The knowledge results presented above essentially describe a situation where some correct knowledge about primary modes of transmission and prevention is found together with misconceptions regarding casual transmission of HIV/AIDS and that it is curable.

Pollak (1992) draws some general conclusions that have emerged from traditional behavioural risk modification models. He argues that “there is no direct relationship between an individual’s levels of knowledge of and attitudes towards a disease and behaviour” (Pollak, 1992, p.32). As Bandura (1977, p.401) notes in relation to knowledge: “It is not inherently enlightening” and has to be selected and integrated. Although accurate knowledge is an essential component of interventions, it alone is not always sufficient to bring about sustained healthier behaviour (Mathews et al, 1990; Ratsaka & Hirschowitz 1993; Kirby, 1995). The focus on knowledge in the questionnaire was restricted both by space constraints imposed by necessary time limits, together with the notion that knowledge is fairly easy to pass on, but attitudes form the

crucial link between knowledge and behaviour. Without minimising the role that accurate knowledge about HIV/AIDS has to play, the above two reasons account for the minimal attention given to knowledge in the questionnaire and the greater emphasis on attitudes.

5.1.2 Attitudes

The attitudes that were assessed are discussed within a similar format to the presentation of the theoretical framework that guided the data collection.

5.1.2.1 Perceived Personal Susceptibility

One of the difficulties in using the construct of personal susceptibility is that although people on average may report low feelings of susceptibility, and these may in fact be quite accurate in terms of their personal behaviour, or alternatively, geographically in terms of the state of the epidemic in their region. This situation is further compounded by personalised interpretations of risk; such as an individual believing they are at low risk because they practice safe sex.

Geographical variations relating to knowledge of the epidemic's state should not have been an influential factor in this study, as it is unlikely that the people surveyed on the ground would have an accurate idea of the HIV prevalence in their district. This seems to have been born out by further analysis of the results by locality, with no significant differences between peri-urban and rural respondents.

When seen in the light of the findings relating to *cues to action*, which on the whole suggest a low perception of the immediacy of the threat, it appears many respondents do not believe HIV/AIDS is in their area. When seen in the context of the local HIV epidemic, the fairly large group of sexually-active students in the current study that perceived themselves not to be personally susceptible to HIV/AIDS, because they believe HIV/AIDS is not in their area, are mistaken. The need for accurate information to be

given to adolescents on the scope of the evolving epidemic appears to be crucial.

To generate more meaningful conclusions perceived susceptibility has to be regarded in the light of the student's behavioural reports. Therefore the results to the questions relating to perceived personal susceptibility only represent the answers of students that reported being sexually active. On the other hand, if sexually-active respondents reported believing that they were not susceptible because they did not practice risky sexual behaviour, other issues need to be addressed.

Almost two-fifths of the sexually-active students (39.4%) reported believing that they were at risk of contracting HIV/AIDS. A very similar result (38.9%) was obtained when the same group of students was asked whether they thought they could contract a sexually transmitted disease; which is another useful measure of perceived personal susceptibility. The results seem to be a fairly high, illustrating a subjective perception of the possibility of contracting the disease. This perceived personal susceptibility is encouraging, bearing in mind the limited exposure pupils have had to formal AIDS education programmes and the largely hidden face of HIV positive people. These results seem to suggest some acknowledgement, by sexually-active students, that HIV/AIDS is a sexually transmitted disease.

This is supported by the finding that a significantly greater proportion of sexually-active respondents believed they could get AIDS, when compared to those that did not report being sexually active. However the finding is not as encouraging as it may initially seem, when seen in relation to low reported condom use. More worrying though, is that almost a third of the sexually-active students believed they could not get AIDS or a sexually transmitted disease. This disturbing result may represent a combination of denial and poor knowledge as well as the lack of visual evidence of the progression of the HIV infection.

5.1.2.2 Perceived Severity of AIDS

Accepting that HIV/AIDS is ultimately a fatal disease is an important initial step in the process of adopting healthier behavioural options. The majority of students (84%) believed that AIDS could kill, with no differences in the students' responses when further analysed by reported sexual activity or gender. The high percentage of students believing AIDS can kill may have been prevalent because the notion that AIDS is a fatal disease was often one of the central messages of the limited, early educational efforts carried in South African media, that had appeared up until the time the data was collected.

A small percentage of the students (8.9%) responded that they did not believe that AIDS can kill. Mathews et al (1990) found that about one per cent of the students they studied did not believe people can die of AIDS. With such a high percentage of the students acknowledging the fatal nature of the disease, it seems that this small percentage of students in the current study that do not believe AIDS is fatal, may be in a state of denial. However this proposed explanation of denial cannot be put down to sexually-active students denying the fatal nature of AIDS, as there was no significant difference in the responses when analysed by reported sexual activity. Once more, the small percentage of students that believe AIDS is not fatal may also be due to a lack of accurate information on the disease.

More than half the students (58.9%) responded correctly when asked whether doctors could cure AIDS. This was similar to the finding of Pattullo et al (1994), that 61.3% of the Kenyan students responding that there was no cure for AIDS, although their question did not directly mention doctors. The question in the current study did not specify whether doctors referred to western doctors or traditional healers. Once again this left the interpretation of the question up to the respondents. The relatively high percentage of students with the "correct" response is encouraging, although if they interpreted doctors as referring to western doctors, it may have failed to include their beliefs about

traditional healers and medicine.

The belief that HIV/AIDS is curable, which was held by nearly 14% of the students, could be related to rumours of effective cures by various yet unproved treatments. In the Cape Peninsula, Mathews et al (1990) found that about a quarter of the students they surveyed believed AIDS could be cured. In KwaZulu-Natal some people believe that several traditional healers and herbalists are able to cure AIDS. These beliefs are not always localised, with people many hundreds of kilometres away knowing about the reputations of certain healers. The belief that HIV/AIDS is curable may also reflect denial as well as the obvious lack of complete AIDS education. This points to the need to reinforce the fact that as yet AIDS is both incurable and fatal in any interventions, as accepting the severity of the disease is an important step in the process of adopting risk reduction strategies.

