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TITLE : INVESTIGATING THE INFLUENCES ON
SEXUAL ABSTINENT BEHAVIOUR OF RURAL
AFRICAN HIGH SCHOOL GOING YOUTH IN
KWAZULU-NATAL.

INSTITUTION : UNIVERSITY OF KWAZULU-NATAL

DEPARTMENT : SCHOOL OF FAMILY AND PUBLIC HEALTH
MEDICINE

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Submitted in partial fulfilment of the academic requirements for the degree of
Master of Public Health in the School of Family and Public Health Medicine,
University of KwaZulu-Natal.

DECLARATION

The work described in this thesis was carried out in the Department of Public Health Medicine, School of Family and Public Health Medicine, Nelson R Mandela School of Medicine, University of KwaZulu-Natal from January 2005 to November 2006.

This study represents original work by the author and has not been submitted, in any form, for any degree or diploma to any University. Where use has been made of the work of others, it has been duly acknowledged.

SIGNATURE : 

DATE : 29 NOVEMBER '07

Acknowledgements:

I would like to extend my appreciation to my supervisor, Professor M Taylor for her assistance in the development, carrying out, and in reviewing of this thesis.

It would have not been possible to do this undertaking without the support of Professor CC Jinabhai, Head of Department of Public Health Medicine, and I thank him for reviewing this thesis.

I thank Professor H de Vries, collaborating professor from Department of Health Education and Health Promotion, Maastricht University, The Netherlands, together with students from his University, namely Rosemarie Huver and Juliette for their assistance in data analysis. I would also like to acknowledge the contribution of Ms Tonya Esterhuizen in this regard.

I wish to express my sincere gratitude to my colleagues Mrs NN Mkhize and Ms R Sathiparsad, who assisted in the various developments of this work and also contributed their expertise.

Special thanks to the KwaZulu-Natal Department of Education and Culture, the school principals, teachers, parents, and learners without whose support this study would not have happened.

Finally I would like to thank my lovely wife, Nthabiseng Dlamini, who has been supportive and understanding; my twin babies, Yada and Zamar for their love and my family, especially my mother Mrs ZBA Dlamini, for their support. Most importantly I would like to thank the Lord God almighty for His strength and guidance.

This study received funding from SANPAD and I would like to thank them.

Abbreviations:

AIDS	Acquired Immuno-deficiency Syndrome
ART	Anti-retroviral treatment
ASE	Attitudes, Social influences and Self-Efficacy
DOE	Department of Education
DHS	Demographic and Health Survey
DSD	Department of Social Development
HBM	Health Belief Model
HIV	Human Immuno-deficiency Virus
HIV/AIDS	Human Immuno-deficiency Virus and Acquired Immuno-deficiency Syndrome
HSRC	Human Sciences Research Council
I-Change	Integrated Model for Motivational and Behavioural Change
IDASA	Institute for Democracy in South Africa
MRC	Medical Research Council
NDOH	National Department of Health
PEPFAR	President's Emergency Plan for AIDS Relief
RAPCAN	Resources Aimed at Prevention of Child Abuse and Neglect
RHRU	Reproductive Health Research Unit
SARPN	Southern African Regional Poverty Network
SES	Socio-Economic Status
TB	Tuberculosis
UNAIDS	Joint United Nations Program on HIV/AIDS
USA	United States of America
USAID	United States Agency for International Development

Summary:

Introduction: The high prevalence of HIV in South Africa was confirmed by Department of Health (2005) which reported an HIV prevalence rate of 40.7 percent amongst antenatal clinic attendees at public facilities in KwaZulu-Natal in 2004. Abstinence is one of the strategies used by many different cultures where young unmarried people are encouraged to abstain from sex until marriage, to prevent young girls from getting pregnant and acquiring sexually transmitted infections (STIs). **Aim:** The aim of this study was to investigate African rural high school learners' choice of sexual abstinence and to compare abstinent versus non-abstinent African rural high school learners in order to be able to develop tailored educational messages. Abstinence was defined as not having penetrative sex, since this is the accepted definition of abstinence in Zulu culture. **Objectives:** a) To investigate the prevalence of abstinence from sexual intercourse amongst African rural high school learners. b) To assess demographic, psychosocial, and economic determinants of abstinence from sexual intercourse. c) To make recommendations about abstinence interventions. **Method:** A descriptive cross-sectional study was carried out in a rural area (Ugu District in southern KwaZulu-Natal). One class of Grade 9 learners, ages 14-20 years, was selected from each of ten randomly selected rural high schools. An anonymous self-reporting semi-structured questionnaire used the I-Change model to investigate demographic and economic information, attitudes, social influences, self-efficacy and intentions towards sexual abstinence. Chi square and T-tests were used for bivariate analysis and Logistic regression was used to develop a model for abstinence from sexual intercourse. **Results:** A total of 454 learners participated with a mean age of 16.76 years (SD 1.41) age range 14-20 years. Of the sample 208 (45.8%) were male and 246 (54.2%)

female. The majority were Christian (84.6% (n=384)) and of this population, 28.3% (n=127) reported that they had 'ever had sex'. Furthermore, 24.5% (n=91) of learners reported that they were currently sexually active. Fifty six percent (n=252) of learners reported that they abstained from sex. When comparing learners reporting abstinence (n=252) with those not abstinent (n=202), abstinent learners were significantly more often females, who had never had sex ($p<0.05$). Furthermore, abstinent learners were significantly younger (16.47 years vs. 17.13 years - non-abstinent group) ($p<0.005$), and drank less alcohol ($p=0.004$). No significant differences were found for marital status, religion, with whom they lived, educational levels of parents, school grades, nor exposure to media (TV, radio, newspapers and magazines), or use of drugs such as cigarettes, benzine and thinners, nor whether they had been forced to have sex. The abstinent group agreed that abstinence helped them to mature emotionally ($p<0.005$), perceived that their friends ($p<0.05$) and parents ($p<0.005$) think that they should abstain from sex, and believed that their friends abstained from sex ($p<0.008$)

Conclusion: Over half of this group of African rural high school learners had chosen to be sexually abstinent. The abstinent group was younger than the non-abstinent, and appeared to be influenced by their parents' and friends' perceptions about abstinence. **Recommendations:** Further research is required on targeted interventions that encourage African rural high school learners to continue to remain abstinent. African rural learners need to be targeted at younger ages to delay early sexual initiation.

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Chapter 1: Introduction

1.1 Introduction:

HIV/AIDS worldwide is one of the most debilitating diseases resulting in many deaths, especially in third world countries. Increasing numbers of people are becoming infected and affected, especially young people (UNAIDS, 2004). This is a cause for particular concern, since young people are the hope for the future. In the 2000 HIV and TB report it is reported that the least affected region in the world is Australia and New Zealand with 0.1% prevalence, the most affected being the sub-Saharan African region with 71.5% prevalence (Statistical Notes, 2000). The Western European countries were reported to be among the regions with low prevalence (2.0%). Interestingly the North African region had even lower rates, reported to be 0.6% (Statistical Notes, 2000).

South Africa is still struggling with the increasing prevalence of HIV/AIDS as more people become infected with the disease (NDOH, 2005). This does not only affect those infected with HIV, but also affects people close to them, the community at large and the economy (IDASA, 2001; van der Berg *et al.* 2005). It is estimated that in 2005 about 5.5 million South Africans were infected as reported by UNAIDS/WHO (2006). The 2004 South African DOH HIV and Syphilis report reported rates higher than this; it reported the total number of potentially infected people to be between 5.7 million and 6.7 million (NDOH, 2004). Studies have shown that it is the youth that is mostly affected by this disease (Reproductive Health Research Unit (RHRU), 2004). Further, the National Department of Health (NDOH) reported that in their survey of antenatal clinic attendees in 2004, 40.7% of the clinic attendees in KwaZulu-Natal were HIV positive (NDOH,

2005). South Africa has the second highest HIV prevalence in the world and only India is reported to have more infected people (UNAIDS/WHO, 2006). The majority (38.5%) of HIV positive women in South Africa are between the ages of 25 and 29 years of age. Women in their early twenties and early thirties showed lower rates with around 30% prevalence. Older women and teenagers had an HIV prevalence below 20% (NDOH, 2004). Since the 1990s there has been a rapid increase in the number of people infected and affected by HIV/AIDS (NDOH, 2002). The challenge of the provision of anti-retroviral treatment (ART) to those most in need still exists, due to the problems of infrastructure, staffing and finance in terms of provision of the drugs (NDOH, 2004). Therefore, even though people can be provided with ART there is no cure, and lifetime treatment is required (NDOH, 2004). There is an urgent need to reduce the number of people becoming infected with HIV (incidence) in order to curb the increasing prevalence of HIV (NDOH, 2000).

The South African government has developed a strategy to address the problem of HIV/AIDS, to which the Health Minister made reference in 2004 at the "abstinence walk" (DOH, 2004). This model recommends abstinence, being faithful to your partner and condom use (ABC) as strategies to prevent the further spread of the disease (NDOH, 2000; Avert, 2006). This highlights the need to develop interventions to deal with the HIV/AIDS problem and sexual abstinence for young people is one option, which has not been adequately studied in South Africa (Stammers, 2003; Nelson Mandela Foundation/Human Sciences Research Council (HSRC), 2002). Despite government's awareness campaigns to reduce HIV transmission the epidemic has continued.

Behavioural studies are required in order to evaluate the effectiveness of these preventive approaches and also to investigate how they can be improved and better targeted.

Abstinence or delaying the age of first sexual intercourse is one of the strategies that has been in existence for a long time (Leclerc-Madlala, 1997). This was used by the societies of old, where young unmarried people were encouraged to abstain from sex until marriage. This was done in order prevent young girls from getting pregnant and acquiring sexually transmitted infections (STIs).

1.2 Aim:

The aim of this study was to investigate the prevalence of sexual abstinence amongst learners (14 to 20 year olds), and to compare abstinent versus non-abstinent learners in order to identify factors influencing abstinence and to be able to make recommendations on how to develop tailored educational messages for the two groups.

Sexual abstinence was defined as not having penetrative sex, since this is the accepted definition of abstinence in Zulu culture. Santelli and colleagues (2006) found varying definitions of abstinence, which ranged from a) postponing sex, b) never had vaginal sex, and c) refraining from further sexual intercourse, if sexually experienced (i.e. ever had sexual intercourse). This is also referred to as secondary abstinence.

1.3 Objectives:

The objectives of this study were:

- a) To investigate the prevalence of abstinence from sexual intercourse amongst rural high school going learners (both males and females).
- b) To investigate demographic, psychosocial (which include media and use of substances), and economic determinants of abstinence from sexual intercourse.
- c) To make recommendations about sexual abstinence interventions.

Chapter 2: Literature Review

This chapter presents work that has been done on sexual abstinence both in South Africa and other countries. It seeks to address the importance of sexual abstinence and its relevance by discussing the extent and spread of HIV/AIDS in relation to young people, risk factors associated with risky sexual behaviour, successes and failures of programmes promoting sexual abstinence, cultural factors influencing abstinence, and other psychological factors affecting decisions about abstinence. A rationale is also given as to why the Integrated Model for Motivational and Behavioural Change was used in this study, in preference to other models of behaviour change.

Prevalence of HIV/AIDS:

HIV/AIDS worldwide is a debilitating disease, causing high morbidity and mortality in many developing countries and in South Africa, particularly amongst young women (Network, 2000; Dorrington *et al.* 2001). A South African national HIV study by Shisana *et al.* (2005) found that among males and females 33.4% and 38.2%, respectively were HIV positive. It is estimated that 5.5 million South Africans are infected, and there are increasing numbers of orphans (Steinberg *et al.* 2000; South African Statistics, 2004; UNAIDS/WHO, 2006). The number of orphans grew from an estimation of 60 000 in 1998 to 160 000 in 2000 and is expected to be 1.95 million by the year 2010 (Steinberg *et al.* 2000). UNAIDS estimated that South Africa has 1.2 million orphans due to HIV/AIDS at the end of 2005 (UNAIDS, 2006).

