

UNIVERSITY OF THE WESTERN CAPE

Faculty of Community and Health Sciences

**Knowledge, Attitude and Sexual Behaviors with Regard to HIV/AIDS
among Upper Primary School Pupils in Meru District, Arusha, Tanzania**



A Mini-Thesis Submitted in Partial Fulfillment of the Requirement for the
Degree, Masters in Public Health

(MPH)

Student: Dr. Yosh Sospater Kasilima

Supervisor: Ms Suraya Mohamed

August 2010

KEYWORDS:

- Primary School
- Meru District
- Tanzania
- Adolescent
- HIV
- Knowledge
- Attitude
- Risky Sexual behaviors
- Sexual Transmission Infections
- Cross-sectional Survey



ABSTRACT

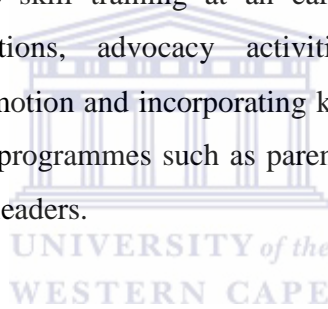
Available data indicates that the prevalence of HIV infection among school going adolescents in Tanzania is increasing. However, many adolescents attending primary schools still engage in risky sexual behaviors. The aim of this study was therefore to describe the knowledge, attitude and sexual behaviors of upper primary school pupils in Meru District in order to have reliable data regarding sexual and reproductive health of primary school pupils which could be used as a base in informing policy and curriculum development of evidence-based HIV intervention programs in primary schools.

A cross-sectional descriptive study using a self-administered close-ended questionnaire was conducted with pupils in standards four to seven (aged 10 – 17 years) in ten government primary schools in Meru District. The sample of 400 school pupils was obtained by a simple random sampling technique. Data analysis was done using Statistical Package for Social Sciences SPSS (version 15) computer software and the results were presented in frequencies using simple percentages, tables and graphs. The Chi-square test was used to assess the significance where a p-value of <0.05 was considered statistically significant.

The results indicate that about half of the pupils had insufficient knowledge about HIV transmission and prevention. The knowledge was even lower in some specific ways of HIV transmission, for example, about 86.7% of primary school pupils had poor knowledge on maternal to child transmission. The knowledge of female pupils was significantly lower than that of male pupils regarding HIV transmission ($p=0.03$). About 19.2% of males and 5.7% of female pupils were sexually active and 27.7% male and 8.1% female sexual active pupils had their first sexual intercourse prior to age 15 years. The proportion of males who had sex were significantly higher than females who had sex ($P=0.002$). Five percent of male and 1.4% of female pupils engaged in

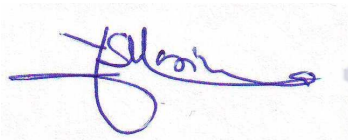
oral sex while 3.1 % of male and 1.4 % of females had practiced anal sex. It was also noted that 11.2% of male and 6.7% female pupils had been involved in sexual coercion including forced to touch or being touched other people's private parts. Eight percent of male pupils and 5.4% of female pupils were taking alcohol while 4.7% of male and 1.8% of female pupils had been involved in substance use. The data shows that both males and females pupils are at risk, although the risks might be different between the genders.

In conclusion, Primary school pupils in Meru district engage in several risky sexual behaviors including substance use, sexual coercion, early sexual debut and engaging in various sexual practices. This calls for a more comprehensive approach in the fight against HIV among primary school children in Tanzania, which could include life skill training at an early age, behaviour change communication interventions, advocacy activities to influence policy formulation, condom promotion and incorporating key stakeholders in the roll-out of school based HIV programmes such as parents, community leaders and faith-based organizations leaders.



DECLARATION:

I declare that, “Knowledge, Attitude and Sexual Behaviors with Regard to HIV/AIDS among Upper Primary School Pupils in Meru District, Arusha, Tanzania” is my own work, that it has not been submitted before for any degree or examination in any other University, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.



Dr Yosh Sospater Kasilima



August 2010

ACKNOWLEDGEMENTS

I would not be able to mention all people by name as many have contributed in one way or another in making this research project a success. However, I will need to mention a few people and colleagues. My deepest gratitude goes to my research supervisor, Ms Suraya Mohamed who has tirelessly molded me to become knowledgeable in the research field, through her guidance, patience and inspiration. Her encouragement, positive feedback and the direction given have enabled me to reach that point of the finalization of this report.

My sincere thanks also go to my fellow staff at MS-TCDC for their assistance and invaluable support in one way or the other. I am grateful and would particularly thank all the adolescents, parents and teachers in Meru district whom I had the privilege to meet during the research. Thanks for sharing your personal views and experiences in adolescent reproductive health. I hope that this report shall be used to improve current efforts to adolescent reproductive health in Tanzania. To you all, and all others whom I have not mentioned here, who contributed in one way or the other, I express my sincere gratitude.

TABLE OF CONTENTS:

KEYWORDS: ii

ABSTRACT iii

ACKNOWLEDGEMENTS vi

TABLE OF CONTENTS:..... vii

LIST OF ABBREVIATIONS..... xi

DEDICATION..... xii

Chapter 1 1

Introduction..... 1

 1.1 Introduction 1

 1.2 Status of School Based HIV Programmes in Tanzania 3

 1.3. Problem Statement 5

 1.4. The Study Context 6

 1.5 Study Rationale 7

 1.6. Thesis Outline 7

Chapter 2 10

Literature Review..... 10

 2.1 Introduction 10

 2.2 The Adolescent stage 10

 2.3 Adolescent Risky Behaviour..... 12

 2.3.1 Sexual debut 12

 2.3.2 Substance Use among Adolescents 13

 2.3.3 Low or No Condom Use..... 15

 2.3.4 Multiple sexual Partners..... 16

 2.4 Factors influencing risky sexual behaviour among Adolescents..... 17



2.4.1 HIV Knowledge among Adolescents	17
2.4.2 Gender Difference in HIV susceptibility	19
2.4.3 Peer Influence during Adolescence	21
2.4.4 Parental Influence.....	22
2.4.5 Factors Influencing Early Sexual Debut.....	23
2.5 Behaviour Change Theories and Models.....	23
2.5.1 The Health Belief Model.....	24
2.5.2 AIDS Risk Reduction Model (ARRM).....	25
2.5.3 Social Psychological Behavioral Theories	27
2.6 Conclusion	28
Chapter 3	29
Research Methodology	29
3.1 Introduction:.....	29
3.2 Aim and Objectives of the Study.....	29
3.2.1 Objectives of the study.....	29
3.3 Methodology	30
3.3.1 Study Design	30
3.3.2 Definition of Terms	30
3.3.3 Study Population.....	31
3.3.4 Sample size	32
3.3.5 Sampling Procedure	32
3.3.6 Data Collection Methods.....	33
3.4 Data Management and Analysis	35
3.5 Reliability	37
3.6 Validity.....	38

3.7 Generalisability of study.....	39
3.8 Ethical Considerations.....	39
3.9. Study limitations	40
Chapter 4.....	42
Results.....	42
4.1 Introduction.....	42
4.2 Socio-demographic Characteristics.....	42
4.3 Knowledge about HIV and Sexual Transmitted Infections	44
4.4 Pupil’s Sexual Behaviour.....	47
4.4.1 Patterns of Pupils Sexual Behaviors.....	47
4.4.2 Alcohol and Substance use.....	50
4.4.3 Different Types of Sexual Practices.....	51
4.5 Sources of Information about HIV	52
4.6 Pupils Perception on their Parents, Friends, and Teachers Attitude about Adolescent Sexuality.....	53
4.7 Attitude of Pupils toward Sexuality	54
4.8 Pupils Attitudes towards People Living with HIV.....	56
4.9 Sexual Coercion.....	59
4.10 Socio-demographic Characteristics in Relation to Sexual Experience	59
4.11 Knowledge Variables in Relation to Sexual Experience	61
4.12 Attitude Variables in Relation to Sexual Experience	63
Chapter 5.....	65
Discussion.....	65
5.1 Introduction.....	65
5.2 Risky Sexual Behaviour.....	66
5.2.1 Early Sexual Debut	66

5.2.2 Sexual Practices	66
5.2.3 Multiple Sexual Partners and Condom Use.....	67
5.2.4 Sexual Coercion.....	68
5.3 Factors Influencing Risky Sexual Behaviour.....	70
5.3.1 Implications of Inadequate or inappropriate HIV Knowledge.....	70
5.3.2 Implications of Socio-demographic factors.....	74
5.3.4 Impact of Alcohol and Substance Use.....	75
5.4 Gender differences in HIV Risk	76
5.5 Conclusion	77
Chapter 6.....	78
Conclusion and Recommendations.....	78
6.1 Introduction.....	78
6.2: Conclusion and Recommendations.....	78
7.0 References	83
Appendix 1: SELF ADMINISTERED QUESTIONNAIRE FOR HIV KNOWLEDGE, ATTITUDE AND SEXUAL BEHAVIOUR AMONG PRIMARY SCHOOL PUPILS: 10-17 YEAR OLDS.....	102
Appendix 2: Approval for Conducting Research Study From Ministry of Education, Meru District Council	115
Appendix 3: Information Sheet for Upper Primary School Pupils on HIV/AIDS Study	116
Appendix 4: Information Sheet for Upper Primary School Pupils on HIV/AIDS Study – Swahili Version.....	119
Appendix 5: Consent Form – English Version.....	122
Appendix 6: Consent Form – Swahili version	123

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARRM	AIDS Risk Reduction Model
BSS	Behaviour Surveillance Survey
FGDs	Focused Group Discussions
FHI	Family Health International
GDP	Gross Domestic Product
HBM	Health Belief Model
HIV	Human Immuno-deficiency Virus
KAP	Knowledge, Attitude and Practice
MOEVT	Ministry of Education and Vocational Training
MOH	Ministry of Health
NACP	National AIDS Control Program
NGOs	Non Governmental Organizations
SPSS	Statistical Package for Social Science
STI	Sexually Transmitted Infections
TACAIDS	Tanzania Commission for AIDS
THIS	Tanzania HIV/AIDS Indicator Survey
UNAIDS	United Nations Joint committee on AIDS
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
WHO	World Health Organization
YMEP	Young Men as Equal Partner Project

DEDICATION

This work is dedicated to my loving wife, Juliet, my mother, Evangelina my sons, Niwagila and Niwamanya and my daughter, Atulinda, for their invaluable support during the study period.



Chapter 1

Introduction

1.1 Introduction

Human Immunodeficiency Virus (HIV) infection is escalating in many parts of the world. UNAIDS estimated that by the end of 2008, over 33.4 million people were living with HIV, about 2.1 million of them being children under 15 years (UNAID, 2009). The global statistics further indicate that, about 2.7 million people were newly infected in 2008 alone. Today adolescents (10-19 years) are considered the AIDS generation because they have not known a world without HIV. Of the 60 million people infected with HIV in the past 20 years, about half became infected between the ages of 15-24 years. It is estimated that, 15 million young people aged 15-24 are living with HIV/AIDS and this accounts for about 45% of new HIV infections worldwide in 2007 (UNAIDS, 2008). Globally, the number of children younger than 15 years living with HIV increased from 1.6 million in 2001 to 2.0 million in 2007 and about 90% of them live in sub-Saharan Africa (UNAIDS, 2008).

The HIV pandemic continues to be a major development challenge for most of the developing countries. There are indications that HIV has a severe impact on the development of a country. For example, currently AIDS is the leading cause of death among adults between 15 – 49 years of age, which is the productive age group (UNAIDS, 2008). According to the World Bank, AIDS is estimated to have reduced Tanzanian real GDP growth from 3.9% to 2.8% during the period 1985 to 2010. The World Bank further predicted that life expectance by 2010 will revert to 47 years instead of the projected 56 years, which would have been the case in the absence of AIDS (World Bank, 2006). Recent evidence indicates that Africa remains the region most heavily affected by HIV. More

recent international epidemiological data shows that in 2008, Sub Saharan Africa accounted for 71% of all new infections and 75% of all AIDS deaths (UNAID, 2009; UNAIDS, 2008).

Tanzania is one of the most affected countries in the world with an estimated 1.4 million adults and children living with HIV (UNAIDS 2006). The latest Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS) report of 2007-2008 showed that about 5.7% of the population aged 15-49 were HIV positive and about 1% of adolescent aged 15 – 19 years were HIV infected. In addition, the national epidemiological data indicate that about 4.3% of Tanzanian youth aged 20-24 are HIV positive (THMIS, 2007-2008).

The United Nations General Assembly Special Session on HIV/AIDS (UNGASS) of 2001, a ‘Declaration of Commitment on HIV/AIDS’ was enacted, setting the target of reducing HIV infection among 15-24 years old by 25% in the most affected countries by the year 2005 and globally by 2010 (UNAIDS, 2001). Unfortunately, in Tanzania there is evidence which indicate that there is a possibility of continued increase in HIV infection among adolescents if proper measures are not instituted as soon as possible to remedy this situation (THIS, 2004). In a community- randomized trial conducted in rural Tanzania in 2000, results confirmed that some rural Tanzanian school adolescents had already been infected with HIV and other Sexually Transmitted Infections (STIs) or had become pregnant before leaving primary school (Ross, Chungalucha, Toddy, Balira, Mosha, Peeling, Grosskurth, Mabey and Hayes, 2000).

Meru District in Arusha region in Tanzania is no exception. Children and adolescents are at high risk of contracting HIV infection. A recent study conducted in four districts of Tanzania including Meru district showed that 49.3% of adolescents reported to have sexual experience, however, only 46% were reported to have practiced safe sex. The same study indicated existence of several misconceptions around HIV issues among school pupils which were

shared amongst the local people, such as contracting HIV through the sharing of food or clothes with an HIV positive person (UMATI, 2005).

In this study, the study population is adolescence with an operational definition drawn from the World Health Organization, as persons aged from 10-19 years. The sample study was drawn from schooling adolescents 10-17 years, none the less, the study continuously refer to statistics of young people 10-24years, and a sub set of young people 15-24 years.

1.2 Status of School Based HIV Programmes in Tanzania

Muhondwa and Mhina, (2003) observed that two decades after the first reported HIV cases in Tanzania, there was no official national school curriculum on HIV education. In 1993 the Ministry of Education issued the education circular No.3 which gave mandate to schools to start HIV education programmes. However, it was not until 2006 when the Ministry of Education adopted a skills-based curriculum for HIV education in primary schools. Unfortunately, previous research indicates that HIV school based education programmes in Tanzania were implemented on a campaign basis mostly by local Non Governmental Organizations (NGOs) and there was no effective coordination of these interventions by the Ministry of Education (Mosi, 2006).

School-based HIV prevention education is noted as one of the most effective preventive approaches against HIV and can help to minimize the risk of HIV infection among school age children (The World Bank, 2002). Education has been called the 'social vaccine' against HIV because some evidence shows its effectiveness in reducing vulnerability to infection (Bakilana, Bundy, Brown and Fredriksen, 2005). However, other study has shown that primary school HIV education in Tanzania which entails simple messages on abstinence showed no significant change in reduction of risky behavior (Klepp, Ndeki,

Leshabari, Hannan and Lyimo, 1997). The failure of behavioral change amongst pupils in previous studies could be associated with factors such as duration of intervention before conducting the evaluation, the government position on sexual and reproductive health education in schools and level of participatory communication method skills amongst primary school teachers on sex education (Merson, Dayton and O'Reilly, 2000; Mushi, Mpembeni and Jahn, 2007; Klepp, et al. 1997; Matasha, Ntembelea, Mayaud, Saidi, Toddy, Mujaya and Tendo-Wambua, 1998).

Furthermore, formal sexual and reproductive health education in Tanzanian primary schools used to be focused largely on knowledge of HIV and Sexually Transmitted Infections (STI) and simple messages promoting sexual abstinence (Todd, Changalucha, Ross, Moshia, Obasi, Plummer, Balira, Grosskurth, Mabey and Hayes, 2004). In addition, the majority of previous studies were conducted when HIV education programme was not part of school curriculum, therefore information on sensitive risky sexual behaviour was not captured.

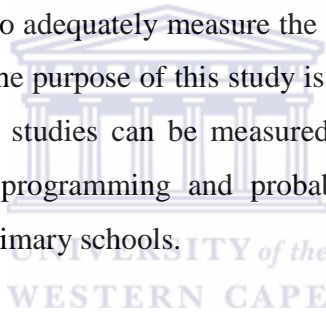
The majority of studies already conducted in Tanzania were done five to twelve months after implementation of education programmes. However, outcomes on behavior change take a much longer time to be established by an individual than the period that was set for follow up in these studies (Todd et al. 2004; Maswanya et al. 1999) and therefore it seems as if the intervention was not successful.

In March 2006, The Government of Tanzania through the Ministry of Education organized a national workshop to call upon all stakeholders to adopt a skills-based approach to HIV education in schools. However, the lack of a monitoring and evaluation system by the Ministry of Education on HIV interventions in schools limited the availability of impact information on HIV programmes for improving its implementation (Mosi, 2006). A baseline study on the status of response to HIV in the education sector reported that the majority of HIV education programmes had no baseline information and hence

it was difficult to measure their contribution in influencing risky sexual behavior of school children (Muhondwa and Mhina, 2003).

UMATI, a local NGO, in collaboration with the Ministry of Education and Ministry of Health started the Young Men as Equal Partners project (YMEP) in 2007 to address sexual and reproductive health issues in primary schools in Meru district. However, the government and NGO efforts in supporting school-based HIV prevention programmes are hampered by unavailability of reliable data on sexual health, knowledge, attitudes and about sexual behavior of children (Todd et al. 2004).

It is clear that the HIV epidemic is affecting lives of schooling pupils in Tanzania and although interventions were put in place in schools, not sufficient baseline data is available to adequately measure the impact or outcome of these interventions over time. The purpose of this study is to collect relevant baseline data against which future studies can be measured and which will influence future HIV intervention programming and probably the basis of the HIV education curriculum in primary schools.



1.3. Problem Statement

There is evidence indicating that the prevalence of HIV infection among schooling adolescents is growing in Tanzania. Five percent of the HIV cases in 2004 were below 15 years of age (National AIDS Control Program (NACP, 2005). However, a more recent study has shown that, 5.3% of the youth population aged 15 – 24 years is infected with HIV virus (THMIS, 2007 - 2008) showing an increase in the rate of infection.

Currently, the government of Tanzania and other key actors such as NGOs, community based organizations (CBOs) and the private sector are supporting the scale up of school-based HIV education programmes in the country. Despite

the reported increase in engagement on high risk sexual behavior among school adolescents, little is known about the knowledge, attitudes and sexual behaviors of primary school pupils in the country (Mosi, 2006; UMATI, 2005). There is a great unmet need for reliable data regarding sexual and reproductive health of primary school pupils aged 10 – 17 years which could play a vital role in informing policy and curriculum development of evidence-based HIV intervention programs.

1.4. The Study Context

Meru District is part of the Arusha region in northern Tanzania with a total population of 514,651. Young people aged 10-24 years form 6.4% of the total population (14,746 males and 18,421 females). The current primary school enrolment rate stands at 71% and school attendance rate is about 78% (UNICEF, 2008). Meru District was selected because of the presence of school-based HIV prevention education implementation in the district. The study area was proposed jointly in a consultative meeting held between the District Medical Officer, the District Education Officer, the Regional Coordinator for UMATI and the principal investigator who is working in the area as HIV and Malaria response program manager. The study was conducted in two wards in Meru. Both wards are situated in a rural area with a total population of 30,127 (Tanzania Population and Housing Census, 2002). The majority of the population are poor subsistence farmers living on less than 1US\$ per day. However, the informal sector is the largest sector, employing over 55% of total person in employment (Ministry of Labor, 2003). The unemployment rate among the 18 – 34 year age group is above 26.3%.

In Meru district, there are several reported cases of school pregnancies, sexual abuse and STI, which predict ongoing unprotected sexual activities among school adolescents (Personal Communication, 22nd February, 2008).

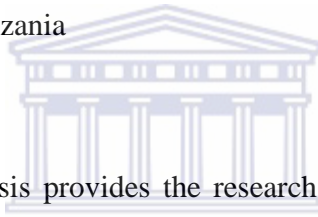
1.5 Study Rationale

Although several studies have been conducted on HIV among Tanzanian youths, unfortunately, research on adolescent attitude and sexual behavior of primary school pupils in Tanzania is very limited. Most studies conducted in the country seem to exclude primary school pupils. The few studies that have been conducted among primary school pupils in Tanzania have showed high rates of sexual activity, inadequate knowledge on sexual and reproductive health issues and sexual attitudes that are likely to put them at high risk of HIV (Todd, *et al.*, 2004; Matasha *et al.*, 1998). Therefore, it is important to increase efforts in reducing the spread of HIV infection among adolescents as they are the future of the nation. The aim of this study was to assess the HIV knowledge, attitude and risky sexual behaviors of upper primary school pupils in Meru District. The collected data will be used as the baseline data for the YMEP project and for any other future HIV primary school based intervention in the Meru district.

1.6. Thesis Outline

Chapter one of the thesis, gives the background and extent of the problem of HIV. It also gives the rationale for the study and describes the setting in which the study was conducted. Furthermore, the chapter provides the importance of the research problem globally by showing global statistics on the research topic.