5.1.2.3 Perceived Benefits (Focussing on Confidence in Preventive Measures)

Personal evaluations of the seriousness of HIV/AIDS as well as the likelihood of dying from the disease tap into aspects of severity, but they do not cover the complete range of probable personal consequences of having AIDS. However because the disease is fatal, the perceived benefits of not contracting the disease, together with the more minor consequences of contracting the disease, were not directly assessed in the current study.

The reason for this decision was twofold: Besides the space limitations in the questionnaire, the paramount benefit of not becoming infected with the disease - life - is obvious. Therefore the focus here falls on whether people will take the necessary steps to protect their life in the face of a perceived threat; whether people perceive preventive measures to be beneficial. However, people will only carry out health promoting actions if they believe such behaviour will actually reduce their own chances of becoming infected. Therefore the emphasis, in assessing perceived benefits, was on the students' perceptions of the effectiveness of acknowledged risk reduction measures.

Less than half of all the students (42%) acknowledged only having one uninfected sexual partner was an effective preventive measure. Many students appear to reject this as an effective risk reduction option, again suggesting the possibility of denial. The probability of non sexually-active students failing to recognise HIV/AIDS as a sexually transmitted disease cannot be entertained here, as there was no significant difference between these two groups when their responses were further analysed by reported sexual activity. There were also no inconsistencies in the responses when analysed by gender.

The lack of significant differences when analysed by these two variables is not surprising as the question could be regarded as a 'knowledge' question, the result of which might not be expected to be significantly affected by either gender or sexual activity. This once again highlights the importance of accurate information in providing knowledge on which to form attitudes.

In their pre-intervention data, collected among Xhosa speaking secondary school students in the Western Cape, Kuhn et al (1994) found that 42.4% believed that only having one uninfected sexual partner help to prevent getting HIV/AIDS. This is a very similar result to the current study. Among Kenyan students, Pattullo et al (1994) found that most (87.7%) knew that having one faithful partner reduced the risk of HIV infection. Once again the similar Kenyan question generated quite different results, possibly for the same reasons already suggested above.

The Kenyan question is not ideal, though, as it encompasses the possibility of serial monogamy, which obviously increases the risk of HIV infection. Although not impossible, the difficulties for a rural couple to establish their HIV status must be considered when appraising the idea of one uninfected partner as a risk reduction option in interventions targeted at this population.

Abstaining from sexual intercourse before marriage was recognised as an effective risk reduction step by just under half of the respondents. As with the above question, this one could also be regarded as a 'knowledge question' with similar implications. There was no significant difference between the responses of females and males. A significantly larger proportion of students that reported being sexually active responded that they did not believe that not having sex before marriage could help to prevent HIV/AIDS. This once more could represent a denial of the possible threat that they may currently be facing; together with a corresponding unwillingness to change their behaviour now. Similarly, the sexually-active students could have personalised the question and may have then rejected it as a viable option for themselves.

Although abstaining from sexual intercourse before marriage, as an HIV risk reduction option, is often regarded as untenable among some groups and consequently rarely included as a major thrust of preventive programmes. However, for different reasons, abstinence is espoused and embraced by some student Christian groups operating within the targeted schools. This, together with half the students acknowledging its effectiveness suggests that it should at least be considered as a viable risk-reduction option in AIDS prevention campaigns, particularly among younger students and those who are not yet sexually active.

If people do know that condoms can be an effective preventive measure for HIV/AIDS, which was not assessed in the current study, their confidence must rest in the consistency that they believe they are actually effective. When the students were asked whether they believed condoms could break during sex, only a quarter said they could not. This is a small percentage having full confidence in the ability of condoms to prevent sexually transmitted diseases and pregnancies as well. These attitudes towards condoms exist together with low reported condom use. Although there was no significant difference in the proportion of responses when further analysed by reported sexual activity, a significantly greater proportion of female students than males ($p = 0.022$) believed that

condoms could break. The results here suggest that the image of the condom as a fairly reliable means of reducing risk of contracting HIV needs to be reinforced.

Across the three questions the students' confidence in the methods of preventing or reducing HIV transmission were generally low. In terms of the Health Belief Model, the results imply that many of the students appear to perceive no benefit in adopting the preventive methods investigated in this study.

5.1.2.4 Perceived Barriers (Including Environmental Barriers)

If the students' perceived negative consequences of adopting a preventive behaviour outweighed the positive benefits, they may not adopt the healthier behavioural option. Although it is difficult to directly access each person's differing values and procedure in the process of evaluating the pros and cons of adopting a given behaviour, it is useful to identify consequences that are perceived to be negative.

Just less than a third of the students reported believing that condoms were only for "loose" or "bad" girls and not for steady girlfriends. No significant differences were discovered when the responses were further analysed by gender and reported sexual activity. Although this finding suggests that the majority of students do not associate condoms with sexual promiscuity, there is quite a large group that seem to make this association. The findings may also be related to the issue reported by Abdool Karim et al (1992), which said that if one partner suggests the introduction of condoms into an established relationship it has the potential to raise issues of trust and fidelity. This is a difficult barrier to overcome, and prevention efforts in this sphere would ideally have to go hand in hand with having one uninfected partner.

Only 14.7% of students said they believed that condoms would be embarrassing to use, with the majority reporting that they would not find condoms embarrassing to use.

There was no difference between the responses when seen in relation to reported sexual

activity, but a significantly larger proportion of male than female students ($p = 0.003$) said they would find condoms embarrassing to use. The small group of male students that believed condoms would be embarrassing to use need to be encouraged, perhaps using the idea that females find condoms acceptable, to overcome their apparent hesitation in using condoms as a preventive measure.

If students report they would not find condoms embarrassing to use, and almost three quarters of the sexually-active students reported that condoms were easy to get with no significant difference between females and males, this leaves the question of why reported condom use is so low. It does not appear to be primarily a logistical problem in the region surveyed, where as inadequate provision has been suggested as the main difficulty in other African countries (Wilson & Mehryar, 1991).