The majority (38.7%) of the HIV positive women are between the ages 25 to 29 years, suggesting that many were infected in their teenage years due to the long dormancy of HIV/AIDS. Infection occurred due to early sexual debut and may be coupled with risky



sexual behaviour. Further evidence of early sexual activity is that by the age of nineteen years 35 percent of all South African teenagers had been pregnant or had had a child (DOH, 2007). The many problems associated with teenage pregnancy include adverse outcomes in respect of the mother's health, adverse social and economic factors, poorer pregnancy outcomes, and pregnancy interferes with the young mother's education and future (Beake & Zimbizi, 1996). The results of the Demographic and Health Survey (DHS) confirm that early sexual activity occurs in an environment of unprotected sex, which places the young person at risk of sexually transmitted infections including HIV (NDOH, 1998). Early sexual initiation amongst unmarried women is an additional risk factor for multiple sexual partners, and the DHS survey indicated that only three percent of teenagers were married or living with a partner (NDOH, 1998).

Factors influencing risky sexual behaviour amongst youth:

South Africa is experiencing a time of transition and the decade of democracy since 1994 has resulted in many political, economic and social changes. However, despite such change poverty remains a dominant feature in the lives of the majority of the population, impacting on mores and traditional values as people seek to improve their lives (May, 2000; Statistics South Africa, 2001). Studies have found that poverty may have a pivotal role in the vulnerability to HIV infection in South Africa (Mufune, 1999; Mitton, 2000; Colvin, 2000). Young people especially girls may be at risk, since they might engage in transactional sex, commercial sex work and/or become involved in love affairs with older men whom they would be dependent on for material gains. These older men may also

force these girls to have sex with them and most often without a condom, thus placing them at risk of contracting or being infected with HIV (Leclerc-Madlala, 2006).

Other studies have also focused on the factors contributing to low self-esteem, which in turn place young people at risk of risky sexual behaviours and use/abuse of substances (Mussen *et al.* 1984; Baumeister, 1993). Mussen emphasizes the importance of peer group influences and influences from other people (e.g. parents and older brothers or sisters) and how they contribute to the well being of an individual (Mussen *et al.* 1984). It is important therefore that people know and have skills as to how to resist negative peer group influences or pressures to engage in sex at a very young age. Baumeister emphasizes the importance of having high self-esteem and self-confidence, as these qualities are self-motivational. Thus, in order to be able to resist negative peer pressure a person must have a reasonably high self-esteem and self-confidence, as Baumeister highlights in his work (Baumeister, 1993).

An important factor is the social influence which affects the sexual behaviour of youth at risk of HIV with peer influences of significant concern (Romer *et al.* 1994; Wood *et al.* 1996; Wood *et al.* 1998b). Pressure from peers to become sexually active and have multiple partners encourages risky behaviour. A more recent issue in South Africa is that the government has developed a social welfare policy to support communities by the provision of financial grants to mothers of young children (Department of Social Development (DSD), 2004).

Substance use and/or abuse has a significant role to play in the learners remaining sexually abstinent or not. Mezzich and colleagues (1997) in the USA found that there was a statistical trend towards significance for the correlation between age of menarche and substance abuse. Kingree *et al.* (2000) found that adolescents who reported use of marijuana in general as well as specifically in sexual episodes also reported higher levels of unprotected sex. They also found that marijuana use in the last episode was related to the occurrence of unprotected sex during that episode. A South African National Survey by loveLife (2004) found that over half of the surveyed youth have had alcohol in their lives, and of these 24% have had sex under the influence of alcohol. Males were significantly more likely than females to report this (31% and 15% respectively).

Cultural factors influencing abstinence:

In KwaZulu-Natal, South Africa, Zulu culture taught young people “ukusoma” (interpreted as thigh sex) in order to avoid pregnancy and sexually transmitted infections and diseases (STIs and/or STDs) (Leclerc-Madlala, 1997). Penetrative sex before marriage and teenage pregnancy were not encouraged. As a result virginity testing to encourage girls to remain virgins was instituted (Leclerc-Madlala, 2001). However, in South Africa the conflict between virginity testing and human rights has resulted in the former being disallowed. Hence, it is argued that virginity testing violates the rights of girls to privacy, dignity, equality, bodily integrity, and protection (RAPCAN, 2006). Media might also have significant impact on sexual abstinent behaviour of adolescents (Okey, 2002). Greenberg and Woods (1999) cite some of the foci portrayed by the media concerning sexual issues and marriage. Among others they list the following: i) male-

female relationships are rocky and need constant attention. ii) sex is very important in holding onto a relationship, iii) sex just happens; you can't really plan for it, iv) You can't count on someone to be faithful if they get tempted, v) sex has more good things that come with it than bad things, vi) sex is more fun before you get married, vii) marriages don't last anyhow. viii) if you're in love, having sex is OK, ix) Why wait to have sex? x) People who use sex to get what they want usually get what they want. These messages are very different to the messages against premarital sex that could encourage youth to reduce risk behaviour.

It is also documented that sex is now more and more used to sell things that are not even sex oriented. such as hair shampoo (Chura. 2001). Reichert (2003) further explains that these adverts send a message to young people that, among other things. sex is the ultimate prize. you must be sexually attractive. and women are presented to "look good and fulfil sexual needs". A study by Brown and colleagues (2006) in the US found that the sexual media diet (i.e. exposure to sexual content in four media types and also duration of exposure) was positively associated with sexual activity among white adolescents, but the trend was not clear among black adolescents. This was still significant after adjusting for important factors that might contribute to early sexual initiation in adolescence. A commentary by Strasburger (2006) claims that in America the media have arguably become the leading sex educator and about 75% of primetime shows contain sexual content, but only 11% discuss the risks of sex. Collins and colleagues (2004) found that watching sex predicts and may accelerate adolescents' sexual initiation. Hence, teenagers

who watched the most sexual content had a twofold increased risk of initiating intercourse.

Kunkel and colleagues (1999) found that out of all US TV programmes (n=942) that they examined 39% of them contained scenes with a substantial emphasis on sex and over half (56%) of the programmes had sexual content. They further found that in all the programmes with any sexual content, there was an average of 3.1 scenes per hour involving sex. Ward and Rivadeneyra (1999) found that there was an association between the amount of time spent watching TV and the viewer's sexual attitudes, expectations, and behaviour.

Other psychosocial factors affecting decisions about abstinence:

It is also important, however, to look at other contributing factors that result in adolescents not being abstinent sexually. Some adolescents are involved in "love affairs" that might put them at risk of engaging in forced sex (Wood *et al.* 1996; Wood *et al.* 1998b; Jewkes, 2000; Jewkes, 2001; MRC News, 2001). As research shows in South Africa about two-thirds of teenagers reported being forced to become sexually active, indicating that they lack the skills to voice their beliefs and values, to assert themselves, and also the skills to choose with whom they associate (Jewkes, 2000; Jewkes, 2001).

In the loveLife's UNCUT March (2006) publication it is reported that for people under 20 years of age there is a 50/50 chance of being infected with HIV during the course of their lives. Two thirds of HIV infections among women occur between the age 18-23

years, and an earlier publication reports, that some of the reasons are i) most girls at that time are looking for marriageable material, or ii) they want to prove their womanhood by getting pregnant (loveLife, 2004). These results highlight a lack of perceived risk that education programmes about HIV need to address.

Eaton *et al.* (2003) report from a review of South African studies the extent to which young people in South Africa engage in unsafe sexual practices. The review describes three types of sexual risk behaviours, namely i) being sexually active, ii) having many sexual partners, and iii) practising unprotected sex, that have received attention in the literature; but notes that other risk or protective behaviours receive less attention. This review also reports that a significant number of young South Africans start engaging in sex whilst they are still in their teens and thus put themselves at risk of getting infected with HIV/AIDS. Knowledge gaps and misconceptions about HIV/AIDS were found to be substantial (Eaton *et al.* 2003).

Kaaya *et al.* (2002) in their review of the sexual behaviour of school learners in sub-Saharan Africa found many challenges facing the region, namely, the high prevalence rate of sexual intercourse, and the significant proportions of adolescents who have two or more lifetime sexual partners. In their conclusion they suggest that additional exploratory and methodological studies be conducted to look at the role of cultural influences on the sexual behaviour of adolescents, but note the sensitivity of such research, and the opportunity afforded by school systems for interventions. They further affirm that such information in the socio-cultural context in which young people are raised will better

inform interventions that both delay sexual initiation and improve risk reduction strategies (Kaaya *et al.* 2002).

In South Africa the majority of children attend school and this includes both girls and boys (Department of Education (DOE), 2003). The Stats in Brief (2000) report estimated that more than 12 million learners from grades 0 to 12 were enrolled in 1998. The 2002/2003 annual report by Department of Education estimated that in South Africa there were about 13.4 million learners and students in schools and tertiary institutions, respectively (DOE, 2003). There is thus still a large number of learners at schools, despite the devastating impact of HIV on many children and early death through mother to child transmission. It is thus important to protect uninfected children from becoming infected or further infected with HIV and to reduce sexual transmission.

Reaching large numbers of young people at school before they become sexually active with programmes that encourage sexual abstinence is thus possible. School-based programmes have been undertaken and evaluated in other countries, and effective school-based programmes can reduce risk behaviour and improve the health of adolescents (Coyle *et al.* 2001; Stammers, 2003).

A review of abstinence promoting school based programmes:

Much work on abstinence and abstinence promoting or education programs has been done in other countries like USA, Uganda and elsewhere (Olsen *et al.* 1992; Postrado & Nicholson, 1992; Kanto, 1993; Goodson & Edmundson, 1994; Khouzam, 1995; Kay,

1995; Haingere *et al.* 1999; Landry *et al.* 1999; Shuey *et al.* 1999; Watts, 1999; Aarons *et al.* 2000; Lammers *et al.* 2000; Okware *et al.* 2001; Aten *et al.* 2002; Singh *et al.* 2004).

These different programmes are described in the table below.

Table 2.1: A summary of sexual abstinence programs.

Author	Country	Title	Objectives	Method	Results
Kanto <i>et al.</i> (1993)	USA	Scared chaste? Fear-based educational curricula.	Review effectiveness of fear-based abstinence programmes	Cross-sectional study	The study found: - Scare tactics don't work. - Misinformation on medical issues and contraceptive method information omissions. - The study also found that there were exclusively negative consequences of sexual behaviour images.
Goodson & Edmundson (1994)	USA	The problematic promotion of abstinence: an overview of Sex Respect.	Evaluate content of abstinence-based sexuality education Sex Respect.	Cross-sectional study	The study found that: - Omission of basic content including misinformation, especially in areas of reproductive health and human sexual response
Khouzam (1995)	USA	Promotion of sexual abstinence: reducing adolescent sexual activity and pregnancies.	To assess sexual abstinence as a prevention strategy	Cross-sectional study	- Sexual abstinence not associated with public health risks and needs to be presented and promoted as the most effective primary prevention for unplanned pregnancies.
Shuey <i>et al.</i> (1999)	Uganda	Increased sexual abstinence among in-school adolescents as a result of school health education in Soroti district, Uganda.	- Improve access to information and other resources for healthy sexual behaviour decision making. - Improve adolescent interaction regarding information and decision making relating to AIDS, sexuality and health. - Improved quality of the existing district educational system in the implementation of the school health curriculum and in counselling/advice giving to students.	- Quasi-experiment design (13 to 14 year olds)	- Reduction in sexual activity from 43% to 11% in the intervention group. - The changes were sustained even after stratifying by gender and school location. - Students tended to speak to peers and teachers more often about sexual matters. - Increased rational responses on the reasons why students wanted to abstain rather than punishment.
Aarons <i>et al.</i> (2000)	USA	Postponing sexual intercourse among junior high school learners – a	Describe a randomized, controlled evaluation of a school-based intervention to delay sexual intercourse	Randomised controlled evaluation which used a cross sectional design.	- 44% males and 81% females were virgins at baseline. - Females more likely to

		randomised controlled evaluation.	among urban junior high school students.	Target population: 7 th graders	report being virgins after controlling for differences at baseline at 6 month follow-up.
Aten <i>et al.</i> (2002)	USA	Keeping middle school students abstinent: outcomes of a primary prevention intervention	- Test long-term effect of a school-based sexual abstinence intervention. - Compare the effect of the intervention when delivered by different providers. - Describe the factors that influence students' transition	Nonrandomised control trial	- At baseline, 27% of girls and 62% of boys reported sexual intercourse experience. - At follow-up 19% of girls and 32% of boys previously abstinent transitioned to sexual activity. - Age, SES, higher general risk predicted the transition.
Singh <i>et al.</i> (2004)	Uganda	A, B and C in Uganda: the roles of abstinence, monogamy and condom use in HIV decline.	Investigate changes that occurred in abstinence, monogamy, and condom use in Uganda in the 1990's.	Cross-sectional study	- Changes differed by gender, marital status, and age; but were mostly small changes. - Changes were greatest at ages 15-17. - Marital status was a significant factor.
Dworkin and Santelli (2007)	United States	Do abstinence-Plus interventions reduce sexual risk behaviour among youth?	To explore whether abstinence-plus interventions help reduce sexual risk behaviour among youth.	Cross-sectional study	- The study found that such interventions were protective. However, there were important programmatic and policy questions that remained.

