

**THE INFLUENCE OF HIV KNOWLEDGE, BELIEFS,
AND RELIGIOSITY ON SEXUAL RISK BEHAVIOURS
OF PRIVATE SCHOOL ADOLESCENTS**

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KEYWORDS

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ABSTRACT

Despite the rapid increase of HIV infections among South Africa's adolescent population, many teenagers continue to partake in sexually risky behaviours. The theory of planned action accounts for the low correlation between information and behaviour by identifying the strong influence of behavioural intentions, attitudes towards the behaviour, subjective norms, and perceived control in determining behaviour change. This research project primarily aims to assess the levels of sexual risk-taking behaviours, HIV-related knowledge, beliefs, and religiosity of private school adolescents, as well as to determine the nature of the relationships between these variables. Placed within a quantitative framework, 123 "socio-economically advantaged" Grade 11 and 12 learners (ages 16 to 19) from two randomly selected private schools in Cape Town completed four self-administered questionnaires. The HIV-KQ-18 questionnaire measured HIV-related knowledge, the Sexual History Questionnaire (SHQ) assessed sexual risk behaviour, the Sexual Risk Behavior Beliefs and Self-Efficacy Scales (SRBBS) measured the effect of attitudes, norms, self-efficacy and barriers to condoms on sexual risk-taking and protective behaviour, and the Santa Clara Strength of Religious Faith Questionnaire (SCSORF) assessed strength of religious beliefs. The data were analysed using descriptive statistics, correlations and t-tests. Results showed that respondents engaged in lower levels of sexual risk-taking behaviour than those reported in South African literature from differing populations. A high level of HIV knowledge and reasonably high acceptance of safe-sex behaviours among respondents was also noted. No other significant differences were identified between this study and recent South African literature. The results of this study lend support to the relevance of the theory of planned behaviour. A strong need has been identified for HIV prevention programmes to be specifically designed to meet the needs of the target audience. It is, therefore, hoped that the results of this study can contribute positively towards the development of effective, target-specific HIV-prevention programmes.

DECLARATION

I declare that this thesis is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.




L. AITKEN

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CONTENTS

	<i>Page</i>
KEYWORDS	i
ABSTRACT	ii
DECLARATION	iii
ACKNOWLEDGEMENTS	iv
CONTENTS	v
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF GRAPHS	xi
	
CHAPTER 1: INTRODUCTION	
1.1 GENERAL INTRODUCTION	1
1.2 MOTIVATION FOR AND SIGNIFICANCE OF THE STUDY	2
1.3 AIMS	4
1.4 CONCLUSION	4
CHAPTER 2: LITERATURE REVIEW	
2.1 INTRODUCTION	6
2.2 HISTORICAL CONTEXT OF HIV/AIDS	6
2.3 DEFINITIONS	9
2.3.1 Risk behaviour	9
2.3.2 Safe-sex and safer-sex behaviours	9
2.3.3 Knowledge	10

2.3.4	Religiosity	10
2.3.5	HIV-prevention programme	10
2.4	SEXUAL RISK BEHAVIOUR	11
2.4.1	Southern African research on behaviour	12
2.4.1.1	Condom use	13
2.4.2	'Risk-behaviour syndrome'	15
2.5	KNOWLEDGE OF HIV-RELATED ISSUES	16
2.5.1	Southern African research on knowledge	16
2.6	RELIGIOSITY	17
2.6.1	Effect of religiosity on sexual behaviour	18
2.6.1.1	Coital debut	18
2.6.2	Effect of religiosity on attitudes	19
2.6.3	Religious affiliation	19
2.6.4	Age	20
2.6.5	Southern African literature on religiosity	20
2.7	ATTITUDES AND BELIEFS	20
2.7.1	Southern African research on attitudes and beliefs	21
2.8	SOCIO-ECONOMIC VARIABLES IN RISK BEHAVIOUR	23
2.8.1	Gender	24
2.8.2	Age	24
2.8.3	Race	25
2.8.4	Level of education	25
2.8.5	Location	26
2.8.6	Disposable household income	26
2.8.7	Awareness of serostatus	26
2.9	THEORETICAL FRAMEWORK	27
2.9.1.	Theoretical models of behaviour change	27
2.9.1.1	Health belief model	27
2.9.1.2	Social learning/cognitive model	28
2.9.1.3	Triandis model	29
2.9.1.4	Theory of reasoned action	29
2.9.1.5	Theory of planned behaviour	31

2.9.2.	Critique of theoretical frameworks	32
2.9.3.	Present study's theoretical framework	33
2.10	FUTURE DIRECTIONS	34
2.11	CONCLUSION	36

CHAPTER 3: RESEARCH METHODOLOGY

3.1	INTRODUCTION	37
3.2	RESEARCH QUESTIONS	37
3.3	METHOD	38
3.3.1	Sample	38
3.3.2	Measuring instruments	40
3.3.2.1	Cover page and demographics	40
3.3.2.2	The HIV Knowledge Questionnaire (HIV-KQ-18)	40
3.3.2.3	The Sexual Risk Behavior Beliefs and Self-Efficacy Scales (SRBBS)	41
3.3.2.4	The Sexual History Questionnaire (SHQ)	42
3.3.2.5	The Santa Clara Strength of Religious Faith Questionnaire (SCSORF)	42
3.3.3	Procedure	42
3.3.3.1	Pilot study	43
3.3.3.2	Actual study	44
3.3.4	Analysis of data	45
3.3.5	Ethical considerations	46
3.4	CONCLUSION	47

CHAPTER 4: RESULTS

4.1	INTRODUCTION	48
4.2	PSYCHOMETRIC PROPERTIES	48
4.2.1	Internal consistency	48
4.2.2	Construct validity of the SRBBS	51

4.2.3	Descriptive statistics	53
4.2.4	Frequencies	54
4.3	INTERCORRELATIONS	60
4.3.1	Correlations between HIV knowledge, beliefs and religiosity	60
4.3.2	Correlations between age and HIV knowledge, beliefs and religiosity	63
4.3.3	Correlations between self-assessment of HIV risk and HIV knowledge, beliefs and religiosity	63
4.4	THE t-TEST ANALYSIS	64
4.4.1	Gender differences in HIV knowledge, beliefs and religiosity	64
4.4.2	Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex	65
4.4.3	Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex with a regular partner	66
4.4.4	Differences in HIV knowledge, beliefs and religiosity for those who have had an HIV test	68
4.4.5	Differences in HIV knowledge, beliefs and religiosity for those who have personally known somebody with HIV	69
4.5	SUMMARY OF SIGNIFICANT RESULTS	70
4.6	CONCLUSION	72

CHAPTER 5: DISCUSSION

5.1	INTRODUCTION	73
5.2	RELIABILITY AND VALIDITY OF MEASURING INSTRUMENTS	73
5.2.1	Reliability of the HIV-KQ-18	73
5.2.2	Reliability of the SRBBS	74
5.2.3	Validity of the SRBBS	74
5.2.4	Reliability of the SCSORF	75

5.3	DESCRIPTIVE STATISTICS AND FREQUENCIES	75
5.4	INTERCORRELATIONS BETWEEN HIV KNOWLEDGE, BELIEFS AND RELIGIOSITY	76
5.5	CORRELATIONS BETWEEN SUBSCALES AND VARIABLES INCLUDING AGE AND SELF- ASSESSMENT OF HIV-RISK	78
5.6	COMPARISONS ACROSS SUB-POPULATIONS	78
5.6.1	Gender differences in HIV knowledge, beliefs and religiosity	78
5.6.2	Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex	79
5.6.3	Differences in HIV knowledge, beliefs and religiosity for those who have had an HIV test	79
5.6.4	Differences in HIV knowledge, beliefs and religiosity for those who have personally known somebody with HIV	80
5.7	RELEVANCE OF THEORETICAL FRAMEWORK	80
5.8	LIMITATIONS OF THE PRESENT STUDY	81
5.9	RECOMMENDATIONS FOR FUTURE RESEARCH	82
5.10	CONCLUSION	84
 REFERENCES		 85

APPENDIX 1 Questionnaire package

LIST OF TABLES

	<i>Page</i>
Table 3.1: Description of sample characteristics	39
Table 4.1: Internal reliability of the HIV-KQ-18, SRBBS and SCSORF	49
Table 4.2: Psychosocial variables of the SRBBS (and their abbreviations)	50
Table 4.3: Means and standard deviations for HIV knowledge, beliefs and : religiosity	53
Table 4.4: Sexual experience of respondents	55
Table 4.5: Heterosexuality and homosexuality	56
Table 4.6: Sexual activities (penetrative) within the last month	56
Table 4.7: Duration since last sexual encounter	57
Table 4.8: Sexual activity during last sexual encounter	57
Table 4.9: Methods of contraception for last sexual encounter	58
Table 4.10: Respondents' exposure to HIV and HIV-testing	60
Table 4.11: Intercorrelations between HIV knowledge, beliefs and religiosity	62
Table 4.12: Intercorrelations between age and HIV knowledge, beliefs and religiosity	63
Table 4.13: Intercorrelations between self-assessment of HIV risk and HIV knowledge, beliefs and religiosity	64
Table 4.14: Summary of means (and standard deviations within parentheses) and t-test results for gender.	65
Table 4.15: Summary of means (and standard deviations within parentheses) and t-test results for unprotected sex	66
Table 4.16: Summary of means (and standard deviations within parentheses) and t-test results for unprotected sex with regular partner	67
Table 4.17: Summary of means (and standard deviations within parentheses) and t-test results for having had an HIV test	68
Table 4.18: Summary of means (and standard deviations within parentheses) and t-test results for knowing somebody with HIV	69

LIST OF FIGURES

		<i>Page</i>
Figure 4.1	Final confirmatory factor model for sexual risk behaviour	51
Figure 4.2	Final confirmatory factor model for protective behaviour	52

LIST OF GRAPHS

		<i>Page</i>
Graph 4.1	Frequency of incorrect responses on HIV-KQ-18	54
Graph 4.2	Desire for sex in last sexual encounter	59
Graph 4.3	Desire for unprotected sex in last sexual encounter	59
Graph 4.4	Self-assessment of risk	59

CHAPTER 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

The Human Immunodeficiency Virus (HIV) is a retrovirus that almost inevitably results in the fatal Acquired Immune Deficiency Syndrome (AIDS). It is a relatively newly acquired virus that is only entering its third decade of public existence. However, despite only having been discovered in the early 1980s, it has rapidly developed into an epidemic that has since caused the death of millions of people of all ages and ethnicities (Van Dyk, 2001). To this day, HIV continues to deprive numerous people worldwide of the resources on which human development depends (UNAIDS, 2004).



A large variety of factors seem to contribute to the rapid spread of HIV. For example, research has shown that certain regions and population groups seem to be more vulnerable to the effects of HIV than others (for a variety of reasons). According to an international survey of HIV prevalence in 2004 by UNAIDS (2004), South Africa is the country with the highest rate of HIV in the world. Age also seems to be a large contributory factor in the spread of HIV. Current statistics show that 15 to 24 year olds are presently the age group most susceptible to HIV, both nationally and internationally (Thom, 2003; UNAIDS, 2004).

The link between HIV and adolescent behaviour is sometimes easily apparent. It has been universally accepted that adolescents' behaviour can place them at risk for adverse physical, mental, and socio-economic outcomes (Kaaya Flisher, Mbwambo, Schaalma, Aaro & Klepp, 2002). As stated by du Plessis, Meyer-Weitz and Steyn (1993), the problems of the breakdown in the knowledge, awareness, attitude and behaviour sequence present themselves dramatically in teenagers' sexual behaviour. This risk is both direct and indirect. For example,

research has shown how adolescents' inclination towards risk-taking behaviour increases the risk of participating in unsafe sexual practices. This, in turn, increases the risk of contracting HIV (Bugra, Amoko & Ncayiyana, 1996; Flisher *et al.*, 2000).

Harrison, Smit and Meyer (2000) suggested that, in order to gain some insight into the world of South African adolescent HIV-related risk behaviours, it is necessary to address the ways in which adolescents process HIV information and behave accordingly. Because knowledge alone cannot motivate behaviour, additional variables must also be taken into account (Du Plessis *et al.*, 1993; Shisana & Simbayi, 2003). These variables not only refer to the attitudes and values regarding the sexual behaviour, but also to additional protective factors such as religious behaviour (Lefkowitz, Gillen, Shearer & Boone, 2004).

1.2 MOTIVATION FOR AND SIGNIFICANCE OF THE STUDY



In a thorough review of studies of adolescent sexual behaviour in sub-Saharan Africa by Kaaya *et al.* (2002), the gaps in the literature were easily apparent. According to Kaaya *et al.* (2002), an average of only four English articles relating to adolescent sexual behaviour were published annually during the period of their literature review (i.e. 1987 – 1999). The authors identified additional deficits such as limited information on sexual practices other than vaginal penetrative sexual intercourse, the relevance of non-penetrative sexual behaviours among adolescents (and its implication for risk reduction interventions), the influence of gender roles in various cultural contexts, and factors influencing consistent use of condoms and contraceptives. As Kaaya *et al.* (2002) stated, “it is important for future studies to focus on understanding a wider range of existing sexual and risk reduction behaviours in [adolescents] including explorations of normative values, intentions towards protective sexual behaviours, and enhancers as well as barriers in the sub-Saharan African context” (p.158). These authors, along with Harrison *et al.* (2000), suggested that each country should attempt a comprehensive analysis of behavioural risk factors to facilitate the production of effective

intervention programmes. As stated by du Plessis *et al.* (1993), it is vital that health education programmes be adequately targeted, researched, planned and evaluated; not only because of the country's strong reliance on awareness and education programmes in the fight against HIV, but also because of the educational and socio-economic diversity within South African communities.

A number of South African articles have also highlighted potential areas of concern. For example, children in low HIV prevalence areas reported less knowledge of HIV and more negative attitudes towards people with HIV (Ndeki, Klepp & Mliga, 1994; Poetsoenen & Kontula, 1999). Many students have also reported feeling personally "immune" from HIV infection, linking vulnerability to HIV-infection with sexually deviant communities (MacPhail & Campbell, 2001; Strebel & Perkel, 1991; Wood & Foster, 1995). The perception that 'advantaged, white' communities tend to view HIV/AIDS as a 'disadvantaged', far-removed affliction is further exacerbated by the large amount of South African mass media advertisements and editorials in South Africa that are specifically aimed at 'black' communities. Out of the 34 studies reviewed by Eaton and Flisher (2000), only one focussed on "white-only" populations. It is, therefore, unknown whether white adolescents generally perceive themselves as at risk and how they behave accordingly.

Most studies focussing on sexual risk behaviour have followed the knowledge-attitude-behaviour paradigm (Eaton & Flisher, 2000). This, however, limits investigation into additional pertinent (and potentially protective) factors. For example, in a recent study by Lefkowitz *et al.* (2004), religious behaviour was found to be the strongest predictor of sexual behaviour. Although a strong link between adolescent sexual behaviour and religiosity (or strength of religious faith) has been well-documented in international literature, in South African literature the potential effect of religiosity on sexual behaviour and HIV knowledge remains unclear and inconsistent (Eaton & Flisher, 2000). This prompted Eaton and Flisher (2000) to request that future research attempt to identify possible links between religiosity and HIV knowledge.

This study will attempt to address some of the deficits and inconsistencies mentioned above. In order to achieve this, the focus of the study will be on white adolescents from traditionally “privileged” private schools. The study is set within a quantitative framework as it aims to answer the questions “*whether*” and “*to what extent*” rather than “*how*” (MacPhail & Campbell, 1999).

1.3 AIM

This study is interested in establishing a baseline assessment of the private school population (in the Western Cape) for further studies in the field of sexual risk behaviour.

The primary aims of the study are:

- a) to assess the levels of sexual risk-taking behaviours, HIV-related knowledge, beliefs, and religiosity of private school adolescents; and
- b) to determine whether significant relationships exist between HIV knowledge, beliefs (including attitudes, norms, self-efficacy and barriers to condom use) and strength of religious faith.

A secondary aim of the study is:

to assess gender differences in sexual risk behaviours, as well as in levels of HIV knowledge, beliefs and religiosity.

1.4 CONCLUSION

In this introductory chapter, the context of this study was introduced, along with the motivation and aim of the study.

In the following chapter, relevant literature regarding HIV will be discussed, specifically pertaining to sexual risk behaviour. The literature will then be structured within a theoretical framework.

The third chapter will outline the research methodology of the study, including the research questions, sampling methods, data collection and data analysis. Ethical considerations will also be discussed.

In the fourth chapter, the results of the statistical analyses will be presented, including the reliability and validity of measuring instruments, descriptive statistics, correlations and t-tests.

These results will then be discussed in greater detail in the fifth and final chapter, with the results being compared to previous studies. The shortcomings and limitations of the study will be examined, as well as implications and recommendations for future research.



CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter the relevant literature regarding pertinent issues under investigation in this study will be presented. The historical context of HIV will be outlined as well as definitions of relevant terminology. Significant articles and studies will then be discussed in relation to topics including sexual risk behaviour, knowledge of HIV and safe-sex behaviours, religiosity, and attitudes and beliefs about HIV-related matters. Following this, theoretical frameworks will be explored, and the chapter will end with a brief look at the impact of these variables on current and future intervention strategies.



2.2 HISTORICAL CONTEXT OF HIV/AIDS

In an attempt to understand the full impact of HIV upon the human population it is necessary to consider the current prevalence statistics. More than 20 million people have died of AIDS since the first documented case in 1981 (UNAIDS, 2004). Sub-Saharan Africa comprises of roughly 10% of the world's population, yet it is home to more than 60% of the world's HIV-positive population (UNAIDS, 2004; Van Dyk, 2001). Southern Africa, unfortunately, remains the worst affected region in the world, with South Africa having the highest HIV prevalence rates worldwide. There seems to be no sign of the epidemic declining (UNAIDS, 2004). According to previous surveys by the Johns Hopkins Aids Service (Quinn, 2002) and the HSRC (Shisana & Simbayi, 2003), approximately 11% of South Africans are living with HIV/AIDS; thus directly affecting 5 million South Africans and indirectly affecting millions of others. Crucially, the largest HIV-positive group in South Africa (aged 15 – 45 years) is also the

country's most economically active age group (Reddy, Meyer-Weitz, van den Borne & Kok, 2000).

