

**THE IMPLEMENTATION AND OUTCOMES OF A VOLUNTARY  
COUNSELING AND TESTING (VCT) PROGRAMME IN SECONDARY  
SCHOOLS IN KIGALI, RWANDA.**

**By**

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## Declaration

I, Désiré KAMANZI, declare that this thesis "*the implementation and outcomes of a Voluntary Counselling and Testing programme in Kigali, Rwanda*", is my original work. Research material and contributions by others have been properly acknowledged. The thesis has been submitted to in the School of Nursing, Faculty of Health Sciences at the University of KwaZulu-Natal, Durban for the PhD degree. It has never been submitted before for any other degree or examination at any other University.

Signed



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## **Dedication**

This work is dedicated to my beloved family, H  l  ne NYIRAMAZAYIRE my spouse, and children: NSHUTIYASE Nathalie, SHYAKA Ivan and MUKUNDENTE Elise. Lets all together praise the Lord for this achievement.

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## **Abstract**

Schools reach further into communities of young people than any other institutions, and therefore, they are critical for reducing the HIV and AIDS vulnerability and risk among this age group (UNESCO, 2002). Therefore, if the schools are to be used as an entry point for prevention activities, it is important to have a clear idea of the current level of knowledge, attitudes and behaviour with regard to HIV/AIDS.

A quasi-experimental design was adopted for this study. Qualitative and quantitative data were collected during the period between June and October 2004 to establish baseline knowledge and behaviour. A total number of 613 respondents participated in this study. Two groups, an experimental and a control group with equal number (306) of pupils in each were established by drawing a random sample of 51 respondents per school from 12 secondary schools in Kigali. However, an extra respondent from one school was noted. A self-administered questionnaire was used to collect quantitative data whereas qualitative data was generated by asking each respondent to write any concerns or experiences with HIV/AIDS on a piece of paper. All respondents (n= 613) expressed their thoughts anonymously and freely on these papers. Furthermore, focus groups and interviews were conducted with some key informants amongst the respondents who were especially the leaders of Anti-AIDS clubs and student managers from schools or counselling session organizers at Kacyiru Health Centre. These were particularly Anti-AIDS club leaders and/or active club members. After a baseline assessment, a phased intervention (sensitization, pre-test counselling, testing, post-test counselling and follow-up) were implemented with the experimental group. This process was described, identifying all barriers to implementation. Finally a second measurement concerning both groups took place.

During the baseline measurement, respondents were more concerned about their reproductive health issues rather than HIV/AIDS as a specific topic. With regard to HIV/AIDS transmission, however, the following was found: high awareness, many misconceptions about HIV/AIDS transmission and almost half of respondents have had sexual intercourse. Unprotected sexual intercourse was also reported. A summary of reasons given for having sexual intercourse is: experience, curiosity, peer pressure, partner empathy, monetary gain, and coercion.

A sensitization phase prior to the testing sessions resulted in a large number of respondents (434) attending Voluntary Counselling and Testing (VCT) services, the main intervention for this study which took place in a Health Centre. Only twelve respondents (3%) tested HIV positive while five respondents (1%) tested syphilis positive. Although the immediate coping with test results for all respondents was successfully dealt with, the findings from this study indicate some difficulties with regard to the management of individual respondents who tested positive. The strong emphasis on anonymity during the study did not allow the researcher to follow-up all respondents who tested positive.

All steps were successfully implemented according to this study model. In spite of certain problems encountered in terms of access to schools, there was nothing insurmountable during the VCT implementation process.

After the intervention, a large number of respondents showed a high HIV/AIDS awareness, expressed willingness to change their behaviours, and a willingness to advocate for VCT amongst their peers. The follow-up sessions and the quantitative data at the second

measurement and especially statistical analysis carried out did not indicate a significant difference in the sexual behaviour of respondents. However, a significant difference was found when comparing the knowledge of the two groups on HIV/AIDS's physiological effects and transmission. Finally, recommendations and Best Practice Guidelines were established with regard to further research and the implementation of VCT in secondary schools.

# TABLE OF CONTENTS

Declaration .....	i
Dedication .....	ii
Acknowledgements.....	iii
Abstract .....	iv
TABLE OF CONTENTS.....	vii
List of tables .....	x
List of Figures.....	xi
List of abbreviations.....	xii
<b>1 CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
<b>1.1 BACKGROUND TO THE PROBLEM.....</b>	<b>1</b>
<b>1.2 PROBLEM STATEMENT.....</b>	<b>5</b>
<b>1.3 AIM OF THE STUDY.....</b>	<b>6</b>
<b>1.4 OBJECTIVES OF THE STUDY.....</b>	<b>7</b>
<b>1.5 RESEARCH QUESTIONS.....</b>	<b>7</b>
<b>1.6 RESEARCH HYPOTHESES.....</b>	<b>8</b>
<b>1.7 SIGNIFICANCE OF THE STUDY.....</b>	<b>8</b>
<b>1.8 DEFINITION OF TERMS.....</b>	<b>10</b>
1.8.1 Knowledge of STIs/HIV/AIDS.....	10
1.8.2 Risk behaviour .....	10
1.8.3 Voluntary Counselling and Testing (VCT) .....	11
1.8.4 Coping mechanisms with HIV test results .....	11
1.8.5 Behaviour change.....	11
1.8.6 Secondary school respondents .....	11
1.8.7 HIV/AIDS.....	12
<b>1.9 THEORETICAL FRAMEWORK.....</b>	<b>12</b>
1.9.1 The application of VCT Model and Transtheoretical Model of Behaviour Change in the study. ....	14
1.9.1.1 VCT Model.....	14
1.9.1.2 Transtheoretical Model of Behavioural Change.....	17
1.9.2 Coping strategies.....	18
<b>1.10 CONCLUSION.....</b>	<b>21</b>
<b>2 CHAPTER TWO: LITERATURE SURVEY.....</b>	<b>22</b>
<b>2.1 INTRODUCTION.....</b>	<b>22</b>
<b>2.2 THE CURRENT HIV/AIDS PROBLEM SITUATION IN THE WORLD.....</b>	<b>22</b>
<b>2.3 PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS (STIs) /HIV/AIDS.....</b>	<b>28</b>
2.3.1 Voluntary Counselling and Testing for HIV/AIDS .....	29
2.3.2 The use of barrier methods for HIV prevention.....	39
<b>2.4 WOMEN'S POSITION WITH REGARD TO HIV/AIDS.....</b>	<b>43</b>
2.4.1 HIV/AIDS among women in developing countries.....	43
2.4.2 HIV/AIDS among Women in Developed Countries.....	45
2.4.3 Effect of HIV infection on pregnancy.....	48
2.4.4 Antenatal care of HIV- infected women.....	52
<b>2.5 MEN'S POSITION WITH REGARD TO HIV/AIDS.....</b>	<b>56</b>
<b>2.6 YOUTH'S POSITION WITH REGARD TO HIV/AIDS.....</b>	<b>58</b>
2.6.1 Why are young people at high risk of HIV/AIDS infection? .....	58
2.6.2 Problems related to HIV/AIDS prevention among youth .....	59

	2.6.2.1	Knowledge and behaviour.....	59
	2.6.2.2	Culture.....	60
	2.6.2.3	Which approach? .....	60
	2.6.3	Existing specific projects.....	62
	2.6.4	Reported Results .....	63
<b>2.7</b>		<b>THE ROLE OF SCHOOLS IN ADDRESSING HIV/AIDS AWARENESS TO RESPONDENTS.....</b>	<b>64</b>
<b>2.8</b>		<b>HIV/AIDS IN RWANDA.....</b>	<b>71</b>
	2.8.1	Overview of HIV/AIDS in Rwanda .....	71
	2.8.2	Voluntary HIV antibody testing and counselling in Rwanda .....	74
<b>2.9</b>		<b>CONCLUSION .....</b>	<b>78</b>
<b>3</b>		<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>80</b>
	<b>3.1</b>	<b>INTRODUCTION .....</b>	<b>80</b>
	<b>3.2</b>	<b>RESEARCH DESIGN .....</b>	<b>80</b>
	3.2.1	Phase One: baseline data collection (pre-intervention).....	82
	3.2.2	Phase Two: The implementation of the VCT programme .....	83
	3.2.1.1	Planning:.....	84
	3.2.1.2	Implementation of pre and post-test counselling.....	85
	3.2.3	Phase Three: Evaluation .....	88
<b>3.3</b>		<b>POPULATION AND SAMPLE .....</b>	<b>90</b>
	3.3.1	Population.....	90
	3.3.2	Sample and technique of sampling.....	90
	3.3.2.1	Sample of schools .....	90
	3.3.2.2	Sample of individuals .....	91
<b>3.4</b>		<b>RESEARCH INSTRUMENTS AND DATA COLLECTION .....</b>	<b>93</b>
	3.4.1	Instruments and variables measured .....	93
	3.4.1.1	Quantitative data .....	93
	3.4.1.2	Qualitative data .....	98
	3.4.2	Data collection process.....	99
	3.4.2.1	Results of pilot study.....	99
	3.4.2.2	Baseline data collection.....	100
	3.4.2.3	Implementation.....	101
	3.4.2.4	Evaluation.....	101
<b>3.5</b>		<b>DATA ANALYSIS.....</b>	<b>102</b>
<b>3.6</b>		<b>VALIDITY OF THE STUDY DESIGN.....</b>	<b>103</b>
<b>3.7</b>		<b>ETHICAL CONSIDERATIONS.....</b>	<b>104</b>
	3.7.1	Permission.....	104
	3.7.2	Confidentiality .....	105
	3.7.3	Informed consent.....	106
	3.7.4	Anonymity .....	106
	3.7.5	Option to withdraw.....	106
	3.7.6	Protection of respondents .....	107
	3.7.7	Report on problems with regard to obtaining ethical approval.....	107
<b>3.8</b>		<b>CONCLUSION .....</b>	<b>108</b>
<b>4</b>		<b>CHAPTER FOUR: RESULTS .....</b>	<b>109</b>
	<b>4.1</b>	<b>INTRODUCTION .....</b>	<b>109</b>
	<b>4.2</b>	<b>BASELINE SURVEY RESULTS.....</b>	<b>109</b>
	4.2.1	Quantitative data .....	109
	4.2.1.1	Sociodemographic data .....	109
	4.2.1.2	Knowledge of HIV/AIDS.....	113

4.2.1.3	Voluntary Counselling and Testing (VCT).....	117
4.2.1.4	Risk behaviour.....	117
4.2.1.5	Factors influencing respondents' knowledge, attitude and behaviour.....	123
<b>4.3</b>	<b>QUALITATIVE DATA PRESENTATION.....</b>	<b>124</b>
4.3.1	Introduction.....	124
4.3.2	HIV/AIDS knowledge.....	124
4.3.2.1	General awareness and knowledge.....	124
4.3.2.2	Knowledge about HIV/AIDS transmission.....	125
4.3.2.3	Knowledge prevention and cure of HIV/AIDS.....	126
4.3.3	Attitudes.....	127
4.3.3.1	Attitudes towards sexual intercourse.....	127
4.3.3.2	Attitudes towards condom use.....	130
4.3.3.3	Attitudes towards Voluntary Counselling and Testing (VCT) .....	131
4.3.4	Risk behaviours.....	132
<b>4.4</b>	<b>VOLUNTARY COUNSELLING AND TESTING IMPLEMENTATION DESCRIPTION (Research questions 4 and 5).....</b>	<b>135</b>
4.4.1	Introduction.....	135
4.4.2	Sensitization phase.....	136
4.4.3	VCT Programme.....	140
4.4.3.1	Organization.....	140
4.4.3.2	Pre-test counselling session.....	144
4.4.3.3	Testing session.....	145
4.4.3.4	Post-test counselling session.....	147
<b>4.5</b>	<b>OUTCOMES OF VCT IN SCHOOLS (EVALUATION).....</b>	<b>168</b>
4.5.1	Introduction.....	168
4.5.2	Experimental vs. comparison group before intervention.....	169
4.5.3	Experimental group results after intervention.....	171
4.5.3.1	Knowledge of HIV/AIDS transmission.....	173
4.5.4	Comparison group results before and after intervention.....	174
4.5.5	Experimental vs. comparison groups' results before and after intervention .....	177
4.5.6	Results from frequency distribution.....	180
<b>4.6</b>	<b>CONCLUSION.....</b>	<b>181</b>
<b>5</b>	<b>CHAPTER FIVE: DISCUSSION OF FINDINGS, RECOMMENDATIONS AND CONCLUSION.....</b>	<b>184</b>
<b>5.1</b>	<b>INTRODUCTION.....</b>	<b>184</b>
<b>5.2</b>	<b>DISCUSSION OF FINDINGS.....</b>	<b>185</b>
5.2.1	Access to schools.....	185
5.2.2	Sensitisation for testing and baseline data.....	188
5.2.2.1	Socio-demographic data.....	190
5.2.2.2	HIV/AIDS awareness, knowledge and attitudes.....	193
5.2.2.3	HIV/AIDS risk behaviours.....	195
5.2.3	Research Outcomes.....	203
<b>5.3</b>	<b>CONCLUSION.....</b>	<b>207</b>
<b>5.4</b>	<b>OVERALL CONCLUSION.....</b>	<b>208</b>
<b>5.5</b>	<b>LIMITATIONS OF THE STUDY.....</b>	<b>209</b>
	<b>LIST OF REFERENCES.....</b>	<b>211</b>

## List of tables

Table 2.1 World estimates of the HIV and AIDS epidemics at the end of 2005.....	27
Table 3.1 HIV Knowledge instruments.....	95
Table 3.2 HIV risk behaviour and sexual practices instruments .....	97
Table 3.3 Recapitulation of variables measured, categories of respondents and the.....	99
Table 4.1 Distribution of respondents according to their religious denomination .....	112
Table 4.2 Distribution of respondents by their study sponsors (n=613).....	112
Table 4.3 Distribution of respondents by HIV/AIDS knowledge.....	114
<b>Table 4.4 Different views of respondents with regard to HIV/AIDS knowledge (n=613)</b> .....	<b>115</b>
Table 4.5 Respondents' point of view on myths attributed to HIV/AIDS .....	116
Table 4.6 Place of VCT as proposed by respondents.....	117
Table 4.7 Distribution of respondents' age at their first sexual intercourse.....	120
Table 4.8 Distribution of conditions for sex as described by the respondents .....	122
Table 4.9 The health message.....	137
Table 4.10 The testing message. ....	138
Table 4.11 Respondents' attendances at sensitization sessions per school.....	139

## List of Figures

Figure 1.1 Theoretical model for VCT and Behaviour Change .....	13
Figure 1.2 The process of coping.....	20
Figure 3.1 Summary of research methodology and time for data collection.....	89
Figure 4.1 Distribution of respondents by age.....	110
Figure 4.2 Distribution of respondents by country of birth.....	111
<b>Figure 4.3 Distribution of respondents by their parents' status (n=611) .....</b>	<b>113</b>
Figure 4.4 Age at first opposite sexual arousal.....	118
Figure 4.5 Distribution of respondents' age at their first sexual intercourse .....	119
Figure 4.6 Distribution of respondents by where their first sexual intercourse took place	120
Figure 4.7 Distribution of respondents by level of school at their first sexual intercourse	121
Figure 4.8 Distribution of respondents according to the number of sexual partners during the last six months.....	122



## **List of abbreviations**

**AIDS: Acquired Immuno-deficiency Syndrome**

**ANCOVA: Analysis of Covariance**

**CDC: Centre for Disease Control**

**CNLS: Commission Nationale de Lutte contre le SIDA**

**FHI: Family Health International**

**HIV: Human Immuno-Deficiency Virus**

**IEC: Information Education and Communication**

**KUBA: Kwifata Ubudahemuka Agakingirizo**

**PACFA: Protection and Care of Families against HIV/AIDS**

**PLWA: People Living With AIDS**

**PMTCT: Prevention of Mother To Child Transmission**

**PNLS: Programme Nationale de Lutte contre le SIDA**

**PSI: Population Services International**

**STIs: Sexually Transmitted Infections**

**TRAC: Centre for Research and Treatment**

**UN: United Nations**

**UNAIDS: The Joint United Nations Programme on AIDS**

**UNICEF: United Nations for Children Emergency Funds**

**UNFPA: United Nations Population Fund**

**VCT: Voluntary Counselling and Testing**

**WHO: World Health Organization**

# **1 CHAPTER ONE: INTRODUCTION**

## **1.1 BACKGROUND TO THE PROBLEM**

The first case of AIDS was reported in 1981, but analysis of specimens retained from people who had died before 1981, has shown that cases of HIV infection were present as early as 1959 (Kaplan and Sadock, 1998). This fact suggests that in 1960s and 1970s, HIV-related disorders and AIDS were increasingly common but unrecognised, particularly in Africa and North America (Kaplan and Sadock, 1998).

In reference to the magnitude of HIV/AIDS, different authors confirmed that since AIDS emerged just over twenty years ago, it has not been easy to predict how the epidemic would evolve. "HIV/AIDS arrived in the world without warning, lurking somewhere waiting for the right moment to ambush the human race" (Van Dyk, 2001: iii). This is because, never before in the history of the human race, has one disease presented so many challenges and brought about so many unanticipated changes and never in the history has there arisen such a widespread and fundamental threat to human development as AIDS (Jackson, 2002).

Currently, however, it is clear from experience that HIV/AIDS can devastate whole regions, attack anybody, poor and rich, young as well as adults. The HIV transmission modes have been highlighted. HIV is spread through sexual contact, blood transfer, from mothers to their babies in utero, and through breastfeeding (UNAIDS, 2002; Jackson, 2002). During the later half of the 20<sup>th</sup> century, with extensive international travel and relaxed sexual relations, the global population was unknowingly at increasing risk and early AIDS deaths occurred mainly amongst people who had lived in Africa (Jackson, 2002).

By the end of 2000, an estimated 58 million people had acquired the HIV infection worldwide since the epidemic began. Of these, nearly 22 million had already died. Even with no new infections, death rates would continue to rise as most of the remaining 36 million sufferers' progress to having AIDS. However, the incidence of new HIV infections is still increasing in many regions of the world especially in Sub-Saharan Africa (Jackson, 2002).

The life expectancy at birth in Southern Africa, which rose from 44 years in the early 1950s to 59 in the early 1990s, is set to drop to just 45 between 2005 and 2010 because of AIDS. In contrast, South Asians, whose life expectancy had barely reached 40 in 1950, can expect by 2005 to be living longer than their counterparts in AIDS-ravaged Southern Africa (Ferris and Kebaabetswe, 2001). However, The WHO report (2002) refutes the comfortable assumption that parts of Asia were somehow found to be immune to HIV. Indonesia, for example, having seen almost no HIV cases until 2002, despite predictable risk factors, now finds itself with a growing epidemic. Because of their huge populations, India and China have more people living with HIV/AIDS, but lower international prevalence and still infection is rising in these countries.

The UNAIDS (2002) estimates that every day around 6,000 people between the ages of 15-24 years contract HIV, and young people now account for nearly half of all new adult infections each year. In some countries, the proportion is even greater, exceeding 60% of new infections in Sub-Saharan Africa and many parts of Asia. The risk of and vulnerability to HIV infection among young women is particularly striking: young women account for 62 percent of the 11.8 million young people living with HIV/AIDS.

According to the report by the Population Council (2003), rates of pregnancy and Sexually Transmitted Infections among adolescents ages 15-19 provide indications of the extent of unprotected sexual activity among young people, and therefore of their vulnerability to HIV/AIDS. The Population Council further reported that 25 percent of boys aged 15-19 in Brazil, Hungary and Kenya report having had sex before the age of 15. The WHO states that “in many developing countries over two-thirds of adolescents aged 15-19 years, male and female, have had sexual intercourse” (WHO, 1992: 1).

Eaton and Flisher (2000) in a review of research literature involving HIV/AIDS knowledge of South African youth found that young people are aware that AIDS is a disease that is sexually transmitted disease and fatal. These youth, however, were less knowledgeable about HIV and how it is physically transmitted from one person to another, the asymptomatic carrier phase, and methods for preventing HIV. Similar findings on HIV prevention were reported by the International Centre for Research on Women (2002) that Zambian youth aged 12-23, did not consider themselves at risk for HIV infection. However, studies have shown that young people have a keen interest in knowing their HIV status (Population Council, 2003).

The WHO (1992) says that in the absence of a cure for AIDS or a vaccine for a HIV infection, and in view of the increasing rates of sexually transmitted diseases among youth, education is critical in reducing the transmission of both. Such education needs to be given to young people before they have their sexual experiences, so that they can protect themselves and others from infection (WHO, 1992, UNAIDS, 2002, Population Council, 2003). To do this, young people need not only appropriate knowledge, but also skills and attitudes that permit effective communication, responsible decision-making and the development of healthy human relationships (WHO, 1992).

Research has shown that knowledge alone often proves insufficient to change behaviour, but that understanding one's personal vulnerability can spur positive change. Unfortunately, youth too often do not perceive their personal risk for HIV infection, even when they engage in risky behaviours like having multiple partners or engaging in sex without using condoms. Young people discount the possibility of catching the virus because they think newly available treatments cure AIDS (Palmer, 2002).

Voluntary Counselling and Testing (VCT), has been recognized to be successful prevention strategy against HIV/AIDS. It plays a role in reducing HIV transmission and promoting the health of HIV infected individuals. It is an effective public health intervention because it provides client-centred interventions and education regarding transmission factors and risk reduction techniques (UNAIDS, 2001).

As one of the sub-Saharan African countries with high rate of HIV/AIDS infection, according to Programme Nationale de Lutte contre le SIDA "PNLS" (1997), Rwanda has an estimated infection rate of 11.5%. Until 2002, there were 28 VCT centres registered with TRAC (National Centre for Treatment and Research). Burundi by contrast had over 80 VCT centres throughout the country. Both countries have established a sound protocol using different rapid tests for initial testing and confirmation (USAID, 2002). Rwanda is one of 11 centres for the UN Inter-Agency Task Team on PMTCT, which is supporting an ongoing programme to prevent mother-to-child transmission. The programme, which is being expanded, currently includes pilot projects in Botswana, Burundi, Cambodia, Côte d'Ivoire, Honduras, Kenya, Uganda, Tanzania, Zambia and Zimbabwe (UNAIDS, 2002).