Nevertheless there is still uncertainty on whether or not abstinence programmes should be undertaken, since not all are successful (Kanto, 1993; Goodson & Edmundson, 1994; Haingere *et al.* 1999; Aten *et al.* 2002). Goodson and Edmundson (1994) in their content evaluation of the sexuality education curriculum "Sex Respect" conclude that the curriculum had omissions in the basic content and also had misinformation, especially in the areas of reproductive health and human sexual response (Goodson & Edmundson, 1994). Some authors (Varga, 1997; Card, 1999; Rector, 2002) have concerns that the abstinence plus programmes (i.e. programmes that include abstinence as one component of the whole programme) pay little attention towards abstinence. Abstinence is just added to thinly disguise the effort to promote condom use (Rector, 2002). There are thus

different aspects to the debate, namely around the effectiveness of abstinence plus interventions, but also in respect of the content of these programmes (Rector. 2002; Card, 1999).

In an abstinence-based curriculum the main focus is to encourage the target population to remain abstinent and also to encourage those that have started engaging in sex to revert back to abstinence (secondary abstinence); the assessment tools that should be used for evaluation should thus be able to include both groups.

Aten *et al.* (2002) in their work (a 12 session intervention) found that 19% of the girls and 32% of the boys reported to have transitioned to sexual activity at 12 months follow-up post-intervention. Boys were also more likely to be from lower socio-economic status (SES). They found that the best predictors of this transition were low SES and higher general risk behaviours. This highlights the importance of addressing proximal and distal factors that might inhibit an individual from practising the desired behaviour. They suggest that successful abstinence maintenance (till 12 months after intervention) in their study was only possible among those subjects that were not already sexually active (Aten *et al.* 2002). The complexity of the problem suggests that innovative approaches are required to promote abstinence in a society with high rates of teenagers/adolescents (ages of 13 to 19 years old) who are sexually active.

If an individual is convinced about the benefits of changing the behaviour, believes that it is good for his/her health and also feels empowered to change, then a person will change

that behaviour (Rosenstock *et al.* 1988). Other abstinence programs have thus also included scare tactics to try and protect young people from engaging in risky and premature sexual involvement (Kanto, 1993). Although this might promote abstinence for a little while, adolescents need to be taught the risks and consequences of engaging in risky and early sexual involvement (Okware *et al.* 2001). Addressing family (e.g. socio-economic status (SES)) and formal education may enhance sexual abstinence among young people (Lammers *et al.* 2000). In South Africa the high unemployment rate has been difficult to reduce despite government efforts over the past decade (Colvin, 2000: Statistical Notes, 2000) and therefore changing SES is complex.

Stammers (2003) suggests that evidence shows that abstinence approaches on the whole, whether “only” (programme that promote only abstinence) or “plus” (programme that promote abstinence and other behaviours like contraception and condom use), can be very effective. In his paper he cited work by Card, where she reviewed eleven primary pregnancy prevention programmes with published evidence of their effectiveness. One of the conclusions that Card mentions is that, “Abstinence is the gold standard behaviour for teens in middle and high schools, because among other reasons, it is the only way to be 100% sure that you will not get pregnant or cause a pregnancy to happen” (Card *et al.* 1996; Card, 1999; Stammers, 2003). He further draws evidence from African countries, especially Uganda, which has experienced success in curbing the spread of HIV/AIDS in the country (USAID, 2002; Stammers, 2003). Notably in Uganda the rates of condom use have been reported to be low and yet there has been a decrease in HIV prevalence (Mulder *et al.* 1995). The USAID report on Uganda also noted significant behaviour

change in respect of abstinence among the 13-16 year olds from 1994 to 2001 (USAID, 2002).

Kay (1995) among others raises concerns that must also be considered when dealing with adolescent sexual activity, and those are the consequences of premature sexual activity and promotion of healthy living. He advocates close involvement of the family (especially parents) in monitoring the adolescents (in terms of the TV programmes they watch, the friends they choose, not to allow early dating, and encouraging them to achieve in their school career and to develop life goals) and also in talking to them about sexual matters. This in turn will reduce the risk of getting incorrect information from their peers. He further suggests that adolescents should be encouraged to abstain from sex from the preadolescent stage and also those that have started should be encouraged to revert to abstinence (Kay, 1995).

This literature review suggests that interventions addressing sexual abstinence should therefore have: i) a comprehensive approach and reach young people early enough before the age of sexual initiation; ii) they should address social influences (which include pressure to have sex, parental involvement and interest in the sexual behaviour of adolescents, and address media influences such as TV); iii) Interventions should teach negotiation skills on saying No to sex for those who are in relationships but are not ready to have sex, prevent and/or reduce alcohol use in such relationships; and iv) address poverty related issues, since some young people might enter into harmful relationships

for economic reasons. v) Programmes that aim at promoting abstinence should also build self-confidence and self-esteem and also encourage building healthy relationships.

Theories of behaviour change:

There are many theories of behaviour change that have been developed. Some are actually older than others and some have been adapted from others. Most of these models are cognitively based and propose one fundamental principle, that if people believe or perceive that they are vulnerable, then they would be motivated to change their risk behaviour. Hereunder is motivation for the selection of the I-Change model and a brief review of different behaviour change theories that have been developed and used to address behaviours that place people at risk, related to this model.

The Integrated Model for Motivational and Behavioural Change:

The model selected to investigate the determinants of sexual abstinence is the Integrated Model for Motivational and Behavioural Change (I-Change Model) (Figure 2.1). This model was chosen; since it integrates constructs different models discussed above and also addresses other constructs that might be fundamental towards behaviour change, as discussed below. This model posits that a person's behaviour is a result of his/her intentions and abilities. The person's abilities and the environmental factors determine whether such intentions will be realised. Thus a teenager motivated to abstain from sex would need to be able to resist peer pressure, and may need social support in order to achieve this aim. Motivating factors, such as attitudes, social influences, and self-

efficacy, determine intention. Such factors are determined by various predisposing factors, information factors (the quality of messages, channels and sources used) and awareness factors (knowledge, risk perceptions and cues to action) (De Vries *et al.* 2003; De Vries *et al.* 2005a; De Vries *et al.* 2005b).

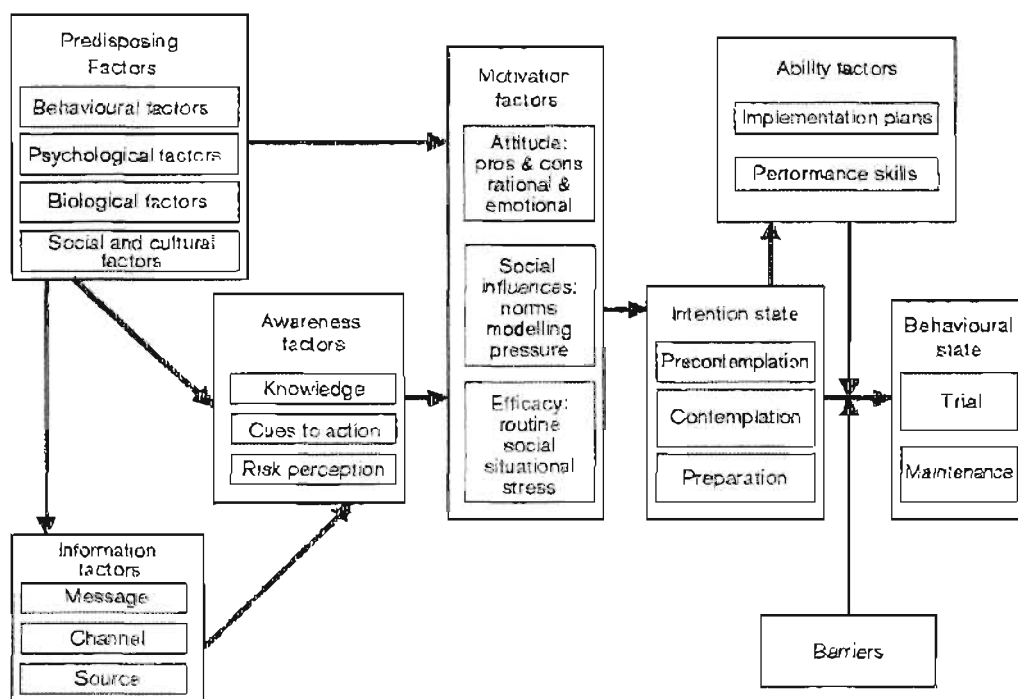


Figure 2.1: The Integrated Model for Motivational and Behavioural Change

This model has incorporates the precede-proceed model (Green and Kreuter, 1991), where the model addresses predisposing factors, such as behavioural, psychological, biological, and social and cultural factors. The awareness factors that the model considers have been adapted from the Health Belief Model (HBM), which defines behaviour as a function of a person taking actions conducive to health if they believe that they are susceptible to a specific disease, the disease is perceived to be serious, and the suggested measures are deemed effective and/or the recommended action is perceived not to be

disadvantageous (Janz and Becker, 1984). Therefore an individual weighs the benefits and costs of the new behaviour before deciding to adopt it. The initiative to pursue a preventative path is cued, by a personal encounter with the disease in the form of knowing/seeing someone with the disease like a friend, family member or a neighbour.

In the case of South Africa not many interventions have been developed and evaluated using the HBM model. There is still more work to be done in terms of understanding perceived vulnerability towards HIV. Studies have reported low levels of perceived risk of HIV infection despite respondents having had unprotected sex and having experienced sexually transmitted infections. This might have been related to the stigma associated with HIV/AIDS, predominantly among men rather than women (MacPhail and Campbell, 2001; Eaton, 2003). Some studies have considered the importance of self-efficacy in enacting the new behaviour, where self-efficacy has been defined as an individual's estimation of his/her ability to cope with the possible barriers to performing the desired behaviour (Bandura, 1997). Gerrard *et al.* (1996) suggest that if the threat or precautionary measures are not available, or are perceived to be difficult to enact, then people will just ignore the threat. Studies have found a positive association between self-efficacy and condom use among young adults, which confirms the above hypothesis (Marin *et al.* 1998; Reddy *et al.* 2000).

The I-Change model also draws from social cognitive theories, which explore the relationship between the individual and the environment. This means that the individual's behaviour is as a result of his or her interaction with his/her environment (Bandura, 1986;

Rosenstock *et al.* 1988). The environment may include social influences like actions, thoughts, and behaviours of significant others that have significant influence on the individual's behaviour. Tones (1997) further explains how beliefs and motivation are linked, where intention to act is influenced both by social norms and the degree to which significant others will react. Modelling of the behaviour is an important influence.

The attitudes and intention of this model are used from the theory of reasoned action, which acknowledges that a person's behaviour is dependent on his/her positive intention(s) to enact that new health or non-risky behaviour (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). Subsequent to this Ajzen and Madden (1986) defined intention as dependent on two determinants, which are a) the person's attitudes to performing a behaviour, and b) beliefs about social pressures that will result from the new behaviour. In other words the stronger the person's intentions are to enact a particular behaviour and he/she has positive beliefs about social norms concerning the behaviour; the more likely he/she is to perform it (Reinecke *et al.* 1996). This raises awareness in terms of targeting health promotion interventions, since most behaviours (e.g. sexual abstinence, condom use, eating healthy foods) are not only dependent on an individual, but also on significant others around the person in order for the person to be successful in implementing and maintaining the healthy behaviour.