An HIV "landmark" reached recently was that, for the first time in the history of the epidemic, more women than men are being infected with HIV in sub-Saharan Africa (Knox, 2003; Shisana & Simbayi, 2003). Women now account for nearly half of all people worldwide living with HIV and, of the estimated 5.3 million people living with HIV in South Africa, almost 3 million were women. On average there are 14 women living with HIV for every 10 infected men and the gap is growing (Shisana & Simbayi, 2003; UNAIDS, 2004).

Women, particularly those between the ages of 15 and 19, are two to four times more likely to become infected with HIV through unprotected heterosexual contact due to various physiological, socioeconomic and cultural reasons (Ickovics & Yoshikawa, 1998; Kalichman, 2003; UNAIDS, 2004; Van Dyk, 2001). Women are receptive sexual partners and therefore more vulnerable to HIV infection in many ways. Physiologically, a woman has a large cervix surface area that is lined with mucosal tissue. These mucous membranes are rich with blood vessels and cells that can be infected with HIV. Considering that this lining is easily prone to tearing, and that the genital tract is exposed to semen (which carries high concentrations of HIV) for longer periods, a woman's risk of contracting HIV during unprotected sexual intercourse is significantly greater than that of a man. In light of the fact that, historically, more men are infected with HIV than women, the probability of a sexual partner being HIV-positive is therefore greater for heterosexual women (Ickovics & Yoshikawa, 1998; Kalichman, 2003; Van Dyk, 2001).

Socioeconomically and culturally, women are frequently oppressed and often expected to be socially and sexually subordinate. Women are commonly discriminated against with regard to education, employment, health care and land. This dependence and subordination make it extremely difficult for women to assert themselves sexually as they often have little control over prevention sexual

practices (Ickovics & Yoshikawa, 1998; UNAIDS, 2004; Van Dyk, 2001). Additional factors that increase vulnerability include cultural norms regarding (or frequency of) sexual abuse and rape.

When accounting for age, individuals between 15 and 24 years are among the most susceptible age group presently, with almost 7 million young women and 2.2 million young men living with HIV at the end of 2004 (Thom, 2003; UNAIDS, 2004). As evident in a study by Mathews, Guttmacher, Hani, Antonetti and Flisher (2000-2001), 25% of South African women presenting at public health clinics for prenatal care tested positive for HIV; the large majority of them being in their twenties. Unfortunately, most of these (and other) young adults are not aware of their HIV-positive status, thus dramatically increasing the risk of unwittingly passing the virus on to vulnerable others (UNAIDS, 2004).

With one-eighth of the world's HIV-infected individuals living in South Africa, it is clearly evident that the South African youth is in strong need of an effective HIV prevention programme. However, what makes a prevention programme effective? Research has consistently shown that it is naïve to infer that acquisition of knowledge will automatically lead to behaviour change (e.g. Strebel & Perkel, 1991). It is vital for researchers, educators and parents alike to gain an accurate and comprehensive understanding of mediating variables that may be hindering South African adolescents from acting according to their knowledge of HIV (such as religion, gender, age and race; as will be discussed later). South Africans cannot rely on foreign research to dictate the direction of HIV behaviour change. Intervention strategies are culturally specific (Eaton, Flisher & Aaro, 2003; Fishbein, 2000). One cannot, for example, apply an intervention strategy that presumes intention to act, when the audience has no such intention. The same can be said for individuals who have "intention" yet lack skill or have environmental restrictions. More appropriate intervention programmes need to be devised for the specific audience in question. In the discussion that follows, relevant international and local literature will be discussed in relation to adolescent sexual and/or risk behaviours and how it relates to the rapid spread of HIV.

2.3 DEFINITIONS

Definitions of some regularly used (and often ambiguous) terms and phrases will be defined for the purpose of this study.

2.3.1 Risk behaviour

Kraemer, Kazdin, Offord, Kessler, Jensen and Kupfer (1997, p.338) defined a risk factor as “a measurable characterisation of each subject in a specified population that precedes the outcome of interest and which can be used to divide the population into two groups (the high-risk and the low-risk groups that comprise the total population)”. The ‘subject’ in this case can refer to an individual or specific groups (e.g. school), with ‘characterisation’ also referring to the individual or the subject’s context.

Within this study, risk behaviours refer to activities that place an individual or group directly or indirectly at risk for contracting HIV. Direct risk behaviours include activities such as unprotected heterosexual and homosexual sex, multiple sexual partners, sex with strangers or acquaintances, and sharing drug needles (Canterbury, Clavet, McGarvey & Koopman, 1998; Kalichman, 2003). Indirect risks include drinking alcohol, smoking, the use of illicit drugs, and other such activities that may lead to impaired judgement. According to UNAIDS (2004), the main mode of transmission in Sub-Saharan Africa is heterosexual transmission. Therefore, for the purpose of this study, the focus will be specifically on sexual risk behaviours that place individuals at risk for contracting HIV (e.g. unprotected anal sex, vaginal sex, oral-genital sex, and multiple partners).

2.3.2 Safe-sex and safer-sex behaviours

Safe-sex behaviours are sexual activities that contain no risk of transmitting HIV from one person to another. In other words, there is no mucous-membrane-to-mucous-membrane or blood-to-blood contact (Kalichman, 2003). Examples of

safe-sex behaviours include hugging, kissing, heavy petting and masturbation. Safer-sex, however, refers to sexual activities that pose a reduced risk of contracting HIV. Although the chances of transmitting HIV are dramatically reduced, the activities retain an element of risk (Kalichman, 2003). Examples include oral sex (without ejaculation) and using latex condoms in penetrative sex (which still has an element of risk because condoms can break).

2.3.3 Knowledge

Knowledge in this study refers specifically to issues of HIV/AIDS; including topics such as modes of transmission, preventative measures, risk behaviours and implications. Knowledge differs from simple awareness and is highly differential and multifaceted (du Plessis *et al.*, 1993). Even simply creating awareness and acquiring knowledge are influenced by different intermediate variables, such as “selective perception, the interpretation of messages and selective access to sources of information” (du Plessis *et al.*, 1993, p.4). Although it will be discussed in detail later, it is important to remember at the onset that there is no simple correlation between knowledge and behaviour (du Plessis *et al.*, 1993).

2.3.4 Religiosity

In the context of this study, religiosity refers more specifically to strength of religious faith rather than belief of a specific denomination or affiliation (as explained in Eaton & Flisher, 2000; Nicholas & Durrheim, 1995; Serlo & Aavarinne, 1999; Strebel & Perkel, 1991).

2.3.5 HIV-prevention programme

An HIV-prevention programme is a form of health promotion intervention. Green and Kreuter (1991) defined health promotion as “any planned combination of educational, political, regulatory, and organisational supports for actions and

conditions of living conducive to the health of individuals, groups, or communities” (in Kok, Kolker, de Vroome & Dijker, 1998, p.19). Health promotion has three inherent primary goals, namely (1) primary prevention, (2) early detection and treatment, and (3) patient care and support (Kok *et al.*, 1998). Other examples of health promotion include health resource provision (e.g. testing and clinic facilities) and regulation (e.g. compulsory HIV education). It stands to reason that the more comprehensive a health promotion programme is, the more effective it is likely to be.

2.4 SEXUAL RISK BEHAVIOUR

International studies have consistently shown a general trend of high sexual risk-taking behaviours (Canterbury *et al.*, 1998; Pattullo *et al.*, 1994). This includes a lack of willingness to use condoms, or using condoms ineffectively and inconsistently (Canterbury *et al.*, 1998). Surprisingly, literature reviews have revealed that this high amount of sexual risk-taking often persists despite high levels of HIV knowledge and positive attitudes towards safe-sex behaviours (Canterbury *et al.*, 1998; Hancock, Blanche, Santos, Nguyen, Nguyen & Bright, 1999; Lance, 2001; Pattullo *et al.*, 1994).

A positive correlation was found between sexual risk-taking and ‘general’ risk-taking behaviours, such as smoking, alcohol use, drug use and poor school performance. It was established that adolescents who engage in general risk behaviours, such as alcohol use, are much more likely to engage in unsafe sexual practices (Canterbury *et al.*, 1998; Edwards, 1992). It was interesting to note that many heterosexual students who participated in risky sexual encounters were also able to accurately appreciate their susceptibility towards HIV infection, and thus had resultant anxiety. Although most students said they would use condoms if their partner suggested it, most agreed that they would rarely discuss safer sex with their partner. The literature review also concluded that the college students with higher levels of sexual self-efficacy were linked with a lower risk for HIV infection (Lewis, Malow & Ireland, 1997).

2.4.1 Southern African research on sexual risk behaviour

A decade ago Nicholas (1994) stated that South African research in human sexuality was in its infancy. This sentiment has been echoed by other authors who have attempted to compile comprehensive literature reviews on sexual behaviour. A thorough review of the literature (in 2000) on sexual behaviour of school students in sub-Saharan Africa yielded 47 viable articles (Kaaya *et al.*, 2002). As the authors stated, this is alarmingly low in light of the high prevalence rates of sexual risk-behaviours and inconsistent condom usage. Of the literature that has been compiled to date, it seems that South African research does not differ radically from international research (Eaton & Flisher, 2000; Swart-Kruger & Richter, 1997).

Flisher, Reddy, Muller and Lombard (2003) have found that the proportion of sexually active students has increased since 1990. Literature reviews of studies about adolescents' sexual behaviours concluded that adolescents of both genders typically display early age of onset of sexual behaviour; the majority of whom have unprotected intercourse with more than one lifetime partner (e.g. Kaaya *et al.*, 2002; MacPhail & Campbell, 2001; Visser, 2003). Analysis of the articles revealed that the mean age of onset of sexual intercourse was seen to typically be 12 – 15.5 years for boys and 13.6 – 15.9 for girls. A recent South African study in 2002 similarly identified a trend towards earlier sexual debut amongst younger respondents. Whereas the median age at first sex for respondents over age 25 years was 18 years, the median age for sexually active 15-24 year olds was 16 years (Shisana & Simbayi, 2003). Sexually active boys uniformly reported earlier ages of onset than their female counterparts. Interestingly, a study of black South African university students found that those respondents who learnt sexual information from their parents were more likely to delay their first sexual encounter until an older age (Nicholas & Tredoux, 1996).

Although many articles showed that adolescents generally engage in a wide range of sexual activities (i.e. activities not limited to vaginal intercourse), the turnover

of sexual partners seems to fluctuate. For example, an older study by Flisher, Ziervogel, Chalton, Leger and Robertson (1993) revealed a high turnover of sexual partners, showing that significantly more younger adolescents (43%) know their sexual partners for less than a week, in comparison to their older counterparts (12%). In stark contrast, a recent study by Shisana and Simbayi (2003) reasoned that partner turnover among youth and adults does not appear to be high. Nearly 40% of all respondents in the study had either never had sex or had abstained from sex in a 12 month period. Among sexually active respondents, most reported having had a single sexual partner during the past 12 months (91.3%). This was more so for females than for males (Shisana & Simbayi, 2003).

2.4.1.1 *Condom use*

Southern African research on condom use and sexual risk taking is similar to international literature in many aspects. Condoms are seen as a threat to masculinity and pleasure, and are often viewed as only necessary for those already infected with HIV or STD's. They differ, however, in the importance of fertility for South African men and their resultant opposition of condoms for their contraceptive properties (Abdool Karim, Abdool Karim, Preston-Whyte & Sankar, 1992; MacPhail & Campbell, 2001).

According to Shisana and Simbayi (2003), the Department of Health distributed over 267 million free condoms in 2001. A recent national study also showed that the levels of condom use (57.1% for males and 46.1% for females) were higher than in similar studies completed previously (Shisana & Simbayi, 2003). Additionally, the rate of condom use at last sex has increased among all women, with the most dramatic increase being among non-urban women. There was, however, a downward trend of condom use among both youth and adults who have had more than three sexual partners in the past year (Shisana & Simbayi, 2003).

Some studies, however, differ somewhat from the above-mentioned study. For example, Kaaya *et al.* (2002) found that the proportion of sexually active

adolescents using condoms consistently range between 10% and 48%, whereas use of condoms during last sex ranges was between 8% and 60%. These results were generally lower among females respondents. This is possibly because women typically use other contraceptives and condoms are predominantly seen as only a means of contraception (as mentioned in Wood & Foster, 1995). Buga, Amoko and Ncayiyana (1996) concluded that 62% of the sexually active boys in a rural school in Transkei had used condoms and nearly a third reported enjoying using them. Only 19.4% of females, however, reported using condoms and the teenage pregnancy rate was 31.3%. In a study by Nicholas (1998), over 48% of the South African tertiary students in the study had never used condoms, and many more admitted to not using contraception during their first sexual intercourse. Much smaller numbers of students were identified as using condoms with every sexual encounter (from 20.7% to 27.5). This result was extremely similar to an older study in Natal, South Africa, in which adolescents were shown not to use condoms to a significant degree (Abdool Karim *et al.*, 1992). Of those who were sexually active (34% of the studied population), only 47% of those had used a condom at least once. The somewhat alarming statistic was that none of these adolescents had used condoms during every sexual encounter.

In practical terms, additional factors may be impeding the consistent use of condoms. As noted by Reddy *et al.* (2000), an average of only 7.7 condoms are being distributed per sexually active person per year. Additionally, health workers seem reluctant to promote condom use, possibly because of their own negative attitudes towards condoms or to condom-users (e.g. associating them with promiscuity, infidelity and sickness).

This reluctance to use condoms, however, is particularly worrisome in light of the strong association between HIV and sexually transmitted infections, as having a history of an STI increases the likelihood of becoming HIV positive (Shisana & Simbayi, 2003). Prevalence rates of STIs, however, differ between studies. For example, a recent study by Shisana and Simbayi (2003) reported

that 2.6% of their respondents were treated for STIs within the last 3 months (with the prevalence being 3.9% among men and 1.7% among women). An older study by Strebel and Perkel in 1991, however, identified that as many as 18% of their respondents were treated for STI's within the nine months prior to the study (with over a third of these being treated more than once in the same time frame). The same study revealed that more than half of the 668 respondents had never used a condom despite having knowledge about their necessity. Despite the difference in reported STI prevalence rates, both authors acknowledged that due to STI's the high risk of HIV infection remains (Shisana & Simbayi, 2003; Strebel & Perkel, 1991)

2.4.2 'Risk-behaviour syndrome'

According to research over the last decade, it is evident that teenagers all over the world typically display a similarly varied range of HIV-related risk behaviours and attitudes (Canterbury *et al.*, 1998; Eaton & Flisher, 2000; Edwards, 1992; Hancock *et al.*, 1999; Pattullo *et al.*, 1994). Interestingly, Fortenberry (1997) found that American adolescents who have three or more sexual partners were typically also involved in additional risk behaviours, such as alcohol use or inconsistent seat belt use (irrespective of demographics including race, gender or socioeconomic status).

Flisher *et al.*'s (2000) South African research expanded on this concept of 'risk behaviour syndrome'. The authors found significant relationships between various pairs of risk behaviours (included smoking marijuana, alcohol use, intercourse, fighting, cigarette smoking, and suicidal ideation or attempts) in children and adolescents. Flisher *et al.* (2000) went on to postulate that the probability of adverse outcomes from one risk behaviour may be increased with the presence of other risk behaviours. This covariation between risk behaviours has alarming implications for adolescents worldwide, particularly if one extends this argument to HIV. It implies that "normal" and sometimes condoned teenage experimentation (such as drinking or smoking) exponentially increases the risk of contracting HIV (via sexual or drug use).

Recent research by Flisher and Chalton (2001), however, was among the first to contradict that contraceptive non-use is a component of risk behaviour syndrome. Their study found that contraceptive non-use was not significantly associated with the use of cigarettes, alcohol or inhalants, perpetration or being a victim of violence, exposure to risk of physical injury, or suicidality. On the basis of this information, Flisher and Chalton (2001) hypothesised that the failure to refrain in risky sexual behaviours and use contraceptives may be due to different psychological roots than those used in other risk behaviours.

2.5 KNOWLEDGE OF HIV-RELATED ISSUES

Better knowledge of HIV/AIDS has been shown to be a necessary, although insufficient, condition of prevention behaviours and positive attitudes to people with HIV/AIDS (Shisana & Simbayi, 2003). The large majority of international literature has shown reasonably high levels of knowledge about HIV yet persistent misconceptions; from methods of HIV transmission to risk behaviours and preventative measures (Brown, Lourie, Flanagan & High, 1998; Hancock *et al.*, 1999; Key, DeNoon & Boyles, 1996; Poetsoenen & Kontula, 1999; Robinson, Thompson & Bain, 2001). An American literature review of studies dealing with the psychosocial correlates of HIV risk found that college students often retain misconceptions about HIV despite being highly knowledgeable about the fundamentals of HIV (Lewis, Malow & Ireland, 1997). It has also been identified that adolescent males are generally less knowledgeable about HIV than their female counterparts; particularly so if they are sexually active (Canterbury *et al.*, 1998; Edwards, 1992; Hancock *et al.*, 1999). Although the misconceptions differed among varied populations, their communal destructive potential is clear to see, particularly in relation to the high reported level of risky sexual behaviours.

2.5.1 Southern African research on knowledge

According to Akande (2001), respondents (students) of both genders were less knowledgeable about HIV transmission and held less favourable attitudes towards

safe-sex than their 'Western' counterparts. Knowledge, Attitude and Behaviour studies within a number of different South African communities (including tertiary institution students, inhabitants of informal settlements, and the "general" population) have consistently shown a general lack of knowledge about HIV/AIDS, as well as a number of alarming misconceptions (du Plessis, Meyer-Weitz & Steyn, 1993; Lindegger & Wood, 1995; Strebel & Perkel, 1991; Wood & Foster, 1995). For example, while Peltzer, Cherian and Cherian's (1998) study of rural secondary school students in South Africa's Northern Province revealed a reasonably high level of HIV/AIDS knowledge (75% accuracy), 18% of the students still believed that AIDS does not exist and 19% thought that there is a cure for AIDS. Interestingly, students who knew people with AIDS or had recent exposure to media information on AIDS did not have more knowledge than their "unexposed" peers (Strebel & Perkel, 1991).