Chapter two provides the literature review of studies on adolescent's HIV knowledge and attitudes and risky sexual behaviors. The chapter further reviews some of the most common behaviour theories used in HIV prevention. Lastly, the literature provides an overview on some risk factors that contribute to HIV infection among adolescents. General findings and conclusion of other similar studies conducted are presented as well as the main findings for similar research carried out in Tanzania



Chapter three of the thesis provides the research methodology. The chapter explains the aim and objectives of the research study, study design, sampling procedure, and the field data collection process. This chapter also highlights data validity, reliability, analysis and generalisability of the findings. It shows the measures taken to consider ethical issues in the research design and what the limitations of the study were.

Chapter four summarizes the research findings with a systematic focus on the research objectives. The research results on pupil's HIV knowledge and attitudes and risky sexual behaviors in Meru district are presented using tables, graphs and figures.

Chapter five provides the discussion on pupils' HIV knowledge and attitudes and risky sexual behaviors based on the research findings and other facts found

in the literature review. The policy implications of the research results are elaborated.

Chapter six finally gives the conclusions drawn from the study and recommends possible measures that can be used to influence policy formulation and implementation regarding primary school based HIV interventions in Tanzania.



Chapter 2

Literature Review

2.1 Introduction

This chapter is a review of literature on factors that influence risky behaviours in adolescents that contribute to HIV infection. The first section of the chapter provides details of the adolescence stage and reproductive health challenges facing adolescents especially in developing countries. The literature review then covers risky adolescent sexual behaviour. The literature further provides an overview on some factors which influence risky sexual behaviour among adolescents world wide with special emphasis on African adolescents. Lastly, the chapter further reviews some of the most common behaviour change theories and models used in HIV prevention which could be used to describe what influences adolescent behaviour change.

2.2 The Adolescent stage

There are an estimated 1.2 billion adolescents in the world today and more than four fifth of them live in developing countries (WHO, 2010). UNFPA (2006) describes adolescence (between the ages of 10 and 19 years) as a period of major physical, psychological, economic and social interactions and relationship. While childhood is left behind, adolescents face pressures to become responsible adults including the need to shape an identity and develop personality and experiment with independence (UNICEF, 2002). Adolescents are thus faced with challenges and choices that are influenced by gender

expectations of societies and families and finding a way through these transitions depends on support provided to adolescents by families and society at large (UNICEF, 2002).

Although adolescents are relatively healthy, lack of family and community support in making right choices predispose them to numerous health problems such as sexually transmitted diseases, unwanted pregnancies, unsafe abortions, sexual exploitation and abuse (UNFPA, 2002). Currently in Tanzania there are obvious social and economical changes which unfortunately have serious implications on community norms and values (Barongo, Mtwewe, Msuya, Mwampete, Manongi, Njau, Kiwale and Lekule, 2004). Traditionally, local systems in communities, aimed at giving young people information to build up their knowledge and ability to face reproductive health challenges existed. However, these systems have been overcome by new technologies such as internet, television/video shows and mobile phone. As a result, the social structures which previously existed in Tanzanian communities, where adolescents could get counseling from adults, have been eroded with the impact of globalization (UNFPA, 2006). The HIV pandemic in Tanzania has therefore occurred within the current context of a deteriorating social system and adolescents feel that they are left out and not supported by adults in the fight against HIV (Barongo et al. 2004).

The period of adolescence involves an adaptive process catalyzed by profound psychological, intellectual, emotional and social development (WHO, 2000). Unfortunately, this period involves, for example, experimenting with sex and drug use predisposing them to risk factors which expose them to both social and behavioral health risks (Kaaya, Leshabari and Mbwambo, 1998). Therefore, an understanding of adolescent behaviour is important in order to address risky sexual behaviour which might predispose adolescents to HIV infection.

2.3 Adolescent Risky Behaviour

Adolescence is the period between puberty and adulthood and during puberty various endocrine glands produce reproductive hormones which are responsible for body changes and secondary sex characteristics (Nelson, Leibenluft, McClure and Pine, 2005). Some of these gonadal hormones cause significant remodeling of the brain and hence could explain why adolescents are more likely than adults to engage in risk-taking behaviours (Sato, Schulz, Sisk and Wood, 2008).

The delicate interaction of gonadal hormones and brain development awakens the adolescent brain to both pleasure and risks. Previous studies indicated that adolescents aged 10-17 years are exposed to several risky sexual behaviours such as early sexual debut, and substance abuse (THIS, 2003-2004; Ross, et al. 2000). One study conducted in South Africa reported risky sexual behaviours such as no condom use, and having a casual sexual partner (Harrison, Cleland, Gouws and Frohlich, 2005).



2.3.1 Sexual debut

Age at first sex is an important indicator of sexual risk among adolescents and therefore marks the onset of individual exposure to HIV infection. Additionally, early sexual debut is a marker of the beginning of exposure to other reproductive health problems such as unwanted pregnancies and other STIs (NACP, 2004). Adolescents who begin sexual activity early are likely to have sex with more partners and with partners who have been at risk of HIV exposure (WHO, 2000). Previous studies conducted in various African countries showed early sexual debut as low as 10 years for both boys and girls (Harrison, Cleland, Gouws and Frohlich, 2005; Matasha et al. 1998; WHO,

2000). Similarly, a representative cross-sectional household survey on sexual behavior for young men (aged 15-24 years) reported early sexual debut before age 15 (range 9-14) among 13% of 314 young men interviewed in rural South Africa (Harrison, Cleland, Gouws and Frohlich, 2005).

Furthermore, the results of a cross-sectional survey which was conducted in both primary and secondary schools in north-western Tanzania, indicated that 80% of school boys and 68% of girls aged 14 -19 were already sexually active. This study revealed that, some adolescents were involved in different types of sexual practices during their first sexual act including anal and oral sex (Matasha et al. 1998). However, vaginal sex was the most common first sexual act reported by secondary school students, while for primary school, 40% of pupils reported oral-genital sex and 9% reported anal sex as their first sexual act (Matasha et al. 1998).

Researchers report several factors that influence early sexual debut among adolescents including peer pressure, asserting masculinity, relationship with an older partner, gifts or money for sex and sexual abuse (Harrison, Cleland, Gouws and Frohlich, 2005; Barongo et al. 2005).

2.3.2 Substance Use among Adolescents

The brain remodeling that happen during adolescent significantly alters their behaviour and was associated as one of the contributing factor for adolescent drug experimentation (Sato, Schulz, Sisk and Wood, 2008). Substance use confers risk for HIV through its relationship with sexual risk taking by interfering with cognitive processes important for decision making in HIV prevention and reduces the likelihood of practicing safe sex (Dermen, Cooper and Agocha, 1998; Derege et al. 2005).

Another study indicates the existence of the important linkages between sexual risk taking and alcohol use. Barongo et al. (2005) reported that 42% of youth who had taken alcohol had sexual experience compared to 21% who had sexual experience but were not taking alcohol. The study concluded that youth taking alcohol were more likely to have sexual experience. Additionally, Derege et al. (2005) reported a significant and linear association between alcohol intake and unprotected sex among a national sample of 20,434 in-schools and out-of-school youth aged 15-24 years in Ethiopia. The study noted that youth who were using alcohol daily had a three fold increased odds compared to those not using it (OR 3.05, 95% CI 2.38-3.91). However, this study used a face-to-face household interview, an approach which previously was found to be inadequate in collecting data from adolescents due to the possibility of under-reporting of sexual behaviour among the adolescents (Mushi, Mpembeni and Jahn, 2007; Todd et al. 2003). Another study reinforces the relationship of alcohol use with respect to sexual assault of adolescents in South Africa. The study was conducted in Cape Town involving a total of 2,946 students in grades 8-11. The results showed that alcohol use (OR 2.0, 95% CI 1.10-3.62) was a significant predictor of sexual abuse (King et al. 2004).

In addition to the fact that substance use contributes to the high risk of HIV infection through interfering with cognitive processes, Kilonzo et al. (2002) revealed that heroin users in Tanzania were sharing injection and needles indicating a high risk of HIV infection associated with drug use. Furthermore, most female heroin users in Dar es Salaam were reported not to be able to afford the high price of heroin hence were trading sex for money to support their habits (Timpson, et al. 2006).

2.3.3 Low or No Condom Use

Correct and consistent condom use remains an important intervention against the spread of HIV and other STIs among sexually active adolescents in Tanzania where heterosexual contact is the primary mode of HIV transmission (Davis and Weller, 1999; THIS, 2004). Despite extensive efforts in promoting condom use, adolescents in sub-Saharan Africa still engage in risky sexual behaviors and condom use remain either relatively low or are used inconsistently. One study from sub-Saharan Africa indicated that in Burkina Faso, Ghana, Uganda and Malawi the proportion of adolescents reporting consistence use of condoms in the 3 months preceding the survey was 38%, 47%, 20% and 36% respectively. Another study finding from a cross-sectional survey conducted in Tanzania among adolescents aged 10-19 years also revealed that only 42% of sexually active adolescents reported having used a condom during their most recent sexual act (Kazaura and Masatu, 2009).

Several factors have been associated with low condom uptake among adolescents. Some studies have found that adolescents had negative perception regarding condom use (Muyinda, Kengeya, Pool and Whitworth, 2001; Barongo et al. 2005; Maswanya et al. 1999). Researchers report several important predictors of consistent condom use among adolescents including age, ever received sex education, exposure to mass media, education and living conditions (Bankole, Ahmed, Neema, Ouedraogo and Konyani, 2007). It was further noted that believing that condom use can protect against HIV and a sense of self-efficacy about condom use, is associated with increased condom use (Maswanya et al. 1999). The above information from the literature review indicates that perceptions and socio-demographic factors need to be considered while planning for condom promotion intervention.

2.3.4 Multiple sexual Partners

Having multiple sexual partners is one of the greatest known risky sexual practice associated with increased HIV incidences (Rehle, Shisana, Pillay, Zuma, Puren and Parker, 2007). Evidence from research indicates that, the risk of contracting HIV increase with multiple sexual partners (Finer, Darroch, and Singh, 1999). Unfortunately, several studies indicate that some adolescents in sub-Saharan Africa including Tanzania engage in risky sexual practices such as multiple sexual partners (Barongo et al. 2005, Kazaura and Masatu, 2009; Maswanya et al. 1999). Available behavioral surveillance surveys show that multiple partners are fairly common among youth in Tanzania (NACP, 2004). For example, about 15% of sexually active in-school and out of school adolescents in Tanzania reported having multiple sexual partners (Kazaura and Masatu, 2009). In another study, 13% of boys and 4% of girls among 1041 adolescents in secondary schools reported that they had multiple sexual partners (Maswanya et al. 1999).

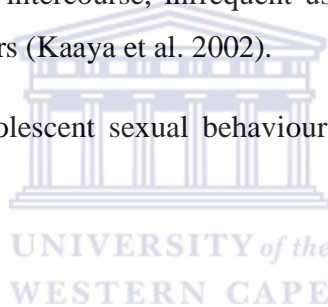
Although the reasons for adolescents to engage in multiple sexual partnership is not clear, some studies pointed out that substance use could be one of the responsible factor (Dermen, Cooper and Agocha, 1998; Derege et al. 2005). Longitudinal surveys in Colombia and Uganda revealed that adolescents with increased drug use were more likely to engage in multiple sexual partnerships (Twa-Twa, Oketcho, Siziya and Muula, 2008; Brook, Brook, and Pahl, 2002).

In summary, evidence from research indicates that adolescent risky behaviors is associated with physiological changes and brain remodeling that happen during adolescent stage. The literature reports several risky sexual behaviors which are associated with adolescent stages such as early sexual debut, low or no condom use, multiple sexual partners and substance use. In the next section, the review provides a detailed analysis on the factors that influence adolescent risky sexual behaviors.

2.4 Factors influencing risky sexual behaviour among Adolescents

There are several factors that can contribute to the high risk of HIV infection among adolescent world wide, for example, inadequate knowledge on sexual and reproductive health issues, early sexual debut, drug abuse, high rate of STIs, negative peer influence, parental influence and sexual attitudes (Todd, et al. 2004; Matasha et al. 1998, Tavoosi et al. 2004; Donenberg, Emerson, Bryant and King, 2006). Kaaya et al. (2002) identified only 47 scientific articles from sub-Saharan Africa reporting sexual behavior of school-based young people aged between 14 and 24 years. The review showed several risk factors that contributed to the high risk of HIV infection among adolescents such as high prevalence rate of sexual intercourse, infrequent use of condoms, and having two or more sexual partners (Kaaya et al. 2002).

Some risk factors for adolescent sexual behaviour will now be discussed in more detail.



2.4.1 HIV Knowledge among Adolescents

Although adequate HIV knowledge among adolescents is of paramount importance for them to establish a sustainable protective health-behavior, many studies have reported limited knowledge on HIV among school going children. Tavoosi et al. (2004) reported moderate knowledge but many misconceptions relating to HIV&AIDS among Iranian students. This study which involved a cluster sampling of 4641 high school student in Tehran revealed many misconceptions about the routes of HIV transmission. For example, 46% of student believed that HIV positive students should not attend ordinary school and 33% of students incorrectly identified mosquito bites as one of the routes of HIV transmission. However, this study cannot be generalized to students in

other context. For example, the study was conducted in a Moslem society where the researcher was restricted when designing questions concerning sexual behaviour. In such a society where there is great religious influence, data quality could easily be affected by inadequacy in the collected information and the failure of students to be honest in responding to sexual behaviour questions.

In Egypt, an exploratory study which involved 1186 students from preparatory and secondary schools revealed a general lack of knowledge of sexual issues. Ninety one percent of male and 96% of female scored zero on STI knowledge while 49% of males and 66% of females did not know of any risk associated with homosexuality (Mervat, Nasr, and Ahmed, 1998). In contrast, studies conducted in Japan and United States among adolescents demonstrated high levels of knowledge concerning HIV and STIs (Maswanya, et al. 2000; Marcelin, McCoy and DiClemente, 2007). These noted variations between developed countries and developing countries could be due to accessibility of information. Young people in developed countries have adequate access to HIV information through various sources including media, parents, schools and religious leaders (Maswanya, et al. 2000; Marcelin, McCoy and DiClemente, 2007) as compared to their counterpart in developing countries (Maswanya, et al. 1999). A number of previous studies have indicated that, poor levels of knowledge on HIV and other reproductive health issues among school youth is due to lack of reliable sources of information on sexuality issues (Nirojin, Payal and Minal, 2004; Tavoosi et al. 2004). Cultural and religious barriers contribute significantly in keeping reproductive health education out of classroom. For example, in Tanzania it is considered taboo for teachers and parents to talk with children about sexual matters including HIV (Kennedy and Zephania, 2006).

Another possible explanation for low levels of HIV knowledge in school adolescents could be inadequate training of teachers on HIV education. Very few school teachers have been well prepared and trained on participatory communication methods to teach sexuality topics (Mpama, 2006). In one study,

interviews with 22 head-teachers revealed that only 3 out of 22 schools had trained teachers in participatory communication on sex education. However the training was for one day only and hence the training was not sufficient enough to impart the needed skills to the teachers (Mushi, Mpembeni and Jahn, 2007).

However, some studies from African countries reported high HIV knowledge among adolescent pupils. Campbell and Mbizvo (1994) observed that 93% of 511 male pupils aged 11 – 19 years in Zimbabwe had high knowledge about HIV. In Tanzania, investigations among primary school children (aged 10 -17 years) showed that pupils from a high prevalence region were more knowledgeable about HIV than pupils from a low prevalence HIV area (Ndeki, Klepp and Mlinga, 1992). In another descriptive study conducted in the southern part of Tanzania among pupils aged 9 – 17 years, knowledge about HIV was found to be higher in over 76% of interviewed pupils (Mushi, Mpembeni and Jahn, 2007). However, this study had some methodological problems. Assessment of HIV knowledge was only based on mode of transmission and leaving out other components of HIV including prevention measures, misconceptions regarding HIV, stigma, and AIDS management. Furthermore, Mushi, Mpembeni and Jahn, (2007) used a small sample size in their study which involved only 135 pupils from 3 primary schools, this sample was too small to make a conclusive statistical generalization of the situation in the entire region.

2.4.2 Gender Difference in HIV susceptibility

Young African women are at high risk of contracting the virus due to social and economic constraints and as a result of social economic disempowerment, many women are unable to take steps to protect themselves (Barongo et al. 2004). Some African traditions and cultural practices and beliefs such as female

genital mutilation, early marriage and forced marriage are factors that increase the risk of HIV infection for the African girl child (Barongo et al. 2005).

Anatomically women are also easily exposed to infection, and the risk of becoming infected with HIV during unprotected sexual intercourse is two to four times greater for women than for men (Ainsworthy and Over, 1997; Royce, Sena, Cates and Cohen, 1997). Male to female transmission is higher because of the predisposing female anatomy. Also, the concentration of HIV is generally higher in a man's semen than in a woman's vaginal secretions (Laurence, 1999).

Adolescent women are at an even greater risk than adult women because the vagina and cervix of young women are less mature and are less resistant to HIV and other STIs (Berman and Hein, 1999). Changes in the reproductive tract during puberty make the tissue more susceptible to penetration of the virus. Also hormonal changes associated with the menstrual cycle often are accompanied by thinning the protective sealant covering the cervix (Moscicki, Ma, Holland and Vermund, 2001). Young women produce only scanty vaginal secretions, providing little barrier to HIV transmission (UNAIDS, 1998; Plourde et al. 1994). Research has shown that women can even become ill at a lower viral load than men (Farzabegan et al. 2001).

Research on risk and protective factors among unmarried youth revealed that females have a slight higher likelihood of having an older sexual partner compared with males (Karim, et al. 2003). Moreover, females were more likely to have multiple sex partners compared with males. In another study, Barongo et al. (2004) reported that the age of the males' first sexual partner ranged from 6 years to 17 years compared to females' first sexual partner ranging from 7 years to 30 years. Barongo et al. (2004) concluded that, the observed cross-generational relationships undermine girls' power to resist pressure to agree on unsafe sexual practices

2.4.3 Peer Influence during Adolescence

During adolescence, children are increasingly influenced by their peers more so than by their parents (UNICEF, 2002). The reasons for increased peer pressure during adolescent is not clear, but research by Nelson et al. (2005) has pointed out that brain remodeling around the time of puberty could lead to an increase in adolescent awareness of and attentiveness to the opinions of their peers. According to Brown, Clasen and Ficher (1986), peer pressure is mainly as a result of individuals' susceptibility to peer influence. The increase in importance of peers among adolescents, lead them into a changed behaviour in order to fit in and avoid being rejected by their friends. Unfortunately, peer pressure is implicated in many accounts of adolescent risk taking such as substance use, unprotected sex, smoking and reckless driving. An experimental study has revealed that exposure to peers during a risk-taking task doubled the amount of risky behaviour among adolescents (Gardner and Steinberg, 2005)

Teenagers may be more inclined to change their behaviour to fit into a new crowd rather than maintaining their old behaviour regardless of whether or not that new behaviour is increasing their vulnerability to HIV infection (Bearmann, and Hannah, 1999). DiBlasio and Benda (1990) noted that about 25% of 13-17 years old adolescents said that they had felt pressured by their peers to have sex. Among this group young women were somewhat more likely than young men to have felt such pressure. They further observed that peer association may be the strongest predictor of the frequency of adolescent sexual intercourse. For example, adolescents who resisted engaging in sexual activity tended to have friends who were abstinent as well. They also noted that those who were sexually active tended to believe that most of their friends were sexually active as well. Other studies reported that adolescents who believed that their friends used condoms were more likely to report consistent use of

condom (Crosby et al. 2003), and youth who report substance use had friends who use substance (Donenberg, Emerson, Bryant and King, 2006).

2.4.4 Parental Influence

Parents are recognized to play an important role in the sexuality education of their children (Mark et al. 2008). Several researchers have shown evidence that parents could influence adolescents' risk behaviour (Donenberg, Wilson, Emerson and Bryant, 2002; Wight, Williamson and Henderson, 2006). For example, Kotchick et al. (2001) reported that increased parental monitoring and supervision are related to decrease in sexual experiences and sexual activity among adolescents. However many parents hesitate to speak directly with their children about sex. Bennett and Dickson (1980) reported that about one third of 15 year old females said that none of their parents had told them how pregnancy occurs and 50% reported that they had received no information on STIs or birth control from their parents.

In many African countries, parents believe that discussions about sex with adolescents would encourage sexual experimentation (Barongo et al. 2005). However, research has shown that early parental communication on sex related topics allows children to talk about sex and ask more questions and is associated with a delay in the onset of sexual activity (Hutchison, Jemott, Jemott, Braveman and Fong, 2003). The more satisfaction adolescents feel with the mother to child relationship, the less likely they are to be sexually experienced. The more they perceive their mothers' disapproval of premarital sex the less likely they are to engage in sexual intercourse and if already sexually active, they will engage in sexual intercourse less frequently and use contraceptives more consistently (Jaccard, Dittus and Gordon, 2000). Therefore, the quality of the parent adolescent relationship and the degree of a

parent openness to discuss sex and sex related topics to their adolescents cannot be underestimated in terms of their influence on adolescent sexual values and behaviour.

2.4.5 Factors Influencing Early Sexual Debut

Adolescence is associated with increase in pleasure seeking behaviors which frequently takes the form of experimentation with sex and thus might contribute to early sexual debut (Sato, Schulz, Sisk and Wood, 2008; Barongo et al. 2005). A study on the factors that influence early sexual debut revealed that about 70% of males' and 56% of females' sexual debut was as a result of curiosity to experiment and fulfill their sexual urge with their boyfriends or girlfriends while 36% of females experienced forced first sexual act compared to 7.2 % for males (Barongo et al. 2005).