Therefore for the interventions to be successful in achieving the desired outcome, interventions must be able to focus/target a single behaviour at a time and also take into account social pressures that exist concerning the behaviour (Rhodes *et al.* 1997). This

theory has also integrated self-efficacy into attitudes and social norms (Bandura, 1997), and evidence from Dutch pupils was reported where 12 to 19 year olds were able to increase their use of condoms (Schaalma *et al.* 1993). Another factor that was seen to have some level of significance for behaviour change was proposed by Ajzen and Madden (1986), who propose that intention will also be influenced by an individual's perceived control in performing the behaviour (Reinecke, 1996).

The precontemplation, contemplation, and preparation stages have been adapted from the transtheoretical model, which proposes that people go through different stages of change before they actually adopt the new behaviour and maintain it for long periods of time, and not everyone is at the same stage in a given population and at any given time (Prochaska *et al.* 1994). Prochaska and colleagues propose that there are five stages (i.e. precontemplation, contemplation, preparation, action, and maintenance) that a person goes through and therefore intervention developers have to consider these factors when developing interventions for behaviour change. Therefore interventions would have different messages for people at different stages, respectively. The different stages are further described below.

Precontemplation means that a person is not even thinking about changing his/her risky behaviour. Contemplation is when a person is thinking about his/her risky behaviour and wants to change. Preparation is when the individual is planning for the adoption of the new behaviour, for example a smoker setting a quitting date. If an individual has performed the behaviour for less than six months, the person has reached the action stage. Maintenance is when an individual has performed the new non-risky behaviour

continually for more than six months. A person can relapse to any of the previous stages at any given time. Therefore progress is not measured in terms of behaviour change per se, but on success in moving people through different stages towards the desired behaviour over time (Prochaska *et al.* 1994). There is supporting evidence that this model can be successful in changing behaviour when used among adolescents if applied properly, like in the USA where Nigg and Courneya (1998) showed success using this model among adolescents. In their study they were able to show both success (adolescents doing physical exercise) and the different stages that the adolescents were at.

The I-Change model also deals with the broader environmental contextual factors and the way in which they shape an individual's decision about his/her behaviour (in this context sexual behaviour). Although the references for this model are for cancer related outcomes (in no way close to abstinence), as a health promotion model it is still a good model to use when investigating the determinants of a particular behaviour and the intentions thereof (Green & Kreuter, 1991; De Vries *et al.* 2005b). The association between constructs such as attitudes, social-influences, self-efficacy (ASE) and intentions, and sexual abstinence need to be investigated, as to whether these influence the behaviour and should be a focus of interventions.

To measure these constructs questions can be developed in respect of a particular behaviour and the reliability tested.

Chapter 3: Method

3.1 Study Design:

An observational descriptive cross-sectional study was undertaken in a rural area, namely Ugu District (in southern KwaZulu-Natal), which has a population of 704 000 (Integrated Rural Development, 2001). The district is an hour's drive from Durban. It is surrounded by sugar cane farms. This district was selected, because it is similar to other rural areas in KwaZulu-Natal where the majority of the population (60%) reside (Stats SA, 2000).

3.2 Sample:

Grade 9 learners from rural co-educational high schools, ages 14-20 years (since compulsory education was only initiated in 1996 the age range of children attending school is wide) were selected for the study. A stratified random sample was obtained. All learners in the class (one randomly selected class of all the grade 9 classes per school) were invited to participate at 10 randomly selected schools (from a total of 28 schools in the circuit). In schools where there was more than one Grade 9 class, papers assigned to each class were put into a container and whichever class that was picked up was chosen for the study. Grade 9 learners were chosen for this study, since this is the stage where most young people start experimenting with different behaviours, like sex and drugs as discussed above (Eaton *et al.* 2003; Jewkes *et al.* 2001).

Ten schools were randomly selected (as mentioned above), since it was estimated that each class would consist of about 40 to 45 learners. Therefore the estimated sample size was a total of 450 learners. The school was taken as the unit. This sample size was

selected since two-thirds of learners are likely to be sexually abstinent (Reddy *et al.* 2003 - Youth Behaviour Risk Survey 2002). The sample size was calculated using Epi Info 6.04 for unmatched cohort and cross sectional studies at an alpha (α) of 0.05, and beta (β) of 0.8.

3.3 Study Instrument:

The questionnaire was developed to collect demographic information about learners, such as age, gender (this term is used instead of sex for males and females since sex is used in relation to sexual intercourse in this thesis), language spoken at home, religion, with whom the learners lived at home, parents' education and whether the parents came back home daily, marks obtained the previous year, beliefs about goals, and whether they had a TV, a fridge and a cell phone at home as measures of socio-economic status. The TV questions also asked if learners used media and watched television programmes like Yizo Yizo, Gaz' Lami, and Simunye (all these programmes had somewhat sexually explicit content, explicit use of illegal drugs and unruly behaviour, especially violence). The learners were asked in the questionnaire about the frequency of their watching such programmes.

The questionnaire also included questions about their parents' values, their own values and whether they live according to their parents' values, perceptions about relationships, whether they had a boy/girlfriend, sexual practices (i.e. vaginal sex, oral sex, anal sex and thigh sex using a four-point scale "never, rarely, sometimes, always"). whether forced to have sex, age of sexual initiation, whether they had ever had an STD and were treated.

and prevalence of substance use. The learners were asked about the use of substances like alcohol, cigarettes, benzine, thinners, and other drugs, and the responses were coded as do not use (0), use occasionally (1), use on weekends only (2), use during week and weekends (3), and use daily (4).

The main dependent variable “sexual abstinence” was measured using a question “Have you voluntarily chosen to abstain?” This question was answered with either a “yes” or a “no”. An algorithm was created for true sexual abstinence, where true sexual abstinence was defined as not having vaginal sex, anal sex, not sexually active now, and having answered yes for sexual abstinence. The questionnaire in exploring perceptions about values and sexual abstinence used a 5-point Likert scale for responses from 1=strongly disagree, 2=disagree, 3=don't know, 4=agree, and 5=strongly agree. The questionnaire included attitude, social influences, self-efficacy (ASE), and intention questions about sexual abstinence. The learners were also asked about the duration of abstinence, and the responses were coded from 1 to 3, which were: abstaining for: 1= 3 months, 2= 6 months, and 3= more than one (1) year. Cronbach's alpha was done for each of the ASE and intention scales. The Cronbach's alpha ranged from 0.68 to 0.82 for the scales.

Attitude Questions:

The attitude questions included, abstinence: i) helps me lower the risk of pregnancy, ii) helps me lower the risk of HIV, iii) does not mean that I don't love my partner, and iv) helps me mature emotionally. All variables were included in the attitudes scale with the standardised Cronbach's alpha of 0.78.

Social Influences Questions:

The social influences questions were divided into subsections that included norms, modelling, and pressure. The norms question were: i) friends think that I should abstain from sex, ii) parents think that I should abstain from sex, iii) family thinks that I should not have a sexual relationship now, and iv) friends think that I should not have a sexual relationship now. Modelling questions included: i) friends abstain from sex, ii) parents abstained from sex at my age, and iii) from TV, I think that one should have a sexual partner. The social pressure question was: peers pressure me to have a sexual relationship.

Seven variables were included in the social influences scale with the standardised Cronbach's alpha of 0.68. The variable that were included in this scale were: i) friends think that I should abstain from sex, ii) parents think that I should abstain from sex, iii) friends abstain from sex, iv) parents abstained from sex at my age, v) my family think that I should not have a sexual relationship right now, vi) friends think that I should not have a sexual relationship right now, and vii) peers pressure me to have a sexual relationship right now. One variable (i.e. from TV I feel that one should have a sexual relationship right now) was not included in this scale, since the Cronbach's alpha was lower (0.65) when it was included.

Self-efficacy Questions:

The self-efficacy questions included, I feel confident that: i) I can abstain from sex, ii) I can abstain from sex when pressured by my partner, iii) I can abstain from sex when I am

in love, iv) I can abstain from sex when I am drunk, and v) I can abstain from sex when I have known my partner for six months.

All self-efficacy variables were included for this scale with an alpha of 0.82 and no variable was deleted from this scale.

Intentions Questions:

The intentions' questions included I intend to: i) abstain from sex in the next six months, ii) abstain from sex next year, iii) abstain from sex while at school, and iv) abstain from sex till married. Four intention variables were included for this scale with an alpha of 0.76. All intention variables were included in this scale.

The table below represents Cronbach's alphas of the ASE constructs that were used for the logistic regression model of sexual abstinence.

Table 3.1: Descriptive statistics and Cronbach's alphas of ASE constructs.

Construct	No. of cases	No. of items	Cronbach's alpha	Mean	STD dev.	Minimum	Maximum
Attitude	340	4	0.78	4.07	3.20	3.93	4.25
Social influences	301	7	0.68	3.20	4.41	2.37	4.04
Self-efficacy	327	5	0.82	3.78	4.27	3.54	4.09
Intentions	323	4	0.76	3.32	4.14	3.11	3.70
Media (TV scale)	357	3	0.76	2.76	3.65	2.49	3.03

The questionnaire was translated into Zulu by a first language Zulu speaker and then retranslated back into English for clarity and accuracy.

3.4 Field Procedure:

Trained field workers (young first language Zulu speakers) administered a semi-structured questionnaire to learners, in the absence of teachers. They emphasised the importance of valid answers and that the questionnaire was anonymous. After the learners had finished answering the questionnaire, they were asked to put the questionnaires into envelopes which they sealed. An anonymous self-reported semi-structured questionnaire was used as the data collection tool, using the I-Change model (De Vries *et al.* 2003) to investigate the different constructs of attitudes, social influences, self-efficacy and intentions and will be described below.

3.5 Ethics approval:

Ethical approval was obtained from the Ethics' Committee, Nelson R Mandela School of Medicine, University of KwaZulu-Natal. Permission to conduct the study was obtained from the KZN Department of Education and Culture, and from the school principals. Written informed consent was obtained from the parents of the learners and also from the learners themselves.

3.6 Data Management:

3.6.1 Data entry:

Data from the questionnaire were double entered (for validation purposes) using the Epi-info 6.04 software package.

3.6.2 Data analysis:

SPSS 11.5 software package was used to analyse the data from the questionnaires. Chi square was used for bivariate analysis for demographic data and included religion, the person the learners live with and the composition of males and females in the sample with respect to abstainers and non-abstainers. Independent samples T-tests were done for bivariate analysis comparing abstinent and non abstinent learners in terms of mean scores for attitudes, social influences, self-efficacy (ASE) and intentions about values, relationships, and sexual abstinence. Covariate (ANCOVA) analysis, allowing for sex, age, and alcohol use, was also conducted to compare abstainers and non-abstainers in terms of the ASE and intention variables. Reliability scales for attitudes' variables, social influences, self-efficacy, and intentions were developed using Cronbach's alpha for each scale, which was then used for binary logistic regression. A correlation matrix of ASE variables was done. The model of sexual abstinence was then developed using binary backward logistic regression after creating reliability scales with the ASE and intention variables of sexual abstinence (as discussed above). Other variables included in the model were a media scale (which included watching Yizo Yizo, Gaz' Lami, and Simunye), age, alcohol use, having a boy/girlfriend, and whether the learners have ever had sex. The sample was then stratified according to gender and regression models of sexual abstinence were developed for boys and girls separately.

Chapter 4: Results

This chapter is a presentation of the study findings and includes a description of the study sample, demographic data, sexual behaviour, economic and media determinants of abstinence, substance use in relation to abstinence, the I-Change constructs of abstinence, and models developed for sexual abstinence.