There are a number of propositions regarding low condom use. Firstly a widespread misconception exists that condoms can slip off into a girl's body and make her sick. More than a third of the students in the current study believed this, with no significant differences in the proportions of responses when further analysed by gender or reported sexual activity. Abdool Karim, Abdool Karim, Preston-Whyte, & Sankar (1992) reported this misconception, adding that it was often supported by anecdotal accounts of women being hospitalised and needing surgery and has been encountered as far a field as Rwanda.

Beside access to condoms and the apparently influential misconception noted above, other common reasons given for lack of condom use include: Condoms not being around when needed; a barrier to sexual pleasure; a challenge to 'being a man', especially when condoms are suggested by a woman; and suggesting condom use often raises questions about trust between partners in relationships (Abdool Karim et al, 1992). These perceived barriers need to be addressed so that students perceive condoms in a more positive light, which would increase the chances of them being used to reduce HIV

infection.

5.1.2.5 Cues to Action (Implying Perceived Immediacy of Threat)

Acknowledging the existence of a threat is seen by Rosenstock et al (1994) as an essential initial cognitive step in the process of taking the recommended action to reduce a given threat. On the whole the students were not very aware of the immediacy of the threat of AIDS. There were no significant differences in the proportions of responses to all three questions, when analysed by gender or reported sexual activity. Because the students do not perceive the disease to be an immediate threat, and they do not really acknowledge it to be a problem in their area, it cannot serve as an initial cue to action. Consequently there is only a limited chance of many students adopting the necessary preventive behaviours.

The proportion of sexually-active students acknowledging the perceived immediacy of the threat of HIV/AIDS, implying cues to action, was greater than the non sexually-active students across all three questions. A greater proportion of sexually-active students knew somebody with HIV/AIDS ($p = 0.0008$); thought that people at their school could have AIDS ($p = 0.0001$); and knew somebody that had died of AIDS ($p = 0.021$). These results could represent both some acknowledgement by sexually-active students that HIV/AIDS is primarily a sexually transmitted disease and that sexual activity is occurring among students. Similarly, among students that reported not being sexually active, the results may represent ignorance about sexually transmitted diseases, together with a limited knowledge of the levels of sexual activity among their peers. The striking difference in the proportions of the responses of these two groups would suggest that sexually active students are more ready to act on such cues to action.

Less than a fifth of the respondents believed that it was possible that somebody at their school could have HIV/AIDS. The vast majority of respondents essentially do not acknowledge or know that there is a very good chance that at least some people at their

school are infected with HIV/AIDS. This could be a result of denial or alternatively ignorance of current HIV infection levels. The latter seems to be more likely. There is an urgent need to make local seroprevalence levels known and perhaps more importantly give these figures a human face. Local people infected with HIV need to come forward to facilitate the realisation of the immediacy of the threat. Information on the projected growth of the epidemic may also help people to acknowledge the immediacy of the threat which serves as the initial cue to action in adopting preventive measures.

Of the respondents, less than a tenth said that they knew somebody with HIV/AIDS. Although this figure seems fairly close to the HIV infection rate at the time of the study, it cannot necessarily be regarded as representing it. This is because it is possible that many of the respondents may have known the same person with HIV/AIDS. Nonetheless, this does not affect the result as a potential measure of immediacy of a threat. Cues to action will clearly be influenced by the progression of the epidemic, together with its increasing public face. This once again highlights the need for people infected with the disease to come forward and speak openly.

Almost a fifth of the respondents said that they knew somebody that had died of AIDS. This figure seems higher than one would expect when seen in relation to the HIV prevalence, together with the window period between HIV and the development of full-blown AIDS. A further problem here may have been that the question did not specify whether the person came from the respondents' area, or whether they knew the deceased personally. This opens the door for the inclusion of deaths resulting from AIDS that have been highly publicised, such as Rock Hudson, which does not represent immediacy of threat in terms of a localised threat. However, the result still represents some level of acknowledgement of the threat. In particular it points to some acceptance of the fatal nature of the disease. This could operate as an initial cue to instigate preventive action, even though it still could allow some people to distance the threat.

5.1.2.6 Self-efficacy in Preventive Behaviour (Including Skills)

On the whole the questions assessing self-efficacy could have included more detail relating to the ability to carry out the given tasks under both differing and challenging circumstances. The questions did not explicitly assess whether the respondents believed they would be able to *consistently* complete the given task successfully. This tends to diminish the usefulness of the assessments of self-efficacy within the current study. The focus of the questioning adopted, was on the beliefs that students held relating to the effectiveness their own ability to adopt preventive behaviours.

Asking students whether they would be able to teach a classmate how to use a condom serves as a useful proxy of whether they would feel efficacious using a condom themselves. Only about a third of all the students felt they could carry out this task. However when analysed further, a greater proportion of sexually-active students ($p < 0.0001$) and male students ($p = 0.0007$) believed they could carry out this task. That sexually-active students should feel more able to teach a friend how to use a condom is understandable. A possible reason for a larger proportion of males than females feeling more confident about this task is that some males high school students in research conducted by Abdool Karim et al (1992) reported having “experimented” or “played” with condoms, although they had not used them for penetrative sex. The majority of the students would benefit from interventions to increase feelings of efficacy relating to condom use. The findings here suggest that females, and students that are not sexually active, may need additional attention during this process.

Among respondents that reported being non sexually-active, just over half believed they would be able to tell their partner that they would only have sex after marriage. A significantly larger proportion of females ($p < 0.0001$) believed they would be able to carry out this task. Again the question assessed efficacy without taking into account various and difficult circumstances that may affect the efficacy that seems to be shown.

The weakness in the question seems particularly pertinent to this question. An example of a factor, which could put pressure on a young woman, is the importance of fertility among some Zulu people. It is common for some young Zulu women to fall pregnant before getting married to prove their fertility. As one male student commented to the researcher "You don't buy a pig in a bag". If such a pressure came to bear on a female, it may reduce her previous efficacy in handling the task. It is difficult to gauge the wide range of circumstances and personal responses that could inhibit self-efficacy even where perceived self-efficacy may initially be high.