Recent literature by Shisana and Simbayi (2003) similarly found a low proportion of respondents with incorrect knowledge, although the proportion of uncertain responses remained high. Common misconceptions included not knowing breastfeeding can result in mother-to-child HIV infection, and thinking that kissing transmits HIV. There was also a relatively high proportion of uncertain responses about whether HIV causes AIDS and about the myth that HIV can be cured by having sex with a virgin. Although no gender difference was identified with regards to level of HIV knowledge, respondents who were younger, more educated, urban, employed, and/or with a higher household socio-economic status were generally more informed about HIV/AIDS. The white population was the most informed population group (Shisana & Simbayi, 2003). Certain South African sub-populations, such as those with poor media coverage, were shown to be inadequately exposed to the flow of information and spread of knowledge about HIV/AIDS (Shisana & Simbayi, 2003).

2.6 RELIGIOSITY

Research has consistently shown for many decades that religious involvement and adolescent sexual behaviour and attitudes are strongly correlated (e.g. Hollander,

2003; Meier, 2003; Nonnemaker, McNeely & Blum, 2003; Steinman & Zimmerman, 2004; Sterk, Klein & Elifson, 2004; Thornton & Camburn, 1989; Woodroff, 1985). In a recent study by Lefkowitz *et al.*, (2004), religious behaviour was found to be the strongest predictor of sexual behaviour. In light of this, it has been hypothesised that there is great potential for faith-based initiatives in preventing STDs and HIV-infection (Hollander, 1993; Smith, 2004).

2.6.1 Effect of religiosity on sexual behaviour

According to Nonnemaker *et al.* (2003), religiosity is a protective factor for a number of adolescent health-related outcomes, including sexual behaviour. Most literature seems to indicate that (high) religiosity decreases the likelihood of sexual risk behaviours. For example, a study of high school students by Steinman and Zimmerman (2004) showed that religious activity limits the development of certain types of risk behaviour among African American youth, even after controlling for reciprocal effects. In a study by Sterk, Klein and Elifson (2004), religiosity was one of five factors associated with sexual behaviour (with low religiosity equating to greater sexual activities). A recent South African study also showed that those who describe religion as very important in their lives are significantly more aware of their serostatus than 'non-religious' others (Shisana & Simbayi, 2003).

Some research studies, however, have revealed conflicting results. For example, in a study by Baldwin and Baldwin (1988), religious socialisation did not appear to decrease risky sexual behaviour among those religious students who were sexually active at the time. Additional studies have also shown that, although religiosity delays first sexual intercourse, once sexual activity begins it frequently deters the use of effective contraceptive methods, thus increasing the probability of HIV-infection (Shornack, Ahmed, Studer & Thornton, 1989; Studer & Thornton, 1987).

2.6.1.1 *Coital debut*

A study by Rostosky, Regnerus & Comer Wright (2003) supported other longitudinal studies by showing that religiosity delays first sex (“coital debut”) directly and indirectly, even when controlling for demographics. Indirect influences include a sexual ideology based on anticipated negative consequences of sexual intercourse. Similarly, Hardy and Raffaelli (2003) found that teenagers who reported higher levels of religiosity were more likely to delay sexual involvement than those with lower levels of religiosity. Interestingly, Meier’s (2003) longitudinal study showed no significant change in religiosity for those who had sex for the first time during the period of the study when compared to those who remained virgins.

2.6.2 Effect of religiosity on attitudes

In comparison to that of sexual behaviours, analyses of the effect of religiosity on attitudes about safe sex behaviour yielded somewhat inconsistent results. Hollander’s (2003) study of Afro-American teenagers (who were predominantly Baptist) revealed that those teenage women who participated regularly in religious or spiritual activities were less likely to engage in sexually risky behaviours than their non-religious colleagues were. They were also more likely to hold attitudes that lower their risk of acquiring STDs, including more positive attitudes about condom use and feeling able to communicate with their partners and refuse unsafe sexual encounters. Thornton and Camburn (1989), however, found that young people who attended church frequently and who valued religion in their lives had the least permissive attitudes and were less experienced sexually than their non-religious counterparts. A qualitative study of young Nigerian migrants by Smith (2003) similarly revealed that many of the respondents did not perceive significant personal risk because they shaped the risk of AIDS in ethical and moral terms. Immorality and danger were projected onto God and imaginary others (e.g. risk of HIV infection is in the hands of God). The ideology was often fatalistic despite knowledge of condoms being a primary protective measure against HIV. Interestingly, it was found that adolescents’ own religiosity and

attitudes are more important predictors of sexual behaviour than those of their parents (Meier, 2003).

2.6.3 Religious affiliation

Differences based on religious affiliation or religious identities have been inconsistent (Lefkowitz *et al.*, 2004). Gray (2004) found a negative relationship between HIV prevalence and being Muslim, although he also stated that additional studies have given mixed evidence. According to McIntosh and Alex Thomas (2004), predominately Muslim and Christian Orthodox countries generally had lower prevalence of HIV/AIDS.

2.6.4 Age

In a study by Lefkowitz *et al.* (2004), older youth reported less importance of religiosity in their daily lives and fewer religious behaviours than their younger counter-parts. This supports previous studies that have shown a decrease in religious behaviour during the transition to adulthood (according to Lefkowitz *et al.*, 2004).

2.6.5 Southern African literature on religiosity

According to Eaton and Flisher (2000), religiosity is possibly a crucial element in sexual behaviours that is seldomly investigated within South African contexts. Whereas international literature has shown a direct link between religiosity and HIV 'ignorance', South African literature is more ambiguous. South African literature generally agrees that religious youth are less likely to be sexually active and may therefore feel that they are not at risk from contracting HIV. This may lead to a lack of interest in HIV-related information (and sexual issues in general). According to Eaton and Flisher (2000), however, some research indicated that religious youth are less informed than their non-religious peers, while others have shown that religious youth are quite well informed. It was suggested by Eaton and

Flisher (2000) that future research in South Africa should attempt to identify possible links between religiosity and HIV knowledge.

2.7 ATTITUDES AND BELIEFS

As mentioned earlier, many studies have shown positive attitudes towards safe sex behaviour (such as condoms). This, however, frequently does not translate into a behaviour change (Canterbury *et al.*, 1998; Pattullo *et al.*, 1994). Lewis, Malow and Ireland's (1997) review showed that many American heterosexual students held 'neutral-to-negative hedonistic' and practical concerns about the use of condoms. Anxiety about HIV was also often identified, although almost half of the respondents reported rarely, or never, using condoms (Brown *et al.*, 1998; Ellen, Boyer, Tschann & Shafer, 1996).

As mentioned in MacPhail and Campbell (2001), international literature on adolescent sexuality has identified common themes in adolescents' discourse about sexuality. These themes include female sexuality, gender power imbalances (particularly in negotiating safe sex behaviours), male sexuality, and peer norms and values. Additional themes include personal 'immunity', in which the individual (or group) feels that s/he is immune from negative consequences, often in spite of knowledge to the contrary (Poetsoenen & Kontula, 1999). Although this remains the general consensus, some studies have, however, differed from the 'norm'. For example, Redjimi and Lert (1993) identified a lack of stereotyping in their study. The respondents did not significantly associate AIDS with drug addicts or gays; instead associating it with the "general" population.

2.7.1 Southern African research on attitudes and beliefs

The majority of the respondents in the study by Shisana and Simbayi (2003) expressed acceptance of people with HIV/AIDS. A number of socio-demographic variables were associated with less stigmatisation and more positive attitudes of respondents towards people with HIV/AIDS, including an urban location, higher

level of education, employment, higher socio-economic status, and being white or Indian.

Peltzer (2002) identified a significant relationship between the age of first intercourse and susceptibility to HIV and attitudes and beliefs about condoms. When examining beliefs and attitudes to safe sex behaviours, Strebel and Perkel (1991) found that more than half of the respondents at the tertiary institution denied feeling personally vulnerable; not considering themselves at risk of contracting HIV. So, despite knowing that a change in behaviour can decrease the risk of infection, only a third of the respondents reported any actual change.

In a study conducted by Nicholas (1998), despite students portraying positive attitudes about condoms, a number of factors were identified as obstacles to consistent condom use. These factors included its connotation with distrust, embarrassment factor, expense, cultural and religious conflicts, unreliability, and discomfort. Stereotypes about high-risk groups were also evident, particularly in relation to homosexuals. Wood and Foster (1995) showed similar results (consistent with the literature), in which individuals linked vulnerability to HIV-infection with sexually deviant communities. Both genders also disliked using condoms as it was said to be less intimate; ruining the atmosphere and decreasing the physical sensation of a sexual experience.

In addition to these factors, Wild and Flisher (in press) showed that low self-esteem in the family and school contexts and high self-esteem in the peer domain were significantly independently associated with multiple risk behaviours in adolescents of both sexes. Low body-image self-esteem and global self-worth were also uniquely associated with risk behaviours in girls, but not in boys.

Over the last two decades, focus group discussions on condom-related issues have consistently identified that many adolescents view condoms with scepticism, particularly as they limit sexual pleasure, are associated with a lack of trust in the partner's fidelity, and are sometimes associated with sexually transmitted

diseases. Additional themes included condoms challenging the male ego, as they hinder “proving fertility” (Abdool Karim *et al.*, 1992). Wood and Foster (1995) identified seven specific themes regarding condom use: negative attitudes towards condoms, condoms used predominantly as contraceptives (rather than a method to prevent HIV infection), perceived invulnerability, stage of relationship and condom use (i.e. being more difficult to use in long-term relationships), gender-role expectations (e.g. “real men don’t wear condoms” and “silly girls and slags”), male-female power relations, and a women-centred discourse on sexuality. MacPhail and Campbell (2001) elicited similar themes among township youth, namely a lack of perceived risk (“personal immunity”), peer norms, condom availability, adult attitudes to condoms and sex, gender power relations and the economic context of adolescent sexuality. Abdool Karim *et al.* (1992), and Sherman and Bassett (1999) highlighted similar issues of stigma and gender imbalances (e.g. the machismo associated with “taking” a girls virginity; girls being responsible for avoiding sex).

2.8 SOCIO-DEMOGRAPHIC VARIABLES IN RISK BEHAVIOUR



A number of additional factors have been identified as possible factors influencing sexual risk-taking, such as age of menarche and single-parenting (Van Coeverden de Groot & Greathead, 1987). All possible confounding variables need to be considered when examining risk behaviours to prevent the transgression of generalisation. For example, a comparison study between American and British populations revealed that American respondents showed greater variability in sexual behaviour, a higher rate of STD, lower condom usage among men, and less tolerant opinions about sexual behaviour than their British counterparts (Micheal, Wadsworth, Feinleib, Johnson, Laumann & Wellings, 1998). In light of the many articles mentioned earlier, it can be presumed that socio-demographic variables such as gender, age, race, and level of education generally play significant roles in predicting or impacting on sexual risk behaviours. Some of the more prominently researched variables will be discussed briefly below.

2.8.1 Gender

According to Shisana and Simbayi (2003), significantly more South African females (12.8%) are HIV positive than South African males (9.5%). As described earlier in the chapter, this gender imbalance could be explained by women's physiological and biological vulnerability to HIV. Despite (or perhaps in light of) this, literature has consistently shown that male adolescents tend to be more sexually precocious, hold more misconceptions about HIV, be less tolerant of people with HIV, less fearful of HIV, and more likely to engage in general risk behaviours (Brown, DiClemente & Beausoleil, 1992; Canterbury *et al.*, 1998; Edwards, 1992; Hancock *et al.*, 1999; Pattullo *et al.*, 1994; Robinson, Thompson & Bain, 2001). Lance (2001) showed that women were a lot more likely to never have had unprotected sex than their male peers (55% of females versus 33% of males). While not as significantly high as the males, female adolescents have also shown a general trend towards misconceptions (Brown *et al.*, 1992; Iurcovich, Lourie & Brown, 1998; Koniak-Griffin & Brecht, 1997; Kumar & John, 2001; Lindan, Allen, Carael & Nsenguremyi, 1991). Not surprisingly, single white women are more likely to engage in risky sexual behaviour than married white women (Wayment *et al.*, 2003).

2.8.2 Age

High-risk sexual behaviours have been developmentally linked (Bachanas *et al.*, 2002). Although older teenagers (16-19 years) reported more substance abuse, more frequent STD's and pregnancies, they also displayed more adaptive coping strategies and more religious involvement. Younger teenagers (12-15 years) have less effective coping skills and frequently have an earlier sexual debut. Younger teenagers with conduct problems and substance were more likely to engage in risky sexual practices, as were those whose peers engaged in risky sexual behaviours (Bachanas *et al.*, 2002). Knowledge of HIV and safe-sex behaviours was also shown to increase with age (Ndeki *et al.*, 1994). Children in low HIV prevalence areas reported less knowledge of HIV (Ndeki *et al.*, 1994) and more negative attitudes towards people with HIV (Poetsoenen & Kontula, 1999).

South African prevalence levels are consistent with international trends, with HIV prevalence rising quickly for women and then decreasing with age; whereas with men the peak occurs at an older age (Shisana & Simbayi, 2003).

2.8.3 Race¹

Of the general South African population (in 2002), the most HIV prevalent racial group is the African population (12.9%), followed by whites (6.2%), then coloureds (6.1%). For South African youth (ages 15-24), Africans again had the highest prevalence rates (10.2%), followed by coloured youth (6.4%), then whites (3.2%). The study acknowledged that this could be a conservative estimate due to the high non-response rates of white and Indian youth populations (Shisana & Simbayi, 2003).

Although the prevalence rate for white youth is significantly less than for Africans, this rate is still more than six times higher than in predominantly white societies such as USA, Australia, France and UK (Shisana & Simbayi, 2003). Interestingly, out of the 34 studies reviewed by Eaton *et al.* (2000), only one focussed on “white-only” populations. It remains largely unclear as to what degree white communities are vulnerable to unsafe risk behaviours.

2.8.4 Level of education

Education level does not seem to significantly correlate with HIV prevalence in South Africa. It seems, however, there is a general trend that those with tertiary education have lower rates of HIV than the rest of the respondents (Shisana & Simbayi, 2003).

¹ For the purpose of this study, the following racial categories have been used: “African”, “White”, “Coloured” and “Indian”. However, although these designations continue to influence the schools children go to, the communities they live, and their socio-economic status, the author acknowledges that using “racial” labels is ill conceived.

2.8.5 Location

According to Shisana and Simbayi (2003), the majority of HIV positive South Africans live in informal urban settlements (21.3%), with the second most prevalent location being the ‘formal’ urban sector (12.1%). Rural locations had the lowest prevalence rates. Sexual experience among youth was also significantly higher in informal urban areas than in other types of localities. Although youth from urban informal areas are more likely to have had more than one sexual partner than sexually active youth from other locations, they are also more likely to use condoms (Shisana & Simbayi, 2003).

2.8.6 Disposable household income

According to Shisana and Simbayi (2003), there is a negative correlation between HIV and socio-economic status. Among all respondents, the HIV prevalence decreased as the disposable income increased. With African respondents, however, there was no discernible trend according to level of income. Those with more disposable income were also significantly more aware of their serostatus than those without (Shisana & Simbayi, 2003).

2.8.7 Awareness of serostatus

Although awareness of serostatus is not a socio-economic variable per se, it is indirectly linked to the availability of and access to national voluntary counselling and testing (VCT) resources. According to Shisana and Simbayi (2003), awareness of serostatus is associated with better knowledge of HIV and is also significantly associated with condom use at last intercourse. However, nearly two-thirds of South Africans who tested HIV-positive admitted that they did not think they could possibly get infected by HIV (Shisana & Simbayi, 2003). The study by Shisana and Simbayi (2003) revealed that South Africans do not tend to make use of VCT services despite being aware of the services and being able to access them.

2.9 THEORETICAL FRAMEWORK

The field of social psychology in particular has made great strides in examining the possible psychological prerequisites in health promotion (Sheeran & Orbell, 1998). Since the earliest research on the relationship between perception and behaviour in the 1930's and due to the growing importance of behavioural prediction in the development of effective health promotion, a variety of social cognitive models were developed in an attempt to explain how knowledge, attitudes, values and beliefs interact with one another to result in an eventual change in behaviour (Abraham, Sheeran & Orbell, 1998). Some of the more prevalent, robust models will be outlined below in an attempt to create a theoretical framework for this study.

2.9.1 Theoretical models of behaviour change

Throughout the plethora of HIV-related articles that have emerged over the past decade, a surprisingly majority of these articles has focussed on social cognitive models – this is a broad category within social psychology and differs to Bandura's specific social learning/cognitive theory. Numerous studies have shown that social cognitive models are the most effective and valuable theoretical tools in predicting HIV-preventive behaviours and can provide “theoretical guidance on psychological changes likely to result in HIV-preventive behaviour change” (Abraham *et al.*, 1998, p.297). The health belief model, theory of reasoned action, theory of planned behaviour, and social learning/cognitive theory are among the most commonly utilised theories with regards to HIV-related risk behaviours (Abraham *et al.*, 1998; Airhihenbuwa & Obregon, 2000; Eaton, Flisher & Aaro, 2003; Montano, Kasprzyk, von Haefen & Fishbein, 2001).