4.1 Description of the sample:

In total 454 learners participated with a mean age of 16.94 years (SD 1.45) with ages ranging from 14-20 years, but more than two thirds (67.6%) were within the ages of 16-18 years. Of the sample more than half (54%) of learners were females. Most of the learners reported to be Christian (88.1% (n=384)) (see Table 4.1). Less than a percent (0.9%) of learners reported being married. About a third (29.7%) of the respondents considered themselves to have performed above average (60 – 69%) in the last year's examinations. More than a third (35.8%) of the respondents reported staying with both their parents, while a similar percentage reported staying with their mothers only. More than two thirds of the total sample reported that their mother always came back home everyday, but only 43.7% reported that their fathers always came back home daily. Of learners 55.5% reported sexual abstinence. There were 1.6% (n=4) of learners in the sample reporting sexual abstinence who were previously sexually active (secondary abstinence).

4.2 Demographic determinants of abstinence:

When comparing adolescents reporting to be abstinent ($n= 252$) with those not abstinent ($n= 202$), abstinent adolescents were significantly ($p<0.005$) more often female (see Table 4.1). Furthermore, abstinent adolescents were significantly younger ($p<0.005$). Among females only ($n=246$), abstainers ($n=181$) were significantly younger (16.38 years) than non-abstainers (17.22 years), ($t=4.388$; $df=244$; $p<0.005$). Among males only ($n=208$), although abstainers were younger (16.69 years) than non-abstainers (17.09 years), these differences were of borderline significance ($t=1.936$; $df=206$; $p<0.054$). In this sample, religion was not a significant predictor of abstinence; neither was living with a parent or both parents or parent's educational level. There was also no significant difference between the abstainers and non-abstainers in terms of reported academic achievements of the previous year. There was no significant difference in terms of the belief that if one works hard one can achieve one's goals. When looking at what the learners wanted to become when leaving school, there were differences between the two groups. The differences were not clear, since some cells had expected cells counts of less than 5.

Table 4.1: Comparison of Socio-demographic status of Abstinent/Non-abstinent learners - Chi-square [% (N)] and T-test analyses [mean scores (N)].

Variable	Abstainers n=252	Non-Abstainers n=202	Total n=454	df	Chi-square	P-value
<i>Sex</i>				1		
1. Male	28.2 (71)	67.8 (137)	45.8 (208)		70.996	<0.005
2. Female	71.8 (181)	32.2 (65)	54.2 (246)			
<i>Religion</i>				2	5.391	0.67
1. Christian	91.0 (223)	84.3 (161)	88.1 (384)			
2. Muslim	0.8 (2)	0.5 (1)	0.7 (3)			
3. Other	8.2 (20)	15.2 (29)	11.2 (49)			
<i>Live with</i>				9	3.965	0.91
1. Both parents	34.7 (87)	37.3 (75)	35.8 (162)			
2. Mother	37.8 (95)	35.3 (71)	36.7 (166)			
3. Father	3.2 (8)	3.0 (6)	3.1 (14)			
4. Grandparents	4.0 (10)	3.0 (6)	3.5 (16)			
5. Grandmother	11.6 (29)	11.4 (23)	11.5 (52)			
6. Aunt and uncle	2.0 (5)	2.0 (4)	2.0 (9)			
7. Other family members	4.4 (11)	5.5 (11)	4.9 (22)			
8. Others	1.6 (4)	2.0 (4)	1.8 (8)			
Variable	Abstainers	Non-Abstainers	df	T-test	P-value	
Mean age (years)	16.47 (252)	17.13 (202)	452	5.144	<0.005	
Marks obtained last year*	3.86 (232)	3.76 (187)	417	-0.735	0.46	

* Marks coding: 1= 30-39%, 2= 40-49%, 3= 50-59%. 4= 60-69%. 5= 70-79%, 6= 80-89%

4.3 Sexual behaviour:

Of the total population (n= 454), almost a third of the learners (28.3%, n= 127) reported to have ever had sex. This study also found of these learners that 44.4% (92 of 207) of boys reported having ever had sex and 14.5% (35 of 242) of girls (p<0.005).

Furthermore, 24.5% of learners (n=91) reported to be currently sexually active (see Table 4.2) and 18.1% of learners did not answer the question. Two thirds (71.7%) of learners reported to have never had sex.

Boys reported earlier sexual initiation (mean age=13.88 years; SD=2.701; n=33) than girls (mean age=15.63 years; SD=2.140; n=19) and this was significant ($p<0.05$). There was no statistically significant difference between abstainers (secondary abstinence) and non-abstainers with regard to age of sexual initiation. There were also no significant differences for whether they had an STD and were treated for it.

Significantly fewer abstainers (1.6%, $p<0.005$) reported ever having sex and also having a boy/girlfriend. No further analysis could be done on abstainers who reported to ever having sex, since these secondary abstainers were few in number ($n=4$). Fewer abstainers reported forced sex than non-abstainers. However, more research needs to be done on the perceptions of abstaining learners about forced sex, since fewer abstaining learners reported sexual experience ($n=4$) than forced sex alone ($n=9$) (1.6% and 5.1% respectively). When the abstainers were asked for how long they have been abstaining, females ($n=162$) reported to have been abstaining longer (mean=2.94 months) than males ($n=62$; mean=2.47 months), and these results were statistically significant ($t=4.365$; $df=68.551$; $p<0.005$).

Table 4.2: Reported sexual behaviour of Abstainers versus Non-abstainers - Chi-square [% (N)] and T-test analyses [mean scores (N)].

Variable	Abstainers n=252	Non-Abstainers n=202	Total n=454	df	Chi-square	P-value
<i>Have sex now</i>						
1. Yes	0 (0)	49.7 (91)	24.5 (91)	1	124.420	<0.005
2. No	100 (189)	50.3 (92)	75.5 (281)			
<i>Boy/girlfriend</i>						
1. Yes	55.4 (139)	79.5 (159)	66.1 (298)	1	28.892	<0.005
2. No	44.6 (112)	20.5 (41)	33.9 (153)			
Variable	Abstainers	Non-abstainers	df	T-test	P-value	
Age of sexual initiation	14.67 (3)	14.51 (49)	50	-0.099	0.92	

4.4 Economic Determinants of Abstinence:

There were no statistically significant differences between abstainers and non-abstainers with regard to socio-economic status. The results seem to suggest that both groups come from similar socio-economic status with two thirds of homes having a TV, fridge, and a cell phone (see Table 4.3).

Table 4.3: Chi-square analyses comparing socio-economic status of Abstinent and Non-abstinent learners [% (N)].

Variable	Abstainers n=252	Non-Abstainers n=202	Total n=454	df	Chi-square	P-value
<i>House has:</i>						
<i>a TV</i>						
1. Yes	68.1 (158)	71.8 (127)	69.7 (285)	1	0.632	0.43
2. No	31.9 (74)	28.2 (50)	30.3 (124)			
<i>a Fridge</i>						
1. Yes	63.5 (148)	66.9 (117)	65.0 (265)	1	0.489	0.48
2. No	36.5 (85)	33.1 (58)	35.0 (143)			
<i>a Cell phone</i>						
1. Yes	67.7 (157)	66.5 (117)	67.2 (274)	1	0.065	0.80
2. No	32.3 (75)	33.5 (59)	32.8 (134)			

4.5 Media Determinants of abstinence:

Abstainers reported less frequent watching of TV programs like Yizo-Yizo, Gaz' Lami and Simunye than that reported by non-abstainers and these results were statistically significant ($p < 0.005$) (see Table 4.4).

Table 4.4: Mean scores (N) comparing media differences between Abstainers and Non-abstainers - T-test analyses.

Variable	Abstainers n=252	Non-abstainers n=202	df	T-test	P-value
Watching Yizo Yizo	2.85 (233)	3.31 (185)	414.308	3.466	0.001
Watching Gaz' Lami	2.69 (218)	3.0 (178)	389.503	1.974	0.049
Watching Simunye	2.37 (217)	2.72 (163)	378	2.384	0.018
Watching Eastern Mosaic	0.57 (201)	0.82 (158)	299.886	1.957	0.051

Code: 0= don't watch, 1= rarely, 2= sometimes, 3= often, 4= always

No significant differences were found for exposure to other media types (e.g. radio, newspaper and magazines). There were no statistically significant difference between males and females in terms of the reported frequency of watching the above programmes, except for one where male non-abstainers reported more frequent watching of Yizo Yizo (mean score=3.42) than male abstainers (mean score=2.94) ($t=2.366$, $df=110.635$, $p=0.02$).

4.6 Substance use in relation to sexual abstinence:

There was a statistically significant difference in alcohol use between abstainers and non-abstainers. Abstainers consumed less alcohol than non-abstainers. There were no statistically significant differences between the two groups in terms of using drugs such

as benzene, thinners, and other drugs. In terms of the use of cigarettes there was a borderline significant difference between abstainers and non-abstainers observed ($p=0.056$). About 27.5% of non-abstainers reported alcohol use compared to about 16% of abstainers reporting alcohol use ($p=0.033$). About 28% of males consumed alcohol compared to about 16% of females that consumed alcohol ($p=0.024$). Males also reported more alcohol consumption (mean score=0.39) than did females (mean score=0.20) and this was statistically significant ($t=-2.770$; $df=295.004$; $p=0.006$) (see Table 4.5).

Abstaining females reported more frequent use of benzene (mean score=0.11) than non-abstaining females (mean score=0) ($t=-1.964$, $df=158$, $p=0.004$). Non-abstaining males reported significantly more frequent use of cigarettes (mean score=0.27; $t=3.126$; $df=108$; $p=0.002$), alcohol (mean score=0.47; $t=2.653$; $df=168$; $p=0.009$), and other drugs (mean score=0.14; $t=2.052$; $df=125.841$; $p=0.042$) than abstaining males (mean score=0; 0.21; 0.02, respectively).

Table 4.5: Mean scores (N) comparing substance use behaviour between Abstainers and Non-abstainers - T-test analyses.

Variable	Abstainers	Non-abstainers	df	T-test	P-value
Use of alcohol	0.20 (215)	0.40 (167)	271.051	2.915	0.004
Use of cigarettes	0.56 (214)	0.18 (159)	231.368	1.924	0.056
Use of benzene	0.08 (214)	0.03 (154)	340.192	-1.465	0.144
Use of thinners	0.04 (202)	0.07 (157)	357	0.881	0.379
Use of other drugs	0.04 (202)	0.12 (154)	240.641	1.730	0.085

Code: 0= don't use, 1= use occasionally, 2= use on weekends only, 3= use during week and weekends, 4= use daily.

4.7 Attitudes, Social influences, Self-efficacy, and Intention determinants of abstinence:

Differences in scores for attitudes, social influences, self-efficacy beliefs and intentions were compared between high school learners reporting abstinence and non-abstinent behaviour. There were no statistically significant differences between the two groups in terms of perceptions about sexual abstinence helping them to lower the risk of pregnancy ($p=0.10$) and HIV infection ($p=0.07$) (see Table 4.6). The abstainers had positive attitudes with respect to sexual abstinence, except for the two variables that have already been mentioned above. Abstainers had positive perceptions about social influences towards sexual abstinence.

There were no statistically significant differences between abstaining and non-abstaining learners on the feelings of social pressure by peers ($p=0.654$) and influence of TV ($p=0.052$) to have a sexual relationship. There were statistically significant differences between the two groups in terms of self-efficacy to abstain from sex in different situations. Abstainers expressed confidence to abstain from sex in all circumstances (see Table 4.6). Abstainers also expressed intentions to abstain from sex but two intention questions were not significant, namely those who are intending to abstain in the next six months and while at school.

Table 4.6: Mean scores (N) of ASE variables: Abstainers/Non-abstainers – T-test analyses.