The following two questions relating to perceived self-efficacy in preventive behaviour were only asked of students that reported being sexually active. Under half the respondents said that they would be able to tell their partner that they would only have sex when using a condom, with a greater proportion of female students ($p = 0.035$) believing they could carry out this task. Although it appears that females are more willing to take responsibility for using condoms they could encounter the: 'using condoms is not done by men' argument, documented by Abdool Karim et al (1992). The challenging circumstances that could test efficacy are both numerous and likely to affect people differently, and are therefore difficult to assess within a limited space. It is encouraging that more females felt that they could take control of a risk situation, and the responsibility of both partners in condom use could be built on in any intervention. Just under half the sexually-active students reported believing they would be able to leave their sexual partner if they discovered that their partner was having intercourse with a somebody else. No statistically significant difference was found when the responses were further analysed by gender. This finding may not only represent fairly low perceptions of efficacy when faced with the given task; but it could also point to a level of acceptance that more than one partner is quite an acceptable state of affairs to some respondents. This seems to be confirmed by the findings relating to perceived peer norms, discussed below.

Where self-efficacy is found to be low, the general recommendation is that skills training be the main focus of the intervention (Bandura, 1986). However some of the above results suggest that it may be necessary, if an intervention is going to be successful, to challenge the existing norms at a community level, and instil new norms. This will be more successfully done among the younger students before they establish their sexual values and identities.

5.1.2.7 Perceived Peer Norms (Including Modelling and Vicarious Influences)

Perceptions of what peers seem to believe and do are very influential, especially among adolescents. When asked whether any of their classmates used condoms only about a fifth believed they did. There was no significant difference in the proportion of female and male responses, but a larger proportion of non sexually-active students said no ($p = 0.0001$). This might have been expected as one could assume that generally the non sexually-active students would tend to have non sexually-active peers. The result from the entire sample appears to confirm the low reported condom use findings among the sexually-active students. If students do not perceive many of their friends to be using condoms, this could become a situation where it is perceived as 'not the done thing'.

Just more than a third of the students said that some of their classmates would not have sex until they are married. A larger proportion of females ($p = 0.0008$), and non sexually-active students ($p = 0.016$), said this was the case. This is an encouraging response as students must have expressed these opinions to their peers. If students, particularly students that are not yet sexually active, perceive that their peers are not having sex before marriage it may encourage them to do the same. Obviously the opposite is true for students whose peers are becoming sexually active. Preventive interventions should buttress these opinions at an early age, so that they become the peer norm before the majority of the students become sexually active between the ages of 15 and 16.

Almost thirty per cent of all the students reported that some female students end up having sex when they don't really want to. This question tried to find out about what is sometimes referred to as date-rape, which was raised by some students during the pilot study focus groups. There was no difference in the proportions of the responses when further analysed by gender and reported sexual activity, which suggests that this is a general perception. This result is disturbing and would need to be addressed in any intervention by suitable skills training for female students in areas such as assertiveness.

Almost half the respondents believed that most unmarried people had many sexual partners. About a third of students said that many of their classmates had many sexual partners, which corresponds with the reported sexual activity result. On both items, a significantly greater proportion of male students, and sexually-active students, reported that this was the case. These two questions illustrate that quite a common perception exists that many people have a number of sexual partners. One may expect that more sexually-active students would report higher levels of sexual activity among their peers, and lower perceptions of sexual activity among those that said they were not sexually active, that this was the case is important as one would expect these two groups to have a slightly more accurate assessment of their peers' sexual activity.

The perception of higher reported sexual activity among male peers, could be seen as offering some support for the reported behaviour result, with more male students reporting that they are sexually active. Alternatively, the larger proportion of male students that perceive their peers to be sexually active, may be due to self enhancing embellishment of their sexual experiences (Catania et al, 1993).

The influence of peers on adolescents behaviour should not be underestimated. Reinforcing healthy peer norms can help in the adoption of healthier behaviours. As Pollak notes:

Research on behavioural change has repeatedly pointed out that trust and credibility in the source of information and social reinforcement by peers within the community are necessary conditions for effective intervention (1992, p.32).

5.1.2.8 Attitudes towards People with AIDS (PWAs)

Although not formally part of either of the two theoretical perspectives used to guide the current study, attitudes towards people with AIDS are important. As Mathews et al (1990) note, a feeling of compassion towards those with AIDS can be an important motivation for behaviour change. Mathews et al also argue that "stigmatisation of disease often resolves in denial of personal risk" (1990, p.515).

Just over a fifth of the students in this study believed that people with HIV/AIDS should be locked up, with no significant difference in the proportions of the responses given when seen in relation to gender or reported sexual activity. However, the majority of students are undecided on the issue. This points to the need for accurate information regarding the primary modes of HIV transmission.

Over half the students in the current study reported that they would be unwilling to sit next to somebody with AIDS in their classroom at school. No significant difference was found in the proportions of female and male responses to this question, but a larger proportion of non sexually-active students ($p = 0.030$) reported being unwilling to sit next to a person with AIDS. Mathews et al (1990) found that a similar percentage of the students they surveyed would not be willing to accept someone with AIDS in their class. In this study more non sexually-active students may have had negative attitudes because of a naivete regarding sexually transmitted diseases generally and HIV/AIDS in particular.

The negative attitudes expressed appear to be mainly related to misconceptions regarding the casual transmission of HIV/AIDS. In addition, Pollak (1992) observes that people with Aids are perceived differently to people with other diseases. He argues that this is so because the belief exists that people who contract the disease are essentially responsible for their condition. This could account for the apparent greater proportion of intolerance among non sexually-active students. Pollak (1992) argues that risk overestimation is an excellent predictor of calls for coercive policies and strict controls where they are not necessary. More positive attitudes towards people with AIDS need to be incorporated in interventions; fostering compassion for those already affected by the disease can encourage people to adopt healthier attitudes and behaviours. Consequently, any AIDS education intervention needs to emphasise a non-discriminatory attitude towards people with AIDS, to prevent stigmatisation.