Interestingly, the early sexual debut below the age of 12 cannot be explained by hormonal excitation. One study on reproductive health risk and protective factors among youth in Ghana identified other factors for early sexual debut. In the Ghana study, other identified factors which were associated with early sexual debut included poor community connections, risky peer behaviour, and poor school attendance (Karim, Magnani, Morgan, and Bond, 2003).

2.5 Behaviour Change Theories and Models

Researchers have investigated adolescent sexual behavior in a variety of contexts, and several projects have designed strategies to address risky sexual behavior among adolescents and young adults. However, in order to conduct effective HIV intervention, it is clearly vital that HIV prevention efforts among

adolescents are properly focused on the essential elements for adolescents to enact and sustain behavior change. Some of these models and theories are discussed below.

2.5.1 The Health Belief Model

The Health Belief Model is a psychological model which predicts health behaviors by focusing on the attitudes and beliefs of an individual. The Health Belief Model hypothesizes that an individual would not make the decision to undertake a health action aimed at a specific disease threat unless he/she is psychologically ready to act (Rosenstock, Strecher and Becker, 1994). Readiness to act is posited to be a function of the individual's perception of his/her personal susceptibility to the health threat, the perceived benefit of the recommended health action and the barriers the individual foresee in taking action.

Applied to the study, the Health Belief Model posits that school adolescents cannot make the decision to undertake preventive action aimed at avoiding HIV unless they are psychologically ready to act. Their readiness to act will depend on their individual perceptions of vulnerability to HIV, perceived seriousness of HIV, the perceived benefits of the recommended preventive action such as condom use. The decision for taking action is likely to occur when perceived threat of HIV is high and the benefit of the proposed preventive action outweighs the barriers. This model shows that it is important to find out the extent to which adolescent believe that HIV is a threat to their life. Bandura (1989) suggests that an individual's perceived ability to successful carry out a 'health' action (self-efficacy) such as using a condom consistently, greatly influences his/her decision and ability to enact and sustain a changed behaviour.

2.5.2 AIDS Risk Reduction Model (ARRM)

Catania, Kegeles and Coates (1990) developed a framework for explaining and predicting the behavior change efforts of individuals specifically in relation to the sexual transmission of HIV based on other behavior change models including the Health Belief Model. The AIDS Risk Reduction Model attempts to understand behavior change of individual in a three-stage model as illustrated in figure 1. The first of these stages is termed “Recognition”, in this stage, the hypothesized influence of changes include: knowledge of sexual activities associated with HIV transmission, recognition of the danger to contract HIV infection, believing that having AIDS is an undesirable condition in the society.

The second stage is “making a commitment to reduce high-risk sexual contacts and to increase low-risk activities”. The cited factors that influence individuals moving to that stage includes: the cost and benefit incurred in the process of change, impact to self enjoyment, response efficacy regarding how the changes could successful reduce risk of HIV infection, self-efficacy and knowledge of the health utility (Catania, Kegeles and Coates, 1990). “Taking Action” is the third stage where individuals actually modify their behavior. This stage is broken into three phases namely, information seeking, obtaining remedies and enacting solutions. The factors that influence individual to move to this final stage includes: social networks and problem solving choices, prior experience with problems and solutions, level of self-esteem, resource requirements of acquiring help, ability to communicate verbally with sexual partner and sexual partner’s beliefs and behaviour.

Although the above two behaviour change models are widely used to explain what influence adolescent sexual behaviour, a major limitation of the two models is that they focus on the individual and do not take into account other important factors such as physical, social, economic and environment contexts

that surrounds adolescents which also are known to strongly influence behaviour (Turbin, Jessor and Costa, 2006).

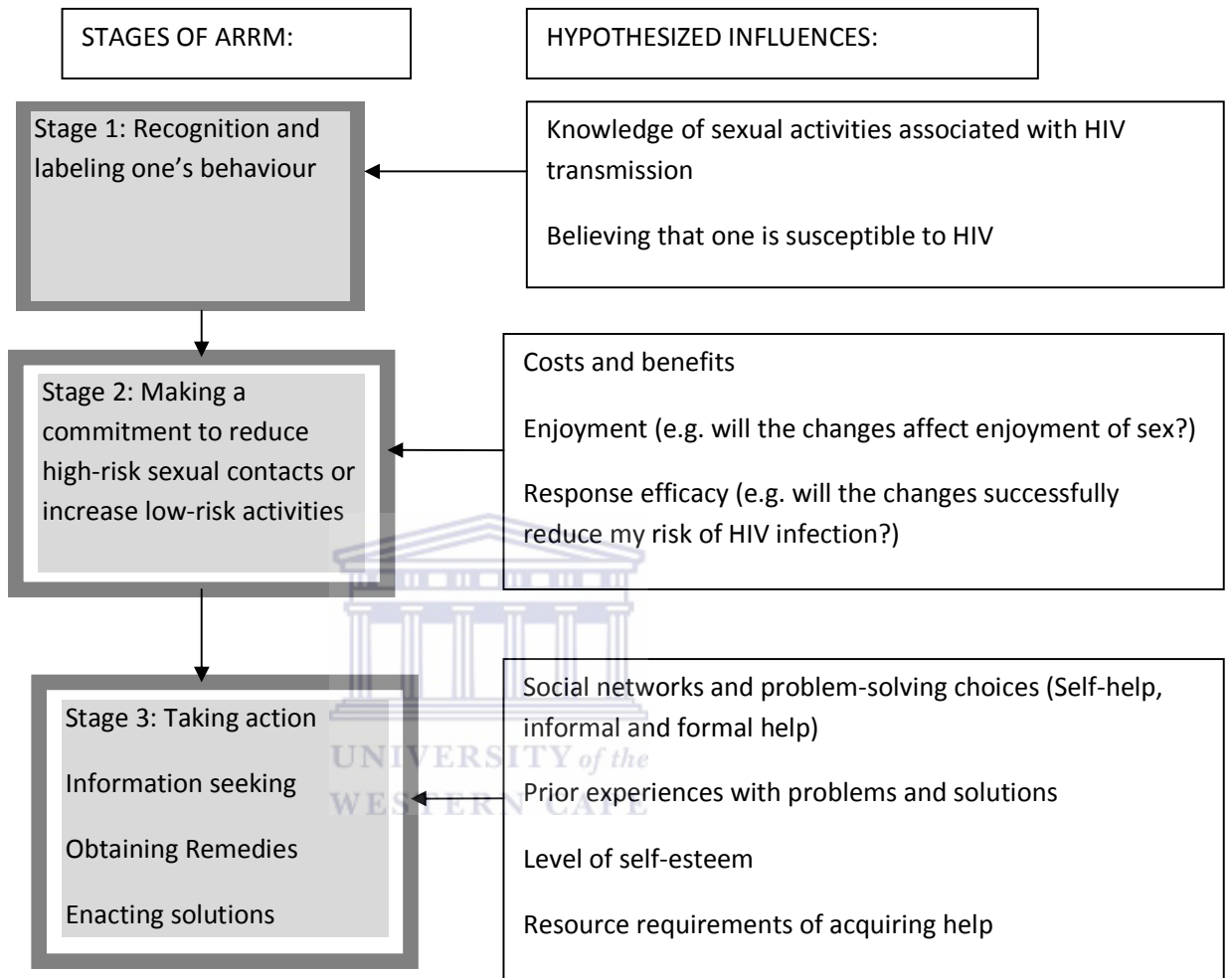


Figure 1: Conceptual Framework for explaining the behavior change efforts of individuals in relation to HIV based on AIDS Risk Reduction (*Adapted from Catania, Kegeles and Coates, 1990*)

2.5.3 Social Psychological Behavioral Theories

The Social Psychological behaviour Theories recognizes the importance of social and environmental factors as determinants of adolescent sexual behaviour as opposed to the above two models where emphasis is placed solely at the individual level (Turbin, Jessor and Costa, 2006). It has been established that social context plays a major role in determining adolescent behaviour. For example, several researchers suggest that parents and peers can strongly influence adolescent sexual behaviour (Wight, Williamson, and Henderson 2006; Donenberg, Wilson, Emerson, and Bryant, 2002; DiBlasio and Benda, 1990). A recent study on adolescent health-enhancing behaviour based on protective and risk factors has found that the social context of protective and risk factors measures were important, accounting uniquely for more variance than did the individual-level protective and risk factors (Turbin, Jessor and Costa, 2006). Social psychological behaviour theories put emphasis on the importance of addressing social context in adolescent interventions which are promoting behaviour changes.

In summary, the Social Psychological Behaviour Theories conceptualize behaviour change while recognizing the influence of social and environmental factors and hence have received empirical support and appear to offer much promise for understanding adolescent sexual behaviour. However, it is reasonable to suggest that determinants of adolescent sexual behaviour are complex interplay of social, cultural, psychological and economic forces which could only be explained through a combination of behaviour change theories and models.

2.6 Conclusion

In conclusion, adolescence is a period of transition in which an adolescent experience biological, social and psychological changes and may be a time of initiation of sexual relations, and increased social responsibilities. Furthermore, the adolescent stage in many developing countries has become a period of vulnerability because of inadequate HIV knowledge, negative cultural practices, peer influence and economic disempowerment. The interaction of gonadol hormones and brain development also leads adolescents into intense and rapid transitions to new roles and responsibility which in-turn might influence their sexual behaviour. Therefore, understanding the behaviour of adolescents and behavioral models is the key to developing effective adolescent HIV prevention programmes.



Chapter 3

Research Methodology

3.1 Introduction:

This chapter gives the aim and objectives of the research study, study design, sampling procedure, and the data collection process. This chapter also highlights the validity, reliability, analysis and generalizability of the study. It shows the measures taken to consider ethical issues in the research design and also gives details on what the limitations of the used methodology were.

3.2 Aim and Objectives of the Study

The aim of this study was to describe the knowledge and attitudes and the risky sexual behavior of upper primary school pupils in two wards of Meru District. The relevant data collected during this study will set the baseline information against which future studies can be measured and which will influence future HIV intervention programming and the HIV education curriculum in Tanzanian primary schools.

3.2.1 Objectives of the study

- i) To determine the knowledge related to HIV among primary school pupils in standards four to seven
- ii) To describe these pupils' attitude towards HIV and AIDS
- iii) To describe the risky sexual behavior among these pupils

3.3 Methodology

3.3.1 Study Design

This quantitative descriptive study was conducted as a cross-sectional survey (Katzenellenbogen, Joubert, and Abdool, 1999) using a self-administered anonymous close-ended questionnaire. Previous studies conducted in Tanzania indicated that adolescents felt shy and feared to discuss sexuality issues during group interviews (Mushi, Mpembeni and Jahn, 2007; Todd et al. 2003; Matasha et al. 1998). Self-administered questionnaires were used to allow pupils to answer the sensitive questions privately. This quantitative research design was chosen as it is less time consuming and the results obtained from this smaller sample could be generalized to the larger population of primary school pupils of similar age in the rural areas of Tanzania.

3.3.2 Definition of Terms

Below are definitions of the key terms used in this study report:

An **Adolescent** is a person between the ages of 10 and 19 years (UNFPA, 1998)

A **risky sexual behaviour** is one that increases the likelihood of adverse sexual and reproductive health consequences such as unwanted pregnancies, unsafe

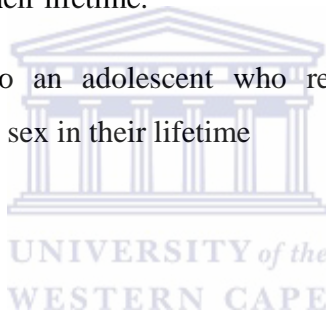
abortion, HIV and STIs and includes sexual activity under the influence of substances, sexual intercourse with drug users, unprotected sexual intercourse, commercial sex and unprotected sex with a same sex partner (WHO, 2000)

Mother-to-child transmission of HIV (MTCT) refers to the transmission of HIV infection from an infected mother to her child during pregnancy, labor, delivery or breastfeeding

HIV Stigma refers to prejudice and discrimination directed at people living with HIV/AIDS and the groups and communities that they are associated with (UNAIDS, 2000)

Ever had sex is an adolescent who reported ever having penetrative vaginal or anal sex, at least once in their lifetime.

Never had sex refers to an adolescent who reported never having had penetrative vaginal or anal sex in their lifetime



3.3.3 Study Population

The study population comprises of all pupils in standards four to seven (the majority being 10 – 17 years old), studying in the ten government primary schools in two wards of Meru district. The focus of pupils in standard four to standard seven was based on the assumption that they are more likely to have received some HIV education than pupils in standard One to Three. The selected age category of 10-17 years was based on previous studies e.g. Barongo et al. 2005 reported that the mean age at sexual debut in Tanzania was 9.2 years, therefore, the assumption here was that the pupils in the selected standards of study would be equally more likely to be sexually active and therefore more appropriate to answer the questions adequately.

3.3.4 Sample size

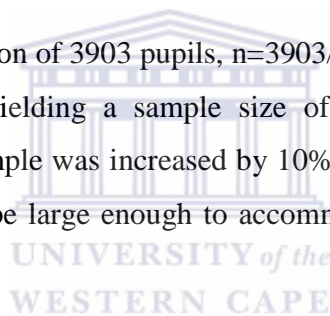
The ten primary schools in the two wards have a total population of 7399 pupils. However the sample was taken from the 3903 pupils in standards four to standard seven only from which a reasonable sample size was estimated using Yamane's formula (Yamane, 1967): $n=N/(1+N*E^2)$ for estimation of sample size where by:

n= sample size

N= population size

E= error rate

Therefore, with a population of 3903 pupils, $n=3903/(1+3903*0.05^2)= 363$ for a five percent error rate yielding a sample size of 363 [9 percent of study population]. The final sample was increased by 10% to come up with a total of 400, which number will be large enough to accommodate possibilities of data collection errors



3.3.5 Sampling Procedure

All ten government primary schools in the two wards participated in the study, and there were no big difference in number of pupils between the schools included in the study. The sampling frame for the ten schools based on a population of 3903 eligible pupils was established using school registers. A simple random sampling technique was applied from each school to get a sample size of 400 pupils by choosing the names of pupils in grades four to seven from the school register. In order to establish the sampling interval of 10, the population size of 3903 was divided by the sample size (400). Respondents from each school were selected based on the sampling interval; every tenth

pupil in standards four to seven class lists was selected and included in the sample. The starting point for each class was randomly chosen by drawing up 10 numbers and put them in a hat. Then a number was drawn out from the hat to act as the starting point. From that randomly selected starting point, every 10th pupil in the sampling frame was included in the study. In case the selected pupils was absent from class during the day of data collection, the next tenth pupil was selected. In this way, forty pupils were chosen from each school and there was a response rate of 100%.

3.3.6 Data Collection Methods

Data collection was done using a self-administered anonymous questionnaire (Appendix 1) in the classroom without the schoolteacher being present. The self-administered questionnaires allowed pupils to answer the sensitive questions privately to avoid previously observed fear and shyness in discussing sexuality issues during group interviews among primary school pupils (Mushi, Mpembeni and Jahn, 2007; Todd et al. 2003; Matasha et al. 1998). The questionnaire was designed and administered in Swahili language (the local language), which is used as the language of instruction in Tanzania primary schools.

The close-ended questionnaire was adapted by the investigator from the commonly used questionnaire for similar studies namely WHO's Knowledge, Attitudes, Beliefs and Practices on AIDS of Young People questionnaire (WHO, 1989), the Tanzania National Reproductive and Child Health Communication Strategy of 2005-2010 (MoH, 2005) and Family Health International – Youth Behavioral Surveillance Survey (BSS) questionnaire (FHI, 2000) but including only questions related to the current study objectives. The questionnaire consisted of questions assessing the following issues; socio-

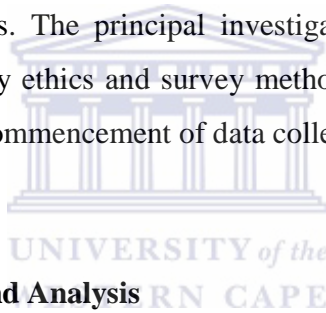
demographic information, knowledge and attitude regarding HIV, sexual behavior, and other risky sexual behaviors.

The pupils were first asked their socio-demographic characteristics such as sex, age, area of residence, religion and living situation. Regarding HIV awareness, respondents were asked whether they had ever heard of disease called AIDS (response categories: yes/no). HIV knowledge was assessed by ten questions concerning HIV transmission routes, prevention measures, and potential misconceptions regarding contracting HIV through insect bites, casual contacts and utensil use (response categories: true/false). Pupils were also asked questions on their attitude towards HIV and AIDS by asking nine questions including three items addressing attitudinal opinions, for example, 'HIV is a punishment from God' (Response categories ranged from 1 (I agree), 2 (I disagree) to 3 (I don't know)). Self reported risky sexual behaviour questions included whether they ever had sex, number of sexual partners within the past six months, whether they ever had used condoms, whether they ever practiced oral or anal sex.

The questionnaire was pre-tested to the pupils of comparable age in another primary school within Arusha region, in a nearby ward, which was not part of the sample, to check whether the questions would be culturally acceptable and easily understood. Necessary changes were made to the questionnaire after the pre-testing exercise. The pre-testing exercise showed that the only adjustment needed in the questionnaire was on questions regarding attitudinal opinion which in the initial version had a response of 5 categories (1=I strongly agree, 2=I agree, 3=I disagree, 4=I strongly disagree, 5=I don't know). The questions were too complex to be answered by primary school pupils and a simplified version including only 3 response categories was made (Response categories: 1=I agree, 2=I disagree, and 3=I don't know).

The survey team included the principal investigator, two counselors who were trained by the YMEP project to coordinate reproductive health education in

primary schools and three younger research assistants aged between 16-17 years. The main role of the principal investigator was to coordinate the whole survey process and training of field workers. The younger research assistants of similar age to the pupils were used to increase the trust of pupils when reporting sensitive sexual behavior and their main role was to conduct the data collection process. The counselors were familiar with school managements and their main role was to introduce the research team to school management, provide the details of the study objective and clarify the issues to be covered during the study and provide counseling services to pupils if the need arose. Therefore, the counselors accompanied the young research assistants to all schools. However, data collection process was done in the classroom in the absence of schoolteachers and counselors in order to increase the trust of pupils to report sensitive sexual behaviors. The principal investigator conducted training on data collection tools, study ethics and survey methodology for 2 days with all field workers before the commencement of data collection.



3.4 Data Management and Analysis

The data were pre-coded in Statistical Package for Social Sciences (SPSS) version 15 for window data view spread sheet. Data from all 400 questionnaires were entered, and cleaned, and no spoiled papers were noted. The coding was used for all categorical variables for example sex, and religion and variable names were defined. For simple categorical questions of Yes and No type, the common code of 1=Yes, 2=No, 0= no response and 9= missing data was used. For simple numerical information such as age of respondents, the actual number was used as a code and the variable name defined.

Data error was checked by running an initial check on data quality using SPSS descriptive analysis which identified the dirty data. The maximum and

minimum values were used to indicate if there were data that had been entered out of range. An initial check using SPSS descriptive analysis was also used to provide calculation on average values for numerical variables and if in case the mean values were deviating significantly from average values, data error was suspected, possible problems were identified and incorrect values were traced and changed in the SPSS Data editor.

All items for the data on knowledge, attitude and risky sexual behavior were pre-coded, double entered and verified. Bivariate analysis was done for descriptive data and a p-value of <0.05 was considered statistically significant. HIV knowledge and sexual behaviour was assessed by asking pupils to respond to “Yes”, and “No” answers. Other items in this section were assessed by asking pupils to respond to “True” and “False” statements. HIV attitudes and beliefs were assessed by using questionnaire including three items addressing attitude toward people with HIV (For example: People with HIV are promiscuous). Response categories ranged from 1 (I agree), 2 (I disagree) to 3 (I don't know).

Data analysis was carried out using (SPSS) computer software and the results were presented in simple percentages. Analysis was stratified by sex to show how responses to the variables of knowledge, attitude, sexual behaviour and coercion differ for male and female pupils. Furthermore, the variables on pupils' knowledge, attitude and socio-demographic data were stratified by sexual experience in order to determine their association to pupils' sexual behaviour. The Chi-square test was used to assess the significance where a p-value <0.05 was considered statistically significant.

The knowledge about HIV transmission and prevention among school pupils was measured using a scoring system which comprised the number of correct responses to ten items regarding HIV prevention and transmission. The knowledge scoring was rated sufficient knowledge (7-10 correct responses) and insufficient knowledge (0-6 correct responses).

The following were the correct answers in relation to the question on knowledge of HIV transmission (question 9): (c). If participants “ticked” (c) of these boxes they were judged to have provided a correct response. If they ticked a, b, d boxes or left these boxes “blank” they were judged to have provided an incorrect response.

The following were the correct answers in relation to the question on knowledge of HIV transmission (question 11): Yes. If participants “ticked” Yes of these boxes they were judged to have provided a correct response. If they ticked “No” or “I don’t Know” or left all boxes “blank”, they were judged to have provided an incorrect response.

The following were the correct answers in relation to the question on knowledge of HIV transmission (question 12): If participants ticked “FALSE” for boxes “a-e” and TRUE for “f” box, they were judged to have provided a correct response. If they ticked “TRUE” for boxes “a-e” and FALSE for “f” box or left all boxes “Blank”, they were judged to have provided an incorrect response.

The following were the correct answers in relation to the question on knowledge of HIV transmission (question 13): If participants ticked “b” box, they were judged to have provided a correct response. If they ticked “a, c and d” boxes or left all boxes “blank”, they were judged to have provided an incorrect response.