## **1.2 PROBLEM STATEMENT**

In the years since its discovery, HIV and AIDS have aroused more concern, research and media coverage than any other health condition, yet the pandemic is still progressing (Jackson, 2002). As problematic as behaviour change is in the general population, it is even more so for adolescents and young adults. This is especially true for those with HIV infection where the long interval between exposure and the onset of illness further complicates youths' adoption of preventive behaviours (Stiffman, Earls, Doré and Cunningham, 1992).

Previous studies of youth in South Africa suggest that sexual activity is initiated early and drug use may be associated with sexual activity (Taylor, Dlamini, Kagoro, Jinabhai and De Vries, 2003). In the USA, Leslie, Cheryl and Jaya (2003) found that amongst high school respondents aged 14-18 years that 68% indicated that they have had sexual intercourse, a rate higher than the national average. Consequently, the CDC has set a goal to reduce the percentage of high school respondents who have engaged in sexual intercourse from the nationwide average of 60% to at least 45%.

Despite various campaigns on HIV/AIDS prevention worldwide, youth still lack HIV basic knowledge in both developed and developing countries. Leslie et al. (2003) found that respondents had significant knowledge deficits about HIV/AIDS for example, thinking that AIDS is curable. More than 25% of the respondents could not answer the basic questions on HIV infection correctly. Similar results have been reported elsewhere in the world. For instance, a study of 100 Greater Windhoek youth, aged 15 to 25, conducted by the Johns Hopkins University (2001) revealed that common HIV/AIDS prevention terms are frequently misunderstood. Most young people believe that "abstinence" means "to be absent" and

"faithfulness" means faith in a religious sense, not being faithful to one sexual partner. Only one-quarter of them understood the word "monogamy", with 75 percent saying they had never heard the word. The Johns Hopkins University (2001:3) states that "some adults still think that sex education encourages sexual experimentation. In fact, some school-based programs have delayed the onset of sexual activity and increased condom use without increasing sexual activity".

Voluntary counselling and Testing (VCT) has emerged as major strategy for the prevention of HIV infection and AIDS in Africa. Apart from raising awareness about HIV/AIDS, many studies show that knowing one's HIV status is instrumental in affecting behaviour change and the adoption of safer sex practices (Mkaya-Mwamburi, 2000; Serima and Manyenna, 2000; both cited in Van Dyk, 2001). In contrast to this, Ladner et al (1996) state that in Africa, few HIV counselling and testing centres are operational, and few data are actually available about their attendance and factors associated with failure to return for HIV-post test counselling. To the researcher's knowledge, Rwanda presents similar problem as there is no specific VCT services available to youth and to secondary schools in particular, little information is available on its acceptability in this particular setting.

### **1.3 AIM OF THE STUDY**

As there have been reported successes of VCT in reducing HIV infected adult people, the aim of this study is to explore its applicability in schools in Rwanda in order to improve HIV/AIDS prevention among youth and in secondary school respondents in particular.

## **1.4 OBJECTIVES OF THE STUDY**

On completion of this study especially in considering its aim, the researcher has to achieve the following objectives:

- To determine the extent of HIV/AIDS knowledge in secondary school respondents in Kigali, Rwanda
- To describe HIV infection risk behaviours presented by secondary school respondents in Kigali, Rwanda.
- To describe the establishment of a Voluntary Counselling and Testing programme in secondary schools in Kigali, Rwanda
- To evaluate the outcomes of the Voluntary Counselling and Testing offered to secondary school respondents in Kigali, Rwanda

## **1.5 RESEARCH QUESTIONS**

- To what extent do secondary school respondents in Kigali, Rwanda have the necessary knowledge to prevent HIV/AIDS?
- How do respondents in secondary schools in Kigali, perceive their own risk to become HIV infected?
- What is the level of HIV/AIDS risk behaviours engaged in by respondents in Kigali?
- What are the problems of implementing a VCT programme in a high school?
- How do respondents cope with their HIV test results?
- To what extent do respondents change their behaviour after testing?



- To what extent do ongoing educational and counselling interventions lead to behaviour change of respondents involved in such activities?

## **1.6 RESEARCH HYPOTHESES**

- More sensitized respondents will voluntarily accept to undergo pre and post test counselling and testing than non sensitized respondents.
- The respondents who go through the VCT process will demonstrate higher knowledge than those not attending such sessions.
- The respondents who go through the VCT process will present less risk behaviour than those not attending VCT.
- The respondents who go through VCT process will adopt safer sexual behaviour than those who did not through VCT.
- Increase in follow-up counselling and support will increase respondents' knowledge on HIV.
- Increase in follow-up counselling and support will decrease Respondents' risk behaviour.
- Increase in follow-up counselling and support will increase safe sexual behaviour.
- Respondents who go through the VCT process will show positive coping.
- Respondents who go through the VCT process will adopt positive behaviour change.

## **1.7 SIGNIFICANCE OF THE STUDY**

Being HIV positive makes a tremendous impact both on the medical, physical, social, spiritual, educational and economic life of the infected person, his or her affected others and the community as a whole (Van Dyk, 2001). Many countries already have high rates of HIV infection among young people yet surveys show that most young people do not perceive themselves to be at risk and many of those living with HIV do not know whether they are infected or not. One of the advanced reasons is that most reproductive health interventions

focus on married couples and other adults, because they are the “easiest group from which to gather data” (Palmer, 2002: 5).

This research is significant as it fits in with the global priorities against HIV/AIDS, whereby the target group for HIV prevention is the young people. For instance, UNAIDS has set a target to reduce the rate of HIV infection among young people aged 15-24 by 25% in the most affected countries by 2005 and globally by 2010. Another target is to ensure that at least 90% of young people aged 15-25 have access to the information, education and services necessary to develop the life skills needed to reduce their vulnerability to HIV and 95% by 2010 (UNAIDS, 2002).

Although VCT has been considered as the cornerstone of HIV prevention programmes by the UNAIDS (2001), little information is available on its accessibility to the younger population.

UNICEF (2003) says it is already too late for many youth. Even if HIV risk were cut in half by 2015, in some countries 20% to 80% of today's 15-year-old boys still would die of AIDS. Further, the UNICEF (2003:5) states that “only acting decisively now to control HIV can ensure that today's young people will have a future as adults”.

To the researcher's knowledge, there is no evidence of Voluntary Counselling and Testing programmes specifically offered to respondents in secondary schools in Africa and in Rwanda in particular. The little information available on VCT in youth in general was reported from a study conducted in Uganda and Kenya by the Population Council, in 2001.

It is hoped that the findings from this research would be able to provide information that possibly will help the stakeholders such as the Ministry of Education, Commission Nationale de Lutte contre le Sida (CNLS), Ministry of Health, NGOs and National Youth Council to establish an appropriate VCT programme to contribute to the prevention of new HIV infection among respondents in Rwanda and to improve respondents' behaviour change.

Culturally, HIV/AIDS like elsewhere, has a stigma among Rwandans, especially from adults to youth. There is almost no communication between parents and their children or adult relatives regarding sexual issues, neither between couples. It has been reported that the culture and stigma in Rwandan society increases the lack of HIV/AIDS knowledge and its prevention among youth. It is therefore an occasion for the researcher to find a way forward and to break the silence and stigma on HIV/AIDS among respondents in Kigali, Rwanda.

## **1.8 DEFINITION OF TERMS**

Main concepts that allow the operationalization of this study have been identified and defined by the researcher as follows:

### **1.8.1 Knowledge of STIs/HIV/AIDS**

The knowledge of STIs/HIV/AIDS in this study refers to the respondents' knowledge on existing sexually transmitted infections and especially HIV/AIDS, their modes of transmission, prevention and treatment.

### **1.8.2 Risk behaviour**

In this study 'risk behaviour' refers to how respondents engage in unprotected sexual intercourse, their number of sexual partners, the age of their first sexual experience, alcohol, whether or not they know that is dangerous to get infected from HIV. This is seen in the

context of school health which is according to Gillis and Jackson (2002:571) “an attempt to distinguish between healthful and non healthful behaviour in school-aged children”.

### **1.8.3 Voluntary Counselling and Testing (VCT)**

In this study ‘VCT’ can be understood as the process by which a pupil will accept voluntarily to undergo a pre and post-test counselling test (Rapid Test). Furthermore, he or she would participate in follow-up counselling sessions.

### **1.8.4 Coping mechanisms with HIV test results**

Coping mechanisms in this study refer to the psychodynamic and interpersonal means that will be used by each respondent, supported by the researcher to accept the HIV test results and plan for their future life. This could be done during the post-test counselling and follow-up sessions.

### **1.8.5 Behaviour change**

Behaviour change can be understood in this study as the extent to which respondents would apply positive behaviour after having undergone counselling and testing sessions as well as having participated in HIV/AIDS education and sensitization sessions. Positive behaviour change refers to a healthy lifestyle especially for those who tested positive. This would mean that they would practice, abstinence, be faithful or use a condom.

### **1.8.6 Secondary school respondents**

The word ‘respondent’ is used in this study to refer to a person of 18 years and above registered at a school (private or government) in Kigali, the capital city of Rwanda during the period of the research and that she or he is part of the sample.

### **1.8.7 HIV/AIDS**

The terms 'HIV/AIDS' do not differ from the international spelling. In other words, there is no particular definition attributed to these concepts in this study. HIV means Human Immunodeficiency Virus and AIDS means, Acquired Immune Deficiency Syndrome.

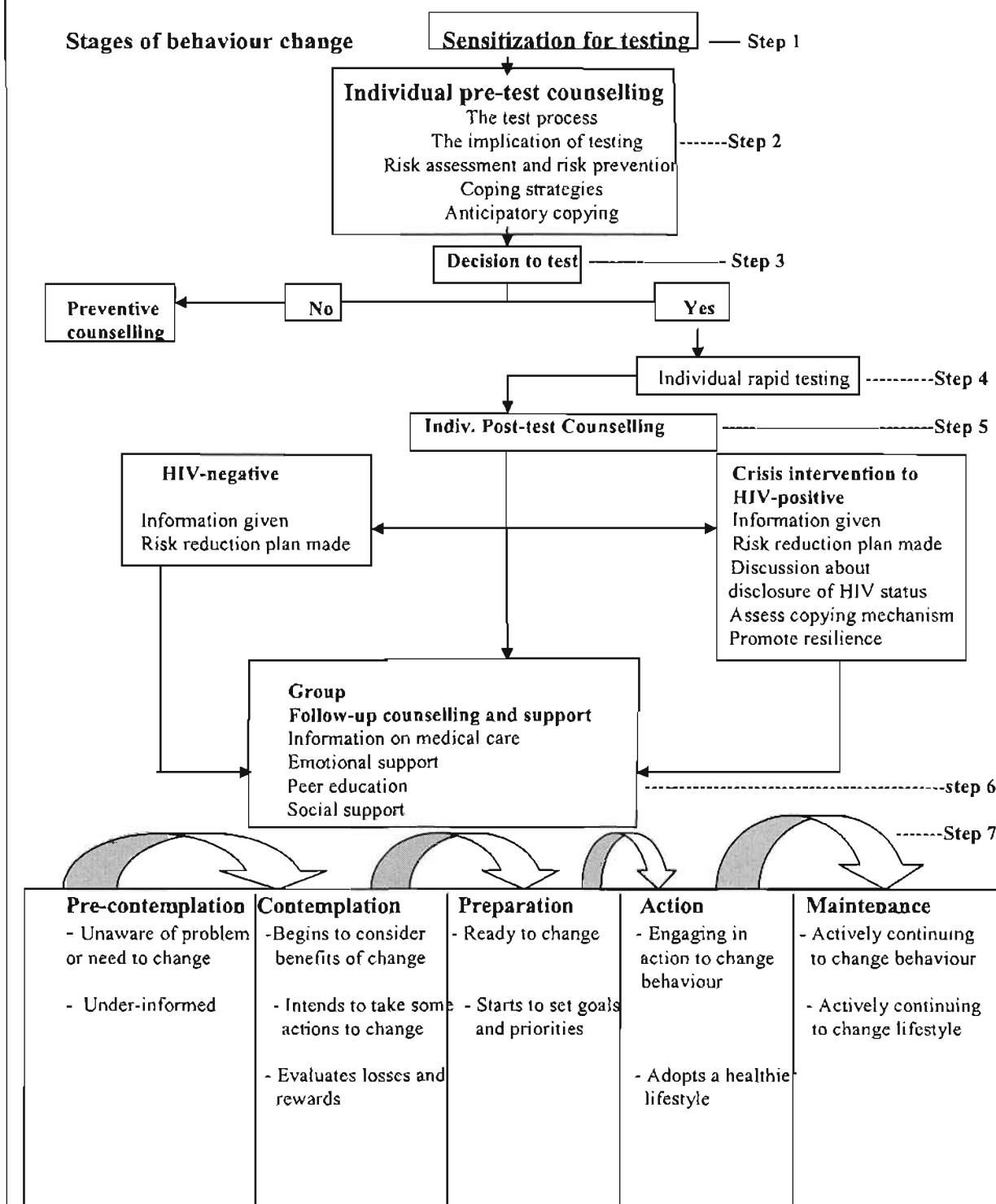
### **1.8.8. Anti-AIDS clubs**

Anti-AIDS Clubs in this study refers to a group of students who have registered for participating in activities aiming to fight against HIV/AIDS within their school.

## **1.9 THEORETICAL FRAMEWORK**

In striving to develop an appropriate model that will guide this study, two models (VCT and Stages of Behaviour Change in the Transtheoretical Model) were combined and adapted by the researcher. These models have been developed respectively by the International Centre for Research on Women Population Council (2001) and Velicier, Prochaska, Fava, Norman and Redding (1998). The description of the models and its application in the study are presented in figure 1.1

## VCT and Transtheoretical models/



**Figure 1.1 Theoretical model for VCT and Behaviour Change**

Source: Population Council (2001) and Velicier et al. (1998:2).

## **1.9.1 The application of VCT Model and Transtheoretical Model of Behaviour Change in the study.**

### **1.9.1.1 VCT Model**

VCT is the process by which a person undergoes counselling enabling him or her to cope with stress and make informed choices about HIV testing. Confidentiality of counselling sessions, test results, and the voluntary choice to test are emphasized (International Centre for Research on Women Population Council, 2001).

The Voluntary Counselling and Testing model was utilized during this study to direct the steps in pre and post-test counselling (see fig1.1- steps 2 to 6). This model has been tested in an exploratory study on HIV VCT among youth ages 14 to 21, in Nairobi and Uganda. Among the outcomes were that youth would like access to HIV testing and counselling services if the services are confidential and inexpensive and if the results are reported honestly (International Centre for Research on Women Population Council, 2001).

Based on the research topic needs, the researcher has tried to adapt the VCT model by adding one element on sensitisation (step1). Through the research, sensitization for testing was done before respondents made their decision for testing. This was not the case for the VCT model as set out by the International Centre for Research on Women Population Council (2001) where the starting point was the decision to seek testing. Once respondents decided to go for the test, individual counselling and rapid testing was done. It is for that reason that the element regarding testing was added to the model. The rest of the VCT components were thought to match with and to guide the research systematically as follows:

First of all, a campaign aimed at sensitizing respondents to HIV/AIDS testing was conducted in-group discussions/focus groups. The researcher emphasized the importance of knowing your own HIV status. At the same time, all HIV concerns were discussed especially its transmission, prevention, and coping mechanisms. In other words, the basic information on HIV/AIDS was given and any misunderstanding of HIV/AIDS related issues was corrected. This allowed each respondent to make the final decision and choose to go for the test or not.

Individual pre-test counselling was offered to those who agreed to be tested. An explanation of the test process, the implication of testing and coping mechanisms following HIV positive results was emphasized. During this communication session the respondent was considered in terms of counselling terminology as a client. The researcher in the role of a counsellor made the risk assessment and discussed risk prevention.

The next step related to the decision on whether to test or not. The researcher took into consideration the possibility of withdrawal from the testing after individual pre-test counselling session. It was planned that those who may refuse to be tested would be counselled about HIV positive behaviour (prevention). During testing sessions, however, all respondents who attended were committed to fully undergo the VCT process. It took approximately 20-30 minutes for conducting an individual rapid testing in an absolutely confidential environment to make the client as comfortable as possible.

Post-test counselling was offered to both HIV negative and positive clients after disclosing the results to them. For those who had tested negative, positive behaviours were highlighted in order for them to remain negative. This is because it has been reported that there has been an assumption amongst people of some people being “immune” especially for those



previously engaged in high-risk behaviour but never become ill (Van Dyk, 2001). The researcher and/or counsellors concentrated on sensitising respondents to actively participate in the follow-up counselling sessions before they left the room. Special counselling-oriented support was given to those who had tested positive. The eventuality of sharing the HIV positive result with somebody close to the person was discussed. Besides the problem of receiving the positive test result, the researcher was aware of specific problems among respondents. He took into consideration the emotions and difficulties that some of the respondents in Rwanda had come across during the war and the genocide of 1994. That is why he tried to educate and prepare them before and after the test.

Despite the measures already mentioned, the researcher believed that a positive result would still be a crisis for the client. He therefore ensured that there was somebody to help the respondent and this was a staff member from school management. Each respondent was also asked for the name of any person next of kin they would wish to share their results with. This person was identified while communicating with the client before the result was given. Furthermore, the management of the school and the Health Centre were informed on such events and together with the researcher appropriate measures were taken before hand.

Follow-up was the final step in the model. The researcher identified the support services such as groups/associations available in the country (including the accessibility on treatment) and prior visits were made. This enabled the researcher to provide a proper orientation. In the meantime, education sessions were carried out regardless of pupil's HIV status. Peer educators, Anti-AIDS clubs, entertainment clubs were made available in each school, where video shows and role play were used to transmit HIV/AIDS education messages.

### **1.9.1.2 Transtheoretical Model of Behavioural Change**

The stages of behaviour change under the transtheoretical model of behaviour change developed by Velicier et al. (1998) were used throughout this study to find out respondents behaviour change with regard to HIV/AIDS. Velicier et al. (1992) describe the stages of behaviour change in five phases:

- **Pre-contemplation:**

In this stage, people are not intending to take action in the foreseeable future because they may be uninformed or under-informed about the consequences of their behaviour.

- **Contemplation:**

In this stage, an individual begins to actively consider the benefits of a lifestyle change, and may even intend to take some action to change, but they have not yet acted upon this intention. Additionally, they have started to evaluate the losses and rewards that successful change would bring.

- **Preparation stage:**

Individuals in this stage are ready to change and keen to take action, and they need to set goals and priorities.

- **Action stage**

During this stage, the individual begins to engage in active attempts to change or modify some aspects of his or her life. Action stage individuals require the skills to use key strategies in order to change habitual patterns of behaviour and adopt a healthier lifestyle.

- **Maintenance stage**

If individuals make it to this stage, they have done so by continuing to actively make changes to their behaviour and lifestyle.

The above stages therefore helped the researcher to identify each respondent's level of behaviour in connection with HIV/AIDS and to intervene appropriately. This study was structured into two assessment phases. The first phase consisted of finding out the extent to

which respondents were aware of the HIV/AIDS problem. A self-administered questionnaire was distributed to respondents and this was done at the beginning of the research before any intervention.

The second phase consisted of evaluating behaviour changes that would have occurred after interventions. This was done towards the end of the study by using the same questionnaire as had been used in baseline data collection. However, respondents' statements from individual counselling and follow up sessions were recorded to generate data on behaviour change. Furthermore, the stages of changes in the Transtheoretical Model were applied in this study to orient the researcher's intervention process, and to measure the outcomes from the study. The stages of change helped the researcher to understand the differences in behaviour change decision-making between respondents.

### **1.9.2 Coping strategies**

Coping refers to what people do when they have or expect to have a problem. It is usually a conscious process (Uys and Middleton, 2004). According to Uys and Middleton, (2004) the list of coping behaviour is never-ending but is typically either an active or passive behaviour and involves a person either moving towards other people (dependence behaviour) or moving against other people (withdrawal behaviour). In each case the strategy chosen depends on the following factors: the person's assessment of the threat or problem; his or her self concept and cognitive set and the external resources available to him or her, such as people, money and tools.

These authors have categorized the coping behaviour into two major types of behaviour change: active and passive as described below.