5.1.3 Reported Behaviour

The assessment of reported behaviour using a questionnaire in the classroom setting proved challenging. During the pilot study students reported that the questions relating to sexual behaviour were difficult to answer. One of the suggested reasons given for difficulties in collecting such data may be the inclination among adolescents to give what they perceive to be socially desirable responses (Mellanby, Phelps, Crichton & Tripp, 1995; Peterson & DiClemente, 1994).

The two main threats to validity encountered in using self-reports of sexual behaviour, is the possibility that respondents either may over or under-report behaviour. Flisher et al (1993) argue that under reporting appears to be associated with fear about the possible consequences of having one's behaviour exposed. Pattullo et al (1994) believe that among females under-reporting may represent pressure on females to report virginity as a sign of their marriageability. Under reporting may also be due to privacy needs, embarrassment and even fear of reprisal (Catania et al, 1993).

Over reporting is often associated with males' responses to sexual activity, as in African surveys these tend to be higher than female subjects from the same populations (Carael et al, 1991). If this tendency does represent over reporting, it is speculated that the subjects may find it self-enhancing to embellish their sexual experiences (Catania et al, 1993). Pattullo et al, (1994) note that over-reporting of sexual behaviour among females may represent a wish to get pregnant, which they discovered among 40% of their female sample.

To encourage students to report as accurately as possible, the anonymity and confidentiality of the data were repeatedly stressed (see *Procedure, section 3.2.4*). Even if research subjects are motivated to give "honest" responses, inaccuracies in both under and over reporting of sexual behaviour may be due to incorrect estimates of sexual behaviour because of distorted or faulty recall (Catania et al, 1993; Peterson & DiClemente, 1994). Confidentiality and anonymity were repeatedly stressed in an attempt to overcome both under reporting and over reporting.

Just over a third of the students in this study reported being sexually active. Mathews et al (1990) found that nearly three quarters of the high school students they surveyed were sexually active. Similarly, Flisher et al (1993) found that about two thirds of the Xhosa speaking students they surveyed, reported being sexually active. The preceding two studies referred to, were conducted in the Western Cape and both their samples included students from standard six to ten.

The result in the current study may be much lower because about three quarters of the students live in rural areas, where as the sample in the study by Mathews et al (1990) was urban or peri-urban. In their review of sexual surveys conducted in various African countries, Carael et al (1991) note that casual sex rises with urban residence. This is confirmed in this study, where a greater proportion of the students in the peri-urban areas reported being sexually active ($p = 0.006$), when compared to their rural

counterparts.

In this study, a greater proportion of males students reported being sexually active ($p < 0.0001$). Of the sexually-active students, males made up 58.4%. In a review of sexual-behaviour studies conducted in various African countries, Carael et al (1991) found that casual sexual activity is more prevalent among men than women in most of the countries and is often associated with higher levels of education. Similar findings have been reported from research among South African students (Flisher et al, 1993). The results of this study may suggest that the male respondents are involved with an additional group of females, not included in the sample.

Unfortunately a question was not included that asked about visits to commercial sex workers or exchanging money or goods for sexual favours. Carael et al (1991) cite a study done among Zimbabwean high school students, where 16% of the male respondents reported sexual contact with commercial sex workers. A similar reason for the substantially higher level of reported sexual activity, including more sexual partners, among male Kenyan high school students was given by Pattullo et al (1994).

However, Standing (1992, p. 477) explains that "much of the sexual exchange in Africa has a monetary value although it would be quite inappropriate culturally to define it as prostitution". Nonetheless such interactions are important as they represent a transmission path from a higher risk population to a relatively lower risk population, spreading the infection among the youth.

On average, most students in this study became sexually active around 16; between the ages of 13 and 19. Flisher et al (1993) reported an onset age of 14.9 years among high school students in the Cape Peninsula. Although the onset age in the current study is slightly later, the sample was primarily rural which may account for the difference. Nonetheless, Carael et al (1991) report that the age of onset is becoming lower in Africa.

The importance of this milestone is that it also marks the age of potential onsets of both HIV infection and pregnancy.

However, Flisher et al (1993) make the incisive observation that the age of onset is not always a very useful measure, as there may be a delay between the initial and next sexual encounter. Perhaps the one of the most useful functions of the finding in this study is that it can be used to convince parents, who often deny the existence of sexual activity among adolescents and stop programmes addressing sexual matters, that sexual activity among this group is a reality.

Although about three quarters of the students said that condoms were easy to get, with a similar percentage saying that they would get them at clinics, the fact that more than half the students had never used a condom is cause for concern. Additionally, even though just over 10% of students reported that they did use condoms every time there is not way of knowing if they were using them correctly. In a review of surveys of sexual behaviour conducted in various African countries, aggregated data suggests that less than 20% of the adults had ever used a condom (Carael et al, 1991). The acceptability of condoms needs to be promoted as in the current study the primary problem does not seem to be a logistical problem.

Pattullo et al (1994) observes that reports of prior treatment for a sexually transmitted disease is an important indicator of risk for acquiring HIV. Furthermore, the presence of another sexually transmitted disease, besides HIV, is regarded as a factor that can increase the chance of HIV infection during a sexual encounter. In this study almost a quarter of the sexually-active students had been for treatment for another sexually transmitted disease in the last six months. There was no significant difference in the proportions of females and males that reported previous treatment. This confirms the high level of sexual activity as well as the lack of HIV prevention tactics already in place. Emphasising the fact that HIV/AIDS is primarily a sexually transmitted disease in the

current context would be an important aspect of any intervention.

5.2 Methodological Limitations

The potential enormity of AIDS in South Africa creates the need to weigh the urgency that is demanded by the epidemic with adequate scientific rigour. However, many traditional scientific methodologies are often quite inapplicable when assessing risk behaviour and the psychosocial concomitants associated with a sexually transmitted disease with the nature and complexity of HIV/AIDS.