The following were the correct answers in relation to the question on knowledge of HIV transmission (question 15): Yes. If participants ticked “Yes” of these boxes they were judged to have provided a correct response. If they ticked “No” or “I don’t Know” or left all boxes “blank”, they were judged to have provided an incorrect response.

3.5 Reliability

Reliability of collected data was addressed through cross checking the reliability of answer. In order to assess the internal consistency of the questionnaire response, some questions were repeated within the questionnaire but asked in a slightly different manner then; responses to asked question were checked for logic with related questions.

3.6 Validity

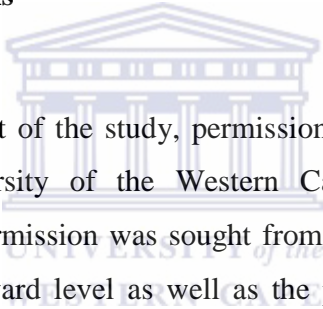
Several measures were taken to address different types of errors and biases in this study. Interviewer bias was reduced thorough training of all field workers and testing them in interviewing skills. The use of younger interviewers of relatively similar age to the respondents was used to increase trust for pupils to report sensitive sexual behavior on questionnaires. Selection bias was minimized by including all ten schools in the study area and by selecting a random sample of participants, thereby ensuring that each pupil had an equal chance of being selected.

In the Meru district context, young men may take pride in their sexual experience and exaggerate their sexual behavior like the number of partners they've had. In order to avoid that, the purpose of the research, importance of honesty and legitimacy was explained to all respondents before the interview. In addition to that, the privacy of the interview and confidentiality of any information obtained from it was assured through the use of a self-administered anonymous questionnaire. Furthermore, sexual behavior questions were asked further on in the questionnaire after respondents had become more familiar with and trusting of the interviewer. Recall bias was reduced by ensuring that participants had enough time to reflect before answering the questions.

3.7 Generalisability of study

The result of this study could only apply to adolescents attending rural primary schools in Tanzania. Since the study sample excluded out-of-school adolescents, the study findings might not represent the overall population of young people. However, it is anticipated that the study findings have relevance to all school-going adolescents in similar rural settings in Tanzania since the sample of this study was representative of the adolescent pupils in the study area.

3.8 Ethical Considerations



Before the commencement of the study, permission to conduct the study was granted from the University of the Western Cape Research and Ethics Committee. Moreover, permission was sought from the Ministry of Education at regional, district and ward level as well as the principals. All the eligible pupils and their parents were asked to give written consent before the interview after they were given information about the study. All study respondents signed the consent form before the commencement of the interview (Appendix 5).

The information sheet (Appendix 3) had the following information: The purpose of the study; participation is voluntary, confidentiality and anonymity will be guaranteed; participants have the right to refuse to answer any question and may withdraw from the study at any point if they choose to do so without any repercussions.

The questionnaire was reviewed by school head teachers, parent school committees and district education officer responsible for HIV/AIDS education to ensure that all questions were socially sensitive and ethically acceptable by the Ministry of Education for primary school pupils. The pupils were made aware

that counseling was available for those pupils if the need arose. The pupils were given information on where and how to access information regarding HIV.

3.9. Study limitations

This study had some limitations. The data collected was school based which is not representative of the overall population of adolescents in Meru district and therefore could not be generalisable to all adolescents in the study area especially out of school youths who might be influenced by different risk factors for HIV infection. According to the District Education Officer, the current primary school enrolment rate stands at 71% and school attendance rate is about 78%, which implies that, a substantial number of adolescents were left out of this study. However, the use of a representative sample in the study area increases confidence that the data provide a comprehensive picture of HIV/AIDS knowledge, attitude and risk sexual behavior, amongst primary school adolescents if not amongst out of school adolescents in the rural areas of Tanzania.

Another limitation of this study was that the research relied mostly on self-reported information using self-administered questionnaire as the tool for data collection. Despite the fact that the respondents were assured that information reported would be kept confidential, and younger field workers of relatively similar age to the respondents were used in this study, it could be possible that some respondents might not have been entirely truthful. Pupils might not have asked a question to clarify something because they would be too shy to ask it loudly in front of everybody.

Finally, this study was designed as a cross-sectional survey which is known to be too rigid and suffer low validity/reliability by providing answers to complex questions around determinants of behaviour (Katzenellenbogen, Joubert, and

Abdool, 1999). Therefore, combining both quantitative and qualitative study would have been of more value in attaining the best results. However, experience from previous studies done in the country which encourage quantitative studies using self-administered questionnaires among primary school pupils in Tanzania (Mushi, Mpembeni and Jahn, 2007; Todd et al. 2003; Matasha et al. 1998) reinforced our confidence in the current study's data.

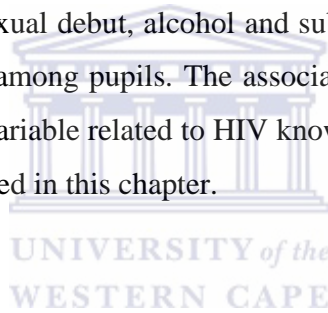


Chapter 4

Results

4.1 Introduction

Chapter 4 presents the research findings with systematic focus on the research objectives. The data on pupil's demographic characteristics, HIV knowledge and attitudes and risky sexual behavior in Meru district are presented using tables and graphs. The chapter provides highlights on pupils HIV knowledge and their perception and attitude regarding adolescent sexuality. Furthermore, the chapter describes the patterns of adolescent sexual behaviour including age at first sex, reasons for sexual debut, alcohol and substance abuse and different types of sexual practices among pupils. The associations between independent variables and dependent variable related to HIV knowledge, attitude, and sexual behaviour are also described in this chapter.



4.2 Socio-demographic Characteristics

The sample consisted of 400 pupils in standard 4 to 7. The demographic profile of the 400 pupils interviewed is shown in Table 1 below. The age of the majority (53.0%) of respondents ranged from 10 – 12 years with a greater proportion of females (54.2%) than males (51.9%) belonging to this age group. Only nine out of 400 interviewed respondents were in the 16-17 years age category. With respect to religious affiliation, the majority of both male (54.8%) and female (49.5%) were Protestants while Catholics and Moslems were 28.5% and 9.5% respectively. The research findings show that 82.0 % of pupils lived with both parents while 5.9 % were double orphans.

Table 1: Demographic Characteristics of the Pupils by Gender (N=400)

Variable	Male (n=208) %	Female (n=192) %	Total %
Age:			
10-12 yrs	51.9	54.2	53.0
13-15 yrs	45.2	44.3	44.8
16-17 yrs	2.9	1.5	2.2
School Grade:			
Class 4	20.7	18.2	19.5
Class 5	22.6	22.9	22.8
Class 6	27.9	27.6	27.8
Class 7	28.8	31.3	29.9
Religion:			
Catholic	28.4	28.6	28.5
Protestant	54.8	49.5	52.3
Muslim	11.1	7.8	9.5
Animist	0.5	1.1	0.7
Others	5.2	13.0	9.0
Living Situation:			
Both Parent alive	80.2	83.9	82.0
Mother alone alive	12.5	9.9	11.3
Father alone alive	2.0	3.6	2.8
None alive	5.3	2.6	5.9

4.3 Knowledge about HIV and Sexual Transmitted Infections

The proportion of students who had correct HIV knowledge by gender is shown in Table 2. The majority of pupils (92.4%) both males and females reported having heard of HIV and AIDS, however, there was a statistically significant difference between males (60.6%) and females (49.4%) who knew that a person who has no symptoms of AIDS can still spread HIV if that person has the infection ($P=0.03$). The majority of both males (82.3%) and females (85.1%) provided correct responses regarding HIV not being transmitted by mosquitoes. However, the percentage of correct responses regarding transmission of HIV through sharing utensils were relatively low for both male (58.3%) and females (54.1%) though these findings did not achieve statistical significance between the two gender groups ($p=0.695$).



Table 2: Proportion of pupils with correct knowledge on transmission and prevention of HIV/AIDS and STI by gender (N = 400)

HIV & AIDS Knowledge variable	Male (n=208)	Female (n=192)	Total	P values
	%	%	%	
Heard of HIV and AIDS	92.0	92.9	92.4	0.898
Knew that a person can get HIV after having sex with a person who has no symptoms of AIDS	60.6	49.4	55.3	0.03*
Knew that mosquito bite cannot spread HIV	82.3	85.1	83.7	0.765
Knew that sharing utensils with infected person cannot spread HIV	58.3	54.1	56.3	0.695
Knew that sharing toilets and bathrooms cannot spread HIV	85.4	76.8	81.3	0.119
Knew that witchcraft cannot spread HIV	82.9	79.9	81.5	0.607
Knew that a person can get HIV through exchange of infected human body fluid	86.9	89.4	79.5	0.694
Knew that high chance for infected mother to transmit the virus to a child is during delivery	12.6	14.1	13.4	0.846
Heard of Sexually Transmitted Infections	85.1	82.5	83.9	0.579
Could differentiate STIs from other diseases	68.6	71.9	70.2	0.8
Heard of condoms	86.1	86.6	86.3	1.0
Knew that consistent & correct use of condom can prevent HIV Infection	65.2	64.8	65.0	0.748
Knew some places where condoms are available	66.3	61.6	64.1	0.702

The asterisk (*) represents values, in which $p < 0.05$ between male and female pupils

The majority of pupils (84.0%) said they had heard of STI, and 68.6% of males and 71.9% of females correctly differentiated STIs from other diseases. The study revealed that most pupils had poor knowledge on maternal to child transmission. Only 13.4% of both male and female pupils accurately mentioned the stage when there is high chance of an infected mother to transmit the virus to her child. Regarding knowledge related to condoms, 86.3% of interviewed pupils said they had heard of condoms. Almost 62.0% of female and 66.3% of male pupils knew some places where condoms were available and 65.0% of all interviewed pupils acknowledged the fact that consistent and correct use of condom could prevent HIV infection.

Table 3 below, shows the HIV knowledge among school pupils using the scoring system which comprises the number of correct responses to ten items regarding HIV prevention and transmission. Further analysis of the data was done by categorizing the knowledge into two categories. The knowledge scoring was rated sufficient if the respondent had 10 – 7 correct responses and was rated into another category of insufficient knowledge if the respondent had 6 or less correct responses. The analysis of data showed that 53.8% of male pupils had sufficient HIV knowledge compared to 47.9% of female pupils. However, the noted difference was not statistically significance among the two gender groups ($p=0.139$). Generally, 49.0% of all pupils had insufficient knowledge and a larger proportion of female pupils (52.1%) compared to male pupils (46.2%) had insufficient HIV knowledge.

Table 3: Level of Knowledge of HIV Transmission and Prevention by Gender (N=400)

Level of Knowledge	Female (n=192)	Male (n=208)	Total	P value
	%	%	%	
Sufficient Knowledge*	47.9	53.8	51.0	0.139
Insufficient Knowledge**	52.1	46.2	49.0	

*7-10 correct responses, **0-6 correct responses

4.4 Pupil's Sexual Behaviour

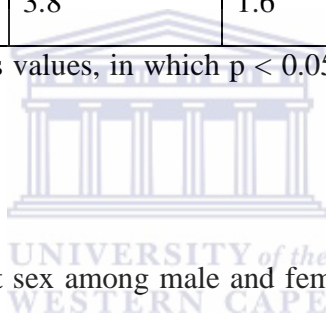
4.4.1 Patterns of Pupils Sexual Behaviors

Just over 19.0% of males and 5.7% of females reported that they ever had sex (Table 4). The proportion of males who ever had sex were higher than females and the difference was statistically significant (P=0.002). Four percent of pupils reported to ever having sex in the past six months.

Table 4: Patterns of sexual behavior by gender (N=400)

Variable	Male (%)	Female (%)	Total (%)	P value
Ever had sex	19.2	5.7	12.8	0.002*
Ever had sex in the past six months	5.8	2.0	4.0	0.159
Ever used a condom	4.8	4.2	4.5	0.313
Person initiating use of condom				
myself	0	2.0	1.0	0.072
my partner	1.0	0.5	0.8	0.662
joint decision	3.8	1.6	2.8	0.467

The asterisk (*) represents values, in which $p < 0.05$ between male and female pupils



The age categories of first sex among male and female pupils are presented in Figure 2. Significantly, more males than female pupils had ever had sex by age 15 years ($p=0.001$). Of those pupils who reported having had sex, 37.5% of male pupils and 63.6% of female pupils reported that they had had more than one sexual partner. Only 4.8% of male pupils and 4.2% of female pupils reported that they ever used a condom and a larger proportion of males (3.8%) than female (1.6%) reported that the use of the condom was as a result of a joint decision.



Figure 2: Age at first sex of pupils by gender

Figure 3 shows differences in response to various factors responsible for sexual debut among the respondents. Regarding the driving force for the first sexual intercourse, 11.2% of males had their sexual debut because they were willing to have sexual intercourse with their partners, as compared to 3.7% of the females. About 1.1% of males and 1.2% of females had their sexual debut through forced sex, while 3.4% of males and 1.2% of females had their sexual debut because they were persuaded by a friend.

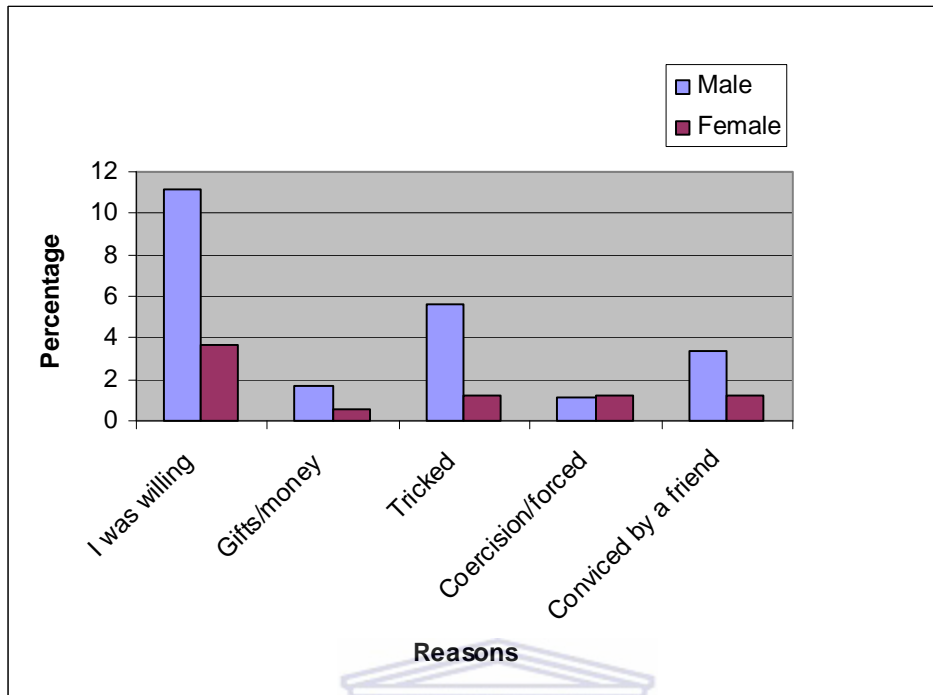


Figure 3: Factors contributing to sexual debut among pupils



4.4.2 Alcohol and Substance use

The patterns of alcohol and substance use are shown in Table 5. Nine percent of pupils reported that they had a peer who drinks alcohol. A higher proportion of males (8.1%) than female (5.4%) reported being involved in alcohol use. Overall, male pupils had a higher frequency of taking alcohol than female pupils which was statistically significant ($p=0.032$). Regarding substance use and cigarette smoking, 4.7% of male pupils and 1.8% of female pupils reported ever having used marijuana drugs. Interestingly, more females than males reported having a peer who uses drugs and smokes cigarettes. However, the noted differences were not statistically significance ($p=1.0$).

Table 5: Alcohol and substance abuse among pupils (N=400)

Variable	Male (%)	Female (%)	Total (%)	P value
Has a peer who drinks alcohol	11.5	5.6	8.7	0.063
Has a peer who use drugs (marijuana, kuberi, glue)	5.7	6.2	5.9	1.0
Has a peer who smokes cigarettes	6.3	8.9	7.6	0.335
Pupils who take alcohol	8.1	5.4	6.8	0.399
Frequency of taking alcohol:				0.032*
Pupils who are occasional drinker	13.2	12.2	12.8	
Pupils who are moderate drinker (weekends)	12.6	4.3	8.6	
Pupils who are Frequent drinker (daily)	3.1	1.4	2.8	
Pupils who ever used drugs (marijuana, ghat, glue, kuberi)	4.7	1.8	3.4	0.15

The asterisk (*) represents values, in which $p < 0.05$ between males and female pupils

4.4.3 Different Types of Sexual Practices

About 9.0% of boys and 2.4% female pupils reported that they had ever practiced masturbation, and 9.0% of all pupils had ever been touched on the penis or vagina for sexual satisfaction. There was a statistical difference between males (13.3%) and females (4.3%) who reported being touched on private parts for the purpose of sexual satisfaction ($p=0.016$). Regarding the person who touched their private parts, 11.8% mentioned a friend of same sex,

8.2% mentioned a friend of the opposite sex. The proportion of pupils who reported to ever having been touched on their private parts by a male adult and female adult was 3.6% and 5.3% respectively. The data further revealed that 5.0% of males and 1.4% of females reported ever having had oral sex while 3.1 % of male and 1.4 % of females had ever practiced anal sex.

4.5 Sources of Information about HIV

The sources of information about HIV are shown in Table 6. The five most important sources of information about HIV for the pupils were newspapers (88.1%), health facilities (31.3%), radio (26.5%), parents (21.8%) and television (19.6%). This study results indicates that there is a statistically significant difference between male pupils (12.4%) and female pupils (6.5%) who accessed HIV information through books ($p=0.041$).

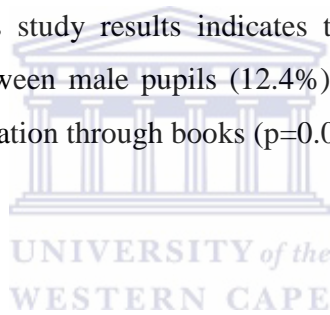


Table 6: Various Sources of HIV Information to Pupils by Gender (N=400)

Source of Information	Male (n=208)	Female (n=192)	Total	P values
	(%)	(%)	(%)	
Newspapers	87.0	89.3	88.1	0.312
Health facilities	34.5	27.6	31.3	0.970
Radio	24.4	29	26.5	0.190
Parents	21.8	21.9	21.8	0.538
Television	19.7	19.5	19.6	0.538
Teachers	18.0	18.9	18.5	0.466
Friends	10.4	13.6	11.9	0.215
Family	10.4	12.4	11.3	0.325
Books	12.4	6.5	9.7	0.041*
Religious Leaders	5.2	6.5	5.8	0.375
Uncle/ Aunt	4.7	4.1	4.4	0.508

The asterisk (*) represents values, in which $p < 0.05$ between male and female pupils

4.6 Pupils Perception on their Parents, Friends, and Teachers Attitude about Adolescent Sexuality

The pupils' perceptions of parents, friends and teachers' attitude about adolescent sexuality is presented in Table 7. The majority (98.6%) of pupils perceived that parents/guardians are not supportive of the idea of adolescents engaging in sexual relationship. About 3.0% of male and 1.2% of female pupils reported that they believed teachers think that doing sex is always right. Only

19.5 % of male and 29.0% of female reported that parents always talk with their children about their sexual values. However, the majority of both male (54.7%) and female (52.7%) pupils reported that they very often discuss with peers about maintaining their virginity.

Table 7: Pupils Perceptions on parents, friends and teachers' attitude about adolescent sexuality (N=400)

Variable	Male (%)	Female (%)	Total (%)	P values
Parents/ guardian think that doing sex is always right	2.1	0.6	1.4	0.43
Teachers think that doing sex is always right	3.2	1.2	2.2	0.011
Friends think that doing sex is always right	7.9	3.6	5.8	0.051
Parents talk with children on their sexual values:				0.11
Always	19.5	29.0	24.0	
Sometimes	19.5	17.6	18.6	
Never	61.0	53.4	57.4	

4.7 Attitude of Pupils toward Sexuality

Interestingly, even though about 42% were of the opinion that boys should respect their girlfriend's decision in a sexual relationship, the research findings show that slightly over one-quarter of both male (29.4%) and female (28.9%) pupils believed that boys should not respect their girlfriend decision in sexual relationship. Furthermore, 18.8% of male and 19.2% of female pupils believed that it is accepted for boys to force girls for sex. It was noted that 15.4% of all

pupils reported that a girl has no right to say no if she is not in a mood to have sexual relationship with a boy. However, the differences between males and females in attitudinal opinions regarding sexual behaviour were not statistically significant for all variables (Table 8).

Table 8: Pupils' attitudes in relation to sexual behaviour (N=400)

Attitudinal Opinion	Male %	Female %	Total %	P value
Boys should respect their girlfriend's decision in sexual relationship				0.284
Agree	45.4	36.1	42.2	
Disagree	29.4	28.9	29.1	
I don't know	25.2	35.0	28.6	
A girl has the right to say no if she is not in a mood to have sexual relationship				0.17
Agree	65.8	56.4	61.2	
Disagree	14.2	16.8	15.4	
I don't know	20.0	26.8	23.3	
It is okay for a boy to force a girl to have sexual intercourse				0.865
Agree	18.8	19.2	19.0	
Disagree	62.9	60.5	61.7	
I don't know	18.3	20.3	19.3	
Frequency of discussing with peers about maintaining virginity:				0.343
Very often	37.2	40.8	38.9	
Sometimes	17.5	11.9	14.9	
Never	45.3	47.3	46.3	

4.8 Pupils Attitudes towards People Living with HIV

Tables 9(a) and 9(b) illustrates the attitudes of pupils towards people living with HIV. The majority of both males (51.9%) and female (59.3%) believed that HIV and AIDS is a punishment for bad behaviour and about 32.7% of all pupils had a perception that HIV is a punishment from God. In addition, more than half of both male (56.2%) and female (56.3%) reported that they would be ashamed if they had HIV and the noted difference was statistically significant between male and female pupils ($p=0.022$). Interestingly, a high proportion of both male (54%) and females (55.4%) had a positive attitude towards HIV positive teachers and were of the opinion that if a teacher has HIV, he/she should continue teaching at school. Furthermore, despite the noted stigma opinions among the respondents, the majority of pupils both males (80.9%) and females (81.5%) stated that they would be willing to care for an HIV infected relative.