2.9.1.1 *Health belief model*

The health belief model is a simplistic, rational-cognitive model of health-promoting behaviour. According to du Plessis, Meyer-Weitz and Steyn (1993), the model is based on the following tenets:

- perceived susceptibility (e.g. subjective evaluation of HIV risk)
- perceived severity (e.g. seriousness of HIV risk)
- perceived benefits (e.g. of condom usage)
- perceived barriers (e.g. cost, inconvenience, embarrassment)
- internal or external quest to actions (e.g. media campaign)
- likelihood of action (which increases when perceived benefits outweigh the barriers)
- demographic, psychological and structural variables (e.g. gender, ethnicity, social class, peers)

Principles such as perceived susceptibility and perceived severity, however, have been found to be problematic in specific health behaviour populations. Additionally, the health belief model not only assumes that health is a highly valued goal for individuals (du Plessis *et al.*, 1993), but it also assumes that individuals are rational decision-makers (Airhihenbuwa & Obregon, 2000). These assumptions, however, are unfounded and have been clearly identified as false (Airhihenbuwa & Obregon, 2000; du Plessis *et al.*, 1993). The model neglects to account for the influence of cognitions, intention formation and other forms of social and affective control (Sheeran & Abraham, 1995). According to Petosa and Jackson (as cited in du Plessis *et al.*, 1993), additional ‘non-health’ forces always need to be considered when using the health belief model to predict sexual intentions. This includes, for example, maturational stage or status, the need for acceptance, and self-esteem issues.

2.9.1.2 *Social learning/cognitive theory*

The social learning/cognitive theory, developed by Bandura, views behaviour as the result of cognition, behaviour, environmental factors and physiology (Airhihenbuwa & Obregon, 2000). It took the ‘bold leap’ at the time by stating that behaviour change requires *social* and cognitive skills instead of deliberate, conscious decision-making. Such a model advocates the effectiveness of instilling belief in individuals so that they may believe they have the ability to change their mind and handle the situation effectively (Viljoen, 2001). This

became the gradual introduction of the concept of ‘self efficacy’, which will be explored to greater depth in the theory of reasoned action and the theory of planned behaviour. While this theory supersedes the health belief model with this introduction of extraneous variables, it contains the misguided notion that the audience is rational by nature; making rational actions that are compliant with health promoting behaviours (Richter & Swart-Kruger, 1995).

2.9.1.3 *Triandis model*

The Triandis model is a very similar model to the social learning/cognitive theory and theory of reasoned action, yet it is the first of these models that allows for the separate influence of both “rational”/cognitive and “irrational”/affective factors (Taylor, 1984). The Triandis model states that behaviour is the function of behavioural intention (a function of attitudinal and social norms), habits and relevant past behaviours, arousal (not only physiological), and relevant environmental factors (Taylor, 1984).



According to du Plessis *et al.* (1993), additional dimensions include:

- motivation to perform in light of personal susceptibility;
- facilitating self-efficacy, perceived knowledge (about preventive actions) and past behaviour or habits;
- affective attitudes or emotional responses regarding behaviour; and social factors (similar to the theory of reasoned action’s “subjective norm” but with moral beliefs and role definition beliefs).

As mentioned with the previous models, however, certain dimensions have not proven to be robust. The Triandis model was later simplified into the more concise theories of reasoned action and planned behaviour.

2.9.1.4 *Theory of reasoned action*

The theory of planned behaviour and the theory of reasoned action are both extensively researched, validated social cognitive models (Abraham *et al.*,

1998; Sheeran & Orbell, 1998). The theory of reasoned action by Fishbein and Ajzen looks at the somewhat linear progression of attitudes, beliefs, behavioural intentions and action to predict behaviours (Airhihenbuwa & Obregon, 2000).

According to this model, “an individual’s behaviour is a function of the intention to perform that behaviour” (du Plessis *et al.*, 1993, p.12). Therefore, an individual’s intention to perform the behaviour is the direct, immediate determinant of the act (Ajzen, 1988). Behavioural intentions are themselves dependent upon two determinants:

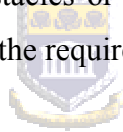
- (a) personal attitude (i.e. a positive or negative evaluation of performing the behaviour and the consequences attached), and
- (b) subjective norms / social influence (i.e. the individual’s perception of what s/he thinks significant others want the individual to do).

Attitudes are derived from the individual’s beliefs about the likely consequences of the action in light of the individual’s evaluations of these consequences (Abraham *et al.*, 1998; Sheeran & Orbell, 1998). The subjective norm component is the direct acknowledgement of social influence on intentions. This influence includes the degree to which specific others are expected to approve or disapprove of the required action (Abraham *et al.*, 1998). Therefore, it can be said that behaviour is seen as the weighted sum of attitudinal and normative effects (Ajzen, 1988; Taylor, 1984).

Despite the simplicity of the model, research has shown that adding 33 other variables to the equation did not substantially increase the prediction rate of behaviour (Taylor, 1984). Recent literature by Gillmore *et al.* (2002) also supported the use of the theory of reasoned action in understanding the cognitive processes underlying teenager’s decisions to have sex.

2.9.1.5 Theory of planned behaviour

Ajzen's theory of planned behaviour is a successor to the theory of reasoned action. It too sees behavioural intention as a central component, yet this time isolates an additional independent determinant of intention. The three determinants of intention are attitudes towards the behaviour, subjective norms and, additionally, the degree of perceived behavioural control (Ajzen, 1988). According to Abraham *et al.* (1998) and Sheeran and Orbell (1998), perceived behavioural control is closely related to the term perceived "self-efficacy". It refers to the level of confidence the individual has that s/he will behave according to his/her intentions. As with the theory of reasoned action, the theory of planned behaviour hypothesises that the intention to act is higher if the individual has a positive attitude about the behaviour as well as believing that significant others will approve of the decision to act (Abraham *et al.*, 1998). A person with high self-efficacy will set high goals, exert greater effort, persevere for longer despite obstacles or errors, and be less prone to anxiety and self-doubt when performing the required action (Abraham *et al.*, 1998).



It is assumed that all of these determinants of intention are influenced by underlying beliefs (Montano *et al.*, 2001). For example, attitude is determined by the individual's belief that the proposed behaviour will result in particular consequences (while counterbalanced by the evaluation of these consequences). Subjective norms are determined by the individual's belief that certain other individuals think s/he should or should not behave, in light of the individual's motivation to conform. Perceived behavioural control is also influenced by the belief that, when it is favourable to behave, certain situational factors will be present (Montano *et al.*, 2001).

Conner, Povey, Sparks, James and Shepherd (2003) examined the efficacy of the theory of planned behaviour as a model of attitude-behaviour relationships, and agreed with the considerable amount of literature supporting the value of the model. The inclusion of perceived behavioural control was found to have been a significant contribution to the predictions of intentions to use condoms

and actual condom use (Conner & Sparks, 1995). As Conner and Sparks (1995) confirmed, while the theory of planned behaviour is considered to be a comprehensive theory of behaviour, it can be more accurately regarded as a theory of the “proximal determinants of behaviour” (p.127). It, therefore, lends itself well to an extensive range of behaviours (Conner & Sparks, 1995).

2.9.2 Critique of theoretical frameworks

Despite all the literature and research supporting the above-mentioned behaviour change models, one prevalent critique remains: the disregard for cultural factors. As almost all of the social cognitive theories were devised and evaluated in America, it would be ill-advised to generalise it to the South African context. Harrison, Smit and Meyer (2000) evaluated different South African behaviour change programmes and suggested ways in which HIV prevention programmes can be made more effective specifically in the South African context. Firstly, they must be targeted at high-risk groups. Secondly, interventions need to be appropriate, well-designed and evaluated (i.e. should include both cognitive and behavioural/skill-based aspects). Thirdly, the messages need to be appropriate and culturally relevant. According to Harrison *et al.* (2000), a quarter of South African men have never used a condom as they are frequently thought to decrease romance and pleasure. These South African issues need to be addressed. Fourthly, behavioural and other prevention programmes need to be combined and linked with health services. Lastly, resources need to be provided.

Considering South Africa’s unique cultural heritage (specifically in relation to typically Eurocentric and Americanised contexts), and what was mentioned above, it can be presumed that a model that accounts for culture and context would be most appropriate in South Africa. Research has shown that models are culture-specific (Eaton *et al.*, 2003). As Airhihenbuwa and Obregon (2000) stated, “classical” models are only flawed because of their contextual differences. According to Fishbein (2000), attitudes, perceived norms and self-efficacy are all functions of underlying, cultural beliefs, and Eaton *et al.* (2003) concluded that it

is vital for models to include personal factors, proximal context and distal context (specifically in relation to South African research).

Abraham *et al.* (1998) refuted this criticism of social cognitive models by denying they are asocial, acontextual and ignorant of non-conscious influences. The authors asserted that social cognitive models have been proven adept in identifying cognitive differences that are predictive of differences in (for example) safer sex practice. Although social cognitive models concede that knowledge influences the beliefs regarding the required behaviour, the emphasis on various other proximal variables accounts for the fact that changing knowledge alone is unlikely to promote behaviour change (Abraham *et al.*, 1998). So, while the theory of planned behaviour makes mention of the ‘obvious’ association between beliefs, attitudes and behaviour, these variables must also be seen in light of additional factors (e.g. intention and self-efficacy that also directly influences action control).



Social cognitive models are, according to Abraham *et al.* (1998), social in the sense that they characterise individual cognitions in relation to other individuals’ responses on dimensions which originate from socially shared understandings of the behaviour in question. From this statement it can be inferred that it is quite imperative for health education messages to be specifically tailored for the particular target population in question.

2.9.3 Present study’s theoretical framework

In a study completed by Montano *et al.* (2001), an integrated model of a project called “SAFER” was developed that incorporated elements found in the social cognitive theoretical models mentioned previously (including the health belief model, theory of reasoned action, social cognitive theory, theory of planned behaviour, information-motivation-behavioural skills model, theory of interpersonal relations and subjective culture) as well as constructs identified in formative research (Montano *et al.*, 2001). This integrated model identified five

potential determinants of intention; namely perceived behavioural control, subjective norms, attitude, critical events and alternative strategies. In this study of project SAFER, although the integrated model held up well in predicting condom use intention and behaviour, neither critical events nor alternative strategies were found to be significant determinants. Without these two elements, the model simply represented Ajzen's theory of planned behaviour.

It is on the basis of Montano *et al.*'s study (2001) and various others supporting the efficacy of the theory (e.g. Conner & Sparks, 1995; Conner *et al.*, 2003) that the theory of planned behaviour has been chosen as the theoretical framework for this research study. Despite the obvious contextual limitations of social cognitive theories, this model is not only substantially integrative and well corroborated, but it is also the only model that recognises that people may not be under complete (perceived) control over their behaviours (Ajzen, 1988). It is, however, vital to remember to adequately account for contextual and cultural factors when interpreting data according to the theory of planned behaviour's framework.



2.10 FUTURE DIRECTIONS

Over the last three decades, HIV has rapidly grown to become an epidemic that is threatening to consume South Africa's youth population; the 'economic future' of the country. There seems little need to further justify the urgent necessity for more South African research (on adolescent knowledge and attitudes of HIV) and its potential value, particularly as numerous researchers have voiced their request for further study and intervention (Eaton & Flisher, 2000; Kaaya *et al.*, 2002; Swart-Kruger & Richter, 1997).

With South Africa's high HIV prevalence rates persisting despite governmental and non-governmental initiatives to curb the epidemic, there seems to be no definitive path for future intervention strategies. Research has shown that brief, informative HIV interventions are capable of changing adolescents' HIV prevention knowledge, attitudes, self-efficacy, and behavioural intentions (Dunn,

Ross, Caines & Howorth, 1998). This, however, does not necessarily infer that behaviour change is likely to occur. Behaviour change not only correlates highly with factors such as attitudes about the behaviour and intention to act on the behaviour, but also (among many others) possession of skills required to change the behaviour (Baron & Byrne, 1994). According to Connor and Waterman (1996), the discrepancy between those who perform health behaviours and those who do not is mediated by factors such as individual cognitions (i.e. knowledge about HIV and risk awareness), beliefs, attitudes, cultural factors and economic considerations. Other factors such as meaningful personal contact with HIV-infected individuals, talking with friends or sexual partners about AIDS, knowing that someone can have AIDS and look healthy, having been previously tested for HIV, and increased education have even been found to effect behaviour change (Deren, Paone, Friedman, Neaigus, Des Jarlais & Ward, 1993; Henderson, 1997). Therefore, it is insufficient in and of itself to inform people about HIV and expect them to behave accordingly. Often getting the audience to simply understand and retain the information is the biggest hurdle in itself, before being able to address the behavioural component (Key, DeNoon & Boyles, 1996). The process by which behaviour is changed is thus a complex and contentious issue.

In light of the covariation between childhood and adolescent risk behaviours, it has been suggested that it is necessary to inquire specifically about additional risk behaviours when one risk behaviour is evident (Flisher *et al.*, 2000). Future interventions should, therefore, be more expansive than simply focussing on the specific individual risk behaviour. Additional factors such as stressors, lack of resources, family psychiatric disorder, psychopathology, and functional impairment need to be considered (Flisher *et al.*, 2000). Ickovicks and Yoshikawa (1998) also recommended that primary prevention programmes be implemented to children from a young age, before the children become sexually active.

Although all the various recommendations for future intervention strategies may seem quite divergent, researchers seem to agree on one principle: mass media campaigns should always be accompanied by various definitive (and more

interpersonal) communication campaigns targeted at specific risk groups (Kok *et al.*, 1998; Shisana & Simbayi, 2003).

2.11 CONCLUSION

From the literature outlined in this chapter it is easily apparent that more research is needed in the field of HIV. Although South African literature has been shown to conform largely to literature from the rest of the world, there remains great danger in inferring from and generalising between different populations. A deeper and more intricate study of various mediating variables (including religiosity, HIV knowledge, attitudes, norms and specific socio-economic factors) in relation to HIV-related risk behaviours is clearly necessary. In light of this literature, a number of relevant social cognitive models were also examined briefly. It was highlighted that the chosen framework, the theory of planned behaviour, needs to account for contextual and cultural variables. In the following chapter, the research methodology of this study will be examined.



CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In light of the literature reviewed in Chapter 2, the need for further study in the field of HIV is clearly evident. This chapter will seek to outline and clarify the aim of this study (in the form of research questions) as well as the methods in which the aims will be achieved. The methodology will be explained in terms of the sampling method, instruments of measurement, procedure of the data collection, and the analysis of the data. Relevant ethical considerations of the research study will also be discussed.

3.2 RESEARCH QUESTIONS



As mentioned in Chapter 1, this study aims to assess the levels of HIV-related knowledge, religiosity, attitudes and the beliefs of private school adolescents, as well as their relationship with sexual risk behaviours within this specific community. In an attempt to achieve this aim, the following research questions will be asked:

1. Is there a correlation between HIV knowledge, beliefs and religiosity?
2. Is there a correlation between age and HIV knowledge, beliefs and religiosity?
3. Is there a correlation between self-assessment of risk and HIV knowledge, beliefs and religiosity?
4. Are there gender differences in HIV knowledge, beliefs or religiosity?
5. Are there differences in HIV knowledge, beliefs or religiosity according to different levels of sexual risk behaviour (i.e. high-risk versus low-/no-risk)?

3.3 METHOD

3.3.1 Sample

The sampling frame of this study included 50 independent (private) high schools in the Western Cape. The database of school names was obtained from the ISASA (Independent Schools Association of South Africa) website². From this database, names of schools were randomly selected. Schools were then contacted and were asked to grant permission to participate in the study. Of the first five schools contacted, two declined the offer to participate for various reasons (including logistic and moral concerns). The three remaining schools consented to participate in the study. These schools were located relatively far in proximity, with one school (School A) being located in the southern suburbs and two schools (Schools B and C) in the northern suburbs of the Cape Town metropole.

In light of the nature of the study (i.e. sexual behaviour), Grade 11 and 12 learners were asked to participate. This decision was largely based on information by Thom (1995), in which 16 to 19 year old adolescents were integrated in the same stage of adolescent sexual development. Not only did this sample account for similar developmental level, but it also allowed for the greatest number of appropriate respondents (considering the smaller class sizes in private schools).

Due to the small number of Grade 11 and 12 learners in School C, this school only participated in a small ‘pilot’ study. In this pilot study, a sample of twelve Grade 11 and Grade 12 learners was randomly selected from School C as well as School A (which was included to represent learners from the southern suburbs). The remaining learners from School A and B were then used for the actual study. Following the pilot study, all Grade 11 and Grade 12 learners of School A and School B who were present on the days of the data collection were invited to participate. Participation was purely voluntary and, although some learners chose

² Information was gathered from “www.isasa.org” on 25/05/2004.

not to participate in the study, no specific numbers of non-respondents were obtained. In total, 123 students responded to the questionnaires.

Table 3.1 Description of sample characteristics

	<i>School A (n=69)</i>		<i>School B (n=54)</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Gender</i>						
Male	37	53.62	28	62.22	65	52.85
Female	31	44.93	26	57.78	57	46.34
Missing cases	1	1.45	0	0.00	1	0.81
<i>Age</i>						
16 years	3	4.35	6	11.11	9	7.32
17 years	33	47.83	32	59.26	65	52.85
18 years	30	43.48	14	25.93	44	35.77
19 years	2	2.90	2	3.70	4	3.25
Missing cases	1	1.45	0	0.00	1	0.81
<i>Grade</i>						
Gr.11	14	20.29	25	46.30	39	31.71
Gr.12	55	79.71	29	53.70	84	68.29
<i>Race</i>						
White	58	84.06	46	85.19	104	84.55
Coloured	7	10.14	3	12.96	10	8.13
African	1	1.45	2	3.70	3	2.44
Indian	0	0.00	1	1.85	1	0.81
Other	2	2.90	2	3.70	4	3.25
Missing cases	1	1.45	0	0.00	1	0.81
<i>Religion</i>						
Christian	34	49.28	39	72.22	73	59.35
Judaism	3	4.35	1	1.85	4	3.25
Islam	2	2.90	1	1.85	3	2.44
Hinduism	0	0.00	1	1.85	1	0.81
Other	21	30.43	12	22.22	33	26.83
Missing cases	9	13.04	0	0.00	9	7.32

As Table 3.1 represents, the ages of the respondents ranged from 16 to 19 years, with the average age being 17.35 years. Most of the respondents were in Grade 12 (n=84) whereas only 39 respondents were from Grade 11. This was largely due to logistical variables (e.g. who was present on the day of administration). Sixty-five respondents were male (52.85%) and fifty-seven were female (46.34%). Most of the respondents (n=104) described themselves as 'white' (84.55%), although two respondents chose to describe themselves as both 'white' and 'African' (these responses were incorporated into the 'other' category). Whereas 73 (59.35%) respondents were Christian, 33 (26.83%) described themselves as 'other'. This category, however, does not differentiate between atheists and those who felt their religious beliefs did not fit in the predetermined categories.