- **Active coping behaviour**

*Dependence behaviour:* Talking things over with a friend, getting professional help, phoning someone and making a date, confronting a person about behaviour

*Aggressive behaviour:* Fighting with a person who insulted you, slapping a person's face, calling a bully's bluff at a meeting

*Withdrawal behaviour:* Problem solving on your own, allowing adolescent children more freedom, adjusting to a reduction in sex life during pregnancy

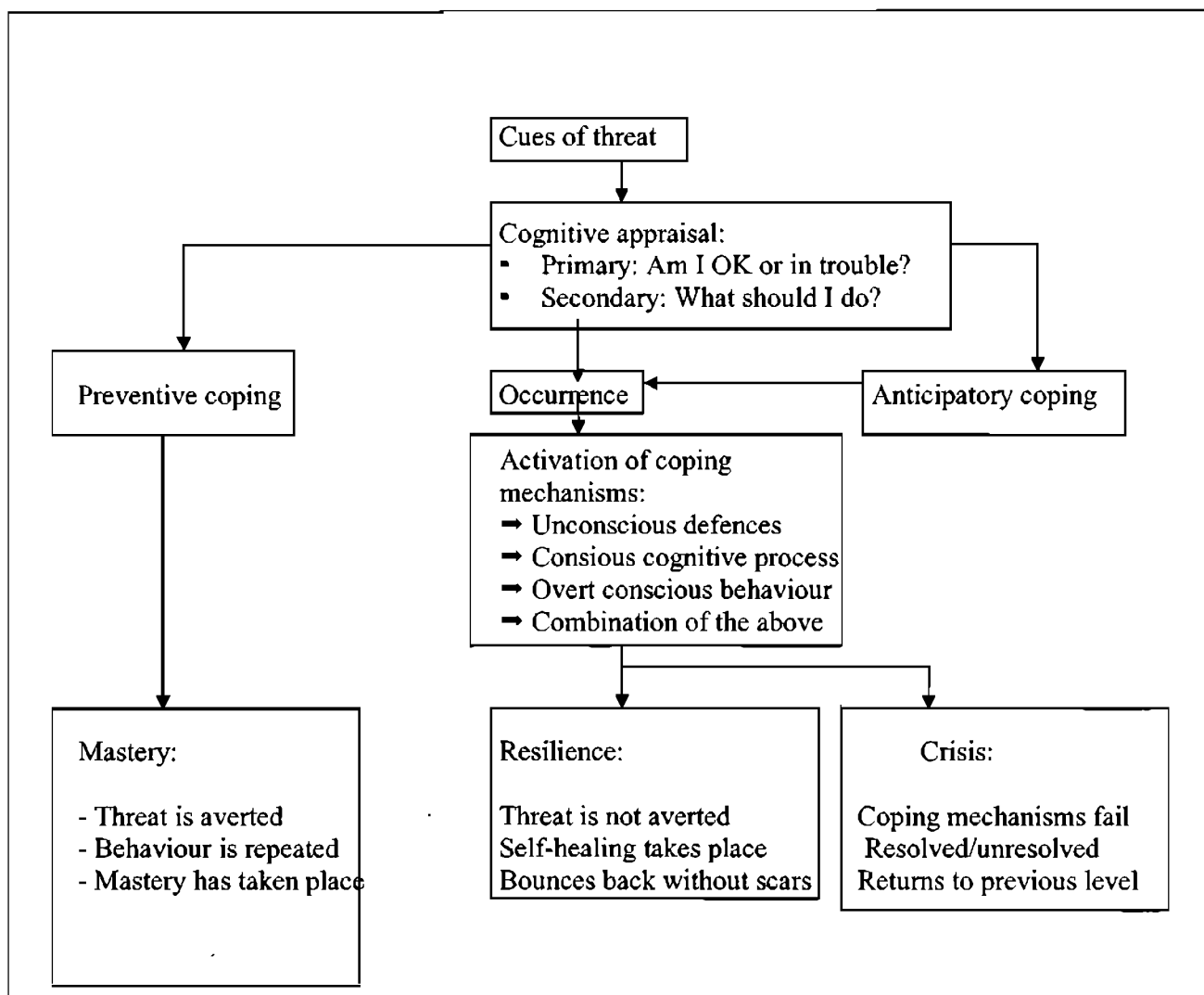
- *Passive coping behaviour*

*Dependence behaviour:* asking another person to solve a problem, crying and clinging, physical complaints and symptoms.

*Aggressive behaviour:* sabotaging actions, malignant gossip or nameless letters, destroying a machine after reprimand.

*Withdrawal behaviour:* avoiding a problem, going to sleep, hiding the vase you have broken.

Based on research findings up to 1997, Uys and Middleton concluded that people do not need many coping techniques, just a few good ones. Coping strategies are developed by trial and error and by following role models from the environment. If a coping strategy is successful, it is repeated and becomes part of the person's repertoire. If coping strategies are not defined strictly as being only conscious processes, defence mechanisms can also be seen as a category of coping strategies. The process of coping is illustrated in Figure 1.2.



**Figure 1.2 The process of coping** (Source: Uys and Middleton, 2004: 28)

Van Dyk (2001: 91) has summarized the theoretical principles of HIV-related behaviour change as follows:

A person will be more likely to change his or her sexual behaviour if he or she:

- realizes the need for behaviour change,
- knows exactly what specific behaviour needs to be changed and how to go about changing it,
- has the intention or commitment to perform the behaviour,
- has positive attitudes towards the behaviour,

- has the support of friends in changing the behaviour,
- has a strong belief in his or her ability to perform the specific required behaviour,
- knows exactly how to perform the behaviour effectively,
- perceives that many more benefits and rewards will accrue from the new behaviour than obstacles,
- has the necessary skills to perform and maintain the behaviour.

## **1.10 CONCLUSION**

This chapter (one) starts with the background to the problem and the problem statement both aiming at giving an overview of the HIV/AIDS magnitude and VCT around the globe and in Rwanda. Then objectives, research questions and hypothesis of this research were presented. Finally theoretical framework and its application were broadly described.

The next four chapters enclose respectively the literature review (chapter two), the methodology (chapter three), the results (chapter four) and the discussion of findings, conclusion and recommendations (chapter five).

## **2 CHAPTER TWO: LITERATURE SURVEY**

### **2.1 INTRODUCTION**

The literature survey introduces the findings available in the area of the study as put forward by different authors. The findings are presented from studies conducted worldwide, in developing countries, in developed countries and especially the current problem in Rwanda where the study was conducted. The findings are presented in subsequent periods for better understanding of how HIV/AIDS evolved. They are ranged from 1981, date of first recognition of HIV, up to and including 2005.

Although the research focuses on young people, both girls and boys in secondary schools, it has been found necessary to present literature regarding HIV/AIDS among adults of both sexes. The main reason is that HIV/AIDS involves everybody. On one hand, girls are future women, the most vulnerable group to HIV and the group that is suffering more from its consequences than any other category of people. On the other hand, young boys are also the future men who have been reported in Rwandan culture and elsewhere in Africa to control sex.

### **2.2 THE CURRENT HIV/AIDS PROBLEM SITUATION IN THE WORLD**

The human immunodeficiency virus (HIV) pandemic is the world's leading public health emergency, with a particularly severe impact on sub-Saharan Africa. It is destroying the health of Africans, the economies of African nations and their prospects for development

(Faussett et al, 2002). Every day, 1900 children in Africa acquire HIV-1 infection from their mothers (Dabis and Ehounou, 2002).

The UNAIDS report on the global HIV/AIDS pandemic mentions that, in the year 2001, the world marked 20 years of AIDS. In high-income countries, where reduced AIDS mortality has made headlines in recent years, the increase in unsafe sex practices and in HIV/AIDS infections have crept up almost unnoticed. The following figures indicated the problem of HIV/AIDS in the World (UNAIDS, 2001):

- Total: 42 million
- Adults: 38.6 million
- Women: 19.2 million
- Children under 15 years: 3.2 million
- Total number of children orphaned by HIV/AIDS: 14 million

In 2001, the United Nations General Assembly Special session placed a clear emphasis on the effect of HIV-1/AIDS on maternal and child health. The final declaration of commitment made from the assembly stated that the proportion of infants infected with HIV-1 should be reduced by 20% by 2005, and by 50% by 2010 (UNAIDS, 2002). These ambitious targets were adopted for at least three reasons. Firstly, the magnitude of the problem, that by the end of 2001, at least 28.1 million people were estimated to be living with HIV-1/AIDS in Africa, including 2.4 million children. Secondly, in the 1990s, major advances in biomedical research were made in the prevention of mother-to-child transmission of HIV-1. Thirdly, HIV-1/AIDS remains strongly stigmatized, and African health systems lack the resources to integrate the prevention of mother-to-child transmission without a strong political, financial, and technical commitment from the international community.



At least 90% of children infected and affected by HIV-1 live in Sub-Saharan Africa. Interventions for the prevention of mother-to-child transmission and care for these children have been developed, but implemented only on a very small scale (Dabis and Ehounou, 2002).

The Commonwealth Secretariat (2002) found that Sub-Saharan Africa remains by far the worst affected and most poorly resourced region in the World. More than 28 million Africans are HIV- positive and a further 17 million have already died of AIDS.

Some specific data on HIV/AIDS and women reported by UNAIDS (2001) have been published by the Commonwealth Secretariat (2002) as follows:

- 48 % of adults newly infected with HIV in 2001 were women
- 49% of adult AIDS deaths in 2001 were women
- 55% of all HIV-positive adults in sub-Saharan Africa are women. Teenage girls are infected at a rate of 5 or – 6 times greater than their male counterparts
- In one Kenyan study, over one quarter of teenage girls interviewed had had sex before the age of 15, of whom one in 12 was already infected
- 50% of all HIV-positive adults in the Caribbean are women
- In Trinidad and Tobago nearly 30% of young girls said they had had sex with older men. As a result, HIV rates are five times higher in girls than in boys aged 15-19
- In the mid-1990s, more than 25 percent of sex workers in India tested positive for HIV. By 1997, the rate had reached 71%.

Thus, the UNAIDS joint programme (2002) fixed the global priorities as follows:

- To ensure that by 2005, a wide range of prevention programmes would be available in all countries. By the same year, to ensure that at least 90% of young people aged 15-

25 would have access to the information, education and services necessary to develop the life skills needed to reduce their vulnerability to HIV. The target would be 95 % by 2010.

- To reduce the rate of HIV infection among young people aged 15-24 by 25% in the most affected countries by 2005 and globally by 2010.
- To reduce the proportion of infants born with HIV by 20% by 2005 and 50% by 2010.
- To empower women as an essential part of reducing vulnerability to HIV. Make treatment and care for people with HIV/AIDS response, as is prevention.

Life expectancy at birth in Southern Africa, which rose from 44 years in the early 1950s to 59 in the early 1990s, is set to drop to just 45 between 2005 and 2010 because of AIDS. In contrast, South Asians, whose life expectancy had barely reached 40 in 1950, can expect by 2005 to be living longer than their counterparts in AIDS-ravaged Southern Africa (Ferris and Kebaabetswe, 2001). The WHO report (2002) refutes the comfortable assumption that parts of Asia were somehow found to be immune to HIV. Indonesia, for example, having seen almost no HIV cases until 2002, despite predictable risk factors, now finds itself with a growing epidemic.

The latest statistics on the world epidemic of AIDS and HIV were published by UNAIDS/WHO (2005). Their report gives the latest AIDS and HIV statistics for the whole world and for regions. These statistics show an overall increase of the pandemic if compared to the statistics of the UNAIDS report 2001:

- Almost 5 million people were infected by HIV globally in 2005, the highest jump since the first reported case in 1981 and taking the number living with the virus to a record 40.3 million.
- More than 25 million people have died of AIDS since 1981.
- Africa has 12 million AIDS orphans.
- Women account for 46% of all adults living with HIV worldwide, and for 57% in sub-Saharan Africa.
- Young people (15-24 years old) account for half of all new HIV infections worldwide
- More than 6,000 become infected with HIV every day.
- Of the 6.5 million people in developing and transitional countries who need life-saving AIDS drugs, only 1 million are receiving them.
- Nine out of 10 people in developing countries do not know their HIV status.

More highlights are given in tables 2.1 and 2. 2.

**Table 2.1 World estimates of the HIV and AIDS epidemics at the end of 2005**

<b>Number of people living with HIV/AIDS in 2005</b>		<b>Estimate*</b>	<b>Range*</b>
	<b>Total</b>	<b>40.3</b>	<b>36.7-45.3</b>
<b>Adults</b>	<b>38.0</b>	<b>34.5-42.6</b>	
<b>Women</b>	<b>17.5</b>	<b>16.2-19.3</b>	
<b>Children</b>	<b>2.3</b>	<b>2.1-2.8</b>	
<b>People newly infected with HIV in 2005</b>		<b>Estimate*</b>	<b>Range*</b>
	<b>Total</b>	<b>4.9</b>	<b>4.3-6.6</b>
<b>Adults</b>	<b>4.2</b>	<b>3.6-5.8</b>	
<b>Children</b>	<b>0.70</b>	<b>0.63-0.82</b>	
<b>AIDS deaths in 2005</b>		<b>Estimate*</b>	<b>Range*</b>
	<b>Total</b>	<b>3.1</b>	<b>2.8-3.6</b>
<b>Adults</b>	<b>2.6</b>	<b>2.3-2.9</b>	
<b>Children</b>	<b>0.57</b>	<b>0.51-0.67</b>	

*\* millions*

Source: UNAIDS (2005: 3)

Table 2.2 Regional statistics for HIV and AIDS end of 2005

Region	Adults and Children Living with HIV/AIDS*	Adults and Children Newly Infected*	Adult Infection Rate (%)	Deaths of Adults and Children*
Sub-Saharan Africa	25.8	3.2	7.2	2.4
East Asia	0.87	0.14	0.1	0.041
South and South-East Asia	7.4	0.99	0.7	0.48
Oceania	0.074	0.0082	0.5	0.0036
Eastern Europe and Central Asia	1.6	0.27	0.9	0.062
Western and Central Europe	0.72	0.022	0.3	0.012
North Africa and Middle East	0.51	0.067	0.2	0.058
North America	1.2	0.043	0.7	0.018
Caribbean	0.3	0.03	1.6	0.024
Latin America	1.8	0.2	0.6	0.066
Global Total	40.3	4.9	1.1	3.1

\* Millions

Source: UNAIDS (2005:4).

### 2.3 PREVENTION OF SEXUALLY TRANSMITTED INFECTIONS (STIs) /HIV/AIDS

Many of the measures that can be taken to prevent the acquisition of STIs and HIV have been known for the past decade: abstaining from intercourse, selecting low-risk partners, negotiating partner monogamy and male condom use. In other words, interventions to prevent HIV infection include (1) behavioural factors such as counselling to decrease sexual risk behaviour, (2) biological (treatment of sexually transmitted infections) and (3) the promotion

of barrier methods (condoms) (Mumahah, Edwards and Orago, 2003; Faussett, Dermot, Ya Diul, Nunn, Perriens and Raviglione, 2002).

### **2.3.1 Voluntary Counselling and Testing for HIV/AIDS**

Voluntary Counselling and Testing is the process by which an individual undergoes counselling to enable him or her to make an informed choice about being tested for HIV (Cahn, O'Malley, Dhaliwal, Nguyen and Zala, 2003).

Professional counselling, coupled with the impact of knowing one's HIV status, has been shown to induce sustainable, positive change in high-risk sexual behaviours of both HIV-positive and HIV-negative individuals. Voluntary counselling and testing (VCT) has also been demonstrated to be a cost-effective intervention, comparable with other prevention programs such as peer education (PSI, 2003). Voluntary and Counselling and Testing are an essential part of the HIV prevention strategy (UN, 2001).

The true impact of the HIV/AIDS epidemic can only be known if infected people come forward. However, by the time many patients seek care, their HIV has already developed into full-blown AIDS. Hence, awareness of the disease among the general population needs to be enhanced (Cahn et al., 2003).

The transmission of HIV from mother to child is responsible for over 90% of infections among children under the age of 15. The effects are dramatic. According to UN (2001), AIDS is beginning to reverse decades of steady progress in child survival rates. But effective and

feasible interventions to reduce mother-to-child transmission are now available and could save the lives of 300 000 children each year.

Access to voluntary counselling and testing should be improved. The reluctance of many women to be tested for HIV infection should be addressed as well. That unwillingness is often a response to the stigma surrounding the disease and is associated with women's concerns that they will be deprived of social or medical support if found to be infected (UN, 2001).

Stigma and discrimination are the major obstacles to effective HIV/AIDS prevention and care and fear of discrimination may prevent people from seeking treatment for AIDS or from acknowledging their HIV status publicly (UNAIDS, 2003).

Bridget's paper (2001) in the UK highlighted the power of the medical profession in defining illness and the impact that has on individuals' perceptions of their own health. It was found that stigma is a powerful force in the way that society and individuals interrelate. The stigma associated with HIV is experienced differently by each individual and changes dynamically throughout the course of the disease. Bridget (2001) mentioned that this stigma was at times reinforced by the actions of health care professionals, who may both stigmatize and act as 'stigma coaches'.

Siegel and Schrimshaw (1999) found that the absence of symptoms negatively influenced the willingness of people to seek testing and to seek medical care. While the presence of symptoms would be expected to lead to testing and the initiation of medical care, the effect of symptoms was dependent on causal interpretations of the symptoms. Symptoms attributed (or misattributed) to other illnesses or to normal ageing did not lead to the initiation of testing or

care. The above authors also suggested that HIV education and counselling should emphasize the need for individuals at risk for HIV to seek testing and medical care even if symptoms of the disease are absent.

The general benefits of VCT have been defined by Cahn et al. (2003) as follows:

- Better health through earlier access to treatment /prevention of HIV-related illness
- Emotional support and better ability to cope with HIV-related anxiety
- Awareness of options for prevention of MTCT
- Motivation to initiate or maintain safer sexual and drug-related behaviours
- Reduction of stigma and secrecy surrounding HIV/AIDS
- Safer blood donation

According to the WHO (1998), there are a number of potential benefits to women of Voluntary HIV testing prior to or during pregnancy. This is the case even in the absence of expensive interventions such as long-term antiretroviral therapy. These benefits include:

- Where a woman has been found to be infected, this knowledge can facilitate early counselling and treatment.
- A diagnosis in the mother allows appropriate treatment and follow up of her child.
- Knowledge of her HIV status enables the woman to take decisions on the continuation of the pregnancy and on future fertility.
- Testing allows an opportunity to implement strategies to try and prevent transmission to the child.
- Knowledge of HIV status enables the woman to take precautions to help prevent transmission to her sexual partners.



- Women diagnosed as HIV positive can tell their sexual partners and enable them to be counselled and tested.
- If test result is negative, woman can be guided towards appropriate HIV prevention measures and risk reducing behaviour.

Rey, Carrieri, Obadia, Pradier and Moatti (1998:272) state: "Increasing information about HIV vertical transmission has created a new justification for the extension of HIV prenatal screening".

From an individual's perspective, the medical and psychosocial support that can be offered to the majority of people who test positive in developing countries remains largely inadequate. However, from the public health perspective, evidence is accumulating that VCT does enable individuals, whether they test positive or negative, to change their behaviour in ways that should reduce rates of HIV transmission (Faussett et al., 2002).

The results from Kenya's 1998 demographic Health Survey where 15% of people had an HIV test, but more than 60% of men and women wanted to be tested for HIV, proved that making VCT accessible to all should help break the silence that has characterized this epidemic thus far (Arthur, 2001). HIV testing by simple and less expensive procedures is now available (Van de Perre, 2000). The report on this issue estimates that cost of personnel, training, consumables, and infrastructure outweigh that of laboratory reagents.

Home-based testing has been suggested to improve the accessibility and acceptability of HIV testing. However, testing without counselling is of limited benefit in terms of care, support, and prevention and may even cause undesirable behaviours. These initiatives exemplify the importance of carefully integrating VCT activities into the existing health systems according to local well-identified priorities. Since strategies have been shown to be successful for condom promotion and other means of prevention, social marketing of a VCT package has also been suggested, but it has not been evaluated (Van de Perre, 2000).

A study on the efficacy of voluntary HIV-1 counselling and testing in individuals and couples in Kenya, Tanzania and Trinidad supports the feasibility and beneficial effects of VCT on HIV-1-related risk behaviour (Coates et al, 2000). Coates et al. (2000) also established that the effects observed can have important public-health implications when assessed in terms of HIV-1 infections averted, and that the impact of this intervention can be as or more cost-effective than other interventions in more-developed and less-developed countries

UNAIDS (2002) considers voluntary HIV counselling and testing as key components of prevention and care programmes. It was mentioned that through care programmes, HIV test results and follow-up counselling many people can be directed, towards relevant care and support services. Treatment for tuberculosis and sexually transmitted infections, family planning and, where indicated, treatment for opportunistic infections, treatment with antiretrovirals and prevention of mother-to-child transmission can be offered. The UNAIDS (2002) adds that wider access to a Voluntary Counselling Testing may lead to greater openness about HIV/AIDS and less stigma and discrimination.

The UNAIDS (2002) says that in industrialized countries VCT has long been an established part of HIV programmes, and many HIV-infected people know their HIV status. However, the vast majority of people in developing countries living with HIV infection do not know that this is the case. For instance, in a random sample of the population in Zambia, where at the end of 1999 the HIV seroprevalence rate among the general adult population was 20%, only 6.5% of adults had previously had an HIV test. Based on positive results from research done in Kenya and in the United Republic of Tanzania, the (UNAIDS, 2002: 122) states “voluntary counselling testing is proven preventive strategy that should be an integral part of HIV prevention programmes in all countries”. However, Faussett et al. (2002) in the bulletin of the WHO, mention that in most regions of Africa, routine VCT for the general population is rarely available. Reasons include, on the supply side, the high cost of VCT services, and on the demand side, the stigma of identification as HIV-positive and the widespread perception that HIV testing offers little to the individual who tests positive. It was again found by researchers that people do not understand why they should test because they assume they will only ‘die sooner if they know their HIV positive serostatus’. According to Faussett et al. (2002), this statement was frequently mentioned in most respondent cases.

In developed countries efforts have been made. Already the Department of Health in the United Kingdom has recommended that obstetric units should offer an HIV test to all pregnant women in areas of high HIV prevalence and have provided guidance on how this should be done (Noone and Goldberg, 1997). MacDonagh et al. (1994) cited in Noone and Goldberg (1997), however, investigated the process of implementing testing programmes in 13 units in UK, offering the test to all women and found discouraging results when compared to those published in most literature that:

- Few had written protocols
- Written material for patients did not contain all the relevant information
- Counsellors and midwifery staff received little training
- Practice was inconsistent
- Documentation was poor

Noone and Goldberg, 1994:1429 state: “Implementing antenatal HIV testing like in London is particularly difficult”. Therefore, “ limited resources should be channelled into places where prevention is most needed” (Noone and Goldberg, 1994:1430).

In other developed countries VCT has been approved. For instance, it has been reported that since January 1993, French physicians are also legally obliged to offer HIV screening to all pregnant women at the time of their first consultation and to provide information about HIV transmission. HIV testing, however, remains voluntary and pregnant women remain free to refuse it (Rey et al., 1998).

Since 1975, abortion upon request has been legal before the end of the 10<sup>th</sup> week of pregnancy and is free of charge under social security coverage in France. There was, however, no official recommendation concerning HIV screening in the context of voluntary termination (Rey et al., 1998).

Rey et al. (1998), carried out two surveys addressing the knowledge, attitudes beliefs and practices toward HIV infection and screening among pregnant women in South-Eastern France, in 1992 before and 1994 after the introduction of the mandatory obligation to offer HIV screening to women who plan to deliver. The findings from these surveys, confirmed

that after the introduction of mandatory screening, access to prenatal HIV testing has continued to increase, and that some inequities in access, especially for less well-educated women, have been further reduced. HIV screening being most often performed simultaneously with other mandatory routine prenatal biological tests, may have contributed to the acceptance of HIV screening. "Acceptance of testing may be affected by cultural factors, the perceived stigma of the selection process, or the fact that women may be unaware of their risk for infection" (Rey et al., 1998: 273). The authors confirmed that their study had found the social acceptability of routine prenatal HIV screening to be very high in the population of pregnant women, as well as in the general population in France.