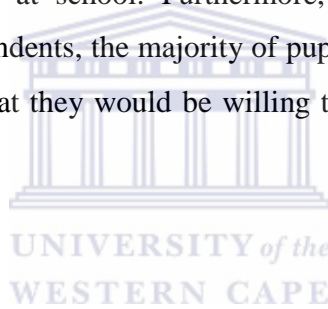


Table 9(a): Pupils Attitudes towards people with HIV/AIDS (N=400)

Attitudinal Opinion	Male %	Female %	Total %	P value
HIV is a punishment from God				0.367
Agree	35.9	29.2	32.7	
Disagree	34.4	36.5	35.4	
I don't know	29.7	34.3	31.9	
People with HIV/AIDS are promiscuous)				0.634
Agree	41.6	42.9	42.2	
Disagree	30.0	25.7	27.9	
I don't know	28.4	31.4	29.9	
HIV/AIDS is a punishment for bad behaviour				0.073
Agree	51.9	59.3	55.5	
Disagree	28.9	18.7	23.9	
I don't know	19.2	22.0	20.6	
People with HIV should be ashamed of themselves				0.469
Agree	31.9	38.1	34.9	
Disagree	40.0	36.4	38.2	
I don't know	28.1	25.5	26.9	
I would be ashamed if someone in my family has HIV/AIDS				0.705
Agree	47.3	43.2)	45.3	
Disagree	36.2	38.1	37.1	
I don't know	16.5	18.7	17.6	

The asterisk (*) represents values, in which $p < 0.05$ between male and female pupils

Table 9(b): Pupils Attitudes towards people with HIV/AIDS (Contn.)

(N=400)

Attitudinal Opinion	Male %	Female %	Total %	P value
I would be ashamed if I had HIV/AIDS				0.022*
Agree	56.2	56.3	56.3	
Disagree	36.2	27.5	32.0	
I don't know	7.6	16.2	11.7	
I would buy food from people showing AIDS symptoms				0.111
Agree	48.7	42.0	45.5	
Disagree	35.3	33.1	34.3	
I don't know	16.0	24.9	20.2	
If a teacher has the AIDS virus but is not sick, S/he should continue teaching at school				0.896
Agree	54.0	55.4	54.7	
Disagree	29.9	30.3	30.1	
I don't know	16.1	14.3	15.2	
If my relative is infected with HIV/AIDS, I will be willing to care for him/her				0.201
Agree	80.9	81.5	81.1	
Disagree	12.2	7.9	10.1	
I don't know	6.9	10.6	8.7	

The asterisk (*) represents values, in which $p < 0.05$ between male and female pupils

4.9 Sexual Coercion

With respect to pupil's involvement in sexual coercion, 11.2% of male and 6.7% female pupils reported that had ever been forced to touch or touched other people's private parts. Overall 9.7% of male and 12.6% of female pupils mentioned the involvement of parents (either mother or father), while the involvement of teacher in sexual coercion was mentioned by 1.5 % of all pupils. The difference between males and females in involvement of sexual coercion was not statistically significant.

4.10 Socio-demographic Characteristics in Relation to Sexual Experience

Table 10 indicates the percentage distribution of different socio-demographic variables of pupils surveyed in relation to their sexual experience (ever had sex). The highest proportion of pupils who ever had sex was from age 14 years upwards ranging from 22.2% to 50%. Interestingly, pupils who did not have a religion were the high proportion (33.3%) of those who reported that they ever had sexual experience. The percentage of sexually experienced pupils among Catholic, Protestants and Muslims were 8.3%, 18.6% and 6.3 % respectively.

These finding indicate that relatively, sexual experiences tended to increase with age and school grade. The highest proportion of pupils who ever had sex was among standard 7 pupils (17.7%) followed by standard 6 pupils (13.5%) while the proportion for standard 5 and 4 were 12.0% and 9.5% respectively. However, these results show no statistical significant difference between various demographic variables and pupils who reported that they ever had sex.

Table 10: Socio-demographic Variables and Sexual Experience

Socio-demographic Variables	Ever Had Sex N(%)	Never Had Sex N(%)	Total N	P value
Pupils Age				0.16
10 years	9 (12.5)	63 (87.5)	72	
11 years	5 (8.6)	53 (91.4)	58	
12 years	5 (8.3)	55 (91.7)	60	
13 years	9 (9.8)	83 (90.2)	92	
14 years	14 (22.2)	49 (77.8)	63	
15 years	6 (50)	6 (50)	12	
16 years	2 (40)	3 (60)	5	
17 years	1 (33.3)	3 (66.7)	3	
Pupils Religion				0.264
none	1 (33.3)	2 (66.7)	3	
catholic	9 (8.3)	100 (91.7)	109	
protestant	32 (18.6)	140 (81.4)	172	
Muslim	2 (6.3)	30 (93.7)	32	
other	6 (17.6)	28 (82.3)	34	
School Grade				0.391
class 4	6 (9.5)	57 (90.5)	63	
class 5	10 (12)	73 (88)	83	
class 6	14 (13.5)	90 (86.5)	104	
class 7	20 (17.7)	93 (82.3)	113	
Living Situation				0.795
both parents alive	37 (12.7)	254 (87.3)	291	
mother alone alive	8 (18.6)	35 (81.4)	43	
father alone alive	2 (20)	8 (80)	10	
none alive	3 (20)	12 (80)	15	

4.11 Knowledge Variables in Relation to Sexual Experience

In order to determine whether there was a relationship in pupils HIV knowledge and their sexual experience, the knowledge variables were analyzed based on sexual experiences. The knowledge on whether a person who has no AIDS symptom can transmit HIV was significantly correlated with sexual experience ($p=0.0001$). Results of this study further reveal that there was a statistically significant difference between pupils (79.5%) who ever had sex and pupils (63.6%) who never had sex, who knew that consistent and correct use of condom can prevent HIV infection ($p=0.000$). Although other knowledge variables did not show any association with sexual experience, the result in Table 11 indicate the general trend which show that more pupils who ever had sex were more likely to have the correct knowledge regarding HIV transmission and prevention.

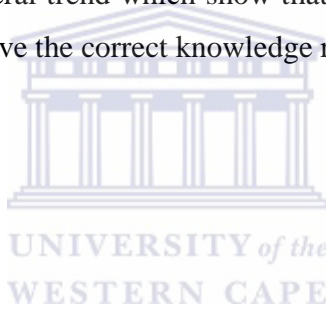


Table 11: Association between Knowledge and sexual experience (N=400)

Knowledge Variable	Ever Had Sex (n=51)	Never had sex (n=349)	p value
	%	%	
Knew that a person can get HIV after having sex with a person who has no symptoms of AIDS	66.7	53.3	0.0001*
Knew that mosquito bite cannot spread HIV	84.4	85.0	0.126
Knew that sharing utensils with infected person cannot spread HIV	56.8	55.5	0.745
Knew that sharing toilets and bathrooms cannot spread HIV	89.1	81.4	0.113
Knew that a person cannot get HIV by playing with infected person	82.6	84.3	0.658
Knew that witchcraft cannot spread HIV	85.7	83.2	0.154
Knew that a person can get HIV through exchange of infected human body fluid	89.4	88.3	0.699
Knew that high chance for infected mother to transmit the virus to a child is during delivery	18.8	13.3	0.496
Could differentiate STIs from other diseases	63.8	71.0	0.102
Knew that consistent & correct use of condom can prevent HIV Infection	79.5	63.6	0.000*

The asterisk (*) represents values, in which $p < 0.05$ as compared to never had sex group

As shown in Table 12 below, pupils who were sexually experienced had sufficient knowledge score, compared to those who were not sexually experienced. In general, the data revealed that there was a statistical significant difference in the levels of HIV knowledge between, pupils who ever had sex (62.7%) compared to pupils (51.6%) who never had sex ($p=0.039$).

Table 12: Level of knowledge of HIV transmission and prevention by Sexual Experience (N=400)

Level of Knowledge	Ever had sex (n=51)	Never had Sex (n=349)	P value
	%	%	0.039*
Sufficient Knowledge*	62.7	51.6	
Insufficient Knowledge**	37.3	48.4	

*7-10 correct responses, **0-6 correct responses

UNIVERSITY of the
WESTERN CAPE

4.12 Attitude Variables in Relation to Sexual Experience

Table 13 shows the relationship between attitude and sexual experience (ever had sex pupils). The results of this study revealed no significant association between all attitude variables and sexual experience. However the general trend of the data show that pupil who never had sex were more likely to have negative attitudes regarding people infected by HIV.

With respect to the association between substance use and sexual experience, there was a statistically significant difference between pupils who use drugs and ever had sex (54.5%) with pupils who use drugs (44.5%) but who never had sex ($p=0.005$). However, more pupils (70.0%) who reported that they never had

sex were taking alcohol compared to the proportion of pupils who ever had sex ($p = 0.06$). Furthermore, this study findings revealed that 33.4% of those who were sexually active and had multiple partners always used condom compared to 6.7% of pupils who had a single partner ($p=0.000$).

Table 13: Association between attitude and sexual experience (N=400)

Attitudinal Opinion	Ever Had Sex % (n=51)	Never had sex % (n=349)	P value
HIV is a punishment from God	48.9	29.7	0.141
People with HIV/AIDS are promiscuous)	32.6	44.6	0.227
HIV/AIDS is a punishment for bad behaviour	52.2	56.3	0.537
People with HIV should be ashamed of themselves	33.3	34.4	0.132
I would be ashamed if someone in my family has HIV/AIDS	7.7	45.8	0.629
I would be ashamed if I had HIV/AIDS	56.8	56.9	0.854
I would buy food from people showing AIDS symptoms	56.8	42.5	0.447
If a teacher has the AIDS virus but is not sick, S/he should continue teaching at school	44.4	55.8	0.12
If my relative is infected with HIV/AIDS, I will be willing to care for him/her	75.6	81.3	0.763

Chapter 5

Discussion

5.1 Introduction

Chapter 5 provides the discussion on pupils' HIV knowledge and attitudes and risky sexual behaviors based on the research findings and other facts found in the literature review. The policy implications of the research results are also elaborated in line with the research results. In the first part of this chapter, pupils knowledge, and attitude on HIV is discussed which is followed with a discussion on adolescent sexual behaviour. This chapter furthermore, discusses the factors influencing risky sexual behaviour, specifically the impact of substance abuse, the impact of HIV knowledge on adolescent sexual behaviour and the influence of socio-demographic characteristics.

This study conducted a Knowledge, Attitude and Behaviour (KAB) survey, an approach which is known to be very useful in identifying knowledge gaps, cultural beliefs and behavioral patterns that may facilitate suggestions of the solutions to the problem investigated (WHO, 2008). Evidence from Tanzania indicates that, risk-taking behavior escalate HIV infection among adolescents (Kaaya, Leshabari and Mbwambo, 1998). The use of a KAB survey in this study was useful to allow information gathering about what pupils know on HIV, what they think about people infected with HIV, and what they actually do with regard to risky taking behaviors

5.2 Risky Sexual Behaviour

5.2.1 Early Sexual Debut

The larger proportion of sexually active primary school pupils had their first sexual intercourse before they attain 15 years of age. This finding is consistent with results from earlier studies in Tanzania in which the majority of children in schools were engaged in sexual activities before the age of 15 (Barongo et al. 2005; Leshabari, Mpangile, Kaaya, and Kihwele, 2004). In addition, several other studies have indicated that, early sexual debut before age 15 is very common in African countries (Harrison, Cleland, Gouws and Frohlich, 2005; Matasha et al. 1998; WHO, 2000). The mentioned reasons for early sexual debut included peer pressure, asserting masculinity, and sexual abuse. In this study, the reasons for primary school pupils engaging in sexual activities at that early age remain speculative. However, deteriorating social systems, high levels of poverty (Barongo et al. 2005), and delayed HIV information to school pupils could be contributing factors. The current Tanzania primary school curriculum includes HIV classes starting from standard four to standard seven. This suggests that, a good proportion of pupils who engage in sexual activities at an earlier age in Tanzania, do so without prior information about HIV.

5.2.2 Sexual Practices

This study indicated that about 12.8% of primary school pupils were sexually active. The reported types of sexual practices included penetrative vaginal sex, anal sex and oral sex. About 5% of male and 1.4% of female pupils reported ever practicing oral sex while 3.1 % of male and 1.4 % of females had practiced anal sex. In Tanzania, anal and oral sex is culturally unacceptable and the current study results suggest that sexual practices among adolescents are

increasingly changing from the cultural point of view. In a more recent study, Kazaura and Masatu (2009) reported similar findings among adolescents in Tanzania in which 8% of them reported anal sex. These findings contradict a study in the United States in which anal and oral sex reported to be very limited among adolescents (Haffner, 1995). Although there is scanty information about anal sex contribution to adolescent HIV infection, previous research indicates that unprotected anal sex is more risky for HIV transmission than unprotected vaginal sex (Schwandt, Morris, Ferguson, Ngugi and Moses, 2006). Unfortunately, with the current globalization trends, increasingly adolescents will continue to access culturally insensitive information through mass media, internet and books that could possibly be suspected as a fuelling factor for adolescents to adopt some foreign risky sexual practices.

5.2.3 Multiple Sexual Partners and Condom Use

Among pupils who reported having had sex, over 63% of females and 37% of males reported that they had more than one sexual partner. Additionally, over 61% females and only 20% males reported that they had used a condom during their last sexual act. This finding is in line with previous study which reported that over 70% of males and 46% female pupils who had reported having sex, had had more than one sexual partner (Todd, et al. 2004). In the same study, only 4% of the pupils who reported having had sex said they had ever used a condom. The current national policy on HIV limits the school-based intervention on condom use by restricting condom availability at schools. The reason given for this is that condom availability could encourage sexual practices at school (MoH, 2001).

It is unfortunate that while there is clear evidence of young children in primary schools being engaged in risky sexual behaviors including multiple partner and unprotected sex, several political, cultural and religious barriers keep sexual education and some HIV preventive measures out of reach of primary school pupils (Lugoe et al. 1995; NACP, 1994). Despite the current strong government commitment to address HIV in primary schools, the majority of parents, politicians and even teachers consider that it is a taboo for teachers and parents to talk to children about sexual matters (Kennedy and Zephania, 2006; Barongo et al. 2004; Maswanya et al. 1999). The present study has shown that many of the pupils reported that parents never discuss sexual matters with them. The study results further demonstrated that the majority of both male and female pupils discuss their sexual matters with friends. This finding raises concern about the credibility of the information shared amongst pupils. A study conducted in Tanzania revealed that pupils who were gaining information from friends were engaging in Risk-1 behaviour (i.e. pupils who were sexually active and do not always use condom) (Maswanya et al. 1999), suggesting that such communication which is shared among friends could be one source of misinformation, prejudice and myths.

5.2.4 Sexual Coercion

This study revealed that a good proportion of pupils experienced sexual coercion. About 11.2% of male and 6.7% female pupils reported that they had been forced to touch or touched other people's private parts. Interestingly, parents and teachers were implicated in taking part in such sexual cohesive behavior when they are regarded as protectors and role models in society. Contrary to results from a previous study in Nigeria (Ajuwon, et al. 2006), there was no significant difference between males and females in experiencing sexual coercion. This difference may be explained by cultural and religious context of

the two countries. The Nigerian study was conducted in a Muslim community where women are kept in exclusion from men minimizing the coercive behaviour to female, while in Tanzania both boys and girls are free to interact with all community members and hence are equally susceptible to experience sexual coercion.

A number of studies from Sub-Saharan Africa have reported significant associations between coerced behaviour and a range of negative health and reproductive outcomes for young women. For example, studies from Zimbabwe and Uganda revealed the significant association between coerced sex and the occurrence of unintended pregnancy (Hof and Richters, 1999; Koenig, 2004). Therefore, implementing intervention strategies that will address the issue of sexual coercion in primary schools will not only minimize the risk of contracting HIV but also improve the reproductive health status of future mothers.

It is important to note that, over one-quarter of interviewed pupils both male and female believed that boys should not respect their girlfriend decision in sexual relationship. This finding describes a deep-seated socio-cultural relationship between males and females in Meru community. The data is very important and shows that the community socio-cultural norms and values may dictate sexual conduct for girls and adversely affect girl's ability to adopt and maintain HIV preventive behaviors.

These findings highlights the HIV vulnerability and sexual risk for both female and male pupils and suggest that most young people start engaging in sexual activities without an understanding of sexual risks which are facing them. An understanding of adolescent risk behaviour among key players including policy makers, politicians and technical staff will be useful in accelerating the development of supportive policies and programs sensitive to the pupils' current needs

5.3 Factors Influencing Risky Sexual Behaviour

5.3.1 Implications of Inadequate or inappropriate HIV Knowledge

The research finding from this study indicates that the proportion of pupils with sufficient knowledge (51%) about HIV transmission and prevention was slightly higher than those with insufficient knowledge (49%), however, the difference was not significant. The study further showed that, most pupils had insufficient knowledge on some specific ways of HIV transmission, for example, only 13.4% of pupils accurately mentioned the stage when there is high chance for an infected mother to transmit the virus to her child. In addition, it was noted that the knowledge of female pupils was significantly lower than that of male pupils regarding the possibility of a person who has no symptoms of AIDS to transmit HIV infection ($P=0.03$). In general, a greater proportion of male pupils (54%) compared to female pupils (47.9%) had sufficient knowledge about prevention and transmission of HIV infection.

These findings are similar to other studies conducted in Tanzania. Maswanya et al. (1999) reported that school females scored significantly lower on HIV transmission knowledge than school males (OR= 1.76, 95% CI: 1.25-2.47). Kapinga et al. (1991) associated the lower HIV knowledge of females compared with males to the socio-cultural context where the majority of Tanzanian females are less likely to be informed through mass media than males. However, the finding of this study does not concur with that of Kapinga et al. (1991). According to the results of this study, mass media is an important source of information about HIV to all pupils. This study further reveals that, there was no statistical significance in difference between male and female pupils in accessing information through mass media ($p>0.05$). This clearly shows that the reasons for difference in HIV knowledge between male and

female pupils in Tanzania remains speculative and it is an area that still needs further investigation.

It was encouraging to note that pupils cited parents and teachers as sources of knowledge about HIV. This finding contradicts a previous study in which none of the respondents (pupils) mentioned parents or teachers as a source of information about STIs (Kennedy and Zephania, 2006). The current study findings suggest that parents are becoming more open to their children in discussing matters related to sexuality. Certainly, this could be due to the fact that parents might be trying to counteract unguided culturally insensitive information currently being offered to children and youth through mass media, internet and books. Previously, in Tanzania the Information and Broadcasting sector was managed by the state and hence the information which was shared through mass media was screened against Tanzanian norms and culture. However, the rapid growth in the sector as a result of liberalization policy has reduced the capacity of government to control the information flow in the country. For example, during the period 1992 to 2006, the number of newspapers has increased from two to forty two, television stations have increased from one to thirty and over twenty one companies are providing internet services to the entire country (Ministry of Information, Culture and Sports, 2006).

On the other hand, citing teachers as the source of HIV information may be explained by the current government efforts to accelerate HIV and life skills training in primary schools in the country. The Ministry of Education has recently introduced the implementation of comprehensive HIV and life skills training in various primary schools in Tanzania (Prime Minister's Office, 2008). Efforts in scaling up the training is not encouraging, a recent report indicates that, rollout of comprehensive HIV and life skills training has reached only 1500 out of 15,673 primary schools in Tanzania since its inauguration in 2006 (Prime Minister's Office, 2008). In addition, many of these schools have

few HIV training manuals and inadequate training materials (Prime Minister's Office, 2008). It was further noted that currently, comprehensive HIV and life skill training is mostly implemented by civil society organizations and are implemented as vertical programs during extra class sessions and not made a subject matter in the curriculum (Mosi, 2006).

Although the majority of pupils had heard of STI, this study revealed insufficient knowledge about STI among pupils. About 29.8 % of pupils were not able to differentiate STI from other diseases like malaria, typhoid, tuberculosis and bilharzias. This finding is similar to that of Todd et al. (2004) in which less than a quarter of pupils were able to name any other STI apart from HIV. This insufficient knowledge regarding STI issues could be reflected in the fact that some pupils in this study were participating in risky sexual activities which would make them prone to HIV as well. The current study also noted that, more than half of both male and female pupils had misconceptions about contracting HIV through sharing utensils which is consistent with another Tanzanian study (Todd et al. 2004). The misconceptions noted in this study could be attributed to insufficient HIV knowledge among primary school adolescents which in turn may have instilled unnecessary fears in pupils resulting in prejudice against people living with HIV as evidenced by a large proportion of pupils with negative attitudes toward HIV and AIDS.