3.3.2 Measuring instruments

Each respondent completed four self-administered questionnaires (totalling 73 items).



3.3.2.1 *Cover page and demographics*

A cover page for the package of questionnaires was designed by the author of this study. It contained a summary of the introduction that was orally presented to the learners prior to filling in the forms. The summary reinforced the issues of confidentiality, anonymity, and the voluntary nature of the study. *Demographic data* were also requested on the cover page. Demographic variables included gender, age, grade, school, race, and religion.

3.3.2.2 *The HIV Knowledge Questionnaire (HIV-KQ-18)*

The HIV Knowledge Questionnaire (HIV-KQ-18) is a self-administered measure of HIV-related knowledge that consists of 18 forced-choice statements. The HIV-KQ-18 was devised by the Center for Health and Behavior at Syracuse University, New York. The items focus particularly on knowledge relating to sexual transmission (Carey & Schroder, 2002). The

response options are “true”, “false” and “don’t know”, therefore the scale is essentially dichotomous. A single summary score is obtained by summing the number of correct responses, with a higher score indicating greater knowledge.

According to Carey and Schroder (2002), reliability analyses indicated strong internal consistency (alphas = 0.75 to 0.89), test-retest reliability ($r_s = 0.76$ to 0.94), and a strong association with the previously validated HIV-KQ ($r_s = 0.93$ to 0.97). Although these validity scores were unavailable, previous validity analyses of the full HIV-KQ (45 item) were completed using known groups and treatment outcome analyses, and its associations between scores on two related knowledge measures were analysed (Carey & Schroder, 2002). The questionnaire is primarily limited towards heterosexual samples, although this was not expected to affect the validity of the study as the sample was expected to be predominantly heterosexual (Carey & Schroder, 2002).

3.3.2.3 *The Sexual Risk Behavior Beliefs and Self-Efficacy Scales (SRBBS)*

The Sexual Risk Behavior Beliefs and Self-Efficacy (SRBBS) Scales measure psychosocial variables affecting sexual risk-taking behaviour. The variables (attitudes, norms, self-efficacy and barriers to condom use) were derived from the theory of reasoned action, social learning theory, and the health belief model (Basen-Engquist *et al.*, 1998). The questionnaire consists of 22 items, divided into eight scales, scored on a 3- or 4-point Likert-type response format. Three scales address sexual risk-taking behaviour, while five scales address protective behaviour. The scores are totalled and divided by the number of items in the scale.

The scales were assessed using high school students and revealed high internal consistency reliability on each scale (Cronbach alpha from 0.61 to 0.87). Although scores were not available, Basen-Engquist *et al.* (1998) reported high concurrent and construct validity (according to confirmatory factor analysis, fit indexes revealed a good fit).

3.3.2.4 *The Sexual History Questionnaire (SHQ)*

The Sexual History Questionnaire (SHQ), devised by Caroline Cupitt, measures the degree to which a person's sexual behaviour is placing him-or herself at risk of contracting HIV (Cupitt, 1998). It consists of 23 items that are a combination of multiple-choice, yes/no, 5-point scale, and numerical questions (Cupitt, 1998). The questionnaire is not scored, but indicates degree of risk (e.g. unprotected penetrative sex in the past month is significantly high risk). According to Cupitt's (1998) analysis with college students, test-retest reliability measures revealed a high level of reliability ($r > 0.80$; $p < 0.001$). Cupitt (1998) concluded that most of the questions had high face validity (no values were given).

3.3.2.5 *The Santa Clara Strength of Religious Faith Questionnaire (SCSORF)*

The Santa Clara Strength of Religious Faith (SCSORF) questionnaire was used to assess strength of religious beliefs. The SCSORF is a quick, easy to administer, 10-item measure developed by Thomas Plante. It is scored on a 4-point scale, and assesses strength of religious faith regardless of religious denomination or affiliation (Plante & Boccaccini, 1997a). According to Plante *et al.* (1997a, 1997b), the SCSORF has high internal reliability ($\alpha = 0.94$ to 0.95) and split-half reliability ($r = 0.90$ to 0.96) when assessing undergraduate students from several different populations. Pearson correlation coefficients revealed positive correlations with various other measures of religiosity (with r 's ranging from 0.64 to 0.90), with no consistent gender disparity identified (Plante, Yancey, Sherman, Guertin & Pardini, 1999). Additional confirmatory factor analysis revealed high validity (Lewis, Shevlin, McGuckin & Navrátil, 2001).

3.3.3 Procedure

Names of private schools were randomly drawn from a database of 50 independent schools in the Western Cape. The principals of the schools were then

contacted and the nature of the study was explained. Some of the principals requested personal interviews with the researcher, while others were satisfied with the information gained from telephonic contact. Of the first five schools contacted, two schools declined the offer to participate in the study (due to logistic and moral concerns). The principals of the three remaining schools agreed to participate in the study and gave informed consent for the researcher to commence data collection.

3.3.3.1 Pilot study

As mentioned earlier, two of the three private schools that originally agreed to participate in the study were asked to participate in a small, initial pilot study. School C (from the northern suburbs) was chosen because of its small sample size and School A was chosen to represent learners from the southern suburbs. The pilot study was conducted prior to commencement of the actual study, once explicit consent was obtained from the principals of each school. Due to the sensitive nature of the topic, the purpose of the pilot study was to assess respondents' reactions to the questionnaires and to explore ways in which anonymity and confidentiality were assured and honesty could be encouraged.

Twelve Grade 11 and 12 learners from Schools A and C were randomly selected and asked to participate in the pilot study. Prior to administration of the questionnaires, an introductory letter was read to the learners, explaining a brief purpose and motivation of the study and outlining issues of confidentiality and anonymity, informed consent, the importance of honesty, and the availability of follow-up referrals/counselling. Respondents were also given opportunity to withdraw from the study at any time. After the questionnaires were completed, the respondents were asked to give qualitative feedback about the content and nature of the study. Respondents were asked if there were any queries regarding the questionnaire, any vague or unclear questions, and whether they felt some or all of the questions were too explicit. Issues of confidentiality and anonymity were also discussed. The pilot study was also used to establish appropriate seating arrangements and to estimate

average time for completion of the questionnaires. The results of the questionnaires completed in the pilot studies were not analysed statistically.

The result of the pilot study showed that most respondents were open to concept of the study. Although quite shy and ‘giggly’ initially, the respondents soon quietened down and answered all the questions with apparent candour. Although one respondent disagreed somewhat with the wording of the SCSORF scale, no other respondents had similar problems. A concern of the administrator, prior to the pilot study, was the issue of questionnaire visibility – in which it was feared that respondents would be able to see what page other respondents were on and how quickly they were progressing. This was potentially problematic as a large section of the SHQ is skipped if the respondent has never been sexually active (thus making it apparent to other respondents sitting nearby). When this issue was raised after the pilot study, however, none of the respondents expressed similar concerns.



3.3.3.2 *Actual study*

Once a database of private schools in the Western Cape was collated, three private schools were contacted and agreed to participate in the study. Two of the three schools were used for the actual study (the third school had a small number of Grade 11 and 12 learners and was used for the pilot study). Informed consent was obtained from the school principals and the adolescents themselves. Parents of the learners were informed of the research study and were given the opportunity to object to the study.

On the day of data collection of the actual study (after the pilot study had been completed), the same introduction letter was read to the Grade 11 and 12 learners of both schools. The letter outlined the motivation for the study, concepts of confidentiality and anonymity, the importance of honesty, issues of informed consent, and availability of follow-up referrals/counselling. Learners were made aware of their right to withdraw from the process at any time, and that participation (or non-participation) in the study would not be reflected in

their grades. The learners were then given the opportunity to participate in the study. Although an unknown number of learners from School A chose to leave the room (i.e. not to participate), no learners from School B exercised the right to withdraw from the study.

Those learners who remained were given the questionnaire as well as extra page of A4 paper (which they were recommended to use to cover their responses as they progressed). Once all of the questionnaires were completed and handed in, the class teacher was given a list of HIV-related resources for the learners' future reference. Opportunity was also provided afterwards for respondents to ask questions (individually or in groups) regarding the subject matter. The author of this study was the sole facilitator of the study, handing out and collecting all questionnaires, and personally entering all the data into spreadsheets for statistical analysis. Administration of the questionnaire spanned over a month in July/August 2004.

3.3.4 Analysis of data



This study was interested in predicting and comparing the relationship between predetermined variables and was therefore positioned within a quantitative research design in an attempt to obtain objective, measurable data that could be analysed statistically (Rosnow & Rosenthal, 1996). Congruent with the aims of this project, analysis attempted to look at the degree of influence that knowledge of HIV, strength of religious faith, and attitudes (i.e. independent variables) had on adolescents' self-reported sexual behaviour (i.e. dependent variable). The data were analysed using the Statistical Package for the Social Sciences (SPSS).

Biographical data were collated using descriptive statistics, yielding means and standards deviations for HIV knowledge, attitudes and norms, religiosity, and risk behaviour (and allowing a comparison of gender, age, school, etc.). As well as assessing the reliability of the measuring instruments (using Chronbach's Alpha), the construct validity of the SRBBS was assessed using confirmatory factor analysis. In order to achieve this, the SRBBS was divided into two models (one of

sexual risk behaviour and one of protective behaviour) and examined to establish whether the models fit the data.

Pearson product-moment correlations were computed to identify the nature and extent of relationships between the various variables, and independent samples t-tests were computed to identify significant differences between the scores of the independent variables. In addition, the measuring instruments were subjected to a scale analysis (Cronbach's alpha was used for the analysis of internal reliability).

3.3.5 Ethical considerations

The research proposal for this study was approved by the Research Ethics Committee (Faculty of Health Sciences) of the University of the Western Cape. The primary ethical emphases of this study were issues of confidentiality and consent. It was vital that the adolescents, their parents, and the school were aware of (and understood) the nature of the study, and were confident that the information the adolescents provided would not be divulged to any person other than the researcher. The questionnaires were completely anonymous, so there was no way to link a particular learner's responses with a particular response sheet. The adolescents were informed of their right to omit the demographic section of the questionnaire if they felt it was too intrusive (although the importance of the information was emphasised).

Informed consent was obtained from the school principals and the adolescents themselves. Parents of the learners involved were informed of the research study and were given the opportunity to withdraw their child/ren if they objected to the study. The learners were made aware of their right to withdraw from the process at any time if they no longer wished to participate, and that grades or academic performance would not be affected by their participation, or lack of participation, in this study (to minimise the feeling of coercion). The researcher, being the sole administrator of the research process, provided the contact details of numerous independent, external referral agencies that would be available for counselling

services should any specific issues or traumas arise regarding HIV/AIDS. The researcher also provided an opportunity for the respondents to ask questions (individually or in groups) regarding the subject matter after the questionnaires were completed and collected. The research findings of this study will be made available to the participating schools for future reference.

3.4 CONCLUSION

In this chapter, the research questions of the study were identified. The study's method was outlined, including the method of sampling, an explanation of the measuring instruments, and the procedure of the pilot study and the actual study. A brief outline of the analysis of data was provided, as well as the relevant ethical considerations of the study. In the following chapter the results of the statistical analyses will be presented. These results include the reliability and validity of the measuring instruments, descriptive statistics, correlations, and t-test analyses.

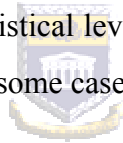


CHAPTER 4

RESULTS

4.1 INTRODUCTION

This chapter contains the results of the statistical analyses used to test the hypotheses of the study. The reliability and validity of the measuring instruments are discussed, as well as the descriptive statistics for the relevant scales and subscales. Intercorrelations are explored between variables including HIV knowledge, religiosity and beliefs regarding sexual risk behaviour, and t-test analyses examine how these variables (i.e. knowledge, religiosity and beliefs) differ according to gender, having had unprotected sex (with and without a regular partner), having had an HIV test, and personally knowing somebody with HIV. For the purpose of this study, a statistical level of significance of $p \leq 0.05$ is used as the acceptable level, although in some cases the actual p will be reported.



4.2 PSYCHOMETRIC PROPERTIES

4.2.1 Internal consistency

Reliability refers to the consistency or stability of the measuring instrument (Rosnow & Rosenthal, 1996). One of the types of reliability is internal-consistency reliability, which measures the degree of relatedness of the individual items (Rosnow & Rosenthal, 1996). Chronbach's Alpha, a method of internal analysis, was used in this study in an attempt to measure the reliability of the various measuring instruments. Although reliability is often relative to convention, a reliability coefficient of above 0.70 was considered to be reliable for the purpose of the study, in accordance with Anastasi's criterion for adequate reliability (Anastasi, 1982).

The HIV Knowledge Questionnaire (HIV-KQ-18) was designed to measure HIV-related knowledge, particularly in relation to sexual transmission. Despite Carey and Schroder (2002) reporting strong internal consistency of the HIV-KQ-18 (alpha = 0.75 to 0.89), an alpha coefficient of 0.4862 was obtained for the current study (see Table 4.1). This correlation differs significantly in effect size from the coefficient originally reported. This difference could be due to the forced-choice structure of the questionnaire and/or differences in sample demographics (as will be discussed further in the following chapter).

Table 4.1: Internal reliability of the HIV-KQ-18, SRBBS and SCSORF

	<i>N of cases</i>	<i>N of items</i>	<i>Alpha</i>
<u>HIV-KQ-18</u>	123	18	0.4862
<u>SRBBS: ASI</u>	123	2	0.7179
ACU	123	3	0.8717
NSI	123	2	0.6576
NCU	123	3	0.8542
SER	123	3	0.7026
SECM	123	3	0.6417
SECU	123	3	0.6525
BCU	123	3	0.6119
<u>SCSORF</u>	122	10	0.9647

The Sexual Risk Behaviour Beliefs and Self-Efficacy (SRBBS) questionnaire attempts to measure eight psychosocial variables affecting sexual risk-taking behaviour. These variables, as outlined in Table 4.2, are attitudes about sexual intercourse, attitudes about condom use, norms about sexual intercourse, norms about condom use, self-efficacy in refusing sex, self-efficacy in communication about condoms, self-efficacy in using and buying condoms, and barriers to condom use.

Table 4.2: Psychosocial variables of the SRBBS (and their abbreviations)

<i>ASI</i>	<i>Attitudes about sexual intercourse</i>
<i>ACU</i>	<i>Attitudes about condom use</i>
<i>NSI</i>	<i>Norms about sexual intercourse</i>
<i>NCU</i>	<i>Norms about condom use</i>
<i>SER</i>	<i>Self-efficacy in refusing sex</i>
<i>SECM</i>	<i>Self-efficacy in communication about condoms</i>
<i>SECU</i>	<i>Self-efficacy in using and buying condoms</i>
<i>BCU</i>	<i>Barriers to condom use</i>

The reliability coefficients of the SRBBS yielded similar results to those reported in Basen-Engquist *et al.* (1998), with the alpha coefficients for the present study ranging between 0.61 and 0.87. As evident in Table 4.1, half of the subscales had high levels of internal reliability (ASI, ACU, NCU and SER), whereas the remainder had moderate internal reliability levels (NSI, SECM, SECU and BCU). Three of the subscales differed significantly to the levels of internal reliability reported by Basen-Engquist *et al.* (1998). These scales include ACU (which was 0.78 in the original study but 0.87 in the present study), SER (which went from 0.84 to 0.70) and BCU (from 0.73 to 0.61).

The Santa Clara Strength of Religious Faith (SCSORF) questionnaire, which assesses strength of religious faith, also showed similar levels of internal reliability to the original reliability study (Table 4.1). An alpha coefficient of 0.965 was obtained for the SCSORF questionnaire; much like the alpha coefficients of 0.94 and 0.95 achieved by Plante *et al.* (1997a, 1997b).

It is therefore evident that, although the HIV-KQ-18 did not display the high level of reliability reported in a previous study, the SRBBS and the SCSORF yielded similar results to prior reliability studies and were sufficiently reliable instruments within this specific sample.

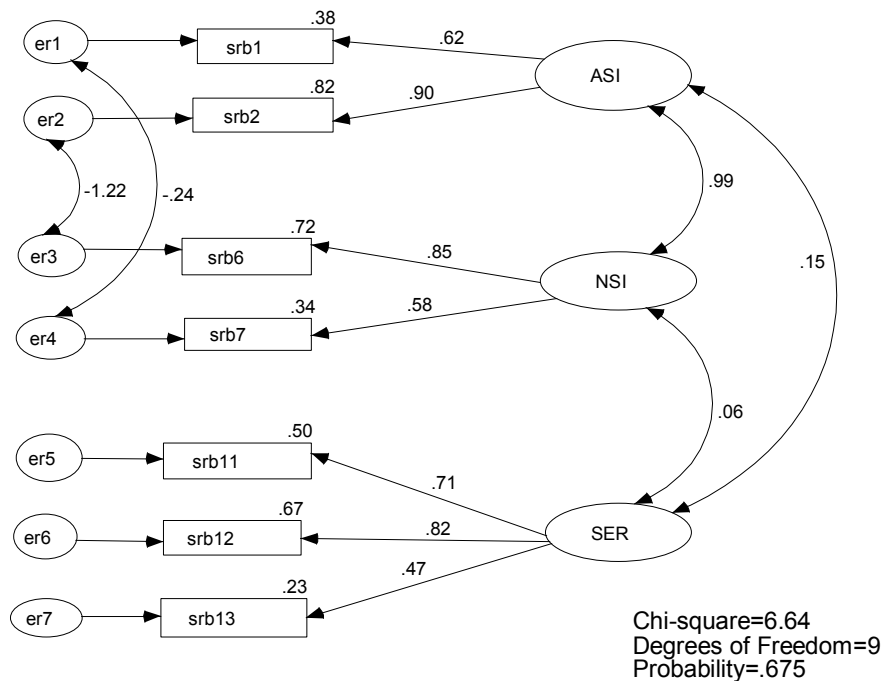
4.2.2 Construct validity of the SRBBS

In line with the analyses conducted by Basen-Engquist *et al.* (1998), confirmatory factor analysis was used to assess the construct validity of the SRBBS. The SRBBS was divided into two models; one evaluating sexual risk behaviour (consisting of the ASI, NSI and SER subscales) and the other evaluating protective behaviour (including ACU, NCU, SECM, SECU and BCU).