The shortcomings of the more robust methods require pragmatic decisions in selecting what appear to be the most appropriate methods in terms of finding out what one wishes to know and why one wishes to know it. In the current study the methodological considerations were further restricted by design of the related evaluative study.

Survey researchers have long been wary of conducting research among 'unfamiliar populations' and have tended to avoid 'sensitive' issues such as sexual practices and drug use. The result is that most of the HIV/AIDS surveys that have been conducted, have been designed for use among white, middle-class populations of gay men or students (Ostrow, 1993). As a result there were few resources to draw on for current study; with the target population not yet achieving high levels of education and often living in environments of poverty and social deprivation. This required some innovation in the approach to the current study given the context of the target population.

5.2.1 Sampling Considerations

The sampling method adopted here does impact on this study in a number of ways. Firstly, school-based studies obviously exclude youths that have left school, those that had never attended school and those that may have been absent on the day the study was carried out. However, if the information generated from the study is primarily to be

applied within a school context, mainly because of its suitability as a site to deliver interventions, the above concern is not very important.

Secondly, although the final level of sampling was random, it was not feasible for all the earlier sampling levels to have been random, as explained in more detail in the *Research Design, Sampling (Section 3.2.3)* above. This restricts the application of the study's findings from a point of generalisability. However, although not directly generalisable to any entire population, the researcher believes it would be fair to use the information produced by this study as a guide among equivalent populations; provided that HIV seroprevalence levels among the population were similar to those of the study population at the time this survey was carried out.

Thirdly, and closely related to the above two points, selecting standard eight Zulu speaking students further restricts the range of findings as well as their applicability. Although the factors considered when making this decision are comprehensively outlined in the Research design section, the key considerations were that standard eight Zulu speaking school students represented both sexually-active and non sexually-active members from a group at relatively high risk of contracting HIV.

Finally, there was no consultation with the students' parents, and only limited consultation with their teachers regarding the entire research process, but in particular the selection of the students and their consent to the process. However, bearing in mind the aims and methods adopted, together with the urgency demanded by the epidemic, it could be argued that the value added by taking a more consultative approach may have been negligible, particularly because time is crucial when faced with an epidemic of this nature.

5.2.2 Surveys as Method

A one-off survey used to determine baseline information among a population cannot be longitudinal by nature. Consequently one of the major limitations of this approach is the inability to reflect any changes that may happen in the population over time; rather the findings represent a slice in time.

Flisher et al (1993) observe that this consideration is particularly pertinent to the topic of adolescent beliefs and behaviour as these are typically transient in nature and may change significantly over a fairly short time frame.

A major challenge faced by AIDS researchers conducting surveys generally, and this study in particular, is the necessary reliance on self-reports of behaviour, especially because much risky behaviour occurs in private (Peterson & DiClemente, 1994). Sexual behaviour is complex and affected by a range of factors including "... physical desire and hormones; the need for acceptance; family, peer and personal values; the media and a myriad of other factors" (Kirby, 1995, p.403). It is therefore difficult to account for all the determinants that influence and impact on every individual's unique sexual values and behaviour.

The major concern with self reports of sexual behaviour is the question of validity. However, Peterson and DiClemente (1994) concede that although self reports of behaviour are not ideal, they provide one of the best measures available, because it is not possible to directly measure HIV risk behaviour.

Carael, Cleland & Adeokun (1991) note that some social scientists doubt whether surveys can generate valid and valuable data on sexual behaviour. The authors point out that similar concerns were expressed about family planning surveys done 30 years ago, which were later largely shown to be unfounded. Self reports of sexual behaviour can also be augmented by biological markers such as the prevalence of sexually transmitted

diseases or alternative measures such as the possession of condoms.

The two main threats to validity using reported sexual behaviour, namely under-reporting and over-reporting were discussed in more depth in relation to the findings of the current study above.

Regardless of all the criticisms of self reports, Standing (1992, p.481) makes an incisive point regarding reported sexual behaviour:

...while knowledge of the 'real' behaviour is of the utmost importance to reliable epidemiological projections of the spread of HIV, knowledge of people's sexual stereotypes and phantasies could be of considerable relevance to the design of health education messages.

5.2.3 Questionnaire Content

Besides the measurement challenges faced, the questionnaire failed to tap into some central issues. Space constraints, dictated by the need for the questionnaire to be completed in a standard class period, did restrict the areas of content that could be covered. The first major shortcoming in the content of the questionnaire was the failure to address factors such as alcohol consumption, smoking or drug use which are typically associated with risky sexual behaviour (Flisher et al, 1993; Johnson et al, 1990). This prevented an assessment of the role these risk co-factors may play among the study population.

A second shortcoming of the questionnaire may be that a definition of sex was neither given to nor elicited from the respondents. Although this may be regarded as a limitation, it left the initiative and interpretation with the respondents. The researcher believes that most students understood "sex" to mean heterosexual penetrative intercourse. Even though most of the questions were asked assuming a primarily heterosexual population, using the word "sex" alone allowed for the term to be

interpreted to possibly include homosexual relations. However, Flisher et al (1993) found only just over 1% of adolescents in the Western Cape reported a homosexual experience, which suggests that this concern may be negligible. Furthermore, nurses working across the region report that outmoded practice of 'ukusoma' or non-penetrative thigh sex is unknown among large portions of the youth and it is unlikely that it is widely practised.

The third notable limitation was the absence of a question that assessed whether the students understood the difference between HIV and AIDS. This would have been valuable, although it was purposefully decided that this distinction would not be made. This approach was adopted as the survey was conducted prior to any comprehensive educational efforts in the region, and it was believed most students would not have been familiar with HIV, but may have some rudimentary knowledge or experience with "AIDS". It was also assumed that focussing on more technical issues may confuse the students and confound the results. Consequently, "HIV/AIDS" is often used in this report to overcome statements that may otherwise have been technically incorrect.