Variable	Abstainers	Non-abstainers	df	T-test	P-value
Attitudes					
Helps me lower risk of pregnancy	4.32 (191)	4.16 (175)	364	-1.654	0.10
Helps me lower risk of HIV	4.04 (184)	3.83 (167)	349	-1.835	0.07
Does not mean I don't love my partner	4.28 (183)	4.01 (177)	358	-2.591	0.010
Helps me mature emotionally	4.35 (186)	3.57 (173)	316.327	-6.986	<0.005
Social Influences					
Friends think I should abstain	3.63 (189)	3.10 (174)	361	-4.521	<0.005
Parents think I should abstain	4.36 (185)	3.71 (173)	321.253	-6.100	<0.005
Friends abstain from sex	3.32 (177)	2.88 (171)	346	-4.395	<0.005
Parents abstained from sex at my age	3.29 (177)	3.12 (171)	346	-2.040	0.042
Family thinks I should not have a sexual relationship now	3.70 (228)	3.24 (182)	408	-4.210	<0.005
Friends think I should not have a sexual relationship now	3.01 (229)	2.80 (186)	413	-2.040	0.042
Peers pressure me to have a sexual relationship	2.40 (229)	2.45 (188)	415	0.448	0.654
From TV I feel one should have a sexual relationship	2.99 (227)	3.21 (187)	387.755	1.949	0.052
Self-efficacy					
Confident that I can abstain from sex	4.34 (186)	3.84 (173)	328.094	-4.758	<0.005
Confident that I can abstain from sex when in love	4.10 (178)	3.54 (170)	346	-4.848	<0.005
Confident to abstain from sex when pressured by partner	3.97 (181)	3.52 (168)	347	-3.766	<0.005
Confident to abstain from sex when drunk	3.67 (180)	3.34 (167)	345	-2.708	0.007
Confident to abstain from when I have known partner for 6 months	3.88 (178)	3.56 (163)	339	-2.503	0.013
Intentions					
Intend to abstain from sex in the next 6 months	3.34 (193)	3.30 (166)	357	-0.287	0.77
Intend to abstain from sex next year	3.33 (193)	3.01 (159)	350	-2.248	0.025
Intend to abstain from sex while at school	3.27 (194)	3.21 (159)	351	-0.443	0.66
Intend to abstain from sex till married	4.28 (228)	3.32 (168)	295.778	-7.142	<0.005

Ranking: 1= strongly disagree, 2= disagree, 3= don't know, 4= agree, 5= strongly agree

Since both groups differed significantly on gender distribution, age and alcohol use, these variables were used as covariates, since the differences between the two groups could otherwise be attributed to differences on these three variables. After adjusting for gender, age, and alcohol some of the previously statistically significant findings were no longer significant (see Tables 4.6 and 4.7).

There were, however, significant differences even after adjusting for the above covariates. The abstainers still believed that abstaining from sex would help them mature emotionally ($p < 0.005$). they thought that their friends and parents thought that they should abstain ($p < 0.05$ and < 0.005 respectively). and also thought that their friends abstained from sex ($p = 0.008$).

Table 4.7: Mean scores (N) of ASE variables: Abstainers/Non-abstainers-Covariate analyses

Variable	Abstainers	Non-abstainers	df	F-test	P-value
Attitudes					
Helps me lower risk of pregnancy	4.30 (160)	4.14 (141)	1, 296	1.652	0.200
Helps me lower risk of HIV	4.03 (156)	3.86 (135)	1, 286	1.562	0.212
Does not mean I don't love my partner	4.25 (156)	4.05 (142)	1, 293	2.443	0.119
Helps me mature emotionally	4.30 (158)	3.60 (139)	1, 292	25.246	<0.005
Social Influences					
Friends think I should abstain	3.57 (159)	3.25 (141)	1, 295	4.758	0.030
Parents think I should abstain	4.26 (155)	3.80 (139)	1, 289	12.426	<0.005
Friends abstain from sex	3.29 (150)	2.94 (138)	1, 283	7.076	0.008
Parents abstained from sex at my age	3.22 (151)	3.15 (138)	1, 284	0.486	0.486
Family thinks I should not have a sexual relationship now	3.63 (196)	3.34 (153)	1, 344	4.438	0.036
Friends think I should not have a sexual relationship now	3.01 (198)	2.82 (154)	1, 347	1.906	0.168
Peers pressure me to have a sexual relationship	2.59 (198)	2.28 (155)	1, 348	5.751	0.017
From TV I feel one should have a sexual relationship	3.08 (196)	3.10 (154)	1, 345	0.006	0.936
Self-efficacy					
Confident that I can abstain from sex	4.18 (159)	4.01 (139)	1, 293	1.876	0.172
Confident that I can abstain from sex when in love	3.92 (153)	3.70 (137)	1, 285	2.466	0.117
Confident to abstain from sex when pressured by partner	3.94 (155)	3.63 (136)	1, 286	4.613	0.033
Confident to abstain from sex when drunk	3.54 (155)	3.51 (135)	1, 285	0.052	0.820
Confident to abstain from when I have known partner for 6 months	3.68 (155)	3.77 (134)	1, 284	0.345	0.558
Intentions					
Intend to abstain from sex in the next 6 months	3.28 (170)	3.40 (138)	1, 303	0.498	0.481
Intend to abstain from sex next year	3.23 (170)	3.20 (135)	1, 300	0.039	0.845
Intend to abstain from sex while at school	3.19 (171)	3.34 (130)	1, 296	0.750	0.387
Intend to abstain from sex till married	4.11 (198)	3.67 (139)	1, 332	9.315	0.002

Ranking: 1= strongly disagree, 2= disagree, 3= don't know, 4= agree, 5= strongly agree

Despite the pressure that the abstainers felt from their peers to have a sexual relationship, they were still confident that they could abstain from sex even when pressured by their partners, encouraged by their perceptions of parents wanting them to abstain from sex and they also intended to abstain from sex till they got married ($p < 0.005$) (see Table 4.7).

The correlation matrix of ASE variables showed higher correlations between the self-efficacy scale and attitude scale, and the self-efficacy scale and social influences scale ($p < 0.005$) (see Table 4.8). Intentions to abstain correlated significantly with abstinence self-efficacy, abstinence social influences, and abstinence attitude scales ($p < 0.005$).

Table 4.8: Correlation Matrix of the ASE variables for sexual abstinence.

		Abstinence attitude scale	Abstinence social influence scale	Abstinence self-efficacy scale	Abstinence intention scale
Abstinence attitude scale	Pearson Correlation	1	.397(**)	.560(**)	.331(**)
	Sig. (2-tailed)		<0.005	<0.005	<0.005
	N	340	297	310	254
Abstinence social influence scale	Pearson Correlation		1	.476(**)	.399(**)
	Sig. (2-tailed)			<0.005	<0.005
	N		307	294	233
Abstinence self-efficacy scale	Pearson Correlation			1	.496(**)
	Sig. (2-tailed)				<0.005
	N			327	248
Abstinence intention scale	Pearson Correlation				1
	Sig. (2-tailed)				
	N				323

** Correlation is significant.

Two models of sexual abstinence were developed, one with a self-efficacy scale without social influence and another with social influences but without self-efficacy, since these

variables correlated, to examine to what extent the high correlation between these variables affected their influence on sexual abstinence.

4.8 Logistic Regression Model of sexual abstinence:

After creating scales as discussed in the methods section, regression models were developed. The tables below represent final models of sexual abstinence (Tables 4.9a,b, 4.10, and 4.11). The overall logistic regression model shows that the following variables are important for sexual abstinence: social influences ($p=0.030$), gender ($p=0.001$), history of sexual activity ($p=0.005$), but one should exercise caution when interpreting gender, although the odds of females abstaining were almost five times that of males, the confidence intervals are wide.

Table 4.9a: Regression Model of sexual abstinence (without self-efficacy scale).

Variable**	Beta	S.E.	Wald	P - value	Odds Ratio (OR)	95% CI Lower (OR)	95% CI Upper (OR)
Social influences	0.857	0.395	4.712	0.030	2.355	1.087	5.105
Gender	1.486	0.465	10.220	0.001	4.420	1.777	10.994
Ever had sex	-3.313	0.787	17.729	<0.005	0.036	0.008	0.170

** Variables in the model included other factors, namely: attitudes, intentions to abstain, age, alcohol use, TV programmes, and having a boy/girlfriend. Coding male (1), female (0), ever had sex= yes(1), no (2).

Table 4.9b: Regression Model of sexual abstinence (with self-efficacy scale).

Variable**	Beta	S.E.	Wald	P - value	Odds Ratio (OR)	95% CI Lower (OR)	95% CI Upper (OR)
Gender	1.900	0.449	17.879	<0.005	6.684	2.771	16.124
Ever had sex	-3.532	0.782	20.393	<0.005	0.029	0.006	0.135

** Variables in the model included other factors, namely: attitudes, intentions to abstain, age, alcohol use, TV programmes, and having a boy/girlfriend. Coding male (1), female (0), ever had sex= yes(1), no (2). These variables were also used in building models for males and females.

In this model not even one ASE scale was included to explain sexual abstinence and as a result was deemed not a good model of sexual abstinence.

4.8.1 Model of sexual abstinence for females:

Differences were observed between the model of abstinence for females and that of males. In females, with an increase in one unit of social influences towards sexual abstinence, when all else is equal, there is an increase by 1.643 units in abstinence resulting in females being more likely to be abstinent than non-abstinent. With a decrease in age by one year, when all else is equal, there is an increase by 0.5 unit in abstinence, but this was borderline significant ($p=0.06$) (see Table 4.10). It is important to note that although there was a statistically significant result, in as far as social influences are concerned, the confidence intervals are wide and therefore the model should be interpreted with caution.

Table 4.10: Regression Model of sexual abstinence for females.

Variable	Beta	S.E.	Wald	P - value	Odds Ratio (OR)	95% CI Lower (OR)	95% CI Upper (OR)
Social influences	1.643	0.594	7.663	0.006	5.171	1.616	16.551
Age	-0.500	0.268	3.480	0.062	0.606	0.359	1.026

4.8.2 Model of sexual abstinence for males:

For males two risk factors were important in the sexual abstinence model and these were positive attitudes for sexual abstinence and self-efficacy (see Table 4.11). Attitudes were

however of borderline significance and the confidence intervals were wide. Self-efficacy appeared to be protective of boys being abstinent.

Table 4.11: Regression Model of sexual abstinence for males.

Variable	Beta	S.E.	Wald	P - value	Odds Ratio (OR)	95% CI Lower (OR)	95% CI Upper (OR)
Attitudes	1.257	0.666	3.560	0.059	3.513	0.952	12.962
Self-efficacy	-1.678	0.727	5.330	0.021	0.187	0.045	0.776

4.9 Limitations of the study:

The aim of the study was explained to the learners and the importance of honest responses stressed. However, this survey is based on self-reported data and also asks questions that may be considered sensitive by some individuals, and therefore can introduce biases like recall bias and social desirability bias. Questions answered in a school environment where there are large numbers of learners in a class have implications regarding privacy and confidentiality. This might lead to individuals not being comfortable in answering honestly some of the questions asked in the questionnaire or not answering them at all. To try and reduce these biases, the questionnaire was answered anonymously in the absence of an authority figure (i.e. school teacher), and young people (first language Zulu speakers) were trained and used as facilitators in questionnaire administration. After completing the questionnaire, the learners were given envelopes in which to seal the questionnaires to ensure privacy.

Only one grade 9 class was selected. Where there were two or three classes the probability of individuals in a particular class being selected was reduced and this was not taken into consideration in the analysis. In our previous school based studies using weighting however the results did not show large differences.

An algorithm was developed to determine true sexual abstinence (outcome variable of choice), which dealt with the reliability of the instrument. The questionnaire was piloted to ensure clarity of the questions. A further limitation was that only a few questions were used to measure socio-economic determinants (i.e. no income and/or expenditure

variables). Household items were used as proxies of socio-economic determinants (i.e. learners were asked whether the household had a television, cellular phone, and fridge). Not all learners answered every question, which is a limitation in using a self-reporting questionnaire.

Chapter 5: Discussion

Gender and abstinence:

This study found that over half of rural high school learners reported being sexually abstinent, and that the abstainers were predominantly females. Aten and colleagues (2002) found similar results with boys being more sexually active than girls. This is consistent with the findings of the study reported here that boys start engaging in sex early. The area where the study took place is a rural area where traditional practices are more likely to occur and other activities to promote sexual abstinence such as virginity testing which focuses on girls may take place. There is clearly a need for more research to try and answer the question as to who the boys are engage in early sex with.

Interventions also need to consider developing different tailored abstinence interventions for boys and girls, since the models differed when stratified for gender (see Tables 4.10 and 4.11). Interventions targeted at encouraging females to abstain should focus on social influences (which include the perceptions of friends and parents about abstinence from sex), and intervening early before the age of sexual initiation. For males, interventions should include skills on resisting pressure not to abstain and also on changing and creating positive attitudes towards sexual abstinence (Santelli *et al.* 2004).