The initial confirmatory factor model for the sexual risk behaviour model did not fit the data to an acceptable degree ($\chi^2 = 27.76$, $df = 11$, $p < 0.05$). When the model was adjusted to link grammatically similar attitudes and norms of sexual intercourse, however, the model was found to be a good fit ($\chi^2 = 6.64$, $df = 9$, $p > 0.05$). This confirms the findings by Basen-Engquist *et al.* (1998), in which their sexual risk behaviour model was also found to fit the data well once correlated error terms were established between attitude and norms items. The final sexual risk behaviour model is depicted in Figure 4.1.

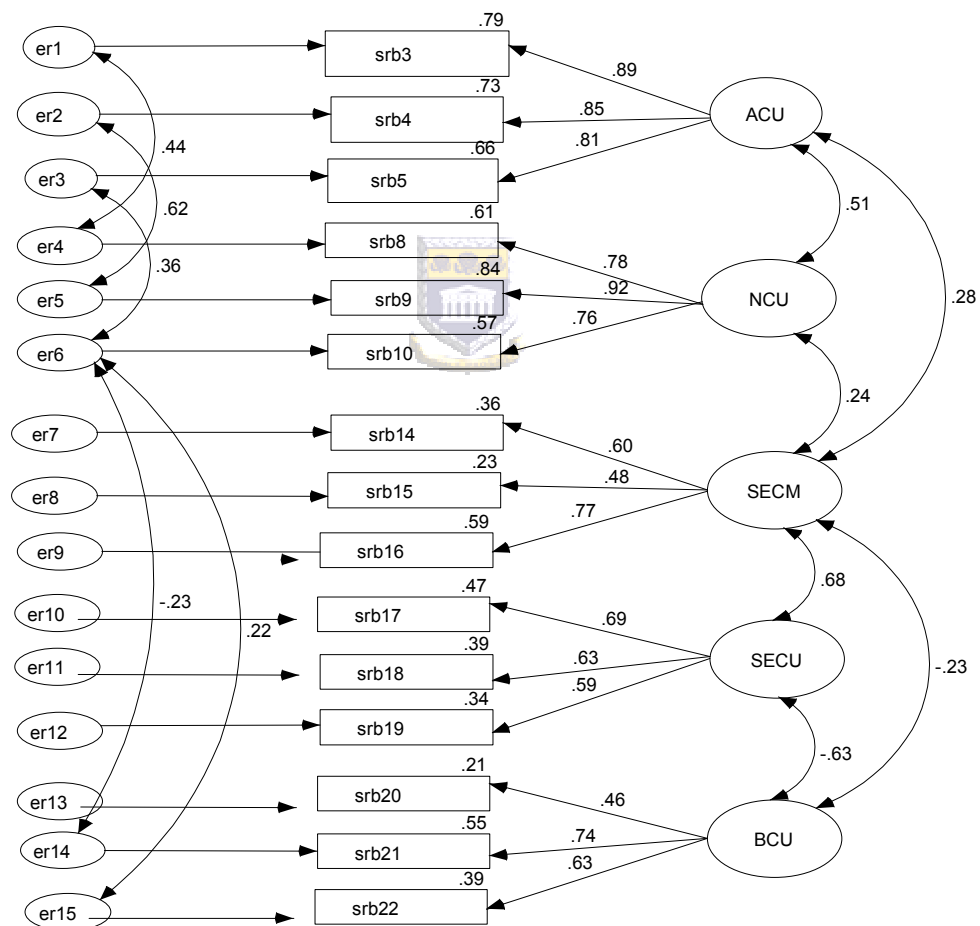


Figure 4.1 Final confirmatory factor model for sexual risk behaviour



For the protective behaviour model, the confirmatory factor analysis revealed that the original model did not fit the data to an acceptable degree ($\chi^2 = 167.56$, $df = 80$, $p < 0.05$). However, once paths for correlated error terms were added between grammatically similar attitude and norms items, and two semantically similar ‘barrier to condom use’ items, the model was found to fit the data to an acceptable degree ($\chi^2 = 96.96$, $df = 79$, $p > 0.05$). The final protective behaviour model is depicted in Figure 4.2.

Figure 4.2 Final confirmatory factor model for protective behaviour




Model Testing 2: Protective Behaviour Model
 Correlated error terms
 Chi-square=96.96
 Degrees of Freedom=79
 Probability=.083

4.2.3 Descriptive statistics

The means and standard deviations for HIV knowledge (HIV-KQ-18), beliefs (SRBBS) and religiosity (SCSORF) are presented in Table 4.3. Comparisons of means and standard deviations for the HIV-KQ-18 and SRBBS across previous studies are, unfortunately, not possible as descriptive statistics for prior studies were unavailable.

According to Plante *et al.* (1997a, 1997b), previous studies using the SCSORF found response means ranging from 23.21 (standard deviation of 8.47) to 27.73 (SD = 6.70). The reported mean for a sample of American high school learners was 24.89 (SD = 8.28). This is similar to the 23.17 mean obtained in the current study (SD = 9.14). No significant gender differences were identified.

Table 4.3: Means and standard deviations for HIV knowledge, beliefs and religiosity

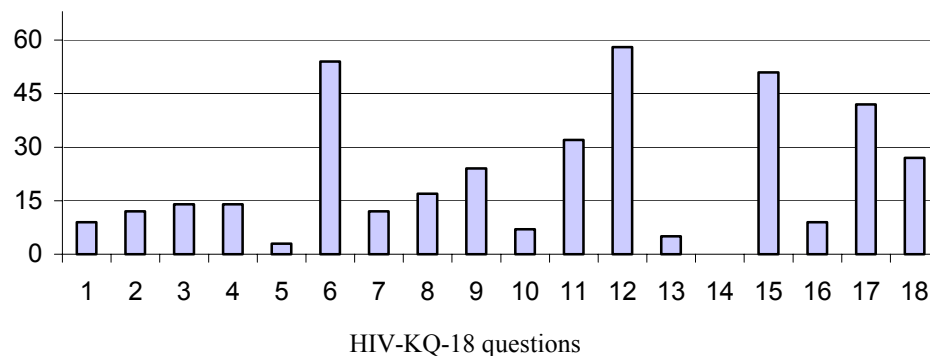


	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
<i>Knowledge</i>	123	9	18	14.82	2.04
<i>Beliefs: ASI</i>	123	2	8	4.50	1.57
<i>ACU</i>	123	3	12	10.96	1.84
<i>NSI</i>	123	2	8	4.08	1.50
<i>NCU</i>	123	3	12	9.64	2.09
<i>SER</i>	123	3	9	7.61	1.55
<i>SECM</i>	123	3	12	8.31	1.25
<i>SECU</i>	123	3	10	7.07	1.66
<i>BCU</i>	123	3	12	5.90	2.17
<i>Religiosity</i>	122	10	40	23.17	9.14

4.2.4 Frequencies

As evident in Graph 4.1, a number of questions from the HIV-KQ-18 had a high rate of incorrect responses (which includes “don’t know” responses). Question 12 received the highest number of incorrect responses (n=58), indicating that almost half of the respondents (47.15%) were either uncertain or misinformed about the effectiveness of natural skin condoms. Question six was the second most frequent incorrect response (n=54), with 43.90% of the population thinking that all babies born of HIV-positive mothers will have AIDS. The third most common misconception was Question 15, in which 41,16% (n=51) of the respondents were not certain of the HIV ‘window-period’.

Graph 4.1 Frequency of incorrect responses on HIV-KQ-18



Of all the questions, question 14 was the only one to receive no incorrect responses. This means that all the respondents were aware that having sex with more than one partner increases the probability of HIV infection. The question with the second least amount of incorrect responses (n=3) was Question five, showing that 97.56% of the respondents knew that showering or washing genitals after sex does not prevent HIV-infection.

As mentioned in Chapter 3, the Sexual History Questionnaire (SHQ) provides an indication of HIV risk (rather than providing a specific score). On Cupitt’s (1998) suggestion, respondents who reported having had unprotected penetrative sex were considered to be at high risk. Oral sex, however, was not considered significantly risky (Cupitt, 1998). As evident in Table 4.4, 27 (21.95%) of all respondents fell within the high-risk category. These individuals constitute 58.70% of the sexually active population. In other words, 27 of the 46 respondents who have had penetrative sex, have also had unprotected penetrative sex. Female respondents showed slightly higher rates of sexual experience than their male counterparts, with 25 females (20.32% of all respondents) and 21 males (17.07% of all respondents) having had penetrative sex. Of these 46 sexually active respondents, 15 females (32.61%) and 12 males (26.09%) had previously had unprotected penetrative sex. Age of sexual debut did not differ significantly across genders, with the debut age ranging from 16.04 to 16.29 years.



Table 4.4 Sexual experience of respondents

	<i>N</i>	<i>Ever had penetrative sex</i>	<i>Unprotected penetrative sex</i>	<i>Average age of debut</i>
<i>Male</i>	65	21	12	16.29
<i>Female</i>	57	25	15	16.04
<i>Total</i>	123	46	27	16.13

On a five-point scale of ‘heterosexuality’, only two of the 123 adolescents did not describe themselves as being completely heterosexual (Table 4.5). One male respondent said he had sex with “mostly women”, while another male described having had sex “equally with men and women”. Both of these males, who were in Grade 12 at the same school, said their last sexual encounter was with a male.

Table 4.5 Heterosexuality and homosexuality

	<i>N</i>	<i>Completely heterosexual</i>	<i>Completely homosexual</i>	<i>Not fully hetero- or homosexual</i>
<i>Male</i>	65	63	0	2
<i>Female</i>	57	57	0	0
<i>Total</i>	122*	120	0	2

* 1 missing case (unidentified gender)

With regards to the sexual activities within the month prior to administration of the questionnaire, 41 (33.33%) of the respondents were sexually active. As seen in Table 4.6, condoms were used 60.38% of the time by those who had penetrative sex within the last month. Only three of the 41 sexually active respondents had more than one sexual partner in the last month. The highest number of reported sexual partners for the month by a single respondent was three. As evident in Table 4.7, most of all sexually active respondents (N = 26) had their last sexual encounter less than one week prior to administration of the questionnaire, whereas only four (5.63%) respondents had their last sexual encounter more than one-year prior. Yet again, it is evident that the females were more sexually active, more often, than their male counterparts.

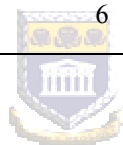
Table 4.6 Sexual activities (penetrative) within the last month

	<i>Sexually active respondents</i>	<i>Average N of sexual partners</i>	<i>% of condom use</i>
<i>Gender – Male</i>	18	1.06	50.00
<i>– Female</i>	23	1.13	69.89
<i>Total</i>	41	1.10	60.38
<i>School – A</i>	22	1.14	47.25
<i>– B</i>	19	1.67	41.18

A small comparison of protective behaviour of respondents from different schools was also completed, showing that learners from School B used condoms less consistently (41.18%) than those from School A (47.25%). Learners from School B, however, generally showed longer durations between sexual encounters than those in School A (Tables 4.6 & 4.7). No other differences in responses were identified between learners from different schools.

Table 4.7 Duration since last sexual encounter

	< 1 week	1 week – 1 month	1 – 3 months	3 – 6 months	6 months – 1 year	> 1 year
<i>Gender – M</i>	9	9	9	3	3	1
– <i>F</i>	17	7	3	2	5	3
Total	26	16	12	5	8	4
<i>School – A</i>	17	8	6	2	3	1
– <i>B</i>	9	8	6	3	5	3



It can be seen in Table 4.8 that the most popular form of sexual activity (according to the respondents' last sexual encounters) was oral sex (N = 43), followed by vaginal sex with a condom (N = 31). Two respondents described having had unprotected anal sex, which is the riskiest form of sexual activity.

Table 4.8 Sexual activity during last sexual encounter

	<u>Vaginal Sex</u>		<u>Anal sex</u>		<i>Oral sex</i>	<i>Non-penetrative</i>
	<i>condoms</i>	<i>unprotected</i>	<i>condoms</i>	<i>unprotected</i>		
<i>Male</i>	13	9	1	2	23	4
<i>Female</i>	18	8	0	0	20	4
Total	31	17	1	2	43	8

According to 33 of the 48 sexually active respondents (i.e. 68.75%), the most common contraceptive among respondents was the condom (Table 4.9). The next prevalent contraceptive was the pill (N = 24), followed by a combination of the pill and condoms simultaneously (N = 16). Of the 49 adolescents who responded to the question, 37 (75.51%) reported having discussed safer sex with their sexual partners.

Table 4.9 Methods of contraception for last sexual encounter

	<i>Condom</i>	<i>Pill</i>	<i>Withdrawal</i>	<i>Rhythm method</i>	<i>Other</i>
<i>Male</i>	16	8	5	0	1
<i>Female</i>	17	16	4	2	0
<i>Total</i>	33 *	24 *	9	2	1

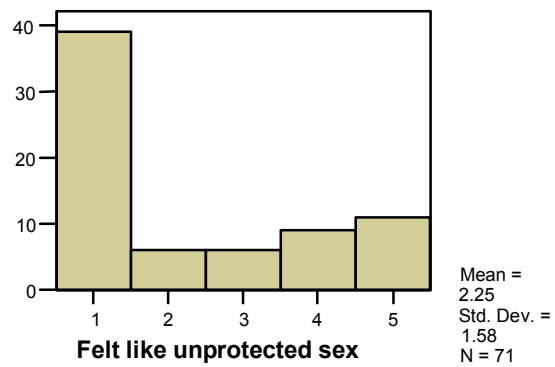
* 16 of these respondents reported using a combination of the pill and condoms.

Self-assessment of desire and risk of HIV was measured on a 5-point Likert scale, with 1 indicating “not at all” and 5 indicating “a great deal”. Graphs 4.2 to 4.4 show that most of the 71 learners who responded to the question felt a moderate or high amount of desire for sex in their last sexual encounter (averaging 3.80) and considerably less desire for unprotected sex (averaging 2.25). Most respondents, however, did not consider themselves to be at risk of contracting HIV (averaging 1.84).

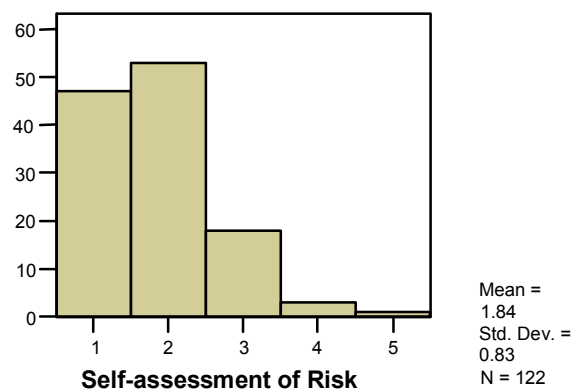
Graph 4.2 Desire for sex in last sexual encounter



Graph 4.3 Desire for unprotected sex in last sexual encounter



Graph 4.4 Self-assessment of risk



Only nine of the 123 respondents had ever been tested for HIV (7.32%), whereas considerably more respondents (N = 31; 25.20%) reported having previously known somebody with HIV (Table 4.10).

Table 4.10 Respondents' exposure to HIV and HIV-testing

	<i>Ever had HIV test</i>	<i>%</i>	<i>Personally known someone with HIV</i>	<i>%</i>
<i>Male</i>	5	7.69	19	29.23
<i>Female</i>	4	7.02	12	21.05
<i>Total</i>	9	7.32	31	25.20

4.3 INTERCORRELATIONS

Intercorrelations were run between the subtests of the measuring instruments to establish whether any relationships exist between the different variables. The Pearson product-moment correlation was used to indicate whether a relationship exists between the variables, as well as the strength and direction of the relationship (Howell, 1997; Rosnow & Rosenthal, 1996).

4.3.1 Correlations between HIV knowledge, beliefs and religiosity

The findings of the intercorrelations between HIV knowledge, sexual risk behaviour beliefs, and religiosity indicated a number of significant positive and negative correlations (Table 4.11). The direction of the correlation will be indicated by the correlation coefficient within brackets (i.e. a minus-sign indicates a negative correlation).

HIV knowledge was found to correlate significantly with self-efficacy in communication about condoms (0.29), self-efficacy in using and buying condoms

(0.30), barriers to condom use (-0.23), and attitudes about sexual intercourse (-0.19). Knowledge did not correlate significantly with religiosity.

Within regards to beliefs regarding sexual risk and protective behaviours, thirteen sub-categories of beliefs and self-efficacy were found to correlate significantly with each other. Attitudes about sexual intercourse correlated significantly with attitudes about condom use (0.30), norms about sexual intercourse (0.57), barriers to condom use (0.34), as well as self-efficacy in using and buying condoms (-0.30). Attitudes about condom use not only correlated significantly with attitudes about sexual intercourse, but also norms about condom use (0.50), self-efficacy in refusing sex (0.26) and self-efficacy in communicating about condoms (0.21). Norms about sexual intercourse also correlated significantly with norms about condom use (0.30), self-efficacy in using and buying condoms (-0.26). Barriers to condom use correlated significantly with norms about sexual intercourse (0.23), self-efficacy in using and buying condoms (-0.45) and, as mentioned previously, attitudes about sexual intercourse. Additionally, self-efficacy in refusing sex correlated significantly with self-efficacy in communicating about condoms (0.39), and self-efficacy in using and buying condoms correlated significantly with self-efficacy in communicating about condoms (0.45).