A final concern is that the questionnaire did not assess the students belief that a vaccine or other medical cure will be found in the near future. The belief in the power of technological cures or preventions, essentially the individual or community's faith in medical technology, is valuable information. Many people may not see the need to change their behaviour because they believe modern science will provide a response to the disease. "This overconfidence in technological solutions to control AIDS and HIV transmission may reflect incorrect knowledge or be a form of denial of individual risk" (Johnson et al, 1990, p.46).

Although other areas of weakness may exist, it is felt that the four issues raised above represent the most obvious absences relating to the content of the questionnaire. These specific factors would need to be included within a future theoretical framework to

further enhance the predictive power of the model adopted to underpin this study.

5.3 Theoretical Considerations

The theoretical model used to underpin the questionnaire unfortunately only crudely approximated the rich variations inherent in the uniqueness of each individual's attitudes and behaviour. The Health Belief Model is therefore a necessarily simple model of complex processes. Some of the past weaknesses of the model, specifically neglecting the influence of emotions, peers and the social context have been largely addressed by the inclusion of Bandura's work in the most recent version of the model (Rosenstock et al, 1994).

All the constructs adopted in the model only provide one way of trying to understand the human functions assessed. Perhaps one of the main limitations of the Health Belief Model, which Rosenstock et al (1994) concede, is that it does not specify how the different constructs interact. They add that research needs to be done in this area which would result in an increase in the predictive utility of the model.

The main question that arises is whether separate constructs interact sequentially or multiplicatively, during the process of perception. Rosenstock et al (1994) suggest that we can perhaps anticipate that people would become alarmed first at the severity before considering susceptibility. They add, however, that if susceptibility and severity interact multiplicatively the resulting threat would be quite different.

In the context of HIV/AIDS these debates may not necessarily be an issue as everybody should perceive AIDS to be severe, but Rosenstock et al (1994) note that individuals do appear to vary in their perceptions of severity.

How is this theoretical analysis relevant to the global problem of AIDS?

The way in which an individual processes risk-based messages should have a large influence of the messages created in AIDS

campaigns...unfortunately there is no empirical research available specifically addressing this issue. (Rosenstock et al, 1994, p.14).

The intricacies of how the model actually operates have yet to be resolved and should provide a focus for much needed future research. Related to this topic is the lack of work done on how the inclusion of Bandura's concept of self-efficacy impacts on the model. This also needs to be clarified by further research.

5.4 Conclusions

Although this study has limitations, it does provide valuable information regarding the existing state of risky behaviour, and its psychosocial concomitants, relating to HIV/AIDS. This material produced is much needed for designing targeted and effective AIDS education programmes. Research presented at the 1996 International AIDS Conference, suggests that education programmes for well-defined groups have been enjoying substantial success (Abdool-Karim & Abdool-Karim, 1996). Although the material generated would be most appropriately used among the population from which the sample was drawn, it could be used in relation to students from similar socio-economic circumstances in other regions, where the HIV infection rate currently is, or will become, the same as the HIV infection rate was at the time this study was conducted. As the KwaZulu-Natal Province is at the forefront of the local epidemic, other regions are only currently reaching similar levels of infection that existed when this study was carried out. Perhaps most important, this study specifically points to certain crucial areas that require urgent attention to facilitate the adoption of healthier behaviour, thus assisting to reduce the spread of HIV/AIDS among the target population.

The gravity of the situation is highlighted by the finding that many of the students reported being sexually active, which was supported by peer reports, with most students tending to become sexually active in their mid teens. In addition, the students did not report using condoms to any notable degree, and alarmingly, almost a quarter of the sexually-active students reported receiving treatment for a sexually transmitted disease in the six months prior to the study. Consequently many of these students are clearly at risk of becoming infected with HIV, and many more will face a similar predicament in the near future.

While these circumstances exist, details of the factors that impact on risky behaviour can contribute to the success of interventions aimed at reducing HIV infection. The

students' existing knowledge, including general knowledge, misconceptions and modes of transmission, was on the whole found to be inadequate to provide a firm foundation for the formation of health promoting attitudes. As may have been expected, the students' knowledge was not notably influenced by the independent demographic variables. The findings relating to knowledge are not entirely unexpected when considered in the absence of targeted AIDS education programmes, together with the relatively poor access to much mainstream media. Consequently it appears that students try to make sense of HIV/AIDS by applying more familiar modes of disease transmission. The need for accurate information is evident. Johnson et al (1990) note that educational efforts aimed at providing knowledge alone may result in initial behaviour changes, but research has shown that knowledge alone seems to be insufficient to result in sustained changes. To achieve lasting healthier behaviour change, attitudes must also be addressed.

Relative to the other attitudes assessed in the current study, a large percentage of the students perceived the severity of HIV/AIDS. This however, does not yet appear to have been transformed into feelings of perceived personal susceptibility. Although Rosenstock et al (1994) suggest that individuals may not separate perceived severity and perceived personal susceptibility, combining the two concepts to form a 'perceived threat', it would appear that this has not yet happened among the population in this study.

The vast majority of the students have not yet perceived the immediacy of the threat, which operates in a similar way as 'cues to action', both being very influential in the adoption of preventive behaviours. Although significantly more sexually-active students were aware of the immediacy of AIDS, this finding only represents a marginal percentage of this group. The low percentage of the students acknowledging possible cues to action and the immediacy of the threat, is supported by the low reported condom use, as well as the low levels of self-efficacy relating to effectively carrying out preventive behaviours

which limits the chances of attempting or successfully carrying out these behaviours.

The influence of the further two elements of the Health Belief Model, namely perceived benefits and perceived barriers, would seem to be most significant once people facing risk have acknowledged the immediacy of a threat and cues to action. It is speculated that only at this point do students seriously consider adopting preventive or risk reducing behaviour. Nonetheless, perhaps the most prominent finding relating to the effectiveness of preventive measures, as an essential component of any perceived benefit of adopting a preventive measure, is that a notable portion of the students were undecided on the issues, suggesting a basic lack of knowledge. Without confidence in a preventive measure, the perceived potential benefit of adopting that measure is eroded.