The majority of both male and female pupils in this study believed that HIV and AIDS is a punishment for bad behaviour and about 32.7% of all pupils had a perception that HIV is a punishment from God. Furthermore, more than half of pupils in the study reported that they would be ashamed if they had HIV. This study is comparable to a recent study of adolescents in Miami-Dade Florida in which 41% of adolescents had demonstrated misconceptions regarding HIV prevention and transmission (Marcelin, McCoy, and DiClemente, 2007). The study associated the noted misconceptions to the lower level of knowledge among adolescents.

The findings of the current study show that even pupils who had sufficient knowledge still expressed misconceptions. This suggests that, in this study, insufficient HIV knowledge alone could not be the only factor which is associated with misconceptions among pupils. It is possible that other factors such as cultural or social norms could be responsible for influencing pupils' attitude and beliefs. In Tanzania, heterosexual transmission is the main route for HIV infection, the route which is perceived by many people including religious leaders as voluntary and avoidable. Such beliefs about HIV and AIDS could partly explain a great deal of misconceptions among pupils regardless of having sufficient HIV knowledge.

On the other hand, beliefs possessed by some pupils that people with HIV and AIDS are promiscuous, may foster stigma and discrimination toward HIV infected person. This research finding also suggests a presence of stigmatizing attitudes around HIV among primary school pupils in the study area. Previous study reported that, misconceptions about how HIV is transmitted are key factors for stigma and discrimination of people living with HIV (Jurgens, 2007). This can have implications on success of HIV programmes as previous studies have shown that stigma creates environments that significantly hinder the effectiveness of health promotion and prevention activities (UNAID, 2000; Jurgens, 2007). Individuals who identify themselves as not belonging to the 'stigmatized' group consequently may not consider themselves vulnerable and therefore ignore or reject information and actions designed to safeguard individual and public health (UNAID, 2000).

Available evidence shows the importance of HIV knowledge in influencing adolescent behaviour change. Previous studies on school-based HIV education programs indicated that adequate HIV knowledge and increasing exposure to HIV information were important determinants in influencing behaviour changes (Mavedzege, Doyle and Ross, 2010; Klepp, et al. 1997; Koula and Jenny, 2006). However, one of the most surprising findings in this study was that

sufficient knowledge score was positively associated with pupils who were sexually experienced. The findings revealed that significantly more pupils who had sex (62.7%) had sufficient HIV knowledge compared to 51.6% of pupils who never had sex ($p=0.039$). It appears therefore that pupils with sufficient HIV knowledge engage more in sexual activities.

This finding is in line with the findings by Maswanya et al. 1999; Marcelin, McCoy, and DiClemente, 2007) who reported a correlation between sufficient HIV knowledge and sexual experience. Just like this study, the above studies did not give the reason for the noted discrepancies, though it points to the fact that sufficient HIV knowledge alone is not a protective factor from HIV infection (Mavedzege, Doyle and Ross, 2010; Kaaya, Leshabari, and Mbwambo, 1998). On the other hand, the discrepancy may be attributed to the lack of innovative sexual education in schools that includes efforts to change adolescents' behaviour and attitude (Todd, et al. 2004).



5.3.2 Implications of Socio-demographic factors

Previous studies suggest that socio-demographic characteristic might influence adolescent behaviour change (Ajuwon, et al 2006; Maswanya et al. 1999). The result of this study indicates that, there was no statistical significant association found between socio-demographic variables and pupils' sexual behaviors. However, the study indicated the general trend showing that the number of pupils who had sex tended to increase with age and school grade. The pupils of age 17 were 2.7 times more likely to be sexually active compared to age 10 pupils. These findings were consistent with a previous study which found that student age and grade were positively associated with sexual activities (Maswanya et al. 1999). As a child advances through the adolescent stage she/he experience physical, hormonal, sexual and social changes which

influence his/her sexual behaviour (Sato et al. 2008). This could partly explain the observed association between older age and sexual activity among pupils.

5.3.4 Impact of Alcohol and Substance Use

In relation to alcohol and substance abuse, the current study showed that pupils reported having been involved in alcohol and substance use (marijuana). Currently, there are no official statistics on drug abuse among primary school pupils in Tanzania. However, this study suggests that adolescents both male and female in primary schools are engaging in drug abuse. A recent study indicated that from years 1980 to 1985, a total of 6,019 persons were prosecuted on narcotic charges in Tanzania, of whom, 7% were aged less than 16 years (Timpson, et al. 2006). The above fact confirms an increasing use of drug abuse among Tanzanian primary school age group. The findings from this study suggest that some primary school adolescents are engaging in drug use which consequently might interfere with their cognitive processes important for making responsible choices that could reduce their risk of HIV infection. Alcohol and drug use could contribute to increasing HIV risk among primary school adolescents in Tanzania through engaging in more high risky sexual behaviors. In a study conducted in Tanzania, it was noted that 27% of the men and 58% of the women who reported using heroin had HIV infection (Kilonzo et al. 2002). Several other studies revealed a strong association between substance use and risk of HIV infection ((Dermen, Cooper and Agocha, 1998; Barongo et al. 2005; Timpson, et al. 2006).

5.4 Gender differences in HIV Risk

This study reveals that three times more males were reportedly sexually active than females. The study further indicates that more male pupils than female pupils engaged in oral and anal sex. This study is in line with a previous study conducted in Tanzania among primary and secondary school adolescents which revealed that a higher proportion of school males were already sexually active (Matasha et al. 1998). Although several researchers have placed women at increased risk of contracting HIV and pointed out unequal gender relations and low socioeconomic status as a reason behind increased HIV risk among the women (Perkins, Khan and Subramanian, 2009; Rodrigo and Rajapakse, 2010; Landman et al. 2008), this study shows evidence that both males and females pupils are at risk, although the risks might be different between the genders.

However, this finding must be interpreted within the context of local culture and methodological challenges associated with collecting data on sexual behaviour from adolescents. The study's reliance on self-reporting data may have resulted in the findings of some risk factors being skewed. Traditional gender norms and culture could be one potential explanation for the observed results. In Tanzania, premarital sex is discouraged by tradition and is highly stigmatized especially with regards to women. The fear of such stigma may have discouraged some female pupils from reporting their sexual behaviors. A previous study from rural Tanzania estimated that single women underreported their numbers of sexual partners by 46% (Nnko, Boerma, Urassa, Mwaluko, and Zaba, 2004). This could mean that the differences observed could be narrower than what this study found.

Despite the fact that more males pupils in this study were sexually active than females, it was surprising to note that a higher proportion of male pupils also had sufficient HIV knowledge compared to female pupils. This study did not explore the reasons for these discrepancies but suggests that good knowledge of

HIV is not synonymous with avoiding risk behaviour. The study findings also demonstrate that a higher proportion of males than female reported being involved in alcohol and marijuana drug use. Alcohol and substance consumption is associated with risky sexual behaviors including unprotected sexual intercourse, anal sex, and multiple sex partners (Derege et al. 2005).

5.5 Conclusion

In conclusion, Primary school pupils in Meru district engage in several risky sexual behaviors including substance use, sexual coercion, early sexual debut and engaging in various sexual practices. The possible reasons for pupils engaging in risky sexual behaviors could include; deteriorating social systems that protect adolescents, and insufficient HIV knowledge as a result of delayed HIV information to school pupils. The misconceptions noted in this study could not be only attributed to insufficient HIV knowledge but also to other factors such as cultural and social norms which might influence pupil's beliefs and attitude. Despite the fact that, many researchers have placed women at much higher risk for contracting HIV infection, the current study provide the evidence that both males and females pupils in Tanzania are at risk, although the risks might be different between the genders.

Chapter 6

Conclusion and Recommendations

6.1 Introduction

With a benchmark of knowledge, attitudes and behavior regarding HIV/AIDS of rural upper primary school pupils obtained from this study, this chapter gives the conclusions and recommendations for possible measures that can be used to influence policy formulation and implementation regarding primary school based HIV interventions in Tanzania.

6.2: Conclusion and Recommendations

In summary, the findings from this study indicate that about half of primary school pupils had insufficient knowledge regarding general HIV and AIDS issues. Furthermore, the majority of pupils had insufficient knowledge on specific areas including STIs and mother to child mode of HIV transmission. Misconceptions noted in this study could be attributed to insufficient HIV knowledge and other factors such as cultural and social norms that influence pupil's beliefs and attitude. This result suggests a need of expanding HIV and adolescence sexual reproductive health education in primary schools to captures more details including prevention of mother to child transmission, and issues related to HIV stigma and discrimination. Therefore, the result of this study highlights the need for the Ministry of Education to incorporate training on stigma reduction in primary school sexual and reproductive health curriculum.

Despite the findings made in this research and previous studies regarding involvement of primary school pupils in risky sexual behaviour, it is only fairly recently that a comprehensive HIV and life skills training strategy in primary schools have been introduced in the country. However, the pace of strategy implementation is very slow and discouraging. It is recommended that, Ministry of Education strengthen the education sector response to HIV in primary schools through staff capacity building and coordination of all key players including teachers, parents, civil society organizations, religious leaders and pupil's peer educators (See figure 4 regarding the proposed Model).

The current study indicates that both males and females pupils in Tanzania are at risk, although the risks might be different between the genders. The trend of engaging in risky behaviors among both school males and females need to be more researched to identify local non-biological factors which influence risky sexual behaviors for effective designing gender specific interventions. The data further revealed the existence of socio-cultural norms and values in the community which might dictate sexual conduct for girls and hence adversely affect girl's ability to adopt and maintain HIV preventive behaviors. There is a need to develop evidence based prevention strategies that address social structure of gender relations.

This study has also shown that there is moderate improvement in communication between pupils and their parents and teachers, which imply that risky sexual behaviors could improve if programs that enhance child-parent sexuality dialogue are established. Conducting behaviour change communication interventions in primary schools could be a way of doing this. The implementation of future HIV education in primary schools should target parents and equip them with positive parenting skills to enable them to become more confident in discussing sexual issues with their adolescent and give accurate knowledge concerning HIV and AIDS.

The current government policy on teaching HIV education in primary schools only allow pupils from standard four to standard seven to undergo HIV and life skills training, while this study and available literature has shown that children attending schools are engaged in early sexual activities before age 10 (Matasha et al. 1998; WHO, 2000; Barongo et al. 2005). These previous studies confirm that children in Tanzanian primary schools receive HIV knowledge and skills on sexuality when it is too late. There is a need to introduce appropriate value-based life skill and sexuality education in primary schools right from an early age of education such as age seven.

The present study results have reported culturally unacceptable sexual practices including anal and oral sex, this suggest that the Tanzanian cultural and social environment for the younger generation is changing from the older generation. This implies that future HIV programs for adolescents should go beyond addressing promoting delayed sexual activity, abstinence and reduction in risky sexual behaviour. The ideal HIV interventions should create a positive context for HIV prevention based on current adolescent social norms. These interventions could include among others: advocacy activities to influence policy formulation that recognize the social dimension of HIV spread among adolescents; changing social norms of parents, teachers and other stakeholders such as including condom promotion.

A good proportion of pupils in this study had experienced sexual coercion. Unfortunately, the issue of sexual coercion remains largely overlooked within the current primary school HIV education curriculum. The results of this study highlights the magnitude of the sexual coercion problem and it is recommended that future HIV education programming in primary schools include awareness of bad touching habits and sexual molestation, and emphasizes assertiveness in rejecting unacceptable body touches.

Finally, there is a need for policy makers, the Ministry of Education and other key actors in the education sector to acknowledge the growing trend in alcohol and substance abuse among adolescents. The future HIV intervention strategies in primary schools must take into account alcohol and substance use as a risk factor for HIV. Possible interventions could include behaviour change communication strategies, aimed at reducing risks of HIV transmission through injectable drug use, and general drug abuse. The interventions should also suggest drug substitution treatment and self-help support groups for pupils already involved with drugs and substance use.

In conclusion, this study finding provides baseline data which indicate clearly that a good proportion of primary school pupils in Tanzania have insufficient knowledge regarding HIV and AIDS, some pupils harbor misconceptions and negative attitude regarding HIV and AIDS – and some pupils engage in high risky sexual behaviors. Unfortunately, both insufficient HIV knowledge and misconceptions could contribute toward pupils engaging in risky sexual activities. Therefore, it is reasonable to suggest that pupils in Meru district are facing a real danger of HIV infection and without serious intervention to keep young people safe, HIV prevalence will continue its rampant spread amongst them. This calls for a more comprehensive approach in the fight against HIV among primary school children, which could include value-based life skill training at an early age, behaviour change communication interventions, stigma reduction, drug substitution treatment among drug users, advocacy activities to influence policy formulation, condom promotion and incorporating key stakeholders in the roll-out of school based HIV programmes such as parents, community leaders and faith-based leaders (See Figure 4).

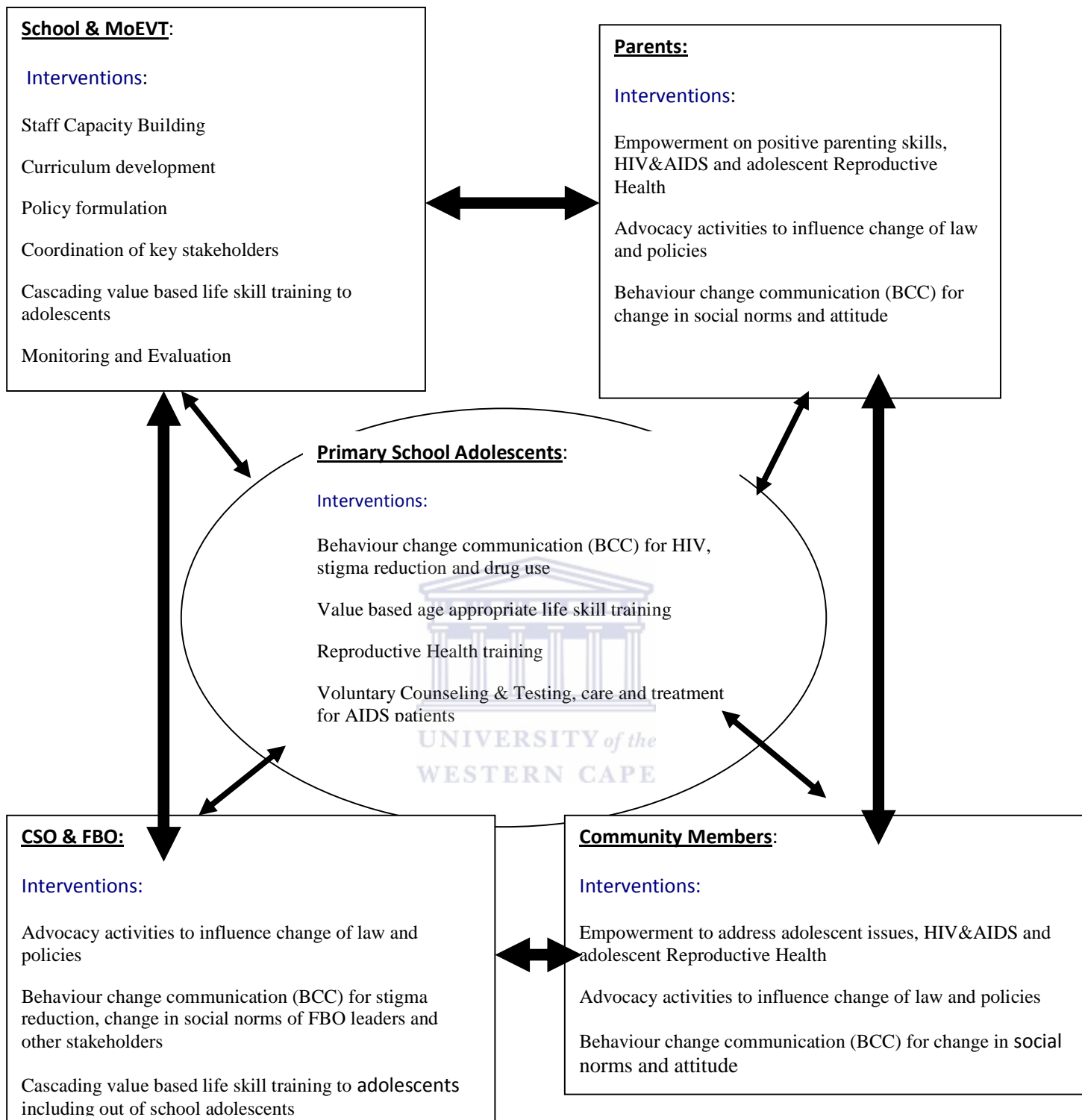


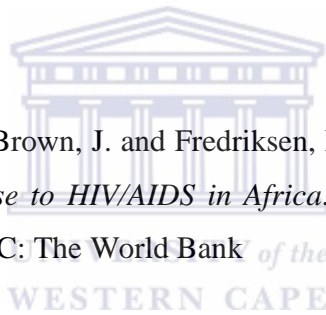
Figure 4: Proposed Model for Implementation of HIV Education in Tanzania Primary Schools

7.0 References

Ainsworth, M. and Over, M. (1997). *Confronting AIDS: Public priorities in a global pandemic. World Bank Policy Research Report*. Washington, D.C: Oxford University Press

Ajuwon, A.J., Olaleye, A., Faramoju, B. and Ladipo, O. (2006). Sexual Behaviour and Experience of Sexual Coercion among Secondary School Students in Three States in North Eastern Nigeria. *BMC Public Health*, 6:310-320

Bakilana, A., Bundy, D., Brown, J. and Fredriksen, B. (2005). *Accelerating the Education Sector Response to HIV/AIDS in Africa: A Review of World Bank Assistance*. Washington DC: The World Bank



Barongo, L.R., Mtweve, S., Msuya, M., Mwampete, J.C., Manongi, R. Njau, B., Kiwale B and Lekule J. (2004). *Baseline Survey on Contextual Factors Influencing Sexual and Reproductive Health, Knowledge, Attitude and Practice Among young Adolescents (10-14 Years) in Tanzania*. Moshi: Kilimanjaro Christian Medical College

Barongo, L.R., Mtweve, S., Msuya, M., Mwampete, J.C., Manongi, R. Njau, B., Kiwale B and Lekule J. (2005). *Factors Influencing Early Sexual Debut Among young Adolescents (10-14 Years) in Tanzania Mainland*. Moshi: Kilimanjaro Christian Medical College

Bandura, A. (1989). Perceived Self-Efficacy in the Exercise of Control Over AIDS Infection. In: V.M. Mayes, G.W. Albee and S.F. Schneider (Eds.), *Primary Prevention of AIDS: Psychological Approaches*. London: Sage Publication: 128-141

Bankole, A. Ahmed, F. Neema, S. Ouedraogo, C. and Konyani, S. (2007). Knowledge of Correct Condom Use and Consistency of Use Among Adolescents in Four Countries in Sub-Saharan Africa. *Africa Journal of Reproductive Health*, 11(3):197-220

Bennet, S.M. and Dickinson W.B., (1980) "Student Parent Rapport and Parent Involvement in sex, Birth control and venereal Disease Education. *The Journal of Sex Research*, 16(2), 1143-130

Berman, S. and Hein, K. (1999). Adolescents and STDs. In: Holmes, K. Sparling, P., Mardh, P., Lemon, S., Stamm, W., Piot P., and Wasserheit, J. (eds.). *Sexually Transmitted Diseases*. 3rd ed. New York: McGraw Hill: 129-142

Bearmann, P. and Hannah B. (1999). *Power in Numbers. Peer Effect on Adolescent Girls sexual Debut and Pregnancy. The National Campaign to Prevent Teen Pregnancy*. Washington DC: Oxford University Press

Brook, D.W., Brook, J.S. and Pahl, T.I.M (2002). The Longitudinal Relationship between Drug Use and Risky Behaviors among Colombian Adolescents. *Archives of Pediatrics and Adolescent Medicine*, 156: 1101-1107

Brown, B. Clasen, D, Eicher S. (1986). Perceptions of Peer Pressure, Peer Conformity Dispositions, and Self Reported Behavior among Adolescents. *Developmental Psychology*, 22:521–530

Campbell, B., and Mbizvo, M.T. (1994). Sexual Behaviour and HIV Knowledge among Adolescent Boys in Zimbabwe. *Central Africa Journal of Medicine*, 40(9): 245-250

Catania, J.A., Kengeles, S.M. and Coates, T.J. (1990). Towards an Understanding of Risk Behaviour: An AIDS Risk Reduction Model. *Health Education*, 17(1): 53-72

Crosby, R., Di Clemente, R.J., Wingood, G., Salazar, L.F., Harrington, K. and Davies S.L. (2003). Identification of Strategies for Promoting Condom Use: A Prospective Analysis of High-Risk African American Female teens. *Prevention Science*, 4: 263-270

Derege, K., Atalay, A., Getnet, M., Fikre, E., Frehiwot, B., Yigeremu, A., Reta, A., Wuleta, L., Tamrat, A., and Tewodros, G. (2005). Khat and Alcohol Use and Risky Sex Behaviour Among in-school and Out-of-School Youths in Ethiopia. *BMC Public Health*, 5:109-118

Dermen, K.H., Cooper, M.L. and Agocha, V.B. (1998). Sex-Related behaviour Alcohol Expectancies as Moderators of the Relationship Between Alcohol use and Risky Sex in Adolescents. *Journal of Studies on Alcohol*, 59:71-77

DiBlasio, F., and Brenda, A. (1990). Adolescent Sexual Behaviour. Multivariate Analysis of a Social Learning Model. *Journal of Adolescent Research*, 5(4) 449 – 466.