Religiosity had significant positive correlations with attitudes about sexual intercourse (0.39), norms about sexual intercourse (0.32), and barriers to condom use (0.34), and a significantly negative correlation with self-efficacy in using and buying condoms (-0.29). No other significant correlations (positive or negative) were identified between religiosity and additional knowledge, beliefs or self-efficacy subscales.

Table 4.11 Intercorrelations between HIV knowledge, beliefs and religiosity

	<i>Knowl</i>	<i>ASI</i>	<i>ACU</i>	<i>NSI</i>	<i>NCU</i>	<i>SER</i>	<i>SECM</i>	<i>SECU</i>	<i>BCU</i>	<i>Religiosity</i>
<i>Knowledge</i>	—	-.187*	.082	-.150	.130	.104	.286**	.302**	-.234**	-.152
<i>ASI</i>		—	.297**	.568**	.148	.091	-.082	-.300**	.338**	.393**
<i>ACU</i>			—	.158	.499**	.263**	.212*	-.029	.079	.139
<i>NSI</i>				—	.301**	-.010	-.127	-.295**	.233**	.321**
<i>NCU</i>					—	.102	.176	.019	-.060	.028
<i>SER</i>						—	.391**	.102	.025	.052
<i>SECM</i>							—	.450**	-.108	-.114
<i>SECU</i>								—	-.451**	-.293**
<i>BCU</i>									—	.339**
<i>Religiosity</i>										—

* < 0.05

** < 0.01

4.3.2 Correlations between age and HIV knowledge, beliefs and religiosity

When comparing the subtests of the measuring instruments with age (Table 4.12), age had a significant positive correlation with HIV knowledge (0.21) and self-efficacy in using and buying condoms (0.27). Age also had a significant negative correlation with religiosity (-0.30), barriers to condom use (-0.24) and attitudes about sexual intercourse (-0.22).

Table 4.12 Intercorrelations between age and HIV knowledge, beliefs and religiosity

	<i>N</i>	<i>Significance (2-tailed)</i>	<i>Pearson Correlation</i>
<i>Knowledge</i>	122	0.018	0.21 *
<i>Beliefs</i>	122	0.013	-0.22 *
<i>ASI</i>	122	0.867	0.02
<i>ACU</i>	122	0.199	-0.12
<i>NSI</i>	122	0.796	0.02
<i>NCU</i>	122	0.861	-0.02
<i>SER</i>	122	0.590	0.05
<i>SECM</i>	122	0.002	0.27 **
<i>SECU</i>	122	0.008	-0.24 **
<i>BCU</i>	122	0.001	-0.30**
<i>Religiosity</i>	121	0.001	-0.30**

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

4.3.3 Correlations between self-assessment of HIV risk and HIV knowledge, beliefs and religiosity

Table 4.13 indicates no significant positive or negative correlations between self-assessment of HIV risk and knowledge, beliefs or religiosity.

Table 4.13 Intercorrelations between self-assessment of HIV risk and HIV knowledge, beliefs and religiosity

	<i>N</i>	<i>Significance (2-tailed)</i>	<i>Pearson Correlation</i>
<i>Knowledge</i>	123	0.297	0.10
<i>Beliefs</i>			
<i>ASI</i>	123	0.349	-0.09
<i>ACU</i>	123	0.615	-0.05
<i>NSI</i>	123	0.515	-0.06
<i>NCU</i>	123	0.121	-0.14
<i>SER</i>	123	0.923	-0.01
<i>SECM</i>	123	0.996	0.00
<i>SECU</i>	123	0.987	0.00
<i>BCU</i>	123	0.189	-0.12
<i>Religiosity</i>	122	0.209	-0.11



4.4 THE t-TEST ANALYSIS

T-tests were used as a means to establish whether significant differences existed between various independent sample means.

4.4.1 Gender differences in HIV knowledge, beliefs and religiosity

The results of the t-test analysis yielded significant results for difference on self-efficacy in refusing sex for males and females ($p \leq 0.01$), showing that females felt more competent in refusing sex. Females also reported significantly higher levels of self-efficacy in using and buying condoms subscale when compared to males ($p \leq 0.05$). Gender did not have a significant influence on the level of HIV knowledge, religiosity, nor ‘self-assessment of HIV risk’ (Table 4.14).

Table 4.14 Summary of means (and standard deviations within parentheses) and t-test results for gender

	Gender		<i>Levene's F</i>	<i>t</i>	<i>Sig.</i>
	<i>Male (n=65)</i>	<i>Female (n=57)</i>			
<i>Knowledge</i>	14.86 (1.88)	14.81 (2.23)	1.152	0.15	0.884
<i>ASI</i>	4.35 (1.50)	4.64 (1.64)	0.667	-1.01	0.316
<i>ACU</i>	10.74 (1.99)	11.19 (1.65)	2.860	-1.36	0.175
<i>NSI</i>	3.96 (1.43)	4.23 (1.58)	2.009	-0.97	0.335
<i>NCU</i>	9.58 (2.20)	9.74 (1.99)	0.385	-0.41	0.684
<i>SER</i>	6.88 (1.72)	8.42 (0.76)	21.498	-6.55	0.000
<i>SECM</i>	8.24 (1.41)	8.40 (1.05)	2.023	-0.74	0.463
<i>SECU</i>	7.38 (1.52)	6.76 (1.73)	2.410	2.10	0.038
<i>BCU</i>	5.75 (2.22)	6.02 (2.11)	0.376	-0.67	0.502
<i>Religiosity</i>	22.85 (9.54)	23.51 (8.81)	0.239	-0.39	0.696
<i>Self-assess. of risk</i>	1.77 (0.81)	1.95 (0.85)	0.006	-1.19	0.238

4.4.2 Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex

As evident in Table 4.15, there is a significant difference in means for ‘attitudes about condom use’ and ‘self-efficacy in using and buying condoms’ when comparing those respondents who have had unprotected sex against those who deny having had unprotected sex. This shows that those who have had unprotected sex are significantly less strict about the use of condoms, despite

feeling more competent in their ability to buy and use them. No additional significant differences were identified when comparing these populations with the remaining belief subscales, knowledge or religiosity.

Table 4.15 Summary of means (and standard deviations within parentheses) and t-test results for unprotected sex

	<i>Unprotected Sex</i>		<i>Levene's F</i>	<i>t</i>	<i>Sig.</i>
	<i>Yes (n=27)</i>	<i>No (n=19)</i>			
<i>Knowledge</i>	15.07 (1.94)	15.11 (2.02)	0.071	0.79	0.958
<i>ASI</i>	3.69 (0.99)	4.05 (1.08)	0.415	-1.19	0.239
<i>ACU</i>	9.73 (2.21)	11.48 (0.84)	27.173	-3.76	0.001
<i>NSI</i>	3.70 (1.32)	3.79 (1.18)	0.088	-0.24	0.814
<i>NCU</i>	9.52 (2.12)	10.24 (1.70)	1.184	-1.24	0.222
<i>SER</i>	7.48 (1.85)	7.66 (1.56)	0.846	-0.35	0.728
<i>SECM</i>	8.33 (1.00)	8.69 (1.31)	0.003	-1.04	0.306
<i>SECU</i>	8.20 (1.13)	7.29 (1.42)	3.331	2.42	0.020
<i>BCU</i>	4.74 (2.01)	5.47 (1.87)	0.030	-1.25	0.217
<i>Religiosity</i>	20.07 (8.85)	20.00 (7.70)	0.325	0.03	0.977

4.4.3 Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex with a regular partner

Of the 27 of the 123 respondents who admitted to having had unprotected sex in the past, 12 reported that this sexual activity was with a regular partner. When

comparing these 12 adolescents with the remainder of the respondents, significant differences were found in their responses to the subscales ‘attitudes about condom use’, ‘self-efficacy in using and buying condoms’ and ‘barriers to condom use’ ($p \leq 0.01$). Those who had unprotected sex with a regular partner also held significantly more permissive attitudes about sexual intercourse ($p \leq 0.05$); meaning they felt it was acceptable to have sex with a steady partner and that it was unnecessary to wait until they were older before having sex. No additional significant differences were identified with regards to HIV knowledge or religiosity (Table 4.16).

Table 4.16 Summary of means (and standard deviations within parentheses) and t-test results for unprotected sex with regular partner

<i>Unprotected sex with regular partner</i>					
	<i>Yes (n=12)</i>	<i>No (n=110)</i>	<i>Levene's F</i>	<i>t</i>	<i>Sig.</i>
<i>Knowledge</i>	14.92 (2.15)	14.82 (2.05)	0.117	0.16	0.875
<i>ASI</i>	3.58 (1.16)	4.60 (1.58)	1.663	-2.15	0.034
<i>ACU</i>	8.92 (2.07)	11.17 (1.69)	1.382	-4.30	0.000
<i>NSI</i>	3.83 (1.34)	4.10 (1.52)	0.275	-0.58	0.566
<i>NCU</i>	9.25 (1.96)	9.69 (2.12)	0.464	-0.69	0.494
<i>SER</i>	7.92 (1.73)	7.60 (1.53)	0.105	0.70	0.504
<i>SECM</i>	8.33 (1.23)	8.30 (1.26)	0.005	0.08	0.937
<i>SECU</i>	8.54 (0.72)	6.90 (1.66)	6.075	6.29	0.000
<i>BCU</i>	4.17 (1.47)	6.10 (2.17)	3.468	-3.01	0.003
<i>Religiosity</i>	19.58 (7.94)	23.54 (9.24)	0.907	-1.42	0.157

4.4.4 Differences in HIV knowledge, beliefs and religiosity for those who have had an HIV test

The nine respondents who reported having had an HIV test were found to hold significantly different ‘attitudes about sexual intercourse’ and ‘barriers to condom use’ ($p \leq 0.05$) when compared to the 111 respondents who had never had an HIV test before. This shows that those who have had an HIV test felt more competent in their ability to use condoms. The t-test analyses in Table 4.17 shows, however, that having had an HIV test did not significantly influence the adolescents’ level of HIV knowledge, religiosity, or the remaining sub-categories of sexual risk beliefs.

Table 4.17 Summary of means (and standard deviations within parentheses) and t-test results for having had an HIV test

	<u>Had HIV test</u>		Levene's F	t	Sig.
	Yes (n=9)	No (n=111)			
<i>Knowledge</i>	15.22 (2.11)	14.84 (2.04)	0.023	0.54	0.589
<i>ASI</i>	3.33 (0.87)	4.58 (1.58)	3.454	-2.34	0.021
<i>ACU</i>	10.09 (1.75)	11.00 (1.86)	0.028	-1.43	0.156
<i>NSI</i>	3.22 (0.97)	4.15 (1.53)	1.259	-1.79	0.077
<i>NCU</i>	9.89 (1.96)	9.61 (2.09)	0.005	0.39	0.696
<i>SER</i>	8.11 (1.36)	7.53 (1.57)	0.608	1.07	0.287
<i>SECM</i>	8.54 (1.38)	8.28 (1.25)	0.094	0.59	0.558
<i>SECU</i>	8.06 (1.67)	6.99 (1.66)	0.012	1.86	0.065
<i>BCU</i>	4.11 (1.36)	6.03 (2.19)	3.099	-2.59	0.011
<i>Religiosity</i>	21.67 (9.04)	23.28 (9.27)	0.561	-0.50	0.615

4.4.5 Differences in HIV knowledge, beliefs and religiosity for those who have personally known somebody with HIV

As evident in Table 4.18, the 31 respondents who said they had personally known somebody who was HIV-positive, showed significantly higher levels of HIV knowledge when compared to the 91 learners who had never known anybody with HIV ($p \leq 0.01$). These 31 adolescents did not, however, differ to the remaining population in their beliefs regarding sexual risk and protective behaviours, nor in their levels of religiosity.

Table 4.18 Summary of means (and standard deviations within parentheses) and t-test results for knowing somebody with HIV

	<i>Know somebody with HIV</i>		<i>Levene's F</i>	<i>t</i>	<i>Sig.</i>
	<i>Yes (n=31)</i>	<i>No (n=91)</i>			
<i>Knowledge</i>	16.03 (1.56)	14.42 (2.04)	4.628	4.58	0.000
<i>ASI</i>	4.45 (1.84)	4.51 (1.48)	2.416	-0.18	0.857
<i>ACU</i>	10.81 (1.97)	11.01 (1.82)	0.945	-0.52	0.603
<i>NSI</i>	4.15 (1.82)	4.06 (1.39)	4.111	0.25	0.804
<i>NCU</i>	9.81 (1.96)	9.58 (2.16)	0.106	0.51	0.613
<i>SER</i>	7.48 (1.61)	7.66 (1.55)	0.003	-0.53	0.600
<i>SECM</i>	8.48 (1.26)	8.25 (1.25)	0.004	0.89	0.377
<i>SECU</i>	6.81 (1.66)	7.15 (1.67)	0.097	-1.01	0.317
<i>BCU</i>	6.29 (2.25)	5.76 (2.15)	0.145	1.18	0.241
<i>Religiosity</i>	23.06 (9.93)	23.21 (8.96)	0.813	-0.07	0.942

4.5 SUMMARY OF SIGNIFICANT RESULTS

1. The SRBBS (which measures beliefs and self-efficacy regarding sexual risk behaviour) and the SCSORF (which assesses strength of religious faith) were found to be sufficiently reliable measuring instruments within the specific sample of the study. The HIV-KQ-18 (a measure of HIV-related knowledge), however, displayed significantly lower levels of reliability than those reported in a previous study (Carey & Schroder, 2002).
2. The confirmatory factor models of the SRBBS (for sexual-risk behaviour as well as protective behaviours) fit the data when they were adjusted to link grammatically and semantically similar items.
3. The SCSORF yielded similar descriptive statistics to previous studies (Plante *et al.*, 1997a, 1997b). Comparative descriptive statistics for the HIV-KQ-18 and SRBBS were not available.
4. The most common HIV ‘misconception’ (which incorporated incorrect and “I don’t know” responses) was that natural skin condoms are as effective as latex condoms, followed closely by high levels of uncertainty about mother-to-child transmission of HIV.
5. The average age of sexual debut of the respondents was 16.13 years of age. Of all the respondents who were sexually active (i.e. 37.40% of the entire sample population), 58.70% admitted to participating in high-risk sexual behaviours (i.e. having had unprotected penetrative sex). For those who were sexually active within the month prior to data collection, the average number of sexual partners was 1.1. The most common sexual activity was oral sex, followed by vaginal sex with a condom. Condoms and oral contraceptives (‘the pill’) were the most prevalent forms of contraception.
6. Most of the respondents did not consider themselves to be at risk of contracting HIV (scoring 1.84 out of a 5-point likert scale). Seven percent of

all respondents reported having had an HIV test in the past, while 25.20% said they had personally known somebody with HIV.

7. When examining the intercorrelations between knowledge, beliefs, and religiosity, numerous significant correlations were identified. Significant positive correlations were found between knowledge and self-efficacy in communicating about condoms, and knowledge and self-efficacy in using and buying condoms. Significant negative correlations were found between knowledge and barriers to condom use, as well as knowledge and attitudes about sexual intercourse. When examining religiosity, significant positive correlations were found between religiosity and attitudes about sexual intercourse, norms about sexual intercourse, and barriers to condom use. A significant negative correlation was found between religiosity and self-efficacy in using and buying condoms. Thirteen other significant correlations were identified when comparing the psychosocial variables of the SRBBS (i.e. attitudes, norms, self-efficacy and barriers to condom use).
8. Significant positive correlations were found between age and knowledge, and age and self-efficacy in using and buying condoms. Significant negative correlations were evident between age and religiosity, attitudes about sexual intercourse, and barriers to condom use. No significant correlations were identified when accounting for self-assessment of HV-risk.
9. It was evident that females have significantly higher levels of self-efficacy in refusing sex and self-efficacy in using and buying condoms than their male counterparts.
10. Those respondents who reported having had unprotected sex were shown to have significantly more lenient attitudes about condom use and more self-efficacy in buying and using condoms in comparison to those who had not had unprotected sex before. The adolescents who had had unprotected sex with a regular partner similarly showed more lenient attitudes to condom use,

more self-efficacy in buying and using condoms, as well as fewer perceived barriers to condom use.

11. The respondents who had had an HIV test in the past also showed more lenient attitudes to condom use and fewer barriers to condom use. Interestingly, the learners who reported having personally known somebody with HIV had significantly higher levels of HIV knowledge when compared to respondents who had never personally known somebody with HIV.

4.6 CONCLUSION

The results of this study were presented in this chapter in the form of descriptive and inferential statistics. Most of the scales, except for the HIV-KQ-18, were shown to have satisfactory internal reliability. A number of significant intercorrelations and mean variations were identified in the correlation and t-test analyses. These results will be discussed in the next chapter, together with the limitations of the study and recommendations for future research.



CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

In this chapter, the statistical results from the previous chapter are discussed in light of the relevant literature. The reliability and validity of the measuring instruments, as well as the descriptive statistics obtained for the subscales of the questionnaires (i.e. the HIV-KQ-18, SRBBS subscales, and the SCSORF) are examined. Relationships are also highlighted between HIV knowledge, sexual risk beliefs and religiosity, and variables including gender, sexual risk (having had unprotected sex), having had an HIV test, and knowing somebody with HIV. Based on these statistical results, the relevance of the theory of planned behaviour will be discussed, along with various limitations of the study and recommendations for future research.