Age and abstinence:

The abstinent group was significantly younger than the non-abstinent group. Recent studies amongst learners attending KwaZulu-Natal Public High Schools indicate that many youth become sexually active before they reach high school (Varga, 1997:

UNAIDS, 2002; Taylor *et al.* 2003b). A study by Kirby *et al.* (1991) in the USA found that boys reported their age of sexual initiation to be younger (12.12 years) than that of girls (14.56 years). Another study done in Zambia found that at baseline, of learners reporting sexual activity, 51% were older (mean age 17.5 years) than those who were not active (Agha and van Rossem, 2004). Interventions to encourage adolescents to remain sexually abstinent are therefore required early before they become sexually active and then need to continue right through their adolescent years until they are able to critically make informed decisions about their sexual activity.

Academic performance:

There were no significant differences found in this study between abstainers and non-abstainers in terms of academic achievement. A study conducted among African Americans and Latino students in the USA however, found that high academic achievement, among other things, was associated with being sexually abstinent (Raine *et al.* 1999). Although there was no statistical significance for this variable, academic achievement is a worthwhile goal in its own right and can still be used to encourage young people to pursue their goals in life (Santelli *et al.* 2004).

Religious Beliefs:

In this study religious beliefs did not appear to have significant influence on whether to abstain or not, and similar results were observed in a Ugandan study (Shuey, 1999). This, however, seems to be in contradiction with what is known to be advocated by most

religious groups and faith-based organisation (Liebowitz, 2002; Myers, 2003). Paul and colleagues (2000) found that persistent involvement in church activities was a predictor of sexual abstinence, rather than just being affiliated with a religious organisation. In the study reported here the question asked the religious group that the learners belonged to. This might have been a limitation, but one might argue that in order consider someone to be of a certain religion they have to be involved in it. Although sexual abstinence has been considered to be a religious ideology only, in some parts of the world sexual abstinence is becoming a national and political agenda (Watts. 1999; Lammers *et al.* 2000; Rosenberg, 2002; The Buzz. 2002; Stammers, 2003;). The PEPFAR funding provided by the USA to reduce HIV infection emphasises abstinence programmes and this has proven to be controversial (Human Rights Watch. 2004).

There is a lot of contention about whether abstinence programmes work or not, but there is evidence proving that abstinence programs can work. The USA, which is one of the most powerful countries in the world, through the Bush Administration is pushing the sexual abstinence agenda forward and is also funding such programmes and this is playing an important role (The Lancet. 2002; Walgate, 2004). It also shows that some prominent people and leaders are beginning to realise the role of abstinence in HIV/AIDS prevention work, not only in America and other affluent countries, but also in Africa (Shuey *et al.* 1999; The Buzz. 2002; Stammers, 2003; Singh *et al.* 2004).

This emphasises the importance of involvement of all the stakeholders that are interested in the up-bringing and well-being of young people. Shuey *et al* (1999) have shown in

their work that much can be achieved, if there is collaboration and willingness between different government departments (i.e. health, social development, and education). In South Africa the Department of Education provides Life Skills as part of the Life Orientation module at schools and abstinence is promoted (DOE, 2003).

Socio-economic determinants:

It is important to recognise the context in which learners live. Although there was not any significant difference in terms of socio-economic status (SES) between the abstainers and non-abstainers in this study, it is important to note that about 40% of households are poor (May *et al.* 1998, Southern African Regional Poverty Network (SARPN), 2006). About 50% of these poor households are in rural areas (SARPN, 2006). This study used three SES items, which provide an indication of SES in the home but these measures are limited. Therefore the interpretation of the results from such measures is also limited, since although households may have commodities (e.g. TV, fridge, and cell phone), individual members (learners in households) may aspire to other commodities that households cannot meet, and these desires may also influence their sexual behaviour.

Poverty, therefore, may have a significant role to play in terms of the sexual behaviour of young people, as studies have shown that young people enter into unhealthy relationships and even engage in unprotected sex because they are dependent on the partner financially and want to prove their love for the partner providing resources (Wood *et al.* 1996; Wood *et al.* 1998b; Jewkes, 2000; Jewkes, 2001; loveLife, 2004). If girls, especially, become pregnant as a result, there are even fewer chances of them continuing with their education

thereafter. This perpetuates the cycle of poverty as a result of limited job opportunities available for people with little or no education at all (Macleod, 2002, Rector *et al.* 2003).

In order for government, policy makers, planners, health care providers, and non-governmental organisations to be successful in behaviour change and thus curb the spread of HIV/AIDS, it is important to also address the issue of poverty at the same time. Institutions, including schools, need to train young people not only with theoretical knowledge, but also with practical skills (i.e. entrepreneurial skills) that they need in order to be able to both find jobs and also start their own businesses and therefore become independent. In South Africa there are programs like Umsobomvu (which is a youth empowerment program) that is aimed at developing young people so that they can start their own businesses. and this resource can be strengthened so that it reaches more people (Umsobomvu Youth Fund, 2006). This will help young people to make informed decisions about their sexuality without external pressures as a result of their economic circumstances (i.e. having to engage in sexual activities because they are dependent on a partner(s) financially and otherwise).

Substance use and abstinence:

With the exception of alcohol and cigarettes (which were of borderline significance) there was no significant difference in terms of use of substances between the two groups in this study. Alcohol use was found to be highly significant with abstainers reporting less alcohol consumption. A study by St. Lawrence *et al.* (2002) in the USA showed a significant increase in abstinence when adolescents were treated for use of substances.

These differences were still observed after a period of 12 months. A South African National Survey by loveLife (2004) found that over half of the surveyed youth have had alcohol in their lives, and of these 24% have had sex under the influence of alcohol. Males were significantly more likely than females to report this (31% and 15% respectively). Interventions should thus address issues of alcohol consumption and other drugs that might influence sexual activity in order to be able to have a sustainable impact in keeping adolescents sexually abstinent.

Media influences on abstinence:

The results of this study confirmed what other people have found concerning media influences on the sexual behaviour of adolescents. This study found that abstainers reported less frequent watching of Yizo Yizo, Gaz' Lami, and Simunye which are locally produced programmes that have a few things in common. They are popular with young people and also have varying degrees of sexual content in them. It also found that non-abstaining boys watched more of such programmes than abstaining ones.

Although this was a cross-sectional study and one cannot tell the direction of the relationship, it seems to concur with other studies on the subject (Kunkel *et al.* 1999; Okey, 2002; Collins *et al.* 2004; Brown *et al.* 2006; Strasburger, 2006). A study by Collins and colleagues supports evidence that exposure of young people to sexual content on TV predicts adolescent sexual initiation. Another study in the USA that looked at the adolescent sexual media diet, found a twofold risk of engaging in sex for white teens that were exposed to a heavy diet of sexy media (Brown *et al.* 2006).

Sexual history:

It is important to note that there were significant differences between abstainers and non-abstainers in terms of reporting to have “ever had sex”. Amongst the abstainers few reported secondary abstinence. In order for the programs/ interventions to be effective in encouraging young people to be sexually abstinent, they need to start or target young people very early, before the age of sexual initiation (Kirby *et al.* 1991; Varga, 1997; Shuey *et al.* 1999; Taylor *et al.* 2003b). Shuey *et al.* (1997) found that in the Soroti district of Uganda there was a significant drop in the number of young people (average age of 14 years) reporting to be sexually active from 42.9% to 11.1% in a period of two years after the intervention. This is a district with a history of civil unrest for a period of about eight years and an economy that was underperforming because of the unrest, but despite this they reported positive changes in sexual behaviour.

There are however many challenges that must be addressed to encourage adolescents to change their behaviour and sustain that new behaviour, as there is still a large percentage that does not abstain. More work therefore needs to be done in trying to understand motivational factors that will help adolescents to stay abstinent from sex.

Determinants of abstinence using I-Change Model:

This study used the I-Change model to try and understand the determinants of sexual abstinence among school-going youth of rural KwaZulu-Natal. The results from the ASE variables presented in Tables 4.6 & 4.7 were interesting. There were significant results from the T-tests which were no longer significant after adjusting for age, gender, and

alcohol use. There was no statistical significance in terms of the belief that abstinence will help lower the risk of HIV and pregnancy. After adjusting for the above-mentioned correlates only one attitude question remained significant, and that is, abstaining helps one to mature emotionally. Other reported studies have focused on interventions aimed at raising awareness in terms of how abstinence could help adolescents prevent getting infected with HIV/AIDS and also getting pregnant (Card *et al.* 1996; Card, 1999; Stammers, 2003; Santelli, 2004). In the models developed attitudes did not influence female behaviour but there was a trend shown amongst males that interventions promoting abstinence could possibly target.

When exploring social influences questions, only four factors remained significant after adjusting for age, gender, and alcohol use. The abstainers considered that friends and parents thought that they should abstain from sex. They also thought that their friends were abstaining from sex, and believed that their family members wanted them not to have a sexual relationship. These findings emphasise the importance of support from significant others in order for abstinence from sex messages to work in rural KwaZulu-Natal. This is useful information to be considered when developing effective interventions, and when thinking about support systems and role models for young people (Santelli, 2004; Babalola *et al.* 2005).

Although the abstainers felt pressure from their peers (youth of similar age) not to abstain from sex, they still abstained. More work should be done to try and understand why they still abstained from sex even when they experienced pressure. This might be because the

support that the abstainers received from their families and friends helped them overcome pressure from their peers. The results seem to suggest that the abstainers were also confident of their ability to resist pressure from their partners. Support from family and friends could have assisted in this. The model developed suggests that social influences were particularly relevant for female learners. Rector's (2002) review of abstinence programs found that in one of the programs that also promoted parental involvement in their children's sexuality, the program was able to reduce the amount of sexual activity from 46.6% to 31.6% among 15 year olds.

It is surprising to learn that even though more than half of the abstainers reported having a boy/girlfriend, they were still confident of abstaining from sex even when pressured by their partners. This is surprising because one would expect that it would be difficult for young people to resist pressure from their partner when they want them to have sex, as some studies have shown (Wood *et al.* 1996; Wood *et al.* 1998b; Jewkes, 2000; Jewkes, 2001; loveLife, 2004). It would appear that younger female learners supported by friends and family were likely to be abstinent. Extending their duration of abstinence will reduce their likelihood of HIV infection, and perhaps enable them to develop the requisite negotiating and refusal skills to protect them when they do become sexually active. More still needs to be done in trying to understand the dynamics and types of relationships that these young people engage in.

There was also significant difference in terms of intending to abstain till marriage.

Abstainers scored significantly higher on this question. This is good news to work with in

delaying sexual initiation during an AIDS pandemic, in dealing with abstinence until marriage. This aspect has recently been facing a lot of criticism, despite evidence of its usefulness in prevention efforts (Aten, 2002; Rector, 2002; Devaney *et al.* 2002). Devaney and colleagues (2002) have documented the effectiveness of abstinence programmes in changing attitudes, raising awareness about the consequences of risky behaviours, improving communication skills between adolescents and their parents, and also improving refusal skills and how adolescents can resist pressure from their peers. They have also shown that abstinence programmes do not only focus on abstinence from sexual activity, but they also teach adolescents goal setting, ability to establish good long lasting relationships, and in some cases understanding and appreciation for the institution of marriage, especially for those youths that come from single parent households.

The main regression model suggests that the social influences, self-efficacy, gender, and sexual history (i.e. ever had sex) variables were the significant predictors of sexual abstinence. Although TV programmes were of borderline significance, however they are still important to consider in intervention development as there is evidence to support their role (Kunkel *et al.* 1999; Okey, 2002; Collins *et al.* 2004; Brown *et al.* 2006; Strasburger, 2006). Parents should be aware and offer guidance regarding the TV programmes viewed by children.

Santelli and colleagues (2004) found that among seventh and eighth graders in the USA personal and perceived peer norms about refraining from sex were strong and consistent protective factors. However they found that being male, using alcohol and other drugs,

and poor academic performance were consistent risk factors. This is useful information, because a lot of interventions that deal with behaviour change, require that the target population be also given skills on how to enact and practise the new behaviour in order to boost their self-efficacy about the new behaviour, and this model confirms it. This is also helpful for, especially, teacher implemented programmes at school since it does require skills and therefore teachers need to be adequately trained, so that they can be comfortable in implementing the intervention. The focus on teachers is important because most of the young people go to school, since it is now compulsory for people of young ages to go to school in South Africa (DOE, 1996). The Life Skills programme which is part of the curriculum offers an opportunity for targeted interventions (DOE, 2003).