Donenberg, G.R., Emerson, E., Bryant, F.B, and King, S. (2006). Does Substance Use Moderate the Effects of Parents and Peers on Risky Sexual Behavior? *AIDS Care*, 18(3): 194-200

Donenberg, G.R., Wilson, H.W., Emerson, E., and Bryant, F.B, (2002). Holding the Line with the Watchful Eye: Parental Monitoring and Parental Permissiveness and Risky sexual Behaviour Among Adolescents in Psychiatric Care. *AIDS Education and Prevention*, 14: 138-157

Farzadegan, H. Hoover, D., Astemborski, J., Lyles, C., Margolick, J., Markham, R., Quinn, T., and Vlahov, D. (1998). Sex differences in HIV-1 Viral Load and Progression to AIDS. *Lancet*, 352: 1510-1514

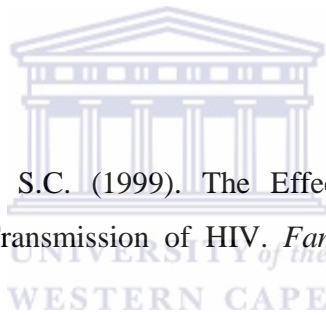
FHI, (Family Health International) (2000). *HIV/AIDS/STD Behavioral Surveillance Surveys (BSS): Questionnaire for Use with Unmarried Male and Female Youth Target Groups*. Washington DC: USA

Finer, L.B., Darroch, J.E. and Singh, S. (1999). Sexual Partnership Patterns as a Behavioral Risk Factor for Sexually Transmitted Diseases. *Family Planning Perspectives*, 31: 228-236

Gardner, M., and Steinberg L. (2005). Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study. *Developmental Psychology*, 41:625–635

Haffner, K.D.W. (1995). *Facing Facts. Sexual Health for American Adolescents*. New York: Sexuality Information and Education Council of the United States.

Davis, K.R. and Weller S.C. (1999). The Effectiveness of Condoms in Reducing Heterosexual Transmission of HIV. *Family Planning Perspective*, 31(6): 272-279



Harrison, A., Cleland, J., Gouws, E. and Frohlich, J. (2005). Early Sexual Debut among Young Men in Rural South Africa: Heightened Vulnerability to Sexual Risk? *Sexual Transmission Infection*, 81: 259-261

Hof, C. and Richters, A. (1999). Exploring the Intersection Between Teenage Pregnancy and Gender Violence: Lessons from Zimbabwe. *African Journal of Reproductive health*, 3(1):51-65

Hutchison, M.K., Jemott, J.B., Jemott, L.S., Braveman, P., Fong, G.T. (2003). The Role of Mother-Daughter Sexual Risk Communication in Reducing Sexual Risk Behaviours Among Urban Adolescent Female: A Prospective Study. *Journal of Adolescent Health*, 33: 98-107

Jaccard, J., Dittus, P.J., Gordon, W. (2000). Parent-Teen Communication about Premarital Sex: Factors Associated with the Extent of Communication. *Journal of Adolescent Research*, 15: 187-208

Jurgens, R. (2007). *Taking Action Against HIV: A Handbook for Parliamentarians No 15*. Geneva; UNAIDS

Kaaya, S.F., Flisher, A.J., Mbwambo, J.K., Schaalma, H., Aaro, L.E., and Klepp, K.I. (2002). A Review of Studies of Sexual Behaviour of School Students in Sub-Saharan Africa. *Scandinavian Journal of Public Health*, 30: 148-160

Kaaya, S.F., Leshabari, M.T. and Mbwambo J.K. (1998). Risk Behaviours and Vulnerability to HIV Infection among Tanzanian Youth. *Journal of Health and Population in Developing Countries*, 1(2): 51-60

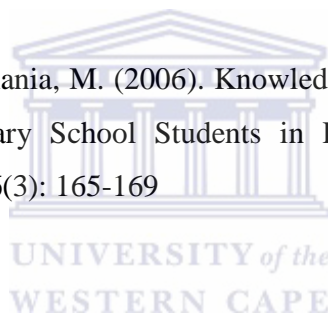
Karim, M. A., Magnani, R.J., Morgan, T and Bond, K.C.(2003). Reproductive Health Risk and Protective Factors Among Unmarried Youth in Ghana. *Journal of International Family Planning Perspectives*. 29(1):14-24.

Kapinga, S.H., Nachtigal, G. and Hunter, D.J. (1991). Knowledge of AIDS among Secondary School Pupils in Bagamoyo and Dar Es Salaam, Tanzania. *AIDS*, 5: 325-328

Katzenellenbogen, J.M., Joubert, G., and Adool, K.S. (1999). *Epidemiology: A Manual for South Africa*, Oxford University Press: 65-73.

Kazaura, M.R. and Masatu, M.C. (2009). Sexual Practices among Unmarried Adolescents in Tanzania. *BMC Public Health*, 9:373

Kennedy, D.M., and Zephania, M. (2006). Knowledge of Sexually Transmitted Diseases among Secondary School Students in Dar es Salaam, Tanzania. *African Health Sciences*, 6(3): 165-169



Kilonzo, G.P., Mbwambo, J.K., Kaaya, S.F., and Hogan, N.M. (2002). *Rapid Situational Assessment for Drug Demand Reduction in Tanzania*. The United Nations Drug Abuse Control Programme Geneva: UNDCP.

King, G., Flisher, A. J., Noubary, F., Reece, R., Marais, A., and Lombard, C. (2004). Substance Abuse and Behaviour Correlates of Sexual Assault Among South African Adolescents. *Child Abuse and Neglect*, 28(6):265-698

Klepp, K.I., Ndeki, S.S., Leshabari, M.T., Hannan, P.J. and Lyimo B.A. (1997). AIDS Education in Tanzania: Promoting Risk Reduction among Primary School Children. *American Journal of Public Health*, 87: 1931-1936

Kotchick, B., Shaffer, A. Miller, K., Forehand, R. (2001). Adolescent Risky Sexual Behaviour: A Multisystem Perspective. *Clinical Psychology Review*, 21(4): 493-519

Koenig, M.A., Zablotska, I., Lutalo, T., Nalugoda, F., Wagman, J., and Gray R. (2004). Coerced First Intercourse and Reproductive Health Among Adolescent Women in Rakai, Uganda. *International Family Planning Perspective*, 30(4): 156-163

Koula, M. and Jenny, K.K. (2006). Peer Education in HIV Prevention: An Evaluation in Schools. *European Journal of Public Health*, 16(2): 128-132

Landman, K.Z., Ostermann, J., Crump, J.A., Mgonja, A., Mayhood, M.K., Itemba, D.F., Tribble, A.C., Ndosu, E.M., Chu, H.Y. Shao, J.F., Bartlett, J.A. and Thielman N.M. (2008). Gender Differences in the Risk of HIV Infection among Persons Reporting Abstinence, Monogamy, and Multiple Sexual Partners in Northern Tanzania. *Plos ONE*, 3(8): e3075

Laurence, J. (1999). Women and AIDS. [Editorial]. *AIDS Patient Care and STDs*, 13(2): 77-79.

Leshabari, M.T., Mpangile, G.S., Kaaya, S.F., and Kihwele, D.J. (2004). From Teenage Unwanted Pregnancy to Induced Abortion: Who Facilitates Links? *International Journal of Adolescent and Youth*, 4:195-210

Lugoe, W.L., Klepp, K.I., Rise, J., Skutle, A. and Biswalo, P.M. (1995). The Relationship Between Sexual Experience and Non-sexual Behaviors among Secondary School Students in Arusha, Tanzania. *East Africa Medical Journal*, 72(10): 635-640

Marcelin, L.H., McCoy, H.V., and DiClemente, R.J., (2007). HIV/AIDS Knowledge and Beliefs Among Haitian Adolescents in Miami-Dade County, Florida. *Journal of HIV and AIDS Prevention for Child and Youth*, 7(1):121-138

Mark, A.S., Rosalie, C., Marc, N.E., David, E.K., Karen, L.E., Annie, J.Z., and David, J.K (2008). Evaluation of Talking Parents, Healthy Teens, a New Worksite Based Parenting Programme to Promote Parent-Adolescent Communication About Sexual Health: Randomized Controlled Trial. *BMJ*, 1: 1-9


UNIVERSITY of the
WESTERN CAPE

Maswanya, E.S., Moji, K., Horiguchi, I., Nagata, K., Aoyagi, K., Honda, S., and Takemoto T. (1999). Knowledge, Risk Perception of AIDS and Reported Sexual Behavior among Students in Secondary Schools and Colleges in Tanzania. *Health Education Research*, 14(2): 185-196

Maswanya, E.S., Moji, K., Aoyagi, K., Yahata, Y, Kusano, Y., Nagata, K., Izumi, T., and Takemoto T. (2000). Knowledge and Attitudes Toward AIDS among Female College Students in Nagasaki, Japan. *Health Education Research*, 15(1): 5-11

Matasha, E., Ntembelea T., Mayaud, P., Saidi, W. Toddy, J., Mujaya, B. and Tendo-Wambua L. (1998). Sexual and Reproductive Health among Primary and Secondary School Pupils in Mwanza, Tanzania: Need for Intervention. *AIDS Care*, 10(5): 571-582

Mavedzege, S.N., Doyle A., and Ross, D. (2010). *HIV prevention in Young People in sub-Saharan Africa: A systematic Review*. Infectious Disease Epidemiology Unit: London School of Hygiene and Tropical Medicine

Ministry of Information, Culture and Sports, (2006). *Information and Broadcasting Policy*. Dar Es Salaam: Ministry of Information, Culture and Sports



Merson, M., Dayton J., and O'Reilly, K. (2000). Effectiveness of HIV Prevention Interventions in Developing Countries. *AIDS*, 14(2): 68-84

Mervat, A., Nasr, M., and Ahmed A. (1998). Knowledge and attitudes of teenage students in relation to sexual issues. *Eastern Mediterranean Health Journal*, 4(1):76-80

MOH (Ministry of Health), (2005). *The Tanzania National Reproductive and Child Health Communication Strategy, (2005-2010)*. Dar Es Salaam: Ministry of Health and Social Welfare

MOH (Ministry of Health), (2001). *National Policy on HIV/AIDS/STD*. Dar Es Salaam: Ministry of Health

Moscicki, A., Ma, Y., Holland, C., and Vermund, S. (2001). Cervical Ectopy in adolescent Girls with and without Human Immunodeficiency Virus Infection. *Journal of Infectious Diseases*, 183(6): 865-870

Mosi, J. (2006). *Planning, Monitoring and Evaluation including the Development of Specific and Appropriate Indicators. Inspectorate and the National Monitoring and Evaluation Framework*. The Workshop on “Accelerating the Education Sector Response to HIV/AIDS in Tanzania Mainland and Zanzibar”. Dar Es Salaam: Ministry of Education.

Mpama, A.R. (2006). *An Overview of the Ministry of Education and Vocational Training Response in Tanzania Mainland*. The Workshop on “Accelerating the Education Sector Response to HIV/AIDS in Tanzania Mainland and Zanzibar”. Dar Es Salaam: Ministry of Education

Muhondwa, E.P.Y. and Mhina, E.H. (2003). *Baseline Study: Status of Response to HIV/AIDS in the Education Sector*. Dar Es Salaam: Ministry of Education and Culture

Mushi, L.D., Mpembeni, R.M., Jahn, A. (2007). Knowledge about Safe Motherhood and HIV/AIDS among School pupils in a Rural Area in Tanzania. *BMC Pregnancy and Childbirth*, 7:5

Muyinda, H. Kengeya, J. Pool, R. and Whitworth, J. (2001). Traditional Sex Counseling and STI/HIV Prevention among Young Women in Rural Uganda. *Culture, Health and Sexuality*, 3(3):353-361

Mwakagile, D., Mmari, E., Makwaya, C., Mbwana, J., Biberfeld, G., Mhalu, F., and Sandstrom, E. (2001). Sexual Behaviour among Youths at High Risk for HIV-1 Infection in Dar Es Salaam, Tanzania. *Sexually Transmitted Infections*, 77: 255-259

NACP, (National AIDS Control Programme) (2005). *HIV/AIDS/STI Surveillance Report, Report Number 19*. Dar es salaam: Ministry of Health

NACP, (National AIDS Control Programme) (2004). *HIV/AIDS/STI Surveillance Report, Report Number 10*. Dar es salaam: Ministry of Health

NACP, (National AIDS Control Programme) (1994). *HIV/AIDS/STI Surveillance Report, Report Number 8*. Dar es salaam: Ministry of Health

Nelson, E., Leibenluft E., McClure, E and Pine D. (2005). The Social Re-orientation of Adolescence: A Neuroscience Perspective on the Process and its Relation to Psychopathology. *Psychological Medicine*, 35: 165-174:

Ndeki, S.S., Klepp, K.I., and Mlinga, G.R. (1992). AIDS Knowledge and Risk Behaviour among Primary School Children in Arusha and Kagera Regions, Tanzania. *International Conference on AIDS*, 8: 19-24

Nnko, S., Boerma, J.T., Urassa, M., Mwaluko, G., and Zaba, B. (2004). Secretive Female or Swaggering Males? An Assessment of the Quality of Sexual Partnership Reporting in Rural Tanzania. *Social Science Medicine*, 59:299-310

Nirojini, B.B., Payal, M., and Minal, S. (2004). Awareness Regarding Sex Among Adolescent Girls (16-20). *Anthropologist*, 6(2):101-103

Odusanya, O.O. and Alakija, W. (2004). HIV: Knowledge and Sexual Practices amongst Students of a School Community Health in Lagos, Nigeria. *Africa Journal of Medicine and Medical Science*, 33:45-49

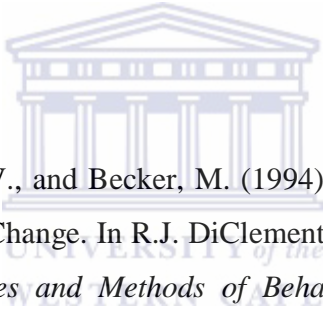
Plourde, P., Pepin, J., Agoki, E., Ronald, A., Ombette, J., Tyndall, M., Cheang, M., Ndinya-Achola, J., D'Costa, L., and Plummer, F. (1994). Human Immunodeficiency Virus Type 1 Seroconversion in Women with Genital Ulcers. *Journal of Infectious Diseases*, 170: 313-317.

Perkins, J.M., Khan, K.T., and Subramanian, S.V. (2009). Patterns and Distribution of HIV among Adult Men and Women in India. *Plos ONE* 4(5): e5648

Prime Minister's Office (2008). *The Second National Multi-Sectoral Strategic Framework on HIV and AIDS (2008-2012)*. Dar Es Salaam: Prime Minister's Office

Rehle, T., Shisana, O., Pillay, V., Zuma, K., Puren, A. and Parker, W. (2007). National HIV Incidence Measures New Insights into the South African Epidemic. *South Africa Medical Journal*, 97: 194-199

Rodrigo, C., and Rajapakse, S. (2010). Looking at Complicating Non-Biological Issues in Women with HIV. *Journal of Global Infectious Diseases*, 2(1): 15-27



Rosenstock, I., Strecher, V., and Becker, M. (1994). The Health Belief Model and HIV Risk Behaviour Change. In R.J. DiClemente, and J.L. Peterson (Eds.), *Preventing AIDS: Theories and Methods of Behavioral Interventions*. New York: Plenum Press: 5-24.

Ross, D., Chagalucha, J., Toddy, J., Balira, R., Mosha, F., Peeling, R., Grosskurth, H., Mabey, D. and Hayes, R. (2000). HIV, Chlamydia, gonorrhoea, and pregnancy in 9,280 rural Tanzanian Primary School Pupils. *International Conference on AIDS*, 54: 9-14.

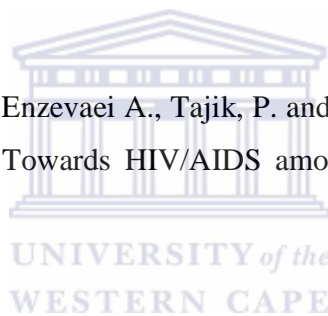
Royce, R., Sena, A., Cates, W., and Cohen, M. (1997). Sexual Transmission of HIV. *The New England Journal of Medicine*, 336(15): 1072-1078.

Sato, M.S., Schulz, K.M., Sisk, C.L., and Wood R.I (2008). Adolescents and Androgens, Receptor and Rewards. *Hormones and Behaviour*, 53(5):647-658

Schwandt, M., Morris, C., Ferguson, A., Ngugi, E. and Moses S. (2006). Anal and Dry sex in Commercial Sex Work, and Relation to Risk for Sexually Transmitted infections and HIV in Meru, Kenya. *Sexual Transmitted Infections*, 82:392-6

Tanzania 2002 Population and Housing Census (2002). [Online], Available: www.tanzania.go.tz/census [Downloaded: 19/11/2008 23:53]

Tavoosi, A., Zaferani, A., Enzevaei A., Tajik, P. and Ahmadinezhad, Z. (2004). Knowledge and Attitude Towards HIV/AIDS among Iranian Students. *BMC Public Health*, 4: 17-23



TDHS (Tanzania Demographic and Health Survey). (2005). *Maternal and Child Health*. Dar es Salaam: National Bureau of Statistics.

THIS (Tanzania HIV/AIDS Indicator Survey). (2003-2004). *HIV Prevalence in Tanzania*. Tanzania Commission for AIDS: Dar es Salaam, Tanzania.

THMIS (Tanzania HIV/AIDS and Malaria Indicator Survey). (2007-2008). *HIV Prevalence in Tanzania*. Tanzania Bureau of Statistics : Dar es Salaam, Tanzania.

Timpson, S., McCurdy, S.A., Leshabari, M.T., Kilonzo, G.P., Atkinson, J., Msami, A., and Williams, M.L. (2006). Substance Abuse, HIV Risk and HIV/AIDS in Tanzania. *African Journal of Drug & Alcohol Studies*, 5(2):158-169

The Ministry of Labor (2003). *Integrated Labor Force Survey 2000/01. Analytical Report*. Ministry of Labor: Dar es Salaam

Todd, J., Chagalucha, J. Ross, D.A., Mosha, F., Obasi, A.I.N., Plummer, M., Balira, R., Grosskurth, H., Mabey, D.C.W. and Hayes R. (2004). The Sexual Health of Pupils in year 4 – 6 of Primary Schools in Rural Tanzania. *Sexual Transmitted Infections*, 80: 35-42

Turbin, M.S., Jessor, R., and Costa, F.M. (2006). Protective and Risk Factors in Health-Enhancing Behaviour among Adolescents in China and the United States: Does Social Context Matter? *Health Psychology*, 25(4):445-454

Twa-Twa, J.M., Oketcho, S., Siziya, S. and Muula, A.S. (2008). Prevalence and Correlates of Condom Use at Last Sexual Intercourse among In-School Adolescents in Urban areas of Uganda. *East Africa Journal of Public Health*, 5(1): 22-25

UMATI (Chama Cha Uzazi na Malezi Bora Tanzania – Family Planning Association of Tanzania). (2004). *Baseline Survey Report for Young Men as Equal Partners Project Phase 11*. Dar Es Salaam: UMATI

UNAIDS, (2009). *Report on the Global AIDS Epidemic*. Geneva: UNAIDS

UNAIDS, (2008). *Report on the Global AIDS Epidemic*. Geneva: UNAIDS

UNAIDS, (2006). *AIDS Epidemic Update*. Geneva: UNAIDS

UNAIDS, ((2002). *Report on global HIV/AIDS Pandemic*. Geneva: UNAID



UNAIDS, (2001). *UNGASS Declaration of Commitment on HIV/AIDS*. Geneva:

UNAIDS, [Online], Available: <http://www.unaids.org/UNGASS/index.html>

[Downloaded: 20/03/2008 01:20 PM]

UNAIDS, (2000). *UNAID Best Practice Collection. HIV and AIDS-Related Stigmatization, Discrimination and Denial: Forms, Context and Determinants*.

UNAID: Geneva: UNAID

UNAIDS, (1998). *Connecting Lower HIV Infection Rates with Changes in Sexual Behaviour in Thailand: Data Collection and Comparison*. Geneva,

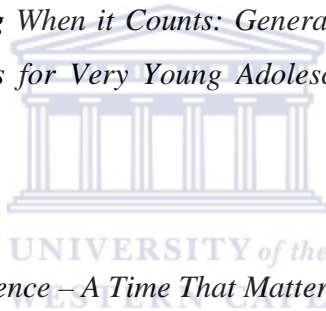
UNAIDS, [Online], Available:

<http://www.unaids.org/bestpractice/collection/country/thailand/thailand.html>,
[Downloaded: 13/06/2009 11:20 A.M]

UNFPA, (1998). *The Sexual and Reproductive Health of Adolescents: A Review of UNFPA Assistance*, Technical Report No. 43. New York: UNFPA

UNFPA. (2002). *Adolescent Sexual and Reproductive Health: How to Deliver Quality Programmes and Services*. New York: UNFPA.