Some barriers to building a comprehensive system of HIV counselling and testing for pregnant women were further reported Rey et al. (1998):

- Although the French screening law makes mention of the need for pre-test information, there was no official recommendation concerning how counselling should be done and how women's consent should be obtained before screening.
- Information about HIV screening is usually provided by physicians and depends on their personal experience of HIV.
- There is a lack of specific training for professionals.

Despite these limitations, French experience suggests that HIV screening should be mandatorily offered to all pregnant women, irrespective of pregnancy outcome. Adoption of such legal obligation in other countries where opportunities for counselling and treatment are already available might be one way to increase the effectiveness of prenatal HIV screening.

In 1987, the National Commission on AIDS recommended that pregnant women in Sweden should be offered an HIV antibody test. Testing of large populations allows surveillance of the epidemic and has been widely encouraged and used in Sweden (Lindgren, Bohlin, Forsgren, Arneborn, Ottenblad, Lidman, Anzen, Von and Brittiger, 1993). Regarding the quality of data, it was found that “A high uptake screening provides valuable data on the spread of HIV in the heterosexual population and presents an opportunity for preventing transmission of HIV to children and partners” (Lindgren et al., 1993:307) “if it has a high acceptance rate, a screening programme for HIV in unselected pregnant women can give valuable information about the spread of the infection in the general population”(1993:1449) “offering the HIV test to all pregnant women, irrespective of origin and risk behaviour, makes testing less difficult for the patient” (1993:1449).

Henderson (1999) reported an interesting result published by US Centres for Disease Control and prevention (CDC), that in the case of reducing perinatal transmission of HIV, Public Health Service guidelines recommend Voluntary HIV Counselling and Testing (VCT) be offered to all pregnant women because the majority of, but not all women, accept VCT. About half of the pregnant women who initially refused an HIV test were willing to take a test if offered again. Henderson’s report concluded that by offering VCT at a later date to women who had initially refused, a substantial number of women might accept the second test, particularly if operational barriers are overcome.

The CDC (2003) in the US intends to make HIV testing a routine part of medical care on the same voluntary basis as other diagnostic and screening tests. Previously, the CDC has recommended that patients be offered HIV testing in high HIV-prevalence acute care

hospitals and in clinical settings serving populations at increased risk, for example clinics that treat persons with STDs. This initiative adds to those recommendations to include offering HIV testing to all patients in all high HIV-prevalence clinical settings and to those with risks for HIV in low HIV-prevalence clinical settings. Because prevention counselling, although recommended for all persons at risk for HIV, should not be a barrier to testing, the CDC will promote the adoption of simplified HIV-testing procedures in medical settings that do not require prevention counselling before testing. For example in 2003, the CDC supported state and local health departments in conducting demonstration projects offering HIV testing to all patients in high HIV-prevalence health-care settings and referral into care, treatment, and prevention services, and assessed the outcomes of these projects.

The CDC (2003) found that many HIV-infected persons do not get tested until late in their infection, and many persons who are tested do not return to learn their test results. In 2000, of an estimated two million CDC-funded tests for HIV, approximately 18,000 tests represented new HIV diagnoses. During 2000, of persons with positive tests for HIV, 31% did not return to learn their test results. Of 573 HIV-infected young gays who were studied in six U.S. cities, 77% were unaware that they were infected. From 1994-1999, of 104,780 persons in whom HIV was diagnosed, AIDS was diagnosed in 43,089 (41%) persons within 1 year of their positive HIV test. Reasons for HIV testing vary. In a study of 7,236 persons in whom HIV was newly diagnosed, the reason given most frequently (42%) for seeking the test was illness. Only 10% of HIV-infected men and 17% of HIV-infected women reported that they were tested primarily because the test was offered or recommended by a health-care facility or provider.

Krabbendam, Kuijper, wolffers and Drew (1998) in their study on the impact of counselling on HIV-infected women in Zimbabwe found that the HIV-infected women experienced strong emotions directly after diagnosis. It was mentioned that counselling is of major importance to reduce fear and can prevent suicide at that specific time. However, in Zimbabwe, only one counselling session was found not to be effective. First, if only one counselling session is given, the women may not hear or remember all that is said. Second, in case of depression, access to counselling is important and it appears that periods of depression return frequently. Support groups play an important role in providing this continuous counselling.

Counselling and testing may need to be uniformly offered and women routinely informed with a frank and open discussion between physician and patient of the utility of HIV status in providing appropriate care (Jensen et al., 1984).

### **2.3.2 The use of barrier methods for HIV prevention**

In the year 2000, the University of Laval, Canada, reported conducting an interesting clinical trial using microbicide gels known as invisible condoms that could be easily used and controlled by women. Microbicide gels begin as liquids and react to body heat to form an impermeable barrier. Previous testing on animals in Canada and other countries have shown the gels can prevent HIV and herpes infections. Some forms also may prevent pregnancy. Furthermore, the new gels (if successful) would give women autonomy over their own health and may save millions of lives, particularly in developing countries where HIV is prevalent. It will also help to overcome the cultural barriers that often make it impossible for these women to convince their male partners to use regular condoms. It was expected that the new type of the condoms reach consumers by mid-2003 (Henderson, 2000a).



Increasing women's insistence on condom use is part of the larger issue of getting men more involved in preventing disease and unwanted pregnancy. In recent years, most of the world's efforts to reduce population growth and improve health have focused on women, who in most cultures are powerless to decide when, where and whether children should be conceived (Kimsey, and Keith, 1995).

The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that nearly 50% of all new HIV infections occur in women. The female condom is the only woman-controlled product that provides protection against sexually transmitted diseases, including HIV/AIDS, as well as unplanned pregnancy. Studies have shown that when the female condom is available as an option, the number of unprotected sex acts decreases ([www. hivpositive.com](http://www.hivpositive.com)). The female condom, in practice, cannot be used as a supplement together with the male condom. This perhaps makes the female condom untestable, since it can obviously be used only as an alternative to the male condom (Stein and Susser, 1998).

The 25-45% risk of mother-to-child transmission can be reduced in several ways: prevention of sexual transmission for women of childbearing age, access to HIV-1 testing, reduction of unwanted pregnancies by education of HIV-1 infected women, and antiretroviral-based prevention (Dabis and Enouhou, 2002). However, Dabis and Enouhou (2002) noted that no large representative surveys on sexual behaviour had ever been undertaken in developing countries.

A greater knowledge of sexual behaviour in different sociocultural contexts should have important implications for designing and evaluating educational efforts to encourage self-protective behaviours (Craiel, Cleland, Deheneffe, Ferry and Ingham, 1995).

In Rwanda, Allen, Serufilira and Gruber (1993) in their study about pregnancy and contraception use among Rwandan women after HIV testing and counselling found a significant increase in condom use in urban Rwandan women, particularly when both partners in a couple participated in the testing and counselling programme. Further findings indicated that the impact of HIV antibody testing and counselling on reduction of pregnancy among HIV-positive women was negligible. Although the incidence of pregnancy among HIV-positive women was found to be significantly lower than that among HIV-negative women in Kigali, the overall rate was still high and the difference was not clearly attributable to the HIV antibody testing and counselling programme.

A study on hormonal contraceptive use and pregnancy in urban Rwandan women, following HIV antibody testing and counselling was conducted in 1993. In this study, Allen et al. (1993), found that HIV-positive women with fewer than four children were more likely to become pregnant than those with four or more. This association was not noted among HIV-negative women. It was further found that at the end of the study, over 40% of previous non-users said they would use hormonal contraception if it was provided at the study clinic, “many women use modern contraceptive methods to space rather than prevent pregnancies” (Allen et al., 1993: 709). Forty percent of HIV-positive women, however, desired more children (Allen et al., 1993). The reason given for this was that for women who must live with HIV, becoming pregnant might also be a way to continue a normal life-style despite the infection, a

way to reduce the risk of losing their spouse and family support in the face of stigmatizing deadly disease (Allen et al., 1993).

A survey was conducted on sexual activity among street children in Kigali (Handicap International, 2002). The results revealed that in general, the knowledge about HIV/AIDS was found to be good. A total of 92% of boys and 96% of girls knew that it was possible to prevent HIV infection. Sexual abstinence and condom use were the best-known methods. Condom usage was found to be very low, with only 36% of boys and 23.8% of girls reporting having used a condom. Only 4.3% of boys and 2.3% of girls reported using a condom all or most of the time they had had sex over the previous 12 months. The reasons for not using condoms included the following:

- 30% did not think of using one
- 25% reported that condoms were not available
- 22% found that condoms were too expensive for them
- 8% responded that their partners were against the use of condoms.

The surprising findings were reported by Van der Straten et al. (1995) in a study on couple communication, sexual coercion and HIV risk reduction in Kigali. They found that HIV-positive women were significantly more likely to discuss and negotiate condom use, and 79% reported discussing condom use compared with 61% of HIV-negative women; 63% of HIV-positive women reported asking their partners to use a condom compared with 43% of the HIV-negative women and 39% of HIV-positive women reported trying to convince their partners to use a condom compared with 17% of HIV-negative women.

## **2.4 WOMEN'S POSITION WITH REGARD TO HIV/AIDS**

### **2.4.1 HIV/AIDS among women in developing countries**

In Africa, 55% of HIV-1 positive adults are women, all of child-bearing age, data from antenatal clinics show that in several parts of southern Africa, more than 30% of pregnant women are infected with HIV-1 (Dabis and Ehounou, 2002).

UNAIDS (2002) reported that in Southern Africa, HIV prevalence among women has not yet stabilized. HIV rates are still on the rise, with HIV infections occurring in more than 40 % of all pregnant women, in some locations. In Botswana, among 25-29 year-old women attending antenatal care in urban areas, 55.6% were living with HIV/AIDS in 2001. The median HIV prevalence among pregnant women in urban areas already stood at 38.5% in 1997. In 2001, it had risen to 44.9%. Similar patterns are visible elsewhere on the African continent. In Zimbabwe, HIV prevalence among pregnant women climbed from 29% in 1997 to 35% in 2000, while in Namibia, it rose from 26% in 1998 to 29.6% in 2000 and in Swaziland the rate was estimated at 30.3% in the same period. The fastest growth has been in South Africa, where the prevalence of infection in adults increased from 1% in 1990 to 25% in 2000.

Henderson (2000b) reported that in South Africa nearly 10% of its population - around 4.2 million people - were infected with HIV. The figure from a national survey of 17,000 women attending public pre-natal clinics confirmed South Africa as having one of the world's highest HIV infection rates.

The South African Ministry of Health mentioned that the 10th National Antenatal HIV Survey showed that on a national scale, 22% of tested pregnant women were HIV positive. In the worst hit province of KwaZulu-Natal, one in three women was HIV positive (Henderson, 2000b).

In West Africa, the adult rate exceeds 5% in Burkina Faso, Cameroon, Côte d'Ivoire, Nigeria and Togo. The incidence in Uganda, especially in young women, has dropped progressively from 29.5% in 1992, to 11.25% in 2000 (UNAIDS, 2002).

Lewis and Smith (1996) state that the chances of a baby born to an HIV-positive mother being HIV positive itself is 1 in 6. There is no sound evidence that pregnancy worsens maternal HIV disease. In many less technologically developed countries, traditional birth attendants deliver 60-80% of all babies and are regarded as essential community health workers with an important role in primary health care.

In central and East Africa, an increasing number of women of reproductive age are infected with HIV. The WHO (1998) states that women in the developing world are at higher risk of HIV infection than their male counterparts for a number of reasons, both biological and sociological. However, Henderson (2000a) differs with the statement by WHO: he found that there is as yet no compelling evidence that the clinical course of HIV infection in women differs significantly from that of men, with the obvious exception of the associated gynaecological conditions and obstetrical issues.

#### **2.4.2 HIV/AIDS among Women in Developed Countries**

Each year in the United States, several thousand women infected with the Human Immunodeficiency Virus (HIV) become pregnant. The scope of the paediatric HIV epidemic will be determined by the reproductive decisions of these women. Sowell and Misener (1997) when trying to discover the reasons why HIV-infected women in Columbia, decide to have a baby found six overarching themes:

- Spiritual and religious beliefs
- Knowledge and beliefs about HIV
- Previous experience with childbearing attitudes of families about HIV
- Personal health
- Intra-personal motivation to have a baby

A study by Sunderland, Minkoff, Handte, Moroso and Landesman (1992) found that 31% of a sample of pregnant seronegative and 33% of sample of seropositive women learned their serostatus early enough in pregnancy to have the option to undergo an abortion. One of the 34 seronegative women (2.9%) and six (18.8%) positive women chose abortion. During follow-up, researchers found no significant differences in the numbers of pregnancies or live births between seronegative and seropositive women

A growing percentage of people in the United States who have been diagnosed with AIDS in 1989 were women. At the same time it had been estimated that a much larger proportion of asymptomatic carriers of the virus were female. Most women who had been infected were heterosexually active and of childbearing age (Fekety, 1989). Silimar findings were reported in Kenya by Simons, Plummer, Ngugi, Black, Kreiss, Gakinya, Waiyaki, D'Costa, Ndinya-

Achola, Piot and Ronald (1990). In Africa, lack of HIV testing may hide the magnitude of HIV/AIDS prevalence rate in women. In a study by De Paoli, Manongi and Klepp (2004) in Kilimandjaro, Tanzania, revealed that Perceived high personal susceptibility to HIV/AIDS, barriers related to confidentiality and partner involvement, self-efficacy regarding alternative feeding methods and religion were all shown to be associated with willingness to accept VCT.

The number of women with HIV and AIDS in the United States rose between 1985 and 1995. In the same period the proportion of reported U.S. AIDS cases occurring among women increased from 7 percent to 19 percent. HIV infection became the third leading cause of death among women aged 25 to 44 and the leading cause of death among black women in this age group ([www.hivpositive.com](http://www.hivpositive.com)).

The rate of newly diagnosed AIDS cases in the United States is increasing most rapidly in women who are infected with HIV primarily through heterosexual transmission. Approximately 60% of these women are African American, and 18% are Latino (Levine, 2002).

Royce and Seals (2001) reported that young women who use hormonal contraception are at increased risk of HIV. In striving to understand how adolescent women who use hormonal contraceptives make decisions about condom use, 39 young and minority population group women participated in open-ended interviews. Among the results found are:

- Barriers to condom use include use of a hormonal method of contraception
- Perceived trust in partner
- Perception of the condom as “irritating”

- Facilitators for condom use included not being with a steady partner
- Fear of pregnancy and infection

The young women suggested some of the factors that would increase their use of condoms such as:

- Being able to talk to their parents about condom use
- Having condoms widely available
- Seeing HIV-prevention messages in many venues
- Seeing young HIV-positive women demographically similar to themselves would prompt them to use condoms.

A study by Hudson, Lee, Miramontes and Portillo (2001) in San Francisco, revealed that, although powerful pharmacological therapies are helping women with HIV infection live longer, women continue to experience the stressors of chronic illness. Women reported limited interactions with family and friends and low level of perceived social support. Limited perceived social support was a significant predictor of distress in the sample of women. The authors concluded that supportive interactions with health care providers could be useful in mediating the relationship between the stressor of HIV disease and distress in HIV-positive women. Community-based nurses can enhance HIV-positive women's support networks by providing positive and supportive interactions as they intervene with women in symptom management, case management, and other health care services.



Vials (1997), in a review of the literature on the prevention of early vertical transmission of the HIV virus in United Kingdom, found that factors, which increase the risk of vertical transmission, are:

- Maternal drug misuse
- Maternal infection
- Malnutrition
- HIV viraemia

Vials (1997) found gaps in knowledge about the mechanisms and rates of transmission indicating that further research is needed. Prevention of early vertical transmission is very important. To promote the health of women, they and their partners must be educated prior to conception and during pregnancy on family planning and healthy living, HIV positive women need counselling and support, and midwives must consider all untested pregnant women to be HIV positive.

In Eastern Europe and central Asia, the assumption that the epidemic would remain confined to marginalized groups, such as injecting drug users, is now being proved to be the worst sort of wishful thinking (UNAIDS, 2002).

#### **2.4.3 Effect of HIV infection on pregnancy**

The main cause of AIDS was identified in 1984 and “It was late 1985 when testing for human immuno-deficiency virus (HIV) first became widely available and most people became aware of the problem for obstetrics only after that time” (Frank, 1996: 1184).

The epidemiology of HIV and STIs infection in the year 1996 worldwide was fatal in pregnant women. The highest prevalence, and the most serious problems, are found in East and Central Africa, where in some areas, 20% to 30% of pregnant women were infected (Frank, 1996). However, the level of HIV-1 infection in African adults is not well-documented and few prospective studies of women have been done. Survival with AIDS tends to be short in Africa. The poor background health status and precarious environment of most African populations contribute to the rapid development of AIDS (Dabis and Ehounou, 2002).

In a systematic review of seven studies, all prospective cohorts, French and Brocklehurst (1998) investigated whether pregnancy increased the risk of disease progression in women infected with HIV compared with women infected with HIV who do not become pregnant. They found that HIV progression in pregnancy was significantly more common in developing country settings than in developed countries. French and Brocklehurst (1998) further state that because studies measuring the association between HIV infection and maternal outcomes have involved relatively small numbers, they have been unable to detect modest differences.

Regarding a concern that pregnancy may increase the rate of progression of the HIV disease, Frank (1996) found that the issue not been completely resolved. Frank's study was unable to determine the effect that pregnancy had on the immune system of women infected with HIV. He mentioned, however, that pregnancy does not have major adverse effect on HIV. In the same study, Frank found HIV as having a statistically significant but modest effect on foetal growth. The author mentions that his finding may be due to confounding variables not yet accounted for combined with general effects of advancing disease on maternal health, rather than any direct effect of the virus.

There was no evidence that there is an associated congenital abnormality or reduction in birth weight in infected infants, which might be expected if infection occurred earlier in pregnancy. It was further mentioned in the same study that the effect of an HIV diagnosis on reproduction planning in developing countries is not well understood. Clinical symptoms of the disease such as coexisting STIs, and HIV-induced amenorrhoea are associated with reduced fertility.

Forsyth, Coates, Grinstead, Sangiwa, Balmer, Kamenga and Gregorich (2002) found that HIV infection may also result in pregnancy complications such as decreased birth-weight, prematurity, and an elevated risk of pre-term delivery. Data depart from the literature in that women infected with HIV were found in multivariate analyses to be 3 times more likely to be pregnant at 6 months post-VCT than were uninfected women. This means they knew they were HIV positive but still they fall pregnant.

The vast majority of HIV-infected women are in their childbearing years, and infertility does not seem to be impaired except in the end-stage severe immunodeficiency state. It was concluded that the vast majority of the available data are unable to support the notion that pregnancy enhances HIV disease progression (Landers, Marinez de Tejada and Coyne, 1997).

In the review of HIV in pregnancy by WHO (1998) it has been mentioned that African women do not appear to experience more rapid progression of HIV-disease during pregnancy, despite the additional factors of multiple pregnancies, other infections and poor nutrition (Tanne, 2002). Pregnancy does not appear to affect the course of HIV-1 infection, but no studies on this topic have been done in Africa. Maternal mortality, up to 6 weeks postpartum, is not directly affected by HIV-1 infection (Dabis and Ehounou, 2002).

The HIV-related immunologic changes may superficially mimic some of the immune changes that occur during pregnancy, but, overall, immunocompetence and host defences remain intact in the normal pregnant woman. Health care providers will benefit from an understanding of how pregnancy may affect the HIV disease and how HIV-related immune alterations may contribute to adverse pregnancy outcomes. The extensive screening efforts now underway to identify women infected with HIV during pregnancy will undoubtedly lead to an increased number of women needing providers who are aware of the interaction between HIV disease and pregnancy (Landers et al., 1997).

There are serious infections during pregnancy among women with advanced human immunodeficiency virus infection. In a cohort of 56 HIV seropositive pregnant women, a total CD4 count of  $< 300$  cells/mm<sup>3</sup> identified a subset of women at increased risk of infectious morbidity during pregnancy. This association between depleted helper T cells and infectious morbidity was found to be compatible with previous reports on non-pregnant seropositive individuals. Opportunistic infections during pregnancy cause not only health problems for the mother but the well-being of the foetus also can be compromised (Minkoff, Willoughby, Mendez, Moroso, Holman, Goedert, and Landesman (1990).

Severe maternal hypoxia can lead to adverse sequelae for the foetus and in extreme cases, such as 20% of patients with fatal cases of pneumocystis carinii pneumonia, foetal survival can be problematic. Since pneumocystis carinii pneumonia was the most common infection seen among immune-deficient pregnant patients, such women also may be suitable candidates for prophylaxis, particularly because preventing such infections in pregnancy may be a major benefit for the foetus. The knowledge that a woman already has severe HIV-associated

immunosuppression might influence her decision to proceed with her pregnancy. CD4 counts should be measured regularly since marked changes can be anticipated in pregnancy and women may become candidates for prophylaxis later in gestation. Most of the infections reported have generally occurred in the third trimester (Minkoff et al., 1990).

In a study by Jensen, O'Sullivan, Gomez-del-Rio, Setzer, Gaskin, and Penso (1984) in Florida, pneumocystis carinii pneumonia presents as the most common opportunistic infection and counts for 51% of the primary diagnoses in patients with AIDS. A definitive diagnosis is made with lung biopsy, as atypical mycobacterial infection, cryptococcus and histoplasmosis may present identically. Initially signs and symptoms may be non-specific and are simply a reflection of lung infection (Jensen et al, 1984).

A recent study on Cervical dysplasia in HIV infected women in Maiduguri, Nigeria, Chama1, Nggada and Gashau (2005:1) report that "The human immunodeficiency virus (HIV) infection has been shown to be a risk factor for premalignant and malignant conditions of the cervix".

#### **2.4.4 Antenatal care of HIV- infected women**

The UK Department of Health shows that increased antenatal HIV testing has contributed to a decrease in vertical transmission of HIV in recent years (Annabel, 2000). The rate of detection of maternal HIV infection in inner London antenatal clinics has improved. In 1999, 76% of pregnant women with the infection in inner London had had it diagnosed before delivery, compared with only 50% in 1998. Diagnosis also improved in Scotland by a similar amount. In England and Wales, however, the rate improved little. The UK Department of

Health reports that substantial efforts have been made to improve antenatal diagnosis. The national targets and objectives were set to include the offer and recommendation of an HIV test to all pregnant women throughout England (Annabel, 2000).

The transmission of HIV from mother to child is responsible for over 90% of infections among children under the age of 15. The effects are dramatic. AIDS is beginning to reverse decades of steady progress in child survival. Ultimately, if infants are to be better protected from the virus, women's vulnerability to HIV infection should be reduced. Such an approach should target HIV-negative women who are pregnant and lactating, in order to protect them and the children they may subsequently have (UN, 2001; Seidel and Dano, 2000 and Taha, Miotti, Liomba, Dallabetta, and Chipangwi (1996).

A number of studies have confirmed that the number of children infected by maternal-child HIV transmission has grown rapidly with the steady increase in the population of HIV-infected women. Clinical trials data have indicated that treatment of an HIV-infected woman with Zidovudine during pregnancy can significantly decrease her child's risk of infection (Turner, Markson, Hauck, Cocroft and Fanning, 1995).

Adequate prenatal care constitutes a basic prerequisite for administering antiretroviral therapy since it requires careful monitoring for side – effects by the provider and faithful compliance on the part of the patient (Turner et al., 1995). If a pregnant woman has access to antiretroviral treatment, she and her unborn child may benefit greatly from her knowledge of her HIV status early in pregnancy. Zidovudine given to the mother during pregnancy and also to the infant, has been shown to reduce the rate of vertical transmission from 25% to 8% (Noone and Goldberg, 1997).

Turner et al. (1995) in a New York City study state that prenatal care for drug-using women has been found to lower the rates of perinatal care deaths and improve the birth weight of babies of drug users receiving adequate prenatal care more than for babies of drug users receiving little prenatal care. Women with three or more previous deliveries were found more likely to have few prenatal visits. Conversely, women who were 40 years or older at delivery had lower odds of having too little prenatal care compared with younger women. The authors recommend that approaches to increase prenatal care of HIV-infected women are especially important given trials showing a reduction in vertical transmission from Zidovudine treatment during pregnancy. Although Zidovudine treatment of HIV-infected women during pregnancy and their infants after the birth promises to reduce maternal-child HIV transmission, Turner et al. (1995) found that the majority of infected women had few or no prenatal visits. This demonstrates the enormous gap that must be bridged to translate the results of clinical trials into clinical practice. It was again found in the same study that illicit drug use was one of the primary sources of HIV infection in women in New York City. Based on other literature, Turner and colleagues state that in other studies of prenatal care in urban populations, women using the drug methadone were likely to have too few prenatal visits compared to non drug users. In their analysis of cocaine use within the groups of methadone-treated women and other illicit drug users, Turner et al. (1995), found no relationship between the probability of having too few prenatal visits and whether or not cocaine use was recorded during pregnancy. Thus researchers did not find any additional effects of cocaine use on prenatal care among drug-using groups of women. It was recommended by Turner et al., that further investigations should be conducted to explore the effect of other approaches to treat illicit drug use on the receipt of prenatal care among HIV-infected pregnant women. However, Turner et al. refer to similar findings from a study of inner city women giving birth and reported the following risk or factors for little or no prenatal care:

- History of three or more previous live-births
- Smoking
- Younger maternal age
- Residence in specific geographic regions

Among HIV-infected women, adequate prenatal care may offer the added benefit of reducing maternal-child HIV transmission through the use of Zidovudine. Researchers limited evidence of Zidovudine treatment during pregnancy to their study population. However, they found their findings not surprising since, in other analyses of HIV care in the late 1980s, it was found that women were significantly less likely than non-drug using men to receive Zidovudine in the year before their AIDS diagnosis. It was reported that adequate prenatal care, linked to treatment with Zidovudine during pregnancy for eligible HIV-infected women may help reverse the rising incidence of maternal-child HIV transmission in the United States.

Prenatal care also offers other important benefits for HIV-infected women and their infants. Adequate prenatal care may reduce the risk of adverse birth outcomes such as low birth weight and prematurity, which have been associated with an increased rate of vertical transmission. Adequate prenatal care may reduce the morbidity and mortality associated with infections due to immunosuppression during pregnancy. Therefore, in this era of rapid change in the health care system, it is important to bolster those aspects of the health care system that may lead to greater prenatal care for HIV-infected women (Turner et al., 1995).

According to a meta-analysis involving data on nearly 5,000 deliveries, for every hour that elapses after an HIV-infected pregnant woman's membranes rupture, the risk that the virus



will be transmitted to her offspring rises by 2%. Moreover, among women with AIDS, the risk of transmission increases steeply as the time since rupture of the membranes grows from 8% at two hours to 31% at 24 hours. To test the a priori hypothesis that the longer the membranes have been ruptured, the higher the risk of vertical transmission, researchers pooled data from 15 prospective cohort studies conducted in Europe and North America. They included only deliveries (vaginal or caesarean) that occurred after the onset of labour or within 24 hours after the membranes ruptured. Caesarean sections performed before labour and before the rupture of membranes were excluded (Tomarken, 2001).

## **2.5 MEN'S POSITION WITH REGARD TO HIV/AIDS**

In the USA, AIDS is the leading cause of death among men aged 25 to 44. And it was the third leading cause of death among women aged 25 to 44. Among male adults/adolescents reported with AIDS in 1995, male-to-male sexual contact accounted for the largest proportion of cases, (51%), followed by intravenous drug use (24%). Among men ages 20 to 24, male-to-male sexual contact and/or injecting drug use accounted for 76% of AIDS cases and 63% of HIV infection cases reported in 1995. Heterosexual contact accounted for only 5% of reported AIDS cases among male adults/adolescents in 1995 (CDC, 1996).

Togut (1999) wrote that more attention should be paid to men's role in the epidemic and their potential to change its course. This includes encouraging men to alter risk behaviours and educating and encouraging leaders to take a stand against unsafe practices. Altering risk behaviour has huge potential for altering the course of the epidemic, particularly in terms of altering risky sexual behaviour.

UNFPA (1999) stated that decision-making about sex is invariably done by men. Women's lack of social status influences their vulnerability to HIV/AIDS because:

- Women have less access to education and information than men, and consequently less economic power
- Increased male mobility and migration, primarily for work, has increased the possibility of multiple sexual partnerships
- Men retain control over most decisions on sexual intercourse, which reduces women's ability to negotiate safer sex.

Changing societal norms and encouraging gender equity and equality means recognising how men view themselves, addressing their fears and desires and encouraging responsibility, communication and respect (UNFPA, 1999).

Negotiating mutual monogamy entails major changes in men's understandings of themselves as sexual beings. Women participating in research in Thailand have commented that they would tend to think that a man who does not visit sex workers is not a real man (UNAIDS, 1999). Similar findings were also reported also in Mumbai where women expressed the view that a wife must accept her husband having partners outside marriage (UNAIDS, 1999). Furthermore in Zambia, women pointed out that they cannot hope to control the number of partners their husband had (UNAIDS, 1999).

## **2.6 YOUTH'S POSITION WITH REGARD TO HIV/AIDS**

### **2.6.1 Why are young people at high risk of HIV/AIDS infection?**

Taylor et al. (2003) in the study on understanding high school respondents' risk behaviors to help reduce the HIV/AIDS epidemic in KwaZulu-Natal, state that Sentinel site surveillance of women receiving antenatal services at public clinics has shown that HIV prevalence of infection in KwaZulu-Natal increased from 2% in 1992 to 36% in 2000.

Taylor et al. (2003) found a very high incidence of HIV infection among younger women between ages 15-29 which indicates that many were infected in their teens, and HIV infection peaks at a younger age in women than in men. A total of 59% of learners in this study reported having a boyfriend or girlfriend, and 30% reported they were sexually active.

In the United States, HIV-related death has had the greatest impact on young and middle-aged adults, particularly racial and ethnic minorities. Among African American men in this age group, HIV infection has been the leading cause of death since 1991. In 1998, among black women 25-44 years old, HIV infection was the third leading cause of death. Many of these young adults were probably infected in their teens and twenties. It has been estimated that at least half of all new HIV infections in the United States were among people under the age of 25, and the majority of young people are infected sexually (CDC, 2001). Approximately one-half of these learners used a condom in the past 30 days when having sex.

In several U.S. cities, recent outbreaks of primary and secondary syphilis among men who have sex with men (MSM) and increases in newly diagnosed human immunodeficiency virus

(HIV) infections among MSM and among heterosexuals have created concern that the HIV incidence might be increasing (CDC, 2003).

Douglas (2002a) also states that because most youth are enrolled in school for many years before they initiate sex and when they initiate sex, schools have the potential to reduce adolescent sexual risk-taking. Adolescents are increasingly at risk for sexually transmitted diseases (STIs), including human immunodeficiency virus (HIV) infection.

Brown and Simpson (2000) indicate that the prolonged latency period, sometimes in excess of five years, and the incubation period of up to 10 years before the manifestation of symptoms, may foster adolescents' false sense of invincibility and denial as they often do not see the devastating effects of the disease in their peers until they are older. In turn, their practice of safer sex may be hindered and this will then contribute to the escalation of this public health crisis among sexually active adolescents. The authors reported results from a national survey conducted in the USA which revealed that 48% of adolescent males and females are sexually active by the age of 16.

## **2.6.2 Problems related to HIV/AIDS prevention among youth**

### **2.6.2.1 Knowledge and behaviour**

Stiffman, Earls, Doré and Cunningham (1992) studied changes in acquired immunodeficiency syndrome-related risk behaviour in inner-city American adolescents and found that knowledge about how to prevent sexual transmission was not necessarily associated with change in risk behaviour. However, it was apparent that there are significant areas of

misinformation related to the most effective methods. Youth did not differ in rating the effectiveness of any of the methods of HIV prevention. For example, only 74% of young adults thought that limiting themselves to one partner was “very effective” while 6% thought it was “not at all effective”. These perceptions certainly limit the likelihood that they would make an effort to limit their contacts. Only one half (52%) of the youth thought that using a condom was “very effective” while 5% thought it was “not at all effective”.

Findings from exploratory research at two sites in Uganda and one in Kenya (2001) on HIV Voluntary Counselling and Testing among youth aged 14 to 21, indicate that “youth would like access to HIV testing and counselling services if the services are confidential and inexpensive and if the results are reported honestly” (International Center for Research on Women Population Council, 2001:1).

#### **2.6.2.2 Culture**

Although HIV/AIDS infection is a huge public health problem in Africa, Senegal is one of the countries least affected by the epidemic. The majority of people with HIV/AIDS in Senegal are women and adolescents. Women are more vulnerable due to their lower level of education and their limited capacity to negotiate safe sex. Adolescents, particularly young women, are sometimes forced into early marriages with older men, which increases their vulnerability to HIV/AIDS and STIs (UNAIDS, 1999).

#### **2.6.2.3 Which approach?**

Brown and Simpson (2000) pointed out a dilemma that health professionals have been facing. Some health care professionals ascribe to the belief that, in the case of STI/HIV education, sexual abstinence should be emphasized as the first line of prevention against STI and HIV

infections, followed by exposure to a comprehensive STI/HIV-prevention curriculum. Health care professionals who advocate the comprehensive aspect of STI/HIV education for adolescents are viewed by some as promoting, encouraging or giving permission to adolescents to engage in sexual intercourse. Others express the concern that they are forcing their sexual values on adolescents in espousing sexual abstinence. Many health care professionals are caught between these opposing views, which sometimes hinder them from providing the necessary information to adolescents. In responding to that dilemma, Brown and Simpson (2000) indicated three categories of people who could be involved in STI/HIV education:

- Health care professionals who work with adolescent populations are positioned to assess the STD/HIV educational needs. They also possess the cognitive knowledge and skills to teach adolescents how to decrease their risk of contracting STI/HIV and, because they are taught not to impose their values on others, they are a likely group to make the decision. It was therefore clearly mentioned that health care professionals, especially nurses, have an ethical imperative to educate all adolescents about the harmful effects of acquiring STIs and HIV infection, the risk factors associated with these diseases, and sexual and nonsexual strategies to prevent contracting and transmitting them.
- Adolescents since they know the frequency of their sexual activity, their number of sexual partners, their condom use pattern, their alcohol and drug use habit, and if they combine alcohol and drug use with sexual activity, with guidance they are able to determine the content of STIs/HIV prevention educational programmes. The course content of such programmes developed by adolescents would be likely to be similar to those developed by health care professionals.

- Some parents, because of their tendency to deny the evolving sexual maturity of adolescents, would probably advocate for restricted STIs/HIV educational programmes.

### **2.6.3 Existing specific projects**

For nearly 10 years, the Ugandan National AIDS Control Programme has had the stated objectives of increasing HIV/AIDS knowledge, faithfulness and promotion of condom use although it has not focused on a delay in sexual intercourse. The effect of these efforts, together with the high morbidity and mortality due to AIDS, which has affected most of the households especially in urban areas may explain the most obvious changes in youth behaviour. In other words, because so many adolescents have seen their parents die of HIV/AIDS, they now are more receptive to making changes in their own sexual behaviour (Okiror, Opio, Musinguzi, Madraa, Tembo and Crael, 1997).

In Rwanda there is a ‘ KUBA ’ youth project that was launched during the Summit of African First Ladies, hosted by Rwanda first lady Jeannette Kagame and her husband, President Paul Kagame. The first ladies of Burkina Faso, Burundi, Côte d'Ivoire, Ghana, Guinea-Bissau, Lesotho, Malawi, Mali, and Nigeria were present at this summit. Following the concert, the late international musicians Brenda Fassie and Natty Dread acted as spokespeople for KUBA by giving press interviews and meeting with young people. This project in Rwanda focused on changing the behaviours and social norms that contribute to the transmission of HIV/AIDS and stigma. It focused on young men aged 15-19 in six provinces, with young women as the secondary targets (Brown, 2003). The objectives of the project are:

- To increase knowledge of the means to prevent HIV/AIDS transmission

- To increase the practice of HIV/AIDS prevention behaviours, notably condom use, abstinence, and fidelity
- To bring HIV/AIDS into public discourse
- To reduce the stigma around HIV/AIDS
- To build capacity and strengthen the skills of multi-sectoral IEC/AIDS coordinators

#### **2.6.4 Reported Results**

Evidence of prevention success can be seen in trends from the Youth Risk Behavior Survey conducted over an 8-year period in the US, which shows both a decline in sexual risk behaviours and an increase in condom use among sexually active youth (CDC, 2001). The percentage of sexually experienced high school respondents decreased from 54.1% in 1991 to 49.9% in 1999, while condom use among sexually active respondents increased from 46.2% to 58.0%. These findings represent a reversal in the trend toward increased sexual risk among teens that began in the 1970s and point to the success of comprehensive prevention efforts to both delay the age of first intercourse among teens and to increase condom use among young people who are sexually active (CDC, 2001). Furthermore in US studies it was revealed that many respondents reported using alcohol or drugs when they had sex, and 1 in 50 high school respondents reported having injected an illegal drug. Surveillance data from the 32 states with integrated HIV and AIDS reporting systems suggest that drug injection led to at least 5% of HIV diagnoses reported among those aged 13-24 in 1999, with an additional 49% attributed to sexual transmission (CDC, 2001).



In South Africa, condom use was reported relatively high among sexually active youth. About one-third of sexually experienced boys and girls reported that they had consistently used condoms. Youth reported that they most often take condoms from a dispenser or box rather than from health personnel. Among young people who had never used a condom, 30% said that their main reason for non-use was that they trusted their partner (Population Council, 2001). This was not the case in inner-city (USA), where most youths reported that they did not use condoms regularly because they disliked them, and had little confidence in their protective ability (Stiffman et al., 1992).

Youth have been found to be more knowledgeable about HIV/AIDS than pregnancy prevention. 43% of youth in South Africa knew someone who had died of AIDS (Population Council, 2001). However, Stiffman et al. (1992:950) wrote: “increases in knowledge are meaningless if they do not lead to behavior change; and behavior change is meaningless if the change is not adequate to ensure protection and is not maintained over time”.

## **2.7 THE ROLE OF SCHOOLS IN ADDRESSING HIV/AIDS AWARENESS TO RESPONDENTS**

The experts all agree that schools are the place to start communicating information to protect the younger generation (UNESCO, 1997). The school has a very important role to play in empowering children with the necessary knowledge, attitudes, values and life skills to protect themselves against HIV infection and AIDS (Van Dyk, 2001).

Africa's 230 million children make up a third of the continent's total population. Through the school, the information can also reach parents and the community, especially those in remote villages, where few adults can read or write (UNESCO, 1997).

While reviewing studies, which examine the impact upon sexual risk-taking of school involvement in US respondents (Douglas, 2002a) found that social scientists and educators have proffered a wide variety of explanations for how schools can reduce sexual risk-taking behaviour. Some of their explanations have empirical research supporting them, while others are plausible, but lack supporting research. According to Douglas (2002a), educators concerned with adolescent sexual behaviour have suggested that:

- Schools structure respondents' time and limit the amount of time that respondents can be alone and engage in sex.
- Schools increase interaction with and attachment to adults who discourage risk-taking behaviour of any kind including substance use, sexual risk-taking, or accident-producing behaviour. More generally, they create an environment, which discourages risk-taking.
- Schools affect the selection of friends and larger peer groups that are important to them. Because peer norms about sex and contraception significantly influence teens' behaviours, this impact of schools may be substantial. However, just how schools affect the selection of friends and peers is not clearly understood.
- Schools can increase a belief in the future and help youth plan for higher education and careers. Such planning may increase the motivation to avoid early childbearing.
- Schools can increase respondents' self-esteem, sense of competence, and communication and refusal skills. These skills may help respondents avoid unprotected sex.

In the US Douglas (2002b) found that the alarming statistics on teenage pregnancy have motivated efforts to delay teenagers' sexual debut and to increase their use of condoms and contraception more generally if they do have sex. For example, communities concerned with the reproductive health of youth have implemented curriculum-based sexuality and HIV education programmes in both school and community settings. These programmes would include:

- Sex and HIV education programmes for parents and their families
- Family planning services for teenagers
- Clinic instructional programmes with one-on-one consultation with a medical provider
- School-based and school-linked clinics
- School condom-availability programmes
- Community-wide pregnancy or HIV prevention initiatives with many components
- Early childhood programmes
- Youth development programmes for adolescents (for instance, service-learning programs, vocational education and employment programs, and other youth development programs)

The 1996 report from the White House Office of National AIDS Policy implied that school-based STI/HIV educational prevention programmes overemphasized abstinence and limited the necessary information about HIV prevention and transmission (Brown and Simpson, 2000).

A pilot sexuality education programme was conducted by Lyn (2000) in secondary schools in Victoria (Australia), to examine gender relations and the production of difference by Lyn

(2000). Gender, power, menstruation, heterosexism and homophobia, were used to analyze the language and practices respondents engage in as part of the process of achieving a (hetero) sexual identity. It was argued that HIV/AIDS education and sexuality education, more broadly defined, presents a particular challenge to dominant forms of masculinity and that programmes need to address gender, power and heterosexuality and its discontents if they are to have a positive impact on HIV-related discrimination and homophobia.

A recent UNAIDS-funded study has been conducted by Smith, Kippax, Aggleton and Turner (2003) about how education systems in selected countries in East Asia, South East Asia and the Pacific are responding to HIV/AIDS-related education. Findings indicate that specific sexual practices are rarely discussed in the region's schools, except in a somewhat mechanistic way. Their HIV/AIDS education focused mainly on human reproduction and anatomy. However, those countries most affected by the epidemic are beginning to re-think their approaches. An increasing openness about sexual and drug injecting practices, and how to communicate these issues with young people, is beginning to be accepted.

Torabi, Crowe, Rhine, Daniels, and Jeng (2000) report on an intervention study conducted on HIV/AIDS education among Russian schools where video approach was applied. The findings from this study suggest that only 20% of respondents reported they had been taught about HIV/AIDS infection in school, while most (80%) claimed they had not been taught. About 37% indicated that respondents with HIV/AIDS infection should be allowed to attend their schools. The remaining 63% either responded "not sure" or were "opposed" to the idea that these respondents be allowed to attend school. When respondents were asked if they knew where to obtain information about HIV/AIDS infection, about 22% indicated "yes," 63% indicated "no," and 15% were "not sure." About 64% indicated they knew how to keep

from getting the infection, 13% said "no," and 23% were "not sure." Respondents also were asked if they had ever talked about HIV/AIDS infection with a friend or parents.

As predicted, about 37% indicated they had talked to a friend, while only 2% had talked to parents about the topic. Respondents' overall knowledge score was positively and statistically related to whether or not they knew how to keep from getting the HIV/AIDS virus. The result of ANCOVA revealed statistically significant improvement from pre-test to post-test for intervention groups' scores on whether they knew how to protect themselves from the AIDS virus. The results of ANCOVA also revealed that the intervention group's attitude score improved statistically from pre-test to post-test compared to the control group. Thus, it was concluded that the video education modestly improved respondents' attitude on HIV/AIDS prevention. A statistically significant improvement also occurred on knowledge scores of the intervention groups from pre-test to post-test compared to control groups (Torabi et al, 2000).

Anne, Debbie and Watson (2000) reported that Australia has gained an international reputation for innovation in dealing with the complex issues of HIV/AIDS, and has achieved some success in containing the epidemic. The HIV epidemic in Australia has not decimated the population of young heterosexual adults in the way that it has in many other countries, although it has had a significant impact on young gay men who continue to be the group most vulnerable to infection. The Australian National HIV/AIDS Strategy identified young people as a priority for education and prevention interventions and schools were most likely to provide a comprehensive and effective means of educating for long-term change.

In Africa there is lack of schools and universities involvement in reducing the incidence of HIV/AIDS among its students. A study conducted by the University of Benin (2000) revealed

that HIV/AIDS has already taken hold at the University and is undermining its personnel, its key functions and the financial resources allocated to it. The factors contributing to the HIV/AIDS spread evoked by researchers are as follows:

- Inadequate sex education within the school system and university
- Denial about the reality of HIV/AIDS
- Poverty
- Lack of effective control of the disease.

It was further reported that the University of Benin has made no provision for the effects of HIV/AIDS in its management, its operations, its policies or strategic planning. All questions of direct concern vis-à-vis to HIV/AIDS among members of the University community have been left to individual responsibility, and not to the University administration.

In reference to UNESCO (2000) sources on different schools in Africa, many facts have been reported:

- AIDS has become the main cause of children dropping out of school in Africa, mostly because their parents have died.
- The epidemic is also widening the gap between boys and girls in the school system. When parents fall ill, the daughter is the first child to be taken out of school to look after sick parents and siblings. More girls than boys become infected with the virus. A 1997 UNAIDS survey in several Kenyan towns showed a 22% HIV infection rate among girls between 15 and 19, compared with only 4% among boys, a disparity which is found in every country.

- Some teachers have sex with girl respondents. Men seek out presumably uninfected younger female partners from schools. This encourages parents to take their daughters out of school.
- Denial of the AIDS problem is compounded by a lack of immediate physical evidence of illness. What makes teachers more aware of the extent of the epidemic is the growing number of AIDS orphans. Each class has one or more children whose parents have died after "a long illness," a euphemism for AIDS
- Many respondents are not yet convinced the disease is real. Thus, it is extremely difficult to convince young people that the pandemic affects them because they do not see their friends suffering.
- Few African governments have made AIDS education part of the school curriculum. There is still opposition to teaching children and teenagers about sex as it has been considered as a taboo.
- There is hope however, thanks to effective publicity campaigns, such as one in Zambia, where the rate of infection among 15-19-year-olds dropped from 28% to 15% between 1994 and 1999. Uganda, Zimbabwe and Senegal have also set up information projects in schools.

## **2.8 HIV/AIDS IN RWANDA**

### **2.8.1 Overview of HIV/AIDS in Rwanda**

Rwanda is a small country in Central Africa, surrounded by Uganda in the North, Tanzania in the east, the Republic Democratic of Congo in the west and Burundi in the south. The Rwandan population is very young with 47.6% under 15 years old and 48.6% are under 64 years old Mugabo, Nkaka, and Lamlenn (2002).

Rwanda is the most densely populated country in Africa, with around 8 million people. Rwanda covers an area of 26 388 square kilometres. Rwanda is considered to be one of the countries in Africa most affected by HIV/AIDS. The first AIDS patients in Kigali, capital city of Rwanda, were diagnosed in 1983 (Bucyendore, Van de Perre, Karita, Nziyumvira, Saw and Fox (1993).

The first national survey on the prevalence of HIV was done in 1986 and it found that 17.8% people in urban and 1.3% in rural areas were HIV positive. A network of sentinel posts monitored the progression of the HIV epidemic, where selected population groups were tested periodically. In particular, two prenatal clinics in Kigali had been used as sentinel posts for the general population of sexual active young women. The clinics were in two densely populated Kigali suburbs, Muhima and Gikondo. An annual increase rate of 3-5% during 1989-1990 was reported in HIV seropositivity in the sentinel population of pregnant women living in Kigali (Bucyendore et al., 1993).



In 1991, data from sentinel surveillance indicated already an increase of HIV prevalence rates, 27% in urban, 8.5% in semi-urban and 2.2 % in rural area. While comparing data of 1991 to 1996, it was obvious that the HIV prevalence had risen significantly more in rural than in urban area, 6.9%, 13%, 27% respectively in rural, semi-urban, and urban (National Programme in-charge of HIV/AIDS (PNLS), FHI and IMPACT-RWANDA, 2000).

A survey at national level by the PNLS (1997) on a sample of 4800 people indicated that 11% of them were infected: 10.8% of males versus 11.3% females.

Currently it is estimated that Rwanda has one of the highest infection rates in the region, with 13.7 % of its 8.1 million people affected by HIV/AIDS (Handicap International, 2002) compared to the average of 8% adult seroprevalence in Sub-Saharan Africa (Baggaley, 2001). According to USAID, until 2004, a single national estimate of HIV seroprevalence based upon a reliable population-based survey was not yet available in Rwanda. Only sentinel sites were used for its estimates.

It is estimated that (24%) of the victims of sexual assault during the genocide and war of 1994 are now living with HIV/AIDS in addition to being economically deprived and caring for a number of orphans and abandoned children (PACFA, 2002).

The Rwandan population is being radically altered by HIV/AIDS. Many HIV-infected women die or are infertile long before the end of their reproductive years. Many of the young adults will themselves be debilitated by AIDS and will require care from children or elderly parents rather than providing it (PACFA, 2002).

The war has created conditions which contribute to the further spread of HIV/AIDS with increased risk to the vulnerable groups especially poor female, widowed, or child-headed household. The First Lady of Rwanda, taking it upon herself to stand up and to do more for the women and children of Rwanda, hosted a conference of African First Ladies on children and HIV/AIDS prevention. From this meeting, the First Ladies produced the Kigali Declaration, which outlines recommendations for each of the First Ladies to undertake in their countries, in their regions and on the continent (PACFA, 2002).

In 1999, Burundi, Kenya, Tanzania, Uganda and Rwanda banded together to form the Great Lakes Initiatives (GLIA) on AIDS that is based in Kigali, Rwanda. Because of this, the initiative intends to establish a joint prevention projects along the primary trade routes in these nations (USAID, 2002).

The risk of HIV transmission has also been boosted by political instability in the region, which has brought greater economic hardship and mass migration of refugees (USAID, 2002).

In the meeting of First Ladies held in Kigali in 2003, Rwanda, a declaration on the magnitude of HIV/AIDS was quoted "HIV/AIDS remained one of the greatest threats to life on the continent, yet stigmatisation and discrimination of people living with HIV/AIDS has affected prevention campaigns and undermined care and support efforts" (UN Office for Coordination of Humanitarian Affairs, 2003:5).

### **2.8.2 Voluntary HIV antibody testing and counselling in Rwanda**

“Voluntary testing of HIV infection and associated counselling are considered important interventions aimed at reducing HIV transmission” (Ladner et al., 1996:70). Post-test counselling allows the opportunity to reveal the HIV status and to provide prevention and psychological support to individuals (Van der Straten, King, Grinstead, Serufilira, and Allen (1995).

In Africa Ladner et al. (1996), few HIV counselling and testing centres are operational, and little data are actually available about their attendance and factors associated with patients' failure to return for HIV-post test counselling. In a concurrent study on social and psychological factors associated with willingness to test for HIV infection among students in Botswana, Thabo (2006) found that willingness to test for HIV infection was negatively associated with being sexually active and having a number of partners. In both secondary and tertiary institutions, Thabo (2006) reports that younger students were more likely to test than older students. Students in the lower educational levels were more willing to test than students in the higher levels.

The USAID mission to Rwanda (2002), in collaboration with the Ministry of Health, have reported implementing four Mother-to-Child (MTCT) sites building on established Voluntary Counselling and Testing specific services in Rwanda. These services include components of post-test HIV counselling for HIV negative pregnant women, provision of antiretroviral drugs

to prevent MTCT in HIV-positive women, and postnatal care and support. To date 1,800 pregnant women have been served by the sites in place.

Baggaley (2001) states that one of VCT's main aims is to reduce HIV transmission by encouraging changes in sexual behaviour following testing. It has been considered important to be able to share one's HIV status with one's sexual partner in order to make appropriate changes in sexual behaviour. In a study by Van der Straten et al. (1995) about couple communication, sexual coercion and HIV risk reduction in Kigali, Rwanda, the results revealed that HIV testing and counselling of both partners was associated with greater communication and HIV risk reduction in the couple, as couple communication is associated with increased condom use. Further findings from this study showed that HIV testing and counselling of couples has beneficial long-term effects on condom use and HIV-related communication. Furthermore, Van der Straten et al. (1995) indicated that HIV-positive women who had been tested alone were significantly less likely to report discussing their HIV test results with their partner. Only 77% of HIV-positive women reported discussing their test results, 95% of the HIV-negative women did. However, overall women were significantly more likely to discuss their own test results if their partner had also been tested compared with women whose partners had not been tested (94% versus 88%), irrespective of their own sero-status. The authors mentioned that their findings suggested important strategies to improve behaviour change through HIV counselling and testing, and highlighted additional areas of couple interaction that should be addressed in HIV prevention. It was concluded that having both partners tested may foster a sense of shared responsibilities with respect to HIV risk reduction and may also facilitate mutual disclosure of sero-status. The counselling sessions should explicitly address sexual communication and decision-making, stigmatisation

of HIV-positive partners, and negative reactions leading to marital violence or sexual coercion. For example, men, who are the traditional sexual decision-makers, should be encouraged to talk about safer sex with their partners (Van der Straten et al., 1995).

Allen et al. (1993) indicated that surveys in Africa have shown high levels of knowledge about HIV, but this knowledge has had little impact on behaviour. In contrast to urban populations in the United States or Europe, most of the risk for HIV infection in Rwanda occurs within the general heterosexual population, and within stable and established couples.

Van der Straten et al. (1995) found that seronegative women with untested partners are at increased risk for HIV as they are the least likely to discuss or attempt to negotiate condom use. These authors commented that in the East African context, little information was available on women's control over their sexuality, their ability to discuss HIV-related topics with their sexual partners and how these factors relate to HIV risk behaviour in their relationship.

Like in many other African countries, women with steady partners in Kigali, Rwanda were found to have little economic independence and a lack of control over their sexual decision-makers so the power dimensions of sexual relations and gender roles may affect HIV preventive behaviours (Van der Straten et al., 1995; USAID, 2004).

Evidence is mounting that VCT does change behaviour for those testing both negative and positive (Arthur, 2001). A multi-centre trial and the most definitive study on both the cost and cost effectiveness of Voluntary Counselling and Testing in Kenya, Tanzania and Trinidad demonstrated a 40-46% decrease in reported unprotected sexual intercourse (Arthur, 2001; Marseille, Morin, Collins, Summers, Coates and Kahn, 2002). Likewise in Uganda, follow-up sessions at 6 months after receiving test results showed a reduction in multiple partners, increased condom use (from 10% to 80%) and more clients choosing abstinence.

In Rwanda, a study of discordant couples showed increased use of condoms from 4% to 57% at the 1-year follow-up session after VCT (Arthur, 2001). According to a study conducted in Kigali Central Hospital on predictors of HIV seropositivity following intrapartum voluntary counseling and testing among Rwandan women, findings conducted earlier studies since the findings showed HIV seroprevalence of 16.0% intrapartum and Women who had been pregnant three or more times were three times as likely to test positive for HIV in comparison to those of lower parity (Salihu, Nnedu, Karita, Vyankandondera, and Jolly, 2003).

From 2002 to 2006, the Ministry of Health through the so called “VCT Intégré” project, aims at establishing at least 117 VCT centres. That is, three VCT centres per each of the 39 existing Health districts country-wide (CNLS, 2002). According to UNAIDS (2004), HIV testing has been a part of blood screening since 1985. However, VCT was adopted in 1997. In 2004, Rwanda had 120 sites which provided 380.000 tests. VCT utilisation was high in 2004, females (78%) and of young people (57%).

## 2.9 CONCLUSION

The literature review has revealed enough evidence that HIV/AIDS is increasing priority as the leading public health emergency worldwide.

There appears to be evidence that women and girls are more affected than men and boys. Although most of findings in developed countries refute the effect of HIV/AIDS on pregnancy outcomes, there is no evidence of a such statement being true in Africa. One could assume that the association of HIV and the endemic malnutrition in some areas in Africa contribute somehow to the high rate of mortality and morbidity especially among poor pregnant women in Africa. The lack of control over sex and reproduction by women, which might well be one of major causes of HIV spread, has not been well investigated. The knowledge of women about their HIV/AIDS status and the decision on reproduction is not well documented. Although UNAIDS and the WHO have advised that HIV counselling should include information about maternal transmission, in Rwanda there was little evidence, to indicate the effectiveness of this type of advice in preventing pregnancies among HIV-positive women

The literature survey finds a lack of evidence regarding the extent to which men should be involved in fighting AIDS, despite their strategic position of being the head of households in African countries.

Although STIs/HIV knowledge was reported by different authors to be quasi-adequate, there was little evidence on its impact with regard to sexual behaviour change and misinformation or misunderstanding of some related concepts, particularly in youth.

According to an empirical study done in Kenya, Tanzania and Trinidad, despite problems reported by some authors elsewhere (France and UK), most of findings indicate that a VCT programme remains the most suitable approach, a pillar strategy for HIV/AIDS prevention especially in youth who are more luckily not or are less engaged in sexual intercourse. While study results from Sub-Saharan Africa revealed that high quality VCT is an effective strategy for reducing HIV transmission through sexual risk behaviour among adults and Mother to Child Transmission, little is known about VCT for youth/adolescent, especially for young girls between ages 14-19.

Finally, there is very little information on the outcomes following VCT for young people and whether they are able to change and sustain changes in their sexual behaviour following VCT.



### **3 CHAPTER THREE: RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This study is predominantly a quantitative research design. Some qualitative data was collected to help the researcher to gain an in-depth understanding of the findings. Qualitative data was mainly collected during various meeting sessions with respondents in the course of the study whereas quantitative data was collected by means of a comprehensive questionnaire.

Different statistical tests were performed to test the significance levels of the findings and to allow further comparison between research findings.

This chapter spells out the following components: Research design, population and sample, data collection, data analysis, validity and reliability of the instruments and ethical considerations.

#### **3.2 RESEARCH DESIGN**

Based on the fact that an intervention was to be carried out on Voluntary Counselling and Testing, HIV/AIDS knowledge and behaviour change, in considering the academic rigor and the limitations under the study, a quasi-experimental, non-equivalent control group before-after design was judged to be appropriate to this research topic. Quasi-experimental study refers to “a before-after study” whereby measurements are made before and after some intervention on a group of individuals (Katzellenbogen, Joubert and Abdool Karim, 1997).

“The greatest strength of quasi-experiments lies in their practicality, feasibility, and, to a certain extent, generalizability”(Polit and Hungler, 1999:190).

Different authors have recognized the above design as being characterized by the use of a small number of collective units that contains different types of individuals. The individuals in the collective units are not randomly assigned to the control groups, nor are the units so themselves assigned (Fisher and Foreit, 2002; Katzenellenbogen, et al., 1999; Polit, Beck and Hungler, 2001). This study does not fit the requirements for an experimental study, as respondents were recruited not randomly but voluntarily. It is argued, “The non-equivalent control group design is the most frequently used in quasi-experimental designs” (Polit and Hungler, 1999:187; Brink, 1996:204; Polit, Beck and Hungler, 2001:176). Campbell and Stanley (1996) cited in Brink (1996:106) state that “it is better to use a non-equivalent control group than no comparison group at all”.

The term ‘comparison group’ was used in this study because Polit et al (2001:176), wrote, “in quasi-experiments, the term comparison group is generally used in lieu of control group to refer to the group against which outcomes in the treatment group are evaluated”.

In reference to the description of the non-equivalent control group design by Polit and Hungler (1999) especially on its strong side, the collection of pre-test/information allowed the researcher to determine whether the groups (experimental and comparison) were initially similar in terms of HIV/AIDS knowledge and risk behaviour.

Katzellenbogen et al. (1997) proposed that before and after results could have been influenced by events other than the intervention studied. To avoid this weakness, the researcher assigned

an experimental group that did receive the intervention and in whom the researcher determined whether the observed changes had been caused by the intervention. Thus, the evaluation of before and after was done on groups that were fully comparable. More details on groups are given below in the section regarding population and sample.

This study was structured into three major phases through which its implementation and data collection was done. It was expected that a total period of 8 months, from November 2003 to June 2004 would be sufficient for these specific tasks. This time ran parallel with a full school year. In Rwanda a school year started in mid-September and ended in July of the following year. But before the research began there was change of school calendar whereby the Ministry of Education decided that the school-year would run from January to October. In addition to other delays including research funds and permission from the National Ethics Committee, the second phase of this research ran from January to July 2005.

### **3.2.1 Phase One: baseline data collection (pre-intervention)**

The first phase aimed to find out the extent to which respondents are aware of the HIV/AIDS problems and its prevention. To do this, a self-administered questionnaire was distributed to respondents in both the experimental and comparison groups at the beginning of the research, before any intervention had taken place.

The responses on their HIV/AIDS knowledge and its prevention served as the basis to ensure the appropriate education messages that the researcher used in addressing the experimental group and at the same time helped to evaluate the performance of the experimental group during and after intervention sessions. This was valid as it was assumed that there would not

be vast differences in the responses of respondents since the two initial groups were similar before intervention.

### **3.2.2 Phase Two: The implementation of the VCT programme**

To enable the implementation of VCT, the researcher gathered information during the baseline data collection and afterwards before implementation. Meetings were held with respondents' clubs, Principals and other authorities to plan the intervention phase.

The researcher worked closely with anti-AIDS clubs he found in place, whether they were operational or not at the time of this research. According to the Ministry of Education's recommendation, each school is supposed to have at least one anti-AIDS club. The researcher re-started two clubs which were not operational and boosted the efforts and morale of all other clubs during the study period. This was done in collaboration with the schools' top management teams. The clubs provided information on their activities through interviews or notes. This information was therefore used to plan the sensitisation and follow-up phases in every school.

Depending on the available facilities in each school, education messages on HIV/AIDS and sexual behaviour issues were displayed by means of videocassettes or role-play. Further strategies for HIV/AIDS teaching, as recommended by Van Dyk (2001), were effectively utilized within Anti-AIDS clubs and in special meetings set up and run by the researcher:

- To be specific when using terminology
- Movies and other visual aids

- Role-play and other participatory exercises such as a question basket into which anonymous questions are placed and they answered in-group
- Same-sex grouping followed by sharing a mixed-sex group (to increase the respondents' comfort level in discussing sexual subjects with members of the opposite sex)
- Involvement of respondents in planning and teaching. Van Dyk (2001) recommends that whenever possible, young people should be encouraged to speak the message to each other. Adolescents learn best when they learn from their peers.

The description of the implementation of the Voluntary, Counselling and Testing programme as applied to this study follows:

#### **3.2.1.1 Planning:**

As discussed earlier in the conceptual framework, after sensitization and the respondents having made a decision on HIV testing, counselling sessions were planned in collaboration with schools and the health centre managements. On one hand, sensitization in favour of Voluntary Counselling and Testing was aimed only at respondents in the schools who had been selected for experimental groups. Those from the experimental group schools volunteered for testing were referred to a Health Centre where individual pre and post-test counselling was offered. On the other hand, while distributing questionnaires to respondents allocated to the control group schools, available VCT centres were mentioned but no specific guidance in that regard was provided compared to what was done for the experimental group members. After answering the questionnaire, the control group respondents were only given a

choice of whether or not they would like to go for HIV testing. Those who accepted were referred to the VCT government services situated in the area of their schools.

The timing of the testing and follow-up sessions depended largely on the availability of the respondents and their school programmes. The details are given on the schedule in appendix 3.

#### **3.2.1.2 Implementation of pre and post-test counselling**

During individual counselling, the rapid HIV testing method was offered. According to Frizelle (2003), the rapid testing method refers to HIV antibody testing which can usually be performed more quickly (5-30 minutes) than the standard laboratory-based tests. It presents the following advantages:

- Can be done without the need for a formal laboratory
- Easy to use and cheaper than standard laboratory tests
- Can usually be operated and read by non-laboratory personnel such as clinical doctors and nurses.

In this study, however, laboratory staff were used since the testing sessions were conducted in a health centre where syphilis infection is routinely checked at the same time as VCT.

As described by Frizelle (2003) and Van Dyk (2001), the scheme below was systematically applied to guide the counselling sessions in this study:

- **Counselling before the test:**

In this stage, the counsellor:

- Ensured each respondent understood the basic facts about HIV infection and AIDS
- Assisted each respondent to understand the test and what the results would mean and prepared him or her to receive the test result
- Considered and explored what the respondent might do if the test is positive or negative. This information was necessary to have while addressing respondents' needs in the post-testing sessions. It was necessary for the researcher to ensure that respondents do not plan for drop out from their studies, rather to understand that if he or she is HIV positive, there was medical care (not cure) and monitoring which could help him or her live a healthier and longer life
- Explored potential support from loved ones, family, friends or guardianship
- Ensured that the respondent had confidence in the confidentiality of the result for example, that it will be kept private
- Advised on safer sexual practices (use of condoms)
- Made an assessment of the risk of possible HIV infection
- Enabled each respondent to make an informed decision whether to take the test or not.
- **Counselling after the test**

In this situation the counsellor:

- Helped to convince a respondent about the reality of testing HIV positive despite knowing that it is not easy for the person to accept and believe that he or she has the HIV infection merely on the basis of an HIV positive test result
- Ensured that the respondent understood the meaning of the result

- Helped the respondent to cope with the result, especially in the days or weeks to follow if the result was positive. In this regard, the researcher increased follow-up sessions because “when people hear that they are HIV positive, they usually experience so much stress that they absorb very little information” (Van Dyk, 2001: 250). Follow up visits were necessary to give clients the opportunity to ask questions, talk about their fears and the various problems they encounter (Van Dyk, 2001)
- Ensured that a respondent was aware of how to prevent the dangers of spreading HIV infection. In this case, information on safer sexual practices was emphasized.
- Explained the need for evaluation if he or she was considered to be in the window period.

- **Roles of participants:**

The researcher facilitated and managed the implementation process and assisted with sensitisation and follow-up activities. Staff of the schools and members of the anti-AIDS clubs participated in sensitisation, administration and follow-up. Health centre staff did pre- and post test counselling and testing.

- **Follow-up**

This was organized in terms of group counselling. The aim was to reinforce the acquired knowledge and positive behaviour of the respondents in the experimental during the previous sessions. It was again the opportunity to explore ways of support for respondents who tested positive.

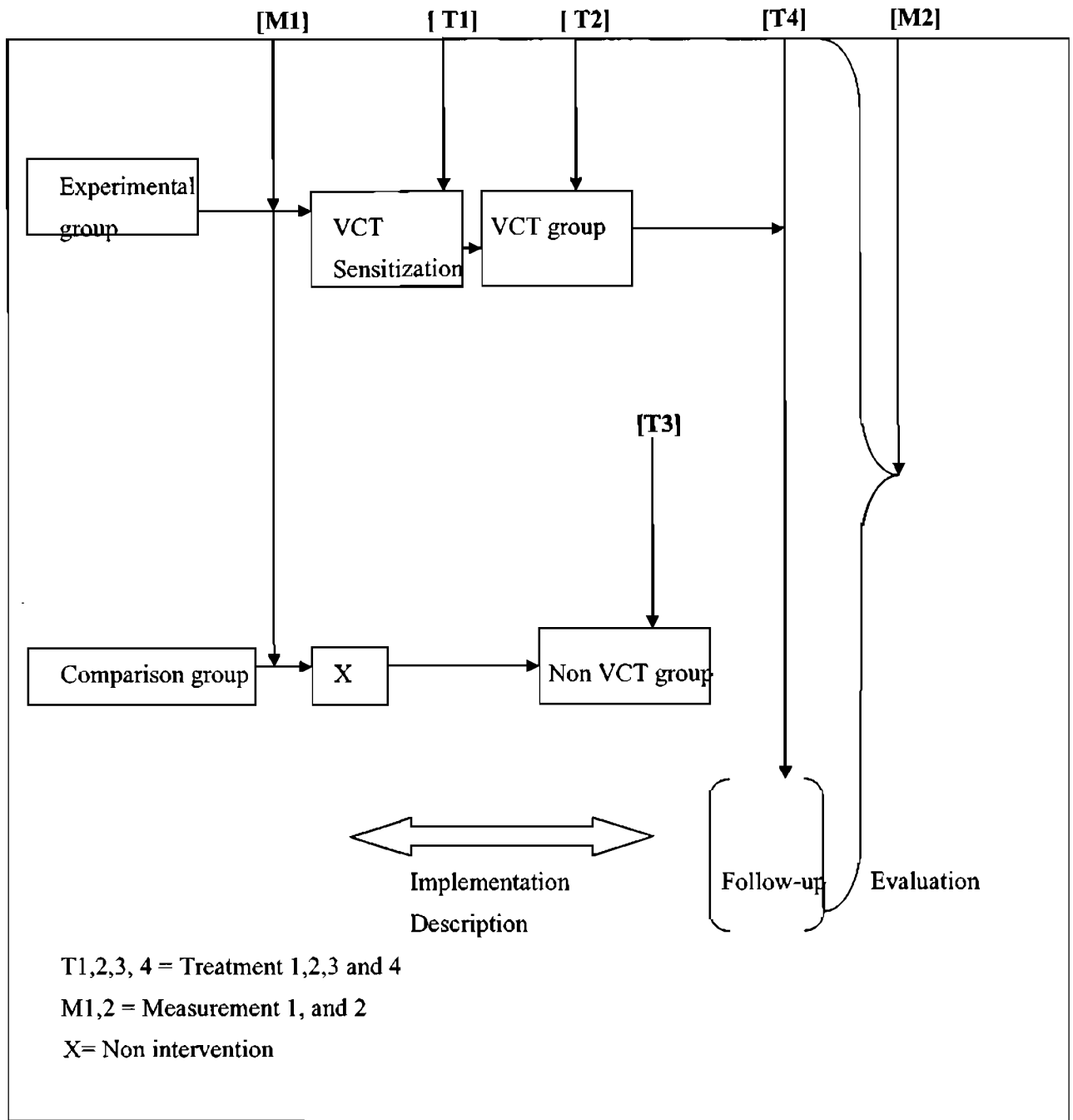


### **3.2.3 Phase Three: Evaluation**

The third phase was done at the end of the study by using the same questionnaire as had been used in Phase One. This evaluation enabled the researcher firstly, to assess the effect of the intervention done to the experimental group and secondly, to measure the knowledge and behaviour change in the comparison group that presumably respondents acquired from any other sources of information from the country such as radio, television or speeches.

The extent to which respondents accepted voluntarily HIV testing and counselling was determined and its further comparison from experimental to the comparison group was established. This was important from this research to know whether or not respondents needed to be sensitized if testing is made available to them.

The three phases (Baseline data, VCT programme and Evaluation) expressing the methodology of the whole study and within which most of the data were collected upon are summarized in the Figure 3.1 It shows the sequences of the research methodology and data collection



**Figure 3.1 Summary of research methodology and time for data collection**

### **3.3 POPULATION AND SAMPLE**

#### **3.3.1 Population**

The target population in this study is the respondents in secondary schools in Kigali, Rwanda. The accessible population constituted respondents from the 3<sup>rd</sup> up to 6<sup>th</sup> years of study, and any respondent above 18 years old, both boys and girls registered and attending classes in the school year 2003, 2004 and 2005.

#### **3.3.2 Sample and technique of sampling**

##### **3.3.2.1 Sample of schools**

The criteria for selecting the schools that constituted the study sample were mentioned as follows:

- The school should be based in Kigali
- The School should have a respondents' residence. The reason for this is that the researcher worked with the respondents during weekends to avoid interference with school activities
- The school should be co-educational/mixed to allow the understanding of the research problem in both sexes
- Although the accessible population is young adult respondents (above 18 years-old), for good representation of the rest of the youth in general, the school should be offering the six levels/years required for secondary schools by the Ministry of Education in Rwanda.

- As secondary schools are divided into career-directed departments, such as Commerce, Science, Nursing or Education, only one department was randomly selected per school.

There are 48 schools in Kigali, the capital city of Rwanda. Of these, 15 schools have respondents' residences and of those, 12 are mixed. Thus, 12 schools have been retained for the study population.

A random sample of six schools (46%) was drawn from the 12 schools and these schools were allocated to the experimental group while the remaining six schools constituted the comparison group.

To draw the experimental sample from 12 schools that have fulfilled the criteria set by the researcher, the simple random sampling method was applied. Each school was assigned a unique letter, from A-L and, a lottery technique was used to select the six schools.

### **3.3.2.2 Sample of individuals**

For the sampling of the individuals, it was not easy to accurately determine the sample size, as the intervention (VCT) offered exclusively to respondents who voluntarily accepted to participate in the research. In other words, the researcher considered the sample as the number of respondents in a particular school above 18 years old who accepted voluntarily to undergo HIV pre and post-test counselling.

Despite the difficulties with regard to the sample size, an expected sample was calculated with EPI-INFO software. To do this, the research design with comparison of the two groups, the published HIV infection prevalence rate, the power, the confidence level were taken into account and applied as follows:

- Group1/Group2 = 2
- Prevalence in experimental group = 4.9%, which corresponds with the national estimated HIV prevalence among adolescents
- Prevalence group in group 2 = 11.5%, corresponding to the HIV prevalence among young adults
- Power : 80%
- Confidence level : 95%

The calculation gave a sample size (n) of 618. In striving to overcome the non responding aspects especially in the experimental group, the researcher decided to split the above sample equally which gave 309 respondents per group. Dividing the total figure amongst the 12 schools, it gave approximately 51 respondents per school. Therefore it came to a total of 612 respondents. Half (306) of the sample was considered as the intake for the experimental group whereas the other 306 respondents were allocated to the comparison group intake. In one school of experimental group, however, an extra respondent was recorded. Thus a total number of 613 respondents counted for the baseline data collection phase.

In the course of the study, however, the sample size for VCT increased dramatically as a result of sensitization. There were 434 respondents in total who attended VCT. In other

words, an addition of 128 respondents to the experimental group of surveyed respondents at the baseline attended VCT sessions.

### **3.4 RESEARCH INSTRUMENTS AND DATA COLLECTION**

#### **3.4.1 Instruments and variables measured**

The content validity was ensured in this study's instruments. Burns and Grove (2001: 400) explain the content-related validity as the "extent to which the method of measurement includes all the major elements relevant to the construct being measured". According to Brink (1996) the content validity is one of the most common types of tests used to judge the accuracy of an instrument. The author says that content validity is an assessment of how representative the instrument is of all the different components of the variable to be measured. This validity test always precedes the actual collection of data. The researcher used Burns and Grove and Brink's approach to ensure the validity of the instrument used in this study by systematically reviewing the essential aspects of quantitative variables to be measured as set in Tab. 3.1. In other words, all the variables are taken into consideration when developing the items of the whole questionnaire. The details to this are given below:

##### **3.4.1.1 Quantitative data**

A self-administered questionnaire was used in this study to gather data from respondents in both the experimental and comparison groups. According to Polit and Hungler (1999), a self-administered questionnaire is used when subjects are asked to respond to the same questions, in the same order, and they have the same set of options for their responses.

To ensure its content validity and reliability, the questionnaire for this study was developed from several instruments that have been used elsewhere and published by international recognized institutions in the study area of HIV/AIDS such as UNDP, WHO, UNFPA, WORLD BANK Special Programme of Research, Europeans Union survey questions and Youth survey questions bank by Horizons Programme (CDC /MMWR, 1991; FAO, undated; Wirc, undated; Population Council, undated ; and the Measurement group, undated).

Variables that were relevant to the objectives of this study were quantitatively measured.

Apart from the socio-demographic data, the questionnaire has three sections notably:

- STIs/HIV/AIDS knowledge vs. awareness
- Risk behaviour/sexual practices
- Knowledge of HIV-Voluntary Counselling and Testing.

The questionnaire has various items with multiple choice answers as well as closed format with yes or no responses. Where applicable, an additional alternative (other) response is offered to the respondent in case his or her response to a particular item does not fit exactly with the options in the list. Questions are posed in a guidance manner whereby respondents are requested to leave out items if they not applicable to them. More on items with regard to specific variables has been developed below:

### 3.4.1.1.1 Demographic questionnaire

This section has 17 items that allowed the respondents to describe their characteristics and background. The demographic questionnaire included items about sex, age, language spoken, religious denomination, lifestyle, sources of finance and social environment.

### 3.4.1.1.2 Knowledge of Sexual Transmitted Infections/HIV/AIDS

Many previous studies addressing this variable were found. More detail about the instruments and variables that were measured are given in table 3.1.

**Table 3.1 HIV Knowledge instruments**

Variables	Sources of instruments							
	CDC	FAO	Wiric	Stiffman	Majumdar	Horizons	Measument group	This study
Myths							▼	▼
Condom use			▼					
Cause	▼			▼				▼
Illness	▼	▼		▼	▼		▼	▼
Treatment	▼				▼		▼	▼
Transmission	▼	▼	▼	▼	▼		▼	▼
Testing	▼		▼	▼	▼			▼
Person with HIV		▼		▼				
Person died from HIV		▼		▼	▼			
Care of People with AIDS/STIs			▼			▼		
Information sources			▼	▼				
Reproductive health						▼		
Prevention/risk factors							▼	▼



Since there was no single instrument covering all 8 topics needed in this study, a new instrument was developed using items from previous studies. The instrument has 29 short items most of which are answerable by a simple Yes-or-No response and covering topics as set out in table 3.1.

To ensure the content validity of the instrument, 14 topics covered by 7 instruments were found as summarized in table 3.1. The researcher decided to cover 8 topics in this study.

No reliability of the instrument is available for any of the instruments in the literature. For this study, the test and retest reliability was ensured. The questionnaire was tested by administering it to 30 respondents and it was retested two weeks later on the same group of respondents in the schools not taking part in the study and the test-retest reliability ( $r$ ) was calculated.

#### **3.4.1.1.3 Risk behaviour and sexual practices questionnaire**

Eleven topics under these variables were identified and were covered by 7 instruments from previous research initiatives (Gregson, Nyamukapa, Garnett, Mason, Zhuwau, Carael, Chandiwana & Anderson, 2002; Lowry, Holtzman, Truman, Kann, Collins & Kolbe, 1994; Horizon/Population Council website, the Measurement group website; Krantz, Luch & Russell, 2002; Moon, Binson, Page-Shafer & Diaz, 2001). The researcher has decided to address 7 topics of the 11 identified. These are summarized in table 3.2.

**Table 3.2 HIV risk behaviour and sexual practices instruments**

Variables	Source of instruments						
	Gregson	Lowry	Horizon	Measurement	Krantz	Moon	This study
Age at 1 <sup>st</sup> sex. Intercourse	▼						▼
Lifetime with partner (s)	▼	▼			▼		
Coital frequency	▼						
Condom use	▼	▼					▼
Partners characteristics	▼						
Recent partner	▼						▼
Substance use		▼	▼	▼			▼
Drug use		▼	▼	▼	▼	▼	▼
Delinquency			▼		▼	▼	▼
Risk taking			▼				
Risky sexual practices				▼	▼	▼	▼

As there was no instrument that covered all 7 needed topics, a questionnaire with 9 items was developed. The content validity was ensured by using the topics identified from literature as summarized in Table 3.2. There was no documented reliability. The test-retest reliability will therefore be calculated as previously discussed.

In addition to the above described tools for quantitative data collection, a checklist was designed by the researcher in French and was used by counsellors while offering individual counselling. Thus a standardized set of information was covered during pre and post-test counselling, according to a list which allowed counsellors to tick where appropriate. A space for further comments was provided as well. The content review was done by a group of key

informed counsellors and a short session was organized prior to actual counselling session to explain how and when the form was to be completed. This meeting was important because it aimed to standardize the completion of the form and also to give all the counsellors common understanding of the concepts in the listed items.

### **3.4.1.2 Qualitative data**

#### **3.4.1.2.1 Behaviour change and coping mechanisms**

Unstructured observation was used for gathering further data on behaviour change during the intervention sessions and the monitoring of coping mechanisms especially for those who tested positive and who needed psychological support. According to Brink (2001: 150) unstructured observation involves the collection of descriptive information that is analyzed qualitatively rather than quantitatively. "In unstructured observations, the researcher attempts to describe events or behaviours as they occur, with no preconceived ideas of what will be seen". In some sessions, the researcher was an active respondent, interacting with respondents and at the same time was recording or taking note of information on HIV/AIDS respondents' behaviour and coping mechanisms in terms of their HIV positive status. All this was done according to the stages of behaviour change developed earlier in the conceptual framework.

The idea that each pupil would be assigned a file in which personal follow-up data would be recorded was not possible. Hence, there was not a pre-established instrument as the data was taken in notes either by the researcher or respondents on sheets of papers which were submitted to the researcher later.

**Table 3.3 Recapitulation of variables measured, categories of respondents and the sources of instruments**

Variables measured	Allocation of respondents		Validity and reliability of the instruments, questionnaires obtained from			
	Experimental Group	Comparison Group	WHO UNDP UNFPA W.BANK	Horizons	EU	Researcher
Socio-demographic data	√	√	-	-	-	√
Knowledge of HIV/AIDS	√	√	√	-	√	-
Risk behaviour/ Sexual practices	√	√	-	√	-	-
VCT	√	√	-	√	-	-
Behaviour change	√	-	-	-	-	Unstructured observation
HIV Coping mechanisms	√	-	-	-	-	Unstructured observation

### 3.4.2 Data collection process

In this study, the data collection process was done according to the three phases that have been discussed earlier in the conceptual framework and in the research design sections.

#### 3.4.2.1 Results of pilot study

The designed self-administered questionnaire was distributed to 30 respondents from the schools that did not take part in this research. Twenty-nine questionnaires were returned. The analysis of the findings revealed that:

- The questionnaire was bit longer than expected. It took about 40 minutes to be completed. Therefore three questions regarding socio-demographic data were taken out and some other questionnaires were revised to make them shorter. The average time used to complete the final questionnaire was 25-30 minutes.
- There was no problem of the language since the questionnaire was firstly translated in the local language, Kinyarwanda by a very knowledgeable person and secondly was distributed to some of the researcher's colleagues to ensure the clarity of wording. In order to respond to the language preferences of some respondents, copies in both English and French were available. It was realized, however, that all respondents preferred to use the questionnaire in Kinyarwanda.
- Very few respondents asked for clarification of questions while responding. It was therefore concluded that the questions were clear.

#### **3.4.2.2 Baseline data collection**

First of all, the researcher requested permission to conduct the study from the top-management of the National Ethical Research Committee, the Provincial education office, from the school principals and respondents. After this, the researcher booked an appointment with each school management team to meet the respondents so that questionnaire could be distributed. There was a research assistant to help in this task. The purpose and process of the research was explained to respondents by the researcher. The format of items was explained to them, however, no suggestion about answers was given to respondents. The researcher waited while the respondents completed the questionnaire and collected them immediately. To avoid any sort of bias especially on sensitive items such as sexuality, the respondents were

recommended to answer as accurately as possible. An additional strategy was to seat the respondents in the same way as they would be seated during exams. This would help them to feel that their answers were secured from being seen by other pupils. The school management service per school helped the researcher to successfully deal with this task.

#### **3.4.2.3 Implementation**

In this phase, the testing was offered to respondents who voluntarily accepted to undergo testing and who were in the experimental group. Most of the qualitative data was collected in this phase. Qualitative data was generated by asking each respondent to write on a sheet of paper any concerns or experiences they had with HIV/AIDS. Without names, all respondents expressed their thoughts freely on these papers (n= 613). Furthermore, interviews were conducted with some key informants amongst the respondents. Interviews were documented by the researcher who made detailed notes during the interviews.

Furthermore the researcher observed, took notes and recorded all the information during pre and post-test counselling and follow-up sessions. A respondent in-charge of Anti-AIDS club per school was requested to report any action realized and sessions held even in the absence of the researcher whenever the researcher asked for it and or to report at least once every two weeks. This served to allow the researcher to monitor the progress of the intervention and to note the reactions of the respondents at any planned or unplanned action.

#### **3.4.2.4 Evaluation**

At this stage, the evaluation was done as the same as at the baseline data collection.

### **3.5 DATA ANALYSIS**

The Statistical Package for Social Sciences (SPSS 11.5 for windows) and Microsoft Excel were used to analyze the quantitative data for this research especially on the sum of scores for categorical variables. The combination of the above two programmes allowed the researcher to analyze the data interchangeably that is, from one program to another.

Multivariate statistic tests were used to detect any relationship between variables and to draw conclusions on the real problem under this study. According to Gillis and Jackson (2002:396) “the Chi-square test is a test of significance used primarily in cross-tabular table analysis”. Thus, chi-square test was used to compare the proportions in order to determine whether or not there was a significant relationship between variables. The T-test was also used to allow a comparison of the means. According to Brink (1996:190) “The t-test is used when the researcher wishes to compare the means of two groups in order to determine whether the differences between two means are significant or due to chance”.

The above programs and statistical tests facilitated for example, knowledge on the proportion of respondents who:

- had had sexual intercourse during their lifetime
- had initiated sexual intercourse before 13 years of age
- had had sexual intercourse with more than one main partner during their lifetime
- had had sexual intercourse during the 4-6 months preceding the study
- are sexually active and report that either they or their partner had used a condom during last sexual intercourse
- are sexually active and had used alcohol and drugs during their sexual intercourse

While performing a comparison of the results, the researcher strived for example to find out the association between respondents' social demographic data such as gender and age and other variables such as initiating sexual intercourse, using alcohol and condom during sexual intercourse.

The software for qualitative data analysis (QSR NVivo) was used and research questions were used as main categories to code the data into knowledge, risk behaviour and attitudes toward condom use. Once the major themes had been identified, sub-themes emerged and were coded. These themes and sub-themes will now be described.

Some qualitative data was analyzed manually as some had already been tape-recorded and most of the others were hand written during pre and post-test counselling sessions as well as in follow-up sessions through unstructured observation.

### **3.6 VALIDITY OF THE STUDY DESIGN**

Validity refers to data that are not only reliable but also true and accurate. It is also an extent to which a measurement does what it is supposed to do (Fisher and Foreit, 2002). The validity of the instrument was determined by the proportion of the responses to particular items of the questionnaire. For example according to the first objective of the study, on one hand a respondent was considered to have sufficient knowledge if he or she responded correctly to at least 80% of the total responses to the items addressing STIs and HIV/AIDS awareness and knowledge of physiological effects of HIV/AIDS and its transmission. On the other hand, a respondent, who engaged in any form of risk listed behaviour was considered at high risk of HIV infection.



The researcher used a specialized translating service to translate the whole questionnaire into Kinyarwanda, the national language that is used by the entire population of Rwanda. Furthermore, adjustments in terms of wording and use of vernacular terms on the questionnaire were made following feedback from the researcher's friends and colleagues as well as the research assistants. This questionnaire was further pre-tested during the pilot study.

To ensure the common understanding of the questionnaire by respondents, most of the questions were posed in closed format. Thus, the answer is either "Yes" or "No", a number, or a choice of one or more of a group of predetermined answer categories.

Research assistants (nurses or counsellors) were trained to assist the researcher during intervention and testing sessions. Despite being with his assistants all the time, it was essential for the researcher to train them in three-day intensive sessions so that a common language on the aim and objectives of the study was ensured.

### **3.7 ETHICAL CONSIDERATIONS**

#### **3.7.1 Permission**

A letter granting permission to carry out this study was first of all obtained from the Research Ethics Committee, University of Natal, Faculty of Community and Development Disciplines. A second permission letter was obtained from the National Ethics Research Committee in Rwanda. Written permission was also granted by the Kigali Provincial Office in-charge of education, and the Muhima District Health Office. Two Ministries (Education and Health) especially the Department of HIV/AIDS Prevention in Schools as well as the National Youth

Council were informed about the research project. This study was carried out with permission from each school Principal.

### **3.7.2 Confidentiality**

Confidentiality in this study referred to keeping test results confidential, and not the fact that testing was done. Because the research topic is sensitive and voluntary the researcher ensured a strong focus on confidentiality in counselling sessions. This means that one respondent at a time was counselled in the privacy of the counsellor's office. Each respondent was told clearly that his or her right to confidentiality would be respected at all times. They were assured that no information would be communicated to anyone without their individual permission. Even if other health care professionals needed to know about a respondent's HIV status or STI for medical reasons, this was done with that particular respondent's consent.

To maintain confidentiality among respondents, it had been planned prior to this study how the test results would be made available to the individuals. In spite of the rule of rapid test, the test result would not be given to each respondent immediately after testing. Rather, individual appointment would be made on Fridays and weekends to allow sufficient time for the counsellor or the researcher to help the respondents deal with their reactions before lectures in the following week if they tested positive. More so, post-test counselling sessions would be held in a confidential venue away from the school compound. However, the necessary arrangements had been made and therefore the entire rapid procedures including conducting post-test counselling (giving results) immediately was successfully implemented.

### **3.7.3 Informed consent**

There was not any form of forcing a respondent to take part in the study. From the baseline data collection, a clear statement on the purpose of the questionnaire was placed on its first page to ensure their voluntary acceptance to participate in this study. Only then did either the researcher and/or his research assistants distribute the questionnaire. Polit and Hungler (1999:143) state “if the child is developmentally mature enough to understand the basic information involved in informed consent (e.g., a 13-year-old), it is advisable to obtain written consent from the child as well, as evidence of respect for the child’s right to self-determination”. More so, the intensive sensitization sessions conducted at schools resulted in each respondent’s informed consent prior to VCT sessions. In other words after each respondent had understood the implications of the test such as how the test would work, what the tests could reveal and what it could not. Especially during individual counselling sessions, an informed consent document with a standardized format was signed individually by all respondents in experimental group.

### **3.7.4 Anonymity**

No name was recorded on respondents’ questionnaires nor were the names of their schools mentioned, instead a code was used to identify schools or individual respondents throughout the research. Except the researcher, no one else was allowed to access the research documents. These documents helped the researcher to keep the records for use in follow-up sessions and data analysis. At the end of the study all the files were destroyed.

### **3.7.5 Option to withdraw**

According to the framework, the right to withdraw from this study at anytime was clearly explained to respondents so that whoever was not happy continuing, especially with the

testing sessions, for any reasons could voluntarily drop his or her participation and his or her decision would be respected.

### **3.7.6 Protection of respondents**

To avoid any confusion or misclassification with regard to test results, there was a strong mechanism of results verification. A same code was used to identify each respondent for three different phases: The blood sample code on the tube which had to have the same code with the laboratory registry, the VCT registry code which was used by a counsellor and a respondent code on a small paper that each respondent received on registration which had to be shown to his or her counsellor later during the post-test counselling session. On reception of the form the counsellor checked immediately if the code corresponded with the result in his or her hands. Then the post-test counselling started.

### **3.7.7 Report on problems with regard to obtaining ethical approval**

The National Ethics Committee resisted giving approval for conducting this research. As a result, it delayed the commencement of data collection for approximately seven months. The reason given was that I should not conduct a VCT research among adolescent respondents without informing their parents. This was almost impossible for me to do due to financial constraints. The Committee assumed that without the support of their parents the respondents would not be able to overcome their emotions if they tested positive. It was then agreed that one member, a Medical Doctor investigate the issue further and bring the relevant information to the attention of the whole committee at a later stage.

The Medical Doctor met the researcher and they discussed the issue thoroughly. The researcher promised to submit supportive arguments from research done elsewhere. Despite

written materials submitted, there was no positive response. Among others the researcher quoted directives by the Ministry of Health on VCT policy together with the results of a brief interview that the researcher had conducted with opinion-formers who work in different recognized (private and governmental) institutions in the domain of HIV. The researcher wrote several times to the President of the Ethical Committee with a copy to the Minister in charge of HIV/AIDS and other epidemics. After a long time, permission was finally granted by the Ethics Committee on condition that respondents below 18 years should be excluded from the sample. This was a major constraint encountered by researcher during this study.

### **3.8 CONCLUSION**

This chapter covers the methodological aspects of the entire study. Its design is a quasi-experimental both quantitative and qualitative. There is a detailed description on two measurements at baseline data collection and evaluation phases after a seven-month VTC intervention.

The sample and sampling techniques of individuals and schools have been explained. Different methods to ensure content validity and reliability of the instruments were presented. Then detail was given on methods of data collection and analysis by specific software, SPSS for quantitative data analysis and NVIVO for qualitative data including behaviour change and coping mechanisms. Finally important aspects of ethics for this study especially how respondents were protected was dealt with in this chapter.

## **4 CHAPTER FOUR: RESULTS**

### **4.1 INTRODUCTION**

As stated in the methodology, this chapter describes the three main components:

- The baseline data presentation
- The description of the implementation of Voluntary Counselling and Testing
- The outcomes of VCT in schools.

Description of the data and its related few comments come before each table to make the findings more accessible before a reader gets to the details on figures. There are simple tables with isolated variables, but a combination of some variables was made to reduce the number of tables.

Furthermore, results on the correlations of different variables are presented. Different tests and comparison of variables are emphasized to allow a better analysis and an in-depth data understanding and thus conclusions are drawn.

### **4.2 BASELINE SURVEY RESULTS**

#### **4.2.1 Quantitative data**

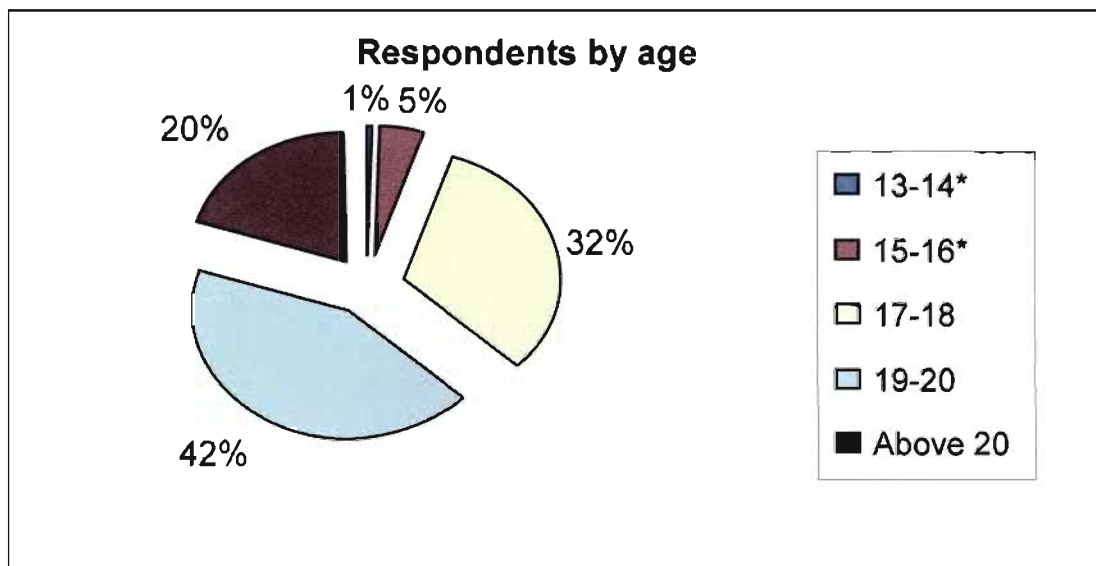
##### **4.2.1.1 Sociodemographic data**

A total number of 613 respondents participated in this study. These respondents were almost equally distributed amongst 12 schools based in Kigali; the capital city of Rwanda and that met the criteria for taking part in the study. In striving to ensure anonymity, alphabetical

codes from A to L, have been used to replace the school names. The sample size per school was 51 respondents except for school A which had one more respondent.

Although there were some schools with more boys than girls or vice versa, in general, respondents were balanced in terms of gender. In other words, there were no big differences in gender representation, 328 or 53% for males and 285 or 47% for females (n=613).

Results revealed that in general respondents were older than the average for their level of school. The most represented age was that of 19-20 years, which accounted for 42%, followed by 17-18 years (32%). A total of 20% were older than 20. This means that many mature individuals have been delayed in completing their secondary school education. Details are displayed in figure 4.1

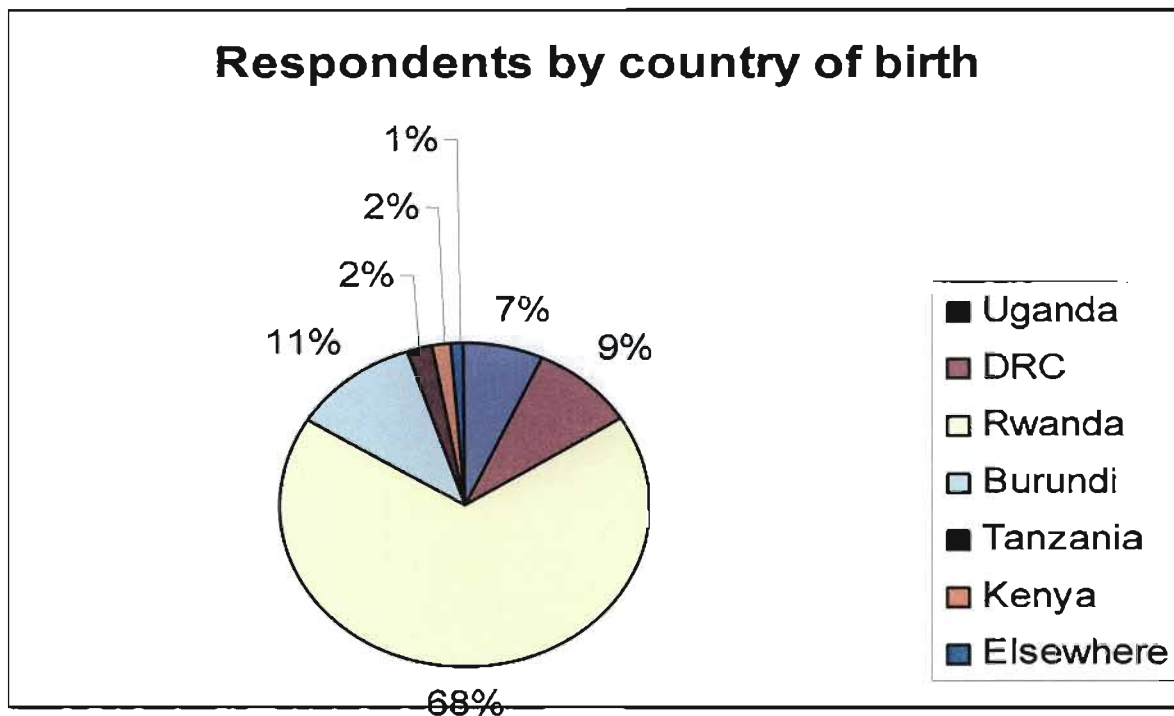


\* Respondents who participated in the baseline data collection phase only.

**Figure 4.1** Distribution of respondents by age

After the war and genocide of 1994 in Rwanda, many early Rwandan refugees who lived in different countries, came back in the country. The results in Figure 4.2 give some indications related to that situation. It is obvious that respondents who were born in Rwanda were in the

majority (68%) followed by the neighbouring countries, Burundi (11%), Democratic Republic of the Congo [(DRC), 9%], and Uganda (7%).



**Figure 4.2 Distribution of respondents by country of birth**

With regard to religion, respondents were found in various denominations (Table 4.1). The highest percentage (43%) belonged to the Catholic Church, whereas Protestant represents 33%. Six percent of respondents did not belong to any religious denomination. It is well known in Rwanda that more than 93% of the population are Christians (Mugabo, Nkaka and Lamlenn, 2002).



**Table 4.1 Distribution of respondents according to their religious denomination**

<b>Religion</b>	<b>Frequency</b>	<b>Percentage</b>
Catholic	262	43
Protestant	204	33
Seventh Day Adventist (SDA)	61	10
Muslim	49	8
Jehovah Witness	10	2
Hindu	3	1
Other	14	2
None	10	2
<b>Total</b>	<b>613</b>	<b>100</b>

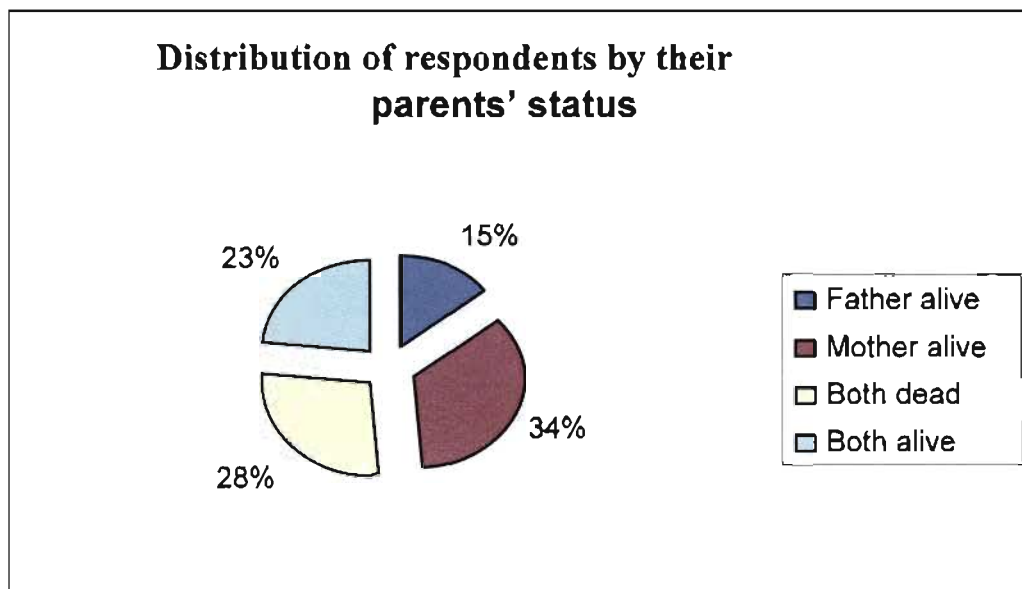
As shown in Table 4.2 less than half (47%) of the respondents who participated were funded by their parents. The majority were funded by different people or organizations. Among other sources, the Funds for Genocide Orphans (FARG) sponsored about 16% of respondents while a sister or brother funded 8%, social affairs (8%) and relatives (6%) also supported a significant number.

**Table 4.2 Distribution of respondents by their study sponsors (n=613)**

<b>Sponsor</b>	<b>Frequency</b>	<b>Percentage</b>
Father	176	29
Mother	113	18
Sister/brother	51	8
Insurance	27	4
Social affairs	47	8
Religious organization	21	3
Relative	36	6
FARG	97	16
Donor	22	4
Other	23	4
<b>Total</b>	<b>613</b>	<b>100</b>

Very few 16 or 26% of respondents could easily afford to pay for their studies. Others did not since, 289 or 47% (n=610) said that they paid their school fees with sometimes difficulties.

A cumulative percentage of 77% of respondents in Figure 4.3 shows that respondents have lost either one or both parents.



**Figure 4.3 Distribution of respondents by their parents' status (n=611)**

#### **4.2.1.2 Knowledge of HIV/AIDS**

The findings in Table 4.3 indicate that the vast majority of the respondents have heard about sexually transmitted infections including HIV/AIDS (99%). A very strong proportion (91%) of respondents confirmed that they knew at least one person from their communities living with HIV/AIDS. A total of 24% stated that they took care of a person living with AIDS (PLWA).

**Table 4.3 Distribution of respondents by HIV/AIDS knowledge**

HIV/AIDS Knowledge modalities	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Heard about STIs	600	99	10	2
Heard about HIV transmission	600	98	11	2
Is it possible to be protected from AIDS?	596	98	15	3
Know a PLWA from the respondent's community	556	91	54	9
Having taken care of a PLWA	146	24	465	76
<b>Total (n=611)</b>				

\*Missing cases explains different total in all tables

The results indicating respondents' views on various HIV/AIDS related statements further help to understand the extent of the respondents' HIV/AIDS knowledge and other related issues are shown in table 4.4. The overall mean of this knowledge was 54%. There are at least 5% of respondents who disagree with the positive statements as listed in Table 4.4. Additionally, the results show 21% and 31% of respondents who respectively strongly agree and agree in stating that most people who have the AIDS virus quickly show the signs of being sick.

**Table 4.4 Different views of respondents with regard to HIV/AIDS knowledge (n=613)**

Statements	Strongly agree (1)		Agree (2)		Disagree (3)		Strongly disagree (4)		
	Freq	%	Freq	%	Freq	%	Freq	%	Mean
HIV destroys the body's immune system	350	57	161	26	56	9	39	6	54
A blood test can tell if one has HIV antibody	480	78	75	12	24	4	26	4	59
AIDS is a STI	459	75	118	19	11	2	19	3	59
AIDS is transmitted through fluids (blood semen, vaginal fluids and breast milk)	381	62	179	29	35	6	11	2	55
People do not die of the AIDS virus itself but of the diseases their bodies cannot fight off	344	56	201	33	41	7	21	3	55
AIDS destroys a person's disease fighting ability	406	66	145	24	28	5	27	4	54
AIDS is caused by a virus	388	63	142	23	37	6	37	6	55
Condoms reduce the risk of getting the AIDS virus	217	35	282	46	56	9	51	8	50
Most people who have the AIDS virus quickly show signs of being sick	129	21	192	31	227	37	54	9	43
People who get AIDS virus through needle sharing can spread the virus to others when having sex	438	72	132	22	17	3	15	2	58
A woman with HIV can pass the virus to her foetus or unborn child	304	50	234	38	36	6	26	4	54
Overall Mean	54%								

There are many myths surrounding HIV/AIDS. Some of them have been listed and the overall mean of the young people responses was calculated (46%). Details are found in Table 4.5 About 14% of respondents agree that one can get AIDS from mosquito bites. Further findings were that 80% agree that a person must have lots of different sexual partners to be at risk for AIDS while, 77% agree that infected people without symptoms cannot transmit the disease and 43% agree that teenagers are less likely to get AIDS than persons over 20years old.

**Table 4.5 Respondents' point of view on myths attributed to HIV/AIDS**

Statements	Strongly agree (1)		Agree (2)		Disagree (3)		Strongly disagree (4)		
	Freq	%	Freq	%	Freq	%	Freq	%	Mean
One can get AIDS from mosquito bites	44	7	40	7	93	15	429	70	56
A person can get AIDS from kissing	79	13	146	24	195	32	180	29	45
A person must have lots of different sexual partners to be at risk of AIDS	344	56	148	24	43	7	66	11	27
Infected people with HIV always show symptoms	96	16	139	23	264	43	109	18	43
People with AIDS antibody but no symptoms can transmit the disease	385	63	89	15	32	5	100	16	28
Keeping in good physical condition is the best way to prevent getting the virus	141	23	120	20	146	24	198	32	42
A person can get AIDS by touching or hugging someone with AIDS	23	3	37	6	59	10	498	80	60
Only people who have sexual intercourse with gay men get AIDS	27	4	44	7	202	33	329	54	54
Teenagers are less likely to get AIDS than persons over 20 years old	89	15	176	29	167	27	168	27	43
If a women uses birth control pills, it lowers her risk of getting AIDS	23	4	36	6	179	29	362	59	60
Overall mean	46%								

#### 4.2.1.3 Voluntary Counselling and Testing (VCT)

From a list of service providers, PSI/Rwanda, an American international organization, was the most popular service chosen by respondents (37%) to access a Voluntary HIV/AIDS Counselling and Testing service. A private hospital or clinic was preferred by 21% of respondents. A proportion of 28% chose to be tested at their school clinic and 3% voted to be tested at any health facility that could offer the VCT services. Details are given in Table 4.6

**Table 4.6 Place of VCT as proposed by respondents**

Health facility	Frequency	Percentage
Private hospital/clinic	125	21
Centre for Treatment and Research on AIDS (TRAC)	41	7
Centre Hospitalier Universitaire de Kigali (CHUK)	97	16
School clinic	171	28
PSI	222	37
Association Rwandaise pour le Bien Etre Familiale (ARBEF)	73	12
Anywhere	21	3

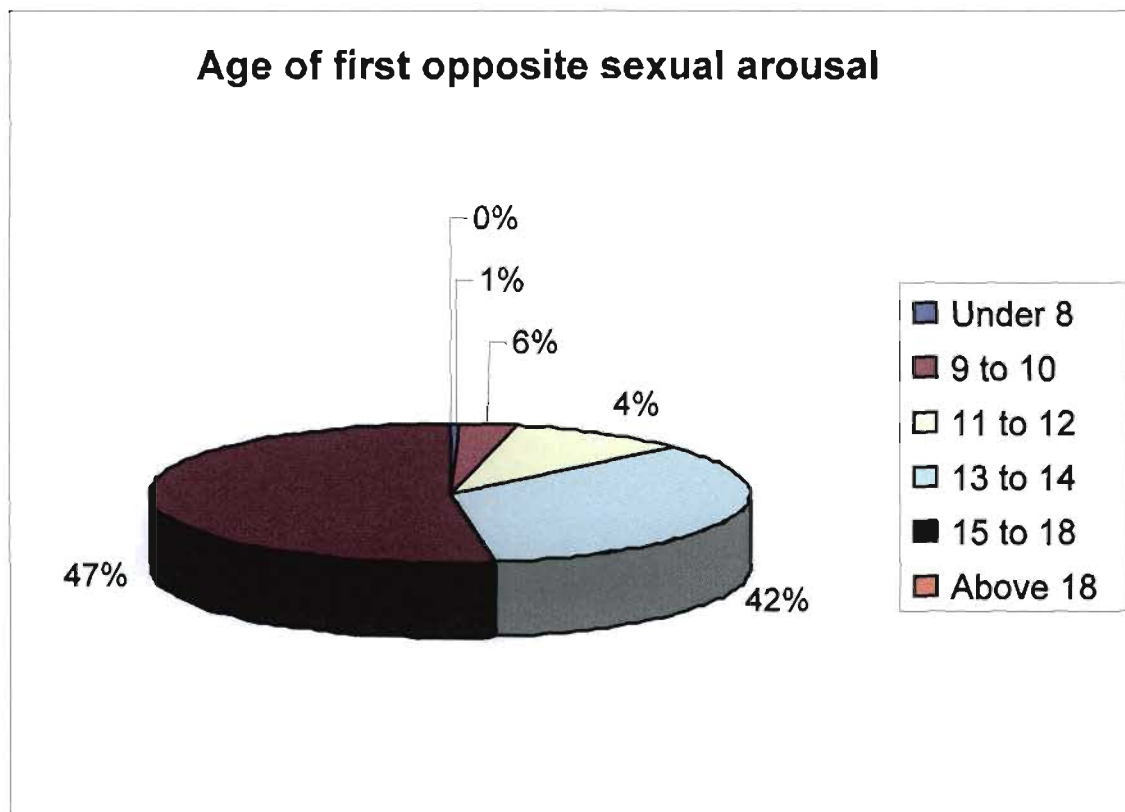
N =602 (number of responses since some respondents ticked more than one

#### 4.2.1.4 Risk behaviour

On the question regarding sexual arousal, which expresses a normal development and sexual need for a human being, the results show that a large proportion 470 or 78% (n=601) of respondents confirmed to have had such an experience.

Figure 4.4 shows that respondents experienced sexual arousal for the first time at an early age. Already 6% had that feeling while they were between 9 and 10 years old. It is obvious that the