However other factors need to be taken into consideration, since the discussion above showed the importance of other skills needed to supplement abstinence messages. This is also particularly true in South Africa, especially rural areas, where most of the unemployed live and young people need motivation to work hard so that they can achieve and realise their dreams (Statistics South Africa, 2001). Young people need a great deal of support especially with respect to behaviour change and also in terms of sustaining that behaviour change (Devaney *et al.* 2002, Babalola *et al.* 2005). Parental support and that of other significant people in young people's lives are very important, since sexual activity seems to be the defining line between the cool and the not so cool youth. Self-confidence, self-esteem and positive self-image of learners therefore need to be explored and factored into abstinence interventions. The loveLife report (2004) showed that only

30% of the sexually active young women wanted (i.e. gave full participation in the act) their first sexual experience, compared to 83% of sexually active young men.

In the same study 44% of all youth (48% females and 39% males) reported that they had spoken to their parents about HIV/AIDS and 75% of those felt that the discussions were useful to them. This emphasises the need for parents to be continually involved in the development and decision-making processes of youth (Babalola *et al.* 2005). Abstinence intervention programmes should therefore try and incorporate parents in order to achieve better outcomes, although this can be a tedious and a difficult process (Devaney, 2002).

Chapter 6: Conclusions and Recommendations

6.1 Conclusions:

In this sample of rural KwaZulu-Natal high school learners, 71.8% of girls and 28.2% of boys reported being sexually abstinent. The learners of younger ages were more likely to be sexually abstinent compared to the older learners. The abstinent learners reported less alcohol use than non-abstinent learners. However, parents' education and the learners' school achievement the previous year did not seem to have significant influence on whether to abstain or not, nor did religion or living with significant others.

From this study a history of sexual activity was associated with non-abstinence. More non-abstainers had boy/girlfriends than abstainers. Non-abstainers appeared to watch the controversial TV programmes such as *Yizo Yizo*, *Gaz' Lami*, and *Simunye* more frequently than the abstainers. Although there were no significant differences between abstainers and non-abstainers on attitudes concerning abstinence preventing pregnancy and HIV, abstainers perceived abstinence helping them to mature emotionally. Their perceptions of friends and parents wanting them to abstain appeared to have a positive influence.

Although more than half of the abstainers reported having a boy/girlfriend, this did not pressure them (or they withstood the pressure) to have sex. Further research needs to be done in order to understand the nature of these relationships. Many abstainers expressed their intention to abstain till they are married.

6.2 Recommendations:

Interventions focusing on sexual abstinence should therefore include the following: i) start intervening early before the age of sexual initiation, ii) despite the fact that the results of this study did not show significant differences between abstainers and non-abstainers with regard to socio-economic status, organisations should take an integrated approach, since there is evidence to suggest that individuals may engage in sexual behaviour, particularly risky sexual behaviour due to poverty; iii) address sexual content in the media by training young people on coping strategies and decision-making skills to critically discern right from wrong and therefore make informed decisions for themselves. iv) There should be more parental involvement in the development of their children and especially in the sexual behaviour of adolescents in terms of improved communication between the parent and the child and helping the child make better informed decisions about sexual matters. v) address social influences (which includes pressure to have sex): vi) Negotiation skills on saying No to sex for those who are in relationships but are not ready to have sex. Further research needs to be done in trying to understand why boys are not sexually abstinent and also profile boys' sexual partners, since their female counterparts reported sexual abstinence. There is an urgent need to therefore try and encourage boys to be sexually abstinent as well and to highlight the advantages thereof.

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Appendix:

Appendix 1:

ABSTINENCE QUESTIONNAIRE 2005

Please complete the questionnaire accurately and honestly. This questionnaire is being completed by learners at the Scottburgh circuit schools. No-one will know your individual answers. Please put a tick in the correct space

Questionnaire Number

Date

Name of School

Grade.....

ABOUT YOU:

Age in years

Sex Male Female

Are you married? Yes No

1. What is your religion? Please tick one answer

Christian Muslim Hindu Other (Please describe.....)

2. Do you consider yourself religious? Please tick one answer

Very religious Religious Don't know Not religious Not religious at all

3. What language do you speak at home? Please tick one answer

English Zulu Afrikaans Other (If other please describe.....)

4. With whom do you live? Please tick one answer

Mother and father Mother Father

Grandparents Grandmother Grandfather

Aunt or Uncle Other family members Friends

Other (If other please explain

5. Please tick the correct answers

Parent Comes home	During the week	Weekends only	Month end only	Infrequently	Live at home
Mother					
Father					

6. What is your parents' education. *Please tick one answer on each line*

Education	No Schooling	Grade 4 or less	Grade 5-7	Grade 8/9	Grade 10-12	Tertiary Qualification	I do Not know
Father							
Mother							

7. What marks did you achieve last year in class? *Please tick one answer*

30-39% 40-49% 50-59% 60-69% 70-79% 80-89%

II SEXUALITY *Please tick one answer on each line*

8. Do you have a boyfriend or a girlfriend? Yes No

9. Have you ever had sex? Yes No

10. At what age did you start to have sex? N/A

11. What was the age (approximate) of your first partner?

10-15 y 16-20y 21-30y 31--50y 51-70y N/A

12. Are you sexually active now? Yes No

13. How many partners did you have sex with in the past 6 months?

1 2 3 4 more than 5 N/A

14. I feel pressured by my partner(s) to have sex. *Please tick one answer*

Strongly agree Agree Unsure Disagree Strongly Disagree N/A

15. When you have sex do you have:

	Sometimes	Often	Always	Never	N/A
Vaginal sex (Penis in vagina)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oral sex (Contact between mouth and penis or vagina)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anal sex (Penis in anus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thigh sex (Penis doesn't enter vagina)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Have you ever been forced to have sex? Yes No

If yes:

17. What was the age (approximate) of the partner who forced you to have sex?

10-15 y 16-20y 21-30y 31--50y 51-70y N/A

III ABSTINENCE

18. Have you voluntarily chosen to abstain? Yes No

19. For how long have you abstained? 3 months 6 months More than 1 year

20.

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
a) Because of the chance of pregnancy young people should not have sex.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Because of the chances of HIV young people should not have sex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Having sex with someone does not necessarily show that you love them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I think that abstinence gives one a chance to mature physically and emotionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. What are the advantages / disadvantages of not being sexually active?

a) You're protected against HIV/AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) You can't get pregnant (Girl) / You can't make someone pregnant (Boy).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) You don't get sexual pleasure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) You are not seen as a "man" or "woman" with experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
22a) My family think that I should not have a sexual relationship at this stage of my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) My friends would not want me to have a sexual relationship at this stage of my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) My peers pressure me to have a sexual relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) From the TV I feel one should have a sexual relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. How confident to do you feel about abstaining from having sex?

a) I feel confident to refuse to have sex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) I feel that I am able to explain why I don't want to have sex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | Strongly
Agree | Agree | Unsure | Disagree | Strongly
Disagree |
| c) I feel that I can tell a friend of the opposite sex who I care for, why I've decided to abstain | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) I feel confident that even if pressured by a partner that I can abstain from sex. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

24. Please tick one answer per line.

My intention is to abstain from sex:

- | | | | | | |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) In the next 6 months | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) In the next year | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) While I am at school | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Until I am married | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

25. Do you think that most of your peers are sexually active? Yes No Don't know

26. Do you think that most of your friends who are sexually active use condoms? Yes No Don't know

IV SUBSTANCE USE

27. Do you use any of the following substances? *Please tick one answer on each line.*

Substance	I do not use this	I use this only occasionally	I use it daily	I use it during the week and weekends	I use it at weekends only
a) Cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Benzine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Thinners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other drugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. Does your household have a TV? Yes No
- Does your household have a Fridge? Yes No
- Does your household have a cell phone? Yes No

THANK YOU FOR ANSWERING THE QUESTIONS!!!



24 August 2005

Mr S B Dlamini
c/o Dr M Taylor
Community Health
Nelson R Mandela School of Medicine

e-mail : dlaminis24@ukzn.ac.za.

Dear Mr Dlamini

PROTOCOL : Investigating the influences on sexual abstinent behaviour of rural high school youth in KwaZulu-Natal. S B Dlamini, Community Health. Ref.: H038/05

The Biomedical Research Ethics Committee considered the abovementioned application and the protocol was approved at its meeting held on 1 March 2005 pending appropriate answers being submitted to queries raised, approval from the Postgraduate Education Committee and permission being granted by the Department of Education. These conditions have now been met, the study is given full ethics approval and may begin as at today's date . 24 August 2005.

Please ensure that permission is obtained from each Principal before starting the study in the school, and submit this document to our offices for record keeping purposes.

This approval is valid for one year from 24 August 2005. To ensure continuous approval, an application for recertification should be submitted a couple of months before the expiry date.

May I take this opportunity to wish you everything of the best with your study. Please send the Biomedical Research Ethics Committee a copy of your report once completed.

Yours sincerely

PROFESSOR D PUDIFIN
Deputy Chair : Biomedical Research Ethics Committee

c.c. Dr M Taylor, Community Health
Mr S Siboto, Postgraduate Education

**Nelson R Mandela School of Medicine, College of Health Sciences,
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Founding Campuses:

■ Edgewood

■ Howard College

■ Medical School

■ Pietermaritzburg

■ Westville



5 August 2005

Mr S B Dlamini
c/o Dr M Taylor
Community Health
Nelson R Mandela School of Medicine

e-mail : dlaminis24@ukzn.ac.za.

Dear Mr Dlamini

PROTOCOL : Investigating the influences on sexual abstinent behaviour of rural high school youth in KwaZulu-Natal. S B Dlamini, Community Health. Ref.: H038/05

The Postgraduate Education Committee considered the abovementioned application and made various recommendations. These recommendations have been addressed and the protocol is approved for your MPH degree.

May I take this opportunity to wish you every success with your study.

Yours sincerely

PROFESSOR M ADHIKARI
Chair : Postgraduate Education Committee

c.c. Dr M Taylor, Community Health
Mr S Siboto, Postgraduate Education

**Nelson R Mandela School of Medicine, Faculty of Health Sciences,
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■ Westville

23 AUG 2005



**UNIVERSITY OF
KWAZULU-NATAL**

Nelson R Mandela School of Medicine

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pillavm@ukzn.ac.za

10 August 2005

Dear Mrs Mthuli

REQUESTING PERMISSION TO CONDUCT AN ABSTINENCE STUDY WITHIN YOUR DISTRICT

Study title: Investigating the influences on sexual abstinent behaviour of rural high school youth in KwaZulu-Natal. SB Dlamini, Community Health. Ref.: H038/05

This letter serves to request permission to conduct a prevalence/determinant study of sexual abstinence among high school learners in your district.

We would like to work with ten schools where one section of grade 9 will be selected at each of the randomly selected schools. The learners will be given information letters and consent sheets to ask for consent from their parents and they will also be asked to sign their own consent sheets, if they wish to participate in the study. They will then be given an anonymous questionnaire to fill in, after which they will put it in a sealed envelop. The questionnaire will ask the learners about their abstinence behaviour and the determinants of abstinence.

Please sign in the space provided, if permission to my request is granted. Should you want to know more about the study, do not hesitate to contact us at the numbers given below. Thanking in anticipation of your favourable considerations to my request.

Yours sincerely

Siyabonga B Dlamini (Mr)
Tel: (031) 260 4649/4499

I S. P. Mthuli grant permission to the study mentioned above to be done at the schools within the district.

Signature

PROVINCE OF KWAZULU-NATAL
DEPARTMENT OF EDUCATION & CULTURE
UMNYANGO WEMFUNDO NAMASIKU
2005-08-11
11/08/05
PRIVATE BAG X0515 UMZINTO 4200
SCOTTBURGH CIRCUIT OFFICE