5.2 RELIABILITY AND VALIDITY OF MEASURING INSTRUMENTS

5.2.1 Reliability of the HIV-KQ-18

The HIV Knowledge Questionnaire (HIV-KQ-18) is a measure of HIV-related knowledge, focussing particularly on sexual transmission. The alpha coefficient of the HIV-KQ-18 for this study (0.487) was significantly lower than the 0.75 to 0.89 found by Carey and Schroder (2002). The internal consistency of the questionnaire was potentially negatively affected by a number of factors, including the sample demographics and the structure of the questionnaire. In the original study by Carey and Schroder (2002), the sample size was significantly larger (n=1019). Although the original and current samples held similar levels of education, the original sample consisted mostly of African-American respondents who were in their late-twenties and of a lower socio-economic standing. In addition to these cultural differences, age is another potential variable. Although

the age span of the current sample was only four years (ages 16-19), the lowest and highest ages differ slightly developmentally, thus potentially affecting the instrument's internal consistency. It must also be considered that the HIV-KQ-18 was negatively affected by the forced-choice (true/false) nature of the questionnaire, which neglected to account for more subtle attitudinal variations.

5.2.2 Reliability of the SRBBS

The Sexual Risk Behavior Beliefs and Self-Efficacy (SRBBS) Scales measure psychosocial variables affecting sexual risk-taking behaviour, including attitudes, norms, self-efficacy and barriers to condom use. The alpha coefficients of the SRBBS subscales ranged between 0.61 and 0.87. Six of the eight subscales were found to have a smaller alpha coefficient than those originally reported by Basen-Engquist *et al.* (1998). Four of the subscales were found to be very reliable, namely 'attitudes about sexual intercourse', 'attitudes about condom use', 'norms about condom use' and 'self-efficacy in refusing sex'. The remaining subscales ('norms about sexual intercourse', 'self-efficacy in communication about condoms', 'self-efficacy in using and buying condoms' and 'barriers to condom use') were found to be moderately reliable within this sample. It is likely that the difference in internal consistency between studies is due to the difference in sample size (with the original study having 6213 respondents) and cultural differences (with the original study being American). Both sample populations were high school students.

5.2.3 Validity of the SRBBS

The SRBBS was divided into two models; the sexual risk behaviour model and the protective behaviour model. Confirmatory factor analyses were used to assess construct validity. It was found that the sexual risk behaviour model fit the data well when paths for correlated error terms were added between grammatically similar attitude and norm items. The same occurred for the protective behaviour model, showing that this model fit the data adequately.

5.2.4 Reliability of the SCSORF

The Santa Clara Strength of Religious Faith (SCSORF) questionnaire assesses strength of religious beliefs regardless of religious affiliation. The SCSORF indicated a very level of high internal consistency ($\alpha = 0.965$), much like the 0.94 and 0.95 described by Plante *et al.* (1997a, 1997b). It can be inferred that the SCSORF was sufficiently reliable within the context of this study.

5.3 DESCRIPTIVE STATISTICS AND FREQUENCIES

With the average result for the HIV-KQ-18 being 14.82, it can be inferred that respondents had an 82.34% accuracy rate of HIV knowledge. This is reasonably high in comparison to previously reported levels from differing population groups (e.g. Peltzer *et al.*, 1998). Despite this, however, it was still evident that a considerable proportion of respondents was either uncertain about, or held misconceptions on, certain aspects of HIV transmission. Specific topics included the effectiveness of natural skin condoms, HIV-infection through birth, and the HIV 'window-period'. Potentially dangerous misconceptions were also evident among certain learners, despite their extensive amount of HIV-education. For example, 21.95% (n=27) of respondents did not know that Vaseline or baby oil could decrease the effectiveness of a condom, and 13.82% (n=17) thought that there is a vaccine that prevents HIV.

Contrary to most literature regarding sexual behaviour and gender (e.g. Brown *et al.*, 1992; Canterbury *et al.*, 1998; Edwards, 1992; Hancock *et al.*, 1999; Pattullo *et al.*, 1994; Robinson *et al.*, 2001), no significant differences were found in HIV knowledge or level of religiosity across genders. Additionally, female respondents were shown to be more sexually active than male respondents. Females were, however, significantly more likely to use condoms during penetrative sex.

When analysing the sexual behaviours of the respondents, the results of this study were very similar to those found by Shisana and Simbayi in the Nelson Mandela/HSRC study of HIV/AIDS (2003). The average age of coital debut (16.13 years) was alike the average age of 16 years reported by Shisana and Simbayi (2003). A similar result was also obtained in the turnover of sexual partners. Of the 41 students who were sexually active in the last month, 92.68% (38) had only one partner, much like the 91.3% found by Shisana and Simbayi (2003). Just as Shisana and Simbayi (2003) found that nearly 40% of all respondents had either never had sex or had abstained from sex in a 12-month period, the present study identified that 45.53% of respondents abstained from sex. The rate of condom-use during the last month, which was 60.38% (50.00% for males; 69.89% for females) in the current study, was equally similar to the previously reported 57.1% for males and 64.1% for females (Shisana & Simbayi, 2003).

Interestingly, when respondents were asked to rate their self-assessment of HIV risk (with 5 indicating a great deal of risk and 1 indicating 'not at all'), the most frequent responses were 2 and 1 (average 1.84). This is most likely because of, rather than 'in spite of', the high rates of reported safe-sex behaviours and HIV knowledge.

5.4 INTERCORRELATIONS BETWEEN HIV KNOWLEDGE, BELIEFS AND RELIGIOSITY

When comparing the intercorrelations between HIV knowledge, sexual risk behaviour beliefs, and religiosity, it was evident that many of the subtests correlated significantly with each other. Of these subtests, self-efficacy in communicating about condoms and self-efficacy in using and buying condoms were integral in portraying significant relationships. One of the strongest correlations was evident between self-efficacy in buying and using condoms and barriers to condom use, showing that those who felt confident in their ability to use condoms were less prone to embarrassment, self-doubt or anxiety about their

behaviour. Additionally those respondents who reported high self-efficacy in communicating about condom use held more positive attitudes about condom use, felt more able to buy and use condoms and felt more confident in their ability to refuse sexual intercourse. These significant results lend credence to the significant role of perceived behaviour control in the theory of planned behaviour.

It was found that those respondents with higher HIV knowledge were significantly more likely to report feeling competent in communicating about sex with others and in buying and using condoms (therefore perceiving less barriers to condom use). A higher level of knowledge was also associated with more permissive attitudes about sexual intercourse (i.e. condoning sex with regular partners and feeling it was unnecessary to delay coital debut). Despite the slight contradiction, this potentially supports previous research findings in which sexual risk-taking persists despite high levels of HIV knowledge and positive attitudes towards safe-sex behaviours (e.g. Canterbury *et al.*, 1998; Hancock *et al.*, 1999; Lance, 2001; Pattullo *et al.*, 1994).



The respondents with higher levels of religiosity were less permissive in their attitudes towards sex (i.e. condoning abstinence), and believed that their friends held similar attitudes (in their perception of the ‘social’ norms). With these attitudes, however, came low self-efficacy in buying and using condoms and a high perception of barriers to condom use (including embarrassment and discomfort). These results support literature findings that adolescents with high levels of religiosity are more likely to delay coital debut but, if or when they do have sex, are less likely to use condoms (e.g. Shornack *et al.*, 1989; Studer & Thornton, 1987). There was a negative correlation between knowledge and religiosity although this correlation was insignificant, showing that each variable is sufficiently independent of each other. This neither confirms nor contradicts the literature findings.

5.5 CORRELATIONS BETWEEN SUBSCALES AND VARIABLES INCLUDING AGE AND SELF-ASSESSMENT OF HIV-RISK

With regards to age, older respondents were more likely to have higher levels of HIV knowledge than their younger counterparts (as expected according to the literature; e.g. Ndeki *et al.*, 1994). Additionally, older respondents were significantly more likely to have more permissive attitudes about sex, feel competent and confident in buying and using condoms, and perceive fewer barriers to condom use. This supports the finding by Bachanas *et al.* (2002) in which older teenagers display more adaptive coping strategies. Older respondents also had significantly lower levels of religiosity than their younger counterparts, confirming the discovery by Lefkowitz *et al.* (2004) that a decrease in religious behaviour is linked to the transition to adulthood.

Self-assessment of HIV risk was found to have no significant correlation with any of the subtests mentioned above.



5.6 COMPARISONS ACROSS SUB-POPULATIONS

5.6.1 Gender differences in knowledge, beliefs and religiosity

Male and female respondents tended to respond to most subscales in a similar way. No significant difference was identified in HIV knowledge between males and females. Although this differs to a large extent from international literature (e.g. Canterbury *et al.*, 1998; Edwards, 1992; Hancock *et al.*, 1999), the finding is similar to that of Shisana and Simbayi (2003). Contrary to previous studies of high school students by Plante and Boccaccini (1997b), there was no significant link between gender and religiosity. With regards to attitudes, beliefs and perceptions about HIV and safe-sex behaviours, female respondents were significantly more likely to perceive themselves as competent and confident in being able to refuse sex. Interestingly, although females reported significantly higher levels of self-efficacy in buying and using condoms, they did not differ

significantly with male adolescents in perceived barriers to condom use or self-efficacy in communicating about condom use. There was also no significant gender difference in attitudes or norms about sexual intercourse or condom use.

5.6.2 Differences in HIV knowledge, beliefs and religiosity for those who have had unprotected sex

The adolescents who had previously had unprotected sex had significantly less permissive attitudes about condom use than those who had only had protected sex (i.e. they did not perceive condoms to be a necessity over-and-above additional forms of contraception). This sub-population of ‘non-advocators’ of condom-use could account for the 31.25% of respondents who preferred using forms of contraception other than the condom. Interestingly, despite this, the same group (i.e. those who had unprotected sex) had significantly higher levels of perceived self-efficacy in buying and using condoms than their ‘safe’ counterparts. These respondents who had had unprotected sex did not differ significantly in any other attitudes or beliefs about safe sex to those who had not had unprotected sex.

When comparing the respondents who have had unprotected sex with a regular partner with the remaining population, those who had had unprotected sex with a regular partner were less likely to advocate strict condom-use and had more permissive attitudes about sexual intercourse (i.e. condoning sex at a younger age). However, despite not using condoms consistently, they also perceived themselves as being more competent and confident in being able to buy and use condoms and did not perceive as many barriers to condom use as the remaining population. No other significant differences were identified.

5.6.3 Differences in HIV knowledge, beliefs and religiosity for those who have had an HIV test

Only nine of the 123 learners (7.32%) reported having previously had an HIV test (seven from school A and two from school B). These nine respondents had

significantly more permissive attitudes about sexual intercourse (i.e. not advocating abstinence), felt more secure in their ability to successfully procure and use condoms, and perceived fewer barriers to condom use than the remaining sample population. This correlates somewhat with previous research by Shisana and Simbayi (2003), in which respondents who had previously an HIV test were shown to be significantly more likely to use a condom during intercourse and to have better HIV knowledge than those who are unaware of their serostatus.

5.6.4 Differences in HIV knowledge, beliefs and religiosity for those who have personally known somebody with HIV

When the same analysis was done with the 25.20% of respondents who reported having personally known somebody with HIV, the only way in which they differed significantly to the remaining sample was their dramatically higher level of HIV knowledge. Interestingly, unlike in some literature (as mentioned earlier), neither being male, having had unprotected sex, having had unprotected sex with a regular partner, having had an HIV test, nor having known somebody with HIV denotes significantly higher levels of HIV knowledge or religiosity.

5.7 RELEVANCE OF THEORETICAL FRAMEWORK

As mentioned in the second chapter, the debate about the relevance of various theoretical frameworks continues, particularly between the theory of reasoned action and the theory of planned behaviour. In an attempt to identify the most relevant theory for the field of sexual risk behaviour, various researchers have examined the role of the vital underlying component that divides these two theories, namely perceived behavioural control (Conner *et al.*, 2003; Gillmore *et al.*, 2002).

The results of this study show that, within this specific population, perceived behavioural control (i.e. self-efficacy) *is* a vital underlying component of the individual's intention to act. When examining the beliefs of the adolescents who had had unprotected sex in the past, it was found that self-efficacy in buying and

using condoms was significantly higher than for those who had never had unprotected sex. Attitudes about sexual intercourse and condom use were also higher, with fewer perceived barriers to condom use. Although this may not explain why adolescents who feel more confident in their ability to use condoms are having unprotected sex, it cannot be denied that self-efficacy about condom use is a significant factor underlying the intention to act.

Self-efficacy in communicating about condoms and self-efficacy in buying and using condoms was also found to correlate significantly with attitudes about condom use, attitudes about sexual intercourse, norms about sexual intercourse, barriers to condom use, HIV knowledge and religiosity. In fact, self-efficacy about condom use correlated more significantly with the adolescents' underlying beliefs than perceived norms about condom use (which only correlated significantly with attitudes about condom use and norms about sexual intercourse). The data has, therefore, shown that the individual's intention to act is significantly comprised of attitudes, subjective norms, and perceived behavioural control regarding safe-sex behaviour. Although this is only a preliminary investigation within this specific population group, it is evident from the above-mentioned information that these results support the relevance of the theory of planned behaviour.

5.8 LIMITATIONS OF THE PRESENT STUDY

- 1) Considering the nature of the sample (high-school adolescents), the subject matter (sexual-related behaviours) and the methodological approach (self-report), the possibility of response 'dishonesty' remains. It was expected that many teenagers would be reluctant to reveal intimate sexual details to a stranger and may, therefore, be tempted to provide the answers that he/she thinks is expected of him/her. However, it must be assumed on good faith that the strict anonymity and confidentiality of the study, as well as the thorough introduction of the research topic (and motivations for the study) to the learners, encouraged the respondents to respond honestly.

- 2) Reliability analysis revealed that the HIV-KQ-18, which measured HIV-related knowledge (specifically relating to sexual transmission), yielded low levels of reliability within this sample. It is therefore difficult to make assumptions based on the information obtained from this questionnaire.
- 3) It is important to remember that the study was conducted among a specific, unique sample of adolescents (i.e. those who attend private schools in the Western Cape). Any attempt to generalise from these findings outside of a similar population must be made with caution.

5.9 RECOMMENDATIONS FOR FUTURE RESEARCH

- 1) As mentioned in the second chapter, the large majority of South African research into adolescent sexual behaviour has been conducted in urban or rural townships. Although the rationale behind focussing on the population group most affected by the HI virus is clearly evident, this somewhat narrow focus neglects to account for a number of additional, substantive population groups. The population group used in this study (i.e. white private school adolescents) may not be the population group most affected by the rapid rate of HIV infection, yet the potential threat of risky sexual behaviour within these communities remain. This is particularly true for adolescents within certain population groups that may perceive themselves to be immune from the devastating effect of HIV due to their location, socio-economic-status, racial group, or social norms and beliefs. It is, therefore, vital that researchers continue to examine as many culturally, ethnically, and racially diverse populations as possible. This will not only provide a more comprehensive understanding of South African adolescents (as a whole), but will also allow for the development of more appropriate intervention programmes that are tailored for the specific population group in hand.
- 2) MacPhail and Campbell (1999) reviewed HIV-prevention programme evaluations (between 1991 and 1998) and criticised the over-emphasis on

quantitative literature. Future studies should consider including a qualitative component. This will allow deeper insight into HIV myths and misconceptions, HIV-related attitudes and beliefs, as well as the perceived impact of religiosity on sexual behaviour. Further qualitative investigation is also needed in understanding why (within this specific population) a noteworthy proportion of certain adolescents continue to knowingly behave in a sexually risky manner.

- 3) As suggested previously by Kaaya *et al.* (2002), a need remains to develop standardised core instruments that allow some flexibility with regards to cultural variations and context. Developing standardised measures of HIV-related issues (e.g. knowledge, attitudes and behaviours) within the South African context will allow for more scientific comparison across different research studies.
- 4) Researchers including Fortenberry (1997) and Flisher *et al.* (2000) have spoken of how the probability of adverse outcomes from one risk behaviour may be increased with the presence of other risk behaviours (e.g. smoking marijuana, alcohol use, intercourse, fighting, cigarette smoking, and suicidal ideation / attempts). The concept of 'risk behaviour syndrome', however, has recently been disputed (Flisher & Chalton, 2001). It is therefore recommended that future studies within similar populations investigate how additional risk factors might impact on sexual risk behaviour.
- 5) It is evident that the respondents of this study have a higher level of HIV knowledge and higher level of condom-use in comparison to the general South African (adolescent) population. In light of this, it is recommended that the HIV-prevention programmes of the schools involved in the study be replicated in other schools in an attempt to see whether similar results will be obtained.
- 6) It is recommended that the theory of planned behaviour be incorporated in future studies as a relevant theoretical model of adolescent sexual risk behaviour.

- 7) It is hoped that this study (as a preliminary exploration) will lead to further investigations, as well as the eventual creation of a standardised, culturally relevant HIV-prevention programme that may be extended to broader contexts within South Africa. As stated by Mathews *et al.* (2000-2001), the low rate of HIV infection in the Western Cape should be used as an advantage point in attempting to prevent further infection rates among youth in the province.

5.10 CONCLUSION

This study has attempted to provide a better understanding of how the sexual risk behaviour of private school learners relates to variables such as HIV knowledge, beliefs and religiosity. An initial concern motivating this study was that private school adolescents, by virtue of their demographics, would feel personally 'immune' to the virus and therefore engage in a higher amount sexual risk-taking behaviours. Being one of the first studies to explicitly focus on the sexual risk behaviours of private school adolescents, an attempt was made to gain a fundamental understanding of this specific population's sexual behaviours as well as some of the relevant factors influencing these behaviours. From the results of this study it is evident that these private school adolescents in the Western Cape generally engage in lower levels of sexually risky behaviours than those reported in South African literature from differing populations. In contrast to some studies that suggest that children from low HIV prevalence areas report less knowledge of HIV and more negative attitudes towards people with HIV (e.g. Ndeki *et al.*, 1994), this specific population revealed a high level of HIV knowledge and a reasonably high level of acceptance of safe-sex behaviours. No other significant differences were identified between this study and recent South African literature. The results of this study lend support to the relevance of the theory of planned behaviour in the field of adolescent sexual risk-behaviour. It is hoped that the results of this study can contribute positively towards the development of effective, target-specific HIV-prevention programmes.

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