UNFPA, (2006). *Investing When it Counts: Generating the Evidence Base for Policies and Programmes for Very Young Adolescents, Guide and Tool kit*. UNFPA: New York



UNICEF, (2002). *Adolescence – A Time That Matters.*: New York: UNICEF

UNICEF, (2008). *Education Statistics: Tanzania*. UNICEF, Division of Policy & Practice, statistics & Monitoring Section. Dar es Salaam: UNICEF

The World Bank (2006). *World Bank Development Indicators*. [Online], Available: <http://publications.worldbank.org/> [Downloaded: 4/02/2010 2:30 P.M]

The World Bank. (2002). *Education and HIV/AIDS a Window of Hope, Executive Summary*. Washington DC: The World Bank

WHO (World Health Organization), (1989). *Interview Schedule for Knowledge, Attitudes, Beliefs and Practices on AIDS of Young People*. Geneva: World Health Organization

WHO (World Health Organization), (2000). *Progress in Reproductive Health Research: Sex and Youth-misconceptions and risk*. Geneva: World Health Organization

WHO, (2008). *Advocacy, Communication and Social Mobilization for TB Control: A Guide to Developing Knowledge, Attitude and Practice Surveys*. Geneva :World Health Organization

WHO ((World Health Organization), (2010). *Child and Adolescent Health and Development*. [Online], Available:

http://www.who.int/child_adolescent_health/topics/prevention_care/adolescent/en/index.ht [Downloaded: 13/02/2010 4:13 P.M]

Wight, D., Williamson, L., and Henderson M. (2006). Parental Influences on young people's sexual behaviour: a longitudinal analysis. *Adolescence*, 29:473-494

Yamane, T. (1967). *Statistics, An Introductory Analysis*. New York: Harper and Row.

Appendix 1: SELF ADMINISTERED QUESTIONNAIRE FOR HIV KNOWLEDGE, ATTITUDE AND SEXUAL BEHAVIOUR AMONG PRIMARY SCHOOL PUPILS: 10-17 YEAR OLDS

QUESTIONNAIRE CODE NO:.....

Name of School.....
Ward.....

Interviewer (code no)..... Interviewee (code no).....

Interview Date (dd/mm/yy).....



INTRODUCTION:

Dear Student

This study is about your HIV/AIDS knowledge, attitude and sexual behavior. You may also be asked to give some information about your peers and other youths of your age. This will take approximately 45-60 minutes.

We want to assure you that we will keep your personal information confidential. To help protect your confidentiality, don't write your name on the questionnaire. Only the researchers will handle the data. If we write a report or article about this research project, your identity will be protected..

Thank you for your participation in this study.

BACKGROUND INFORMATION: DEMOGRAPHIC

Please mark your answer with a tick.

1. Sex:

- Male
- Female

2. When were you born?.....(YEAR).

3. How old are you?

- 10 -12 years old
- 13-15 years old
- 16-17 years old



RELIGION AFFILIATION:

4. What is your religion?

- None
- Catholic
- Protestant
- Muslim
- Other (Specify)

5. Which class are you currently in?

- Class 4
- Class 5
- Class 6
- Class 7.

6. Is one or both of your parents still alive?

- Yes Both parents
- Yes Mother alone
- Yes father alone
- None

7. Which of the following best describes with whom you're living with now? (Tick all that are appropriate to you)

- Living with both parents
- Mother only
- Father only
- Grandparent(s)
- Brother above 18 year olds
- Sister above 18 year olds
- Brother below 18 year olds
- Sister below 18 year olds
- Aunt
- Uncle
- Neighbour
- Other. Name the relationship.....



HIV & AIDS AWARENESS AND KNOWLEDGE

8. Have you ever heard of a Sexual Transmitted Infections?

- Yes
- No

9. Which of the following best describes Sexual Transmitted Infections? (**Tick one which is most appropriate to you**)

- Malaria, typhoid, bilharzias
- Tuberculosis, syphilis, gonorrhea
- syphilis, and gonorrhea
- Neither of the above

10.. Have you ever heard of an illness called HIV&AIDS?

- Yes
- No
- I don't know

11. Can a person get AIDS after having sex with a person who has no symptoms of AIDS?

- Yes
- No
- I don't know

12. Below are some statements how a person can get AIDS. Please indicate which statements are TRUE or FALSE by marking in the box appropriately

A person can get infected with HIV virus:	TRUE	FALSE
From mosquitoes bites and other insects		
By sharing utensils with a person who is infected by HIV/AIDS		
Through sharing of toilets, bathrooms, etc. with an infected person		
Through witchcraft		
Through playing with an infected person		
Through exchange of infected human body fluid		

13. When do you think there is a high chance for infected mother to transmit the virus to her child?

- During pregnancy
- During delivery
- During breast feeding
- I don't know

14. Have you ever heard of a condom?

- Yes
- No

15. Can correct use of condoms when having sexual intercourse prevent you from getting Sexual Transmitted Infections?

- Yes
- No
- I don't know

16. Do you know of any place where you can get condoms?

- Yes
- No
- I don't know

17. What is the nearest place that you can get a condom

- Shop
- Pharmacy
- Market
- Clinic
- Hospital
- Youth resource center
- Peer educator
- Friend
- Others (specify) -----



18. What are the sources of information on reproductive health education?
(Choose all that apply).

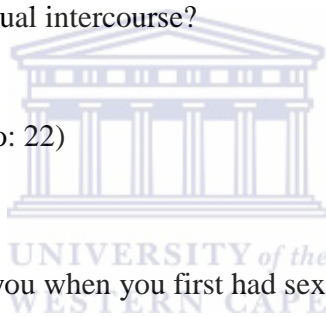
- Parents
- Newspapers
- Radio
- Friends

- Teachers.
- Family.
- Religious leaders
- Auntie or Uncle.
- Television/videos.
- Health campaigns.
- Books
- Health facilities
- Others, specify.....
- I don't know.

SEXUAL BEHAVIOUR

19. Have you ever had sexual intercourse?

- Yes
- No (Move to No: 22)
- I don't know



20. If Yes, How old were you when you first had sexual intercourse?

- _____ years

21. I would like you to remember the very first time you had sex. Which of the following statements most closely describes your experiences the first time you had sexual intercourse?

- I was willing
- I was persuaded through gifts, money and other favours
- I was tricked
- I was physically forced
- I was raped
- I was drunk
- My best friend convinced me.
- I don't know.

22. Have you had sex in the past 6 months?.

- Yes
- No **(Move to No: 24)**
- I don't know

23. If yes, how many sexual partners have you had in the past 6 months?

- _____ people

24. Have you ever used a condom?

- Yes
- No

25. If yes, who initiated it?

- Myself
- My partner
- Joint decision
- Don't remember



26. Have you ever had sex without using a condom?

- Yes
- No

ALCOHOL AND SUBSTANCE ABUSE

27.. *Do you have a close relationship with the following people? (Tick all that are appropriate to you)*

- Peers who drink alcohol
- Peers who use drugs (marijuana, glue, ghat, Kuberi, etc).
- Peers who smokes cigarettes.
- None

28. Do you take alcohol?

- Yes
- No **(Move to No: 37)**

29. If yes, how frequently?

- Occasional drinker
- Moderate drinker (weekends)
- Frequent drinker (daily)

30. Have you ever used drugs (Marijuana, ghat, glue or Kuberi, etc)?

- Yes
- No

31. If yes, what have you used?

- Marijuana,
- ghat,
- glue
- or Kuberi
- Others (specify)-----



SEXUAL COERCION

The following questions are about actual behaviors you might have been involved in.

32. Have you ever been touched or forced to touch other people's private parts (breasts, buttocks, penis, vagina etc).

- Yes
- No

33. If, yes by whom? (Tick all that are appropriate to you)

- My father
- My mother
- My elder brother
- My elder sister
- My teacher
- A male adult

- A female adult
- Others, specify.....

34. Did you report the incidence?

- Yes
- No

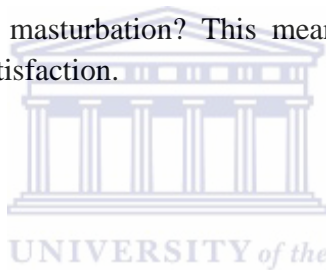
35. If, yes ,where ?

Mention.....

ALTERNATIVE SEX:

36. Have you practiced masturbation? This means touching ones penis or vaginal for sexual satisfaction.

- Yes
- No



37. Have you ever been touched on your penis or vaginal for sexual satisfaction?

- Yes
- No

38. If, yes by whom? (Tick all that are appropriate to you)

- A friend of the same sex
- A friend of the opposite sex
- A male adult
- A female adult
- Others, specify.....

39. Have you ever practiced oral sexual intercourse? This means intimate contact with someone's mouth on either the penis or the vagina.

- Yes
- No

40. Have you ever had anal sexual intercourse? This means intimate contact with someone during whom the penis enters the anus

- Yes
- No

PREMARITAL ABORTION

41. Abortions are common among teenage girls in our area (**Choose one option**).

- Yes
- No
- I don't know

42. Do you know any of the following that had an abortion? (**Tick all that are appropriate to you**)

- Best friend
- Sister
- Relative
- Others, specify.....
- None



HIV & AIDS STIGMA AND DISCRIMINATION: ATTITUDES

Below are some questions about the extent to which you agree or disagree on the issues related to HIV and AIDS. Please mark in the box the option that best represents what you think

		I agree	I disagree	I don't know
43.	HIV is a punishment from God			
44	People with HIV/AIDS are promiscuous			
45	HIV is punishment for bad behaviour			
46	People with HIV/AIDS should be ashamed of themselves			
47	I would be ashamed if someone in my family had HIV/AIDS			
48	I would be ashamed if I had HIV/AIDS			
49.	At a market with several food vendors, I would also buy food from a People showing AIDS signs/symptom			
50	If a teacher has the AIDS virus but is not sick should he continue teaching at the school?			
51	If my relative is infected with HIV/AIDS, I will be willing to care for him/her			
52	I would be willing to be associated with someone who has AIDS			

Below are some questions about the extent to which you agree or disagree on the gender roles of boys and girls on sexuality. Please mark in the box the option that best represents what you think

GENDER ROLES

Tick in the box below which is appropriate

	I agree	I disagree	I don't know
53. Do you think boys should respect their girlfriend's decision in sexual relationships?			
54. Do you think a girl has the right to say no, if she is not in a mood to have sexual relationships, including sexual intercourse?			
55. Do you think it is okay for a boy to force a girl to have sexual intercourse?			

SIGNIFICANT OTHERS BELIEF ABOUT SEX:

Below are some questions about the extent to which you perceive your self; parents, friends or peers about sexuality, abortions and risky behaviours.

56. Do your parents/guardians think doing sex is always right?

- Yes
- No
- I don't know

57. Do your teachers think that doing sex is always right?

- Yes
- No
- I don't know

58. Do most of your friends think doing sex is always right?

- Yes
- No
- I don't know

59. Do your parents talk with you now about their sexual values and beliefs?

- Yes
- No

60. How often have you discussed with your peers about maintaining your virginity?



- Very often
- Sometimes
- Never



(END OF THE QUESTIONNAIRE-THANK THE INTERVIEWEE).

Thank you for answering the Questions.

Appendix 2: Approval for Conducting Research Study From Ministry of
Education, Meru District Council

HALMASHAURI YA WILAYA YA MERU (Barua za: Mkuu wa Wilaya)		Ukumbi wa Wilaya, S.L.P. 3083, ARUSHA.
Mkoa wa Arusha Telegram: Meru Simu: (+255) 027 255-3737 Faksi: (+255) 027 255-3737 Barua pepe: merudc2008@yahoo.co.uk <i>Unapojibu tafadhali taja:</i>		
Kumb.Na.MM/MER/E.10/173/136		30//01/2009
Walimu Wakuu, Shule za Msingi Surumala, Kikatiti, Sakila, Nkoamangasha, Ngyeku, Chemchem, Usa, Leganga, Kilimani na Manyata.		
Yah: <u>UTAFITI WA AFYA KWA WANAFUNZI</u>		
Husika na kichwa cha habari.		
Chama cha uzazi na Malezi Bora (UMATI) kinatarajia kufanya utafiti mdogo katika shule zetu za Kata ya USA na KIKATITI tarehe 5/3/2009 kwa wanafunzi wa shule za msingi wa darasa la 4 hadi la 7 saa saba mchana.		
Lengo ni kupima uelewa, mtazamo na Tabia kuhusiana na afya ya uzazi na ujinsia pamoja na VVU/UKIMWI miongoni mwa vijana.		
Kwenye huo utafiti UMATI itatumia mtaalamu wao Dr. Kasilima Yosh na timu yake.		
Tunaomba mtoe ushirikiano wa kutosha katika hili zoezi na ratiba ya masomo izingatiwe.		
 C.Sawe Kny: AFISA ELIMU WILAYA HALMASHAURI YA WILAYA YA MERU.		
Nakala : Mkurugenzi Mtendaji (W), HALMASHAURI YA WILAYA YA MERU		
Mratibu UMATI ARUSHA.		
Dr. Kasilima Yosh		
Mratibu Elimu Kata KATA YA KIKATITI		
Mratibu Elimu Kata KATA YA USA		

Appendix 3: Information Sheet for Upper Primary School Pupils on HIV/AIDS Study



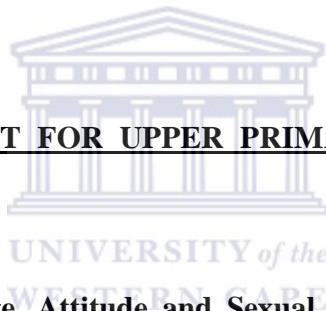
UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959, Fax: 27 21-959

E-mail:

INFORMATION SHEET FOR UPPER PRIMARY SCHOOL PUPILS ON HIV/AIDS STUDY



Project Title: Knowledge, Attitude and Sexual Behavior with regard to HIV/AIDS among upper Primary School pupils in Meru District, Arusha, Tanzania

Dear Participant

What is this study about?

This is a research project being conducted by one student from the School of Public Health at the University of the Western Cape in collaboration with the YMEP Project in Meru District. We are inviting you to take part in this research project because you are pupils from one of ten primary schools present in project area. The purpose of this research project is to provide better understanding about the knowledge, attitude and risky sexual behaviours of

upper primary school pupils in Meru District for better future programming of HIV/AIDS education intervention in primary schools

What will I be asked to do if I agree to participate?

If you agree to take part in this study you will be asked to answer some questions about your HIV/AIDS knowledge, attitude and sexual behaviour. You may be also asked to give more information about the same to your peers and other youths of your age. This will take approximately 45-60 minutes.

We will keep your personal information confidential. To help protect your confidentiality, your name will not be recorded and only the researchers will handle the data. If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research may not help you personally but it will contribute to a better understanding by policy makers, teachers, health workers and other actors in HIV/AIDS prevention sector of developing evidence-based training curriculum and utilize the information as the baseline data for future HIV/AIDS interventions in primary schools in Tanzania.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Your decision to participate or not in this research

project or deciding to leave the study before it is over, will not affect or influence the benefit you get at school.

What if I have questions?

This research is being conducted by **Dr Yosh Kasilima**, of MS TCDC currently studying at School of Public Health, The University of the Western Cape. If you have any questions about the research study itself, please contact **Dr Yosh Kasilima** at the following address:

Tel: +255 27 2553837/8/9

Cell: +255 787 442711

Fax: +255 27 2553836

Email: ykasilima@yahoo.com or kasilimay@mstcdc.or.tz



Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Department:

Dean of the Faculty of Community and Health Sciences:

University of the Western Cape

Private Bag X17

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

Appendix 4: Information Sheet for Upper Primary School Pupils on HIV/AIDS Study – Swahili Version



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959, Fax: 27 21-959

E-mail:

TAARIFA YA UTAFITI WA UKIMWI KWA WANAFUNZI WA SHULE ZA MSINGI

Jina La Mradi: Uelewa, Mtazamo na Tabia Hatarishi kuhusiana UKIMWI kwa Wanafunzi wa Shule za Msingi katika Wilaya ya Meru, Arusha, Tanzania

Mpendwa Mshiriki

Lengo la Utafiti:

Huu ni utafiti unaofanywa na Mwanafunzi toka Chuo Kikuu Cha Western Cape, Kitengo cha Afya ya Jamii kwa Ushirikiano na Mradi wa YMEP katika wilaya ya Meru. Tunaomba ushiriki wako katika utafiti huu, kwa sababu wewe ni mmojawapo wa wanafunzi katika shule kumi zilizo katika eneo la mradi. Lengo la utafiti huu ni kutoa uelewa zaidi kuhusiana na uelewa wa UKIMWI, Mtazamo na Tabia hatarishi kwa wanafunzi wa shule za msingi katika wilaya ya Meru kwa ajiri ya kuboresha mikakati ya ufundishaji elimu ya UKIMWI mashuleni.

Mambo gani nitaulizwa kufanya iwapo nitakubali kushiriki?

Ukikubali kushiriki katika utafiti huu utaulizwa maswali kuhusu uelewa wako wa UKIMWI, Mtazamo wako na Tabia Hatarishi zinazokuzunguka. Unaweza

pia ulizwa maswali hayohayo kuhusu vijana wengine wa rika lako. Hii inaweza kuchukua wastani wa dakika 45-60.

Taarifa uzitoazo zote zitafanywa siri kubwa. Kuhakikisha kuwa taarifa ni siri, jina lako halitaandikwa katika dodoso na ni Mtafiti Mkuu tu atatumza takwimu hizi. Taarifa yoyote itokanayo na utafiti huu, haitataja kabisa jina lako wala kutoa taarifa zako kwa njia yoyote.

Ni Athari gani zitokanazo na Utafiti Huu?

Hakuna Athari yoyote mtu anayoweza kupata kutokana na Utafiti huu.

Kuna faida gani za kushiriki katika Utafiti huu?

Huu utafiti hauna faida za moja kwa moja lakini kushiriki kwako kutasaidia kuongeza uelewa wa kuweka mikakati ya Ufundishaji wa Somo la UKIMWI kwa watunga sheria, waalimu, wahudumu wa afya na Wadau wote wa sekita ya UKIMWI. Utafiti huu utatoa takwimu sahihi katika kupanga, kutadhimini na kutekeleza miradi ya UKIMWI mashuleni katika Tanzania.

UNIVERSITY of the

Ni lazima niendeele kushiriki na naweza kuacha ushiriki muda wowote?

Ushiriki wako katika utafiti huu ni wa hiari. Unaweza hata kuamua kutokushiriki kabisa. Ukiamua kushiriki, vilevile waweza amua kuacha kushiriki muda wowote. Ukiamua kutokushiriki katika utafiti huu au ukiacha kushiriki muda wowote, hautalaumiwa au kupoteza haki zako zozote unazozipata shuleni au ndani ya mradi. Kushiriki kwako au kutokushiriki kwako hakuondoi haki zako za kimasomo pia.

Je nikiwa na swali nimuulize nani?

Utafiti huu unafanywa na **Dr Yosh Kasilima**, wa MS TCDC kwa sasa akiwa mwanafunzi katika Chuo Kikuu cha the Western Cape, Kitengo cha Afya ya Jamii. Kama unaswali lolote kuhusu utafiti huu, tafadhari mjurishe **Dr Yosh Kasilima** kwa anuani zifuatazo:

Simu: +255 27 2553837/8/9

Simu ya Mkononi: +255 787 442711

Fax: +255 27 2553836

Barua Pepe: ykasilima@yahoo.com au kasilimay@mstcdc.or.tz

Ikiwa una swali lolote juu ya utafiti huu na unataka kujua haki zako kama mshiriki wa utafiti au kama unataka kutoa taarifa juu ya tatizo lolote umelipata kutokana na utafiti huu, tafadhari mjulishe:

Head of Department:

Dean of the Faculty of Community and Health Sciences:

University of the Western Cape

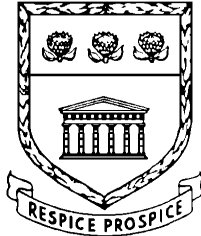
Private Bag X17

Bellville 7535



Uhuu utafiti umepitishwa na kukubaliwa na Kamati ya Utafiti ya Seneti na Kamati ya Maadili ya Chuo Kikuu cha the Western Cape, Afrika Kusini.

Appendix 5: Consent Form – English Version



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959, Fax: 27 21-959

E-mail:

CONSENT FORM

Title of Research Project: Knowledge, Attitude and Sexual Behavior with regard to HIV/AIDS among upper Primary School pupils in Meru District, Arusha, Tanzania

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name.....

Participant's signature.....

Date.....

Parent's Name:.....

Parent's signature.....

Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Ms Suraya Mohamed

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: (021)959- 2809

Cell: Fax: (021)959-2872 Email: sumohamed@uwc.ac.za

Appendix 6: Consent Form – Swahili version



UNIVERSITY OF THE WESTERN CAPE

*Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959*

E-mail:

FOMU YA OMBI LA KUSHIRIKI

Jina La Mradi wa Utafiti: Uelewa, Mtazamo na Tabia Hatarishi kuhusiana UKIMWI kwa Wanafunzi wa Shule za Msingi katika Wilaya ya Meru, Arusha, Tanzania

Utafiti umeelezwa kwangu kwa lugha rahisi ninayoelewa na nakubali kwa hiari yangu kushiriki katika utafiti huu. Maswali yangu yote kuhusu utafiti huu yamejibiwa. Ninaamini kuwa ushiriki wangu na majina yangu yatatunzwa kwa siri kubwa na ninaweza kuacha ushiriki wangu bila kutoa sababu yoyote na kuacha kwangu hakutanidhuru kwa vyovyote vile.

Jina la Mshiriki.....

Sahihi ya Mshiriki.....

Tarehe.....

Jina la Mzazi:.....

Sahihi ya Mzazi.....

Tarehe.....

Ukiwa na swali lolote juu ya Utafiti huu au unataka kutoa taarifa yoyote ya tatizo ulilolipata linalotokana na utafiti huu, tafadhari wasiliana na Mratibu wa Utafiti huu:

Study Coordinator's Name: Ms Suraya Mohamed

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: (021)959- 2809

Fax: (021)959-2872, Email: sumohamed@uwc.ac.za