Besides the misconception regarding illness caused by condoms, barriers to condom use did not appear to be predominantly logistical or related to embarrassment being a factor. Consequently, it seems that both information and an acknowledgement of the immediacy of HIV and cues to action are needed.

The relationship between reported sexual activity and perceived peer norms was quite marked. The findings point to the potential of using non sexually-active students to reinforce similar values among their peers, while allowing sexually-active students to promote preventive measures among their peers. This would most effectively be done according to an age cut-off, ideally before the majority become sexually active. The influence of peers must be seriously considered as an influential agent in determining adolescent behaviour.

A notable element of the respondents exhibited negative attitudes towards people with AIDS (PWAs). These attitudes are influenced by misconceptions, relating to everyday situations presenting a potential risk of contracting HIV. These misconceptions lead to erroneous fears and stigmatisation. Again, accurate knowledge is essential to permit the

formation of more appropriate attitudes, which can also ultimately encourage students to embrace healthier behavioural options.

The influence of the independent demographic variables, namely gender, locality (peri-urban/rural) and reported sexual activity, was varied, with locality being the least influential. Findings relating to cues to action and perceived personal susceptibility were not influenced by locality. This suggests no notable local variations in either the students' acknowledgement of the immediacy of the threat or the known prevalence of HIV/AIDS. The implication is that pupils in both peri-urban and rural localities are in a similar position, regarding these influences in the process of adopting risk reducing behaviours. However, as noted above, a greater proportion of students from the peri-urban areas reported being sexually active.

Although sexually-active students were more aware of their personal susceptibility, which tended to correspond with their reported personal behaviour, they were inclined to reject abstinence as a means of preventing the spread of HIV/AIDS. This appears to be a form of denial, as such a proposition challenges their current sexual activity. The marked difference between sexually-active and non sexual-active students, relating to cues to action, may suggest a certain naivete regarding sexual matters generally, and sexually transmitted diseases in particular, among the latter group. The differences between these two groups in relation to both sexual activity, numbers of sexual partners and condom use are once again supported by peer reports of behaviour.

The independent variable, gender, had a marked impact on the results. On the whole female students appeared to approach their sexuality with more prudence when seen in relation to their male counterparts. This included lower levels of reported sexual activity and higher levels of perceived self-efficacy in adopting preventive measures. Although females reported lower self-efficacy in relation to teaching peers to use a condom, they were less embarrassed about the prospect of using condoms. The apparent ability of

female students to take control of their sexuality may provide an important access point for the development of more widespread healthier attitudes and behaviour.

As South Africa's HIV epidemic is still relatively young, the focus of challenging the epidemic must be on primary prevention. The spiralling rate of HIV infection has increased the need for comprehensive and effective educational interventions. Although at a recent international AIDS conference much of the attention focussed on the development of a vaccine (Abdool Karim & Abdool Karim, 1996), behavioural prevention currently remains the only method for preventing the spread of HIV.

5.5 Recommendations

The recommendations made will be separated into those relating to future research and those regarding factors that will increase the effectiveness of HIV/AIDS behavioural prevention programmes.

5.5.1 Recommendations for Future Research

Regarding the broader theoretical basis underlying this study, research needs to be carried out on the constructs of the Health Belief Model and Social Cognitive Theory, in an attempt to determine both the interplay between the various elements of the models, as well as the relative importance of the various constructs in the process of behaviour change.

When the research focus is on providing descriptive information relating to a specific population, as is the case with this study, quantitative methods can be effectively complimented by qualitative methods. In particular, when considering the complexity of adolescent sexual behaviour, it is recommended that qualitative research be employed to further enhance existing understandings. Such approaches can provide more depth as well as help to identify very circumscribed attitudes and behaviours among a population.

5.5.2 Recommendations for Interventions

Crucial areas that should enhance the likelihood of any AIDS/HIV educational intervention being successful are:

1. An essential step is the provision of clear and correct information. This contributes to the formation of an accurate knowledge base which can function as a starting point for the development of healthier attitudes and behaviour.
2. Together with this initial requirement local seroprevalence levels need to be publicised. Perhaps more importantly, these statistics need to be given a human face so that people can see that members of their own communities are infected with HIV/AIDS. Local people infected with HIV need to come forward to facilitate the realisation of the immediacy of the threat.
3. Additionally, information on the projected growth of the epidemic may also help people to acknowledge the immediacy of threat which serve as an influential cue to action in adopting preventive measures.
4. Both the severity and the as yet incurable nature of the disease need to be emphasised in any HIV prevention interventions.
5. The majority of the students would benefit from skill-based interventions to increase feelings of self-efficacy, particularly relating to condom use. In addition, communicative skills such as assertiveness training and decision making can also facilitate risk reduction and enhance self-efficacy.
6. The differing approach females take towards issues surrounding their sexuality can be buttressed and built on.
7. To increase the effectiveness of interventions it would seem to be preferable to address perceived norms at age appropriate peer-group level. Healthy norms will be more successfully established among younger students before their sexual values, identities and behaviours become entrenched.
8. To be effective educational interventions need to be “community-based and wide scale” (Kelly and St. Lawrence, 1988, p.58). Consultation and involvement of the target community is essential at all stages of programme implementation,

from development onwards. This helps to ensure both the acceptability and suitability of the intervention, together with continued commitment to the programme. Such an approach also facilitates the active involvement of participants, not merely allowing them to be passive receivers of something from outside. As Pollak (1992, p.35) observes: “Community mobilization and a social climate of tolerance and solidarity are major elements for maintaining risk awareness and adequate behaviour”.

The often under-played exigency that the South African HIV/AIDS epidemic calls into being, demands immediate action from both health-service providers as well as people at grass-roots level. However, as a final note: The adoption of healthier behaviours does not occur in a vacuum. Any potentially successful AIDS prevention programme needs to be complemented by efforts to address adverse socio-economic conditions. Factors such as poverty, access to education and health care, male domination and disrupted family structures have been shown to be related to higher levels of HIV infection. These conditions present an equal challenge to that posed by the AIDS epidemic, in both magnitude and urgency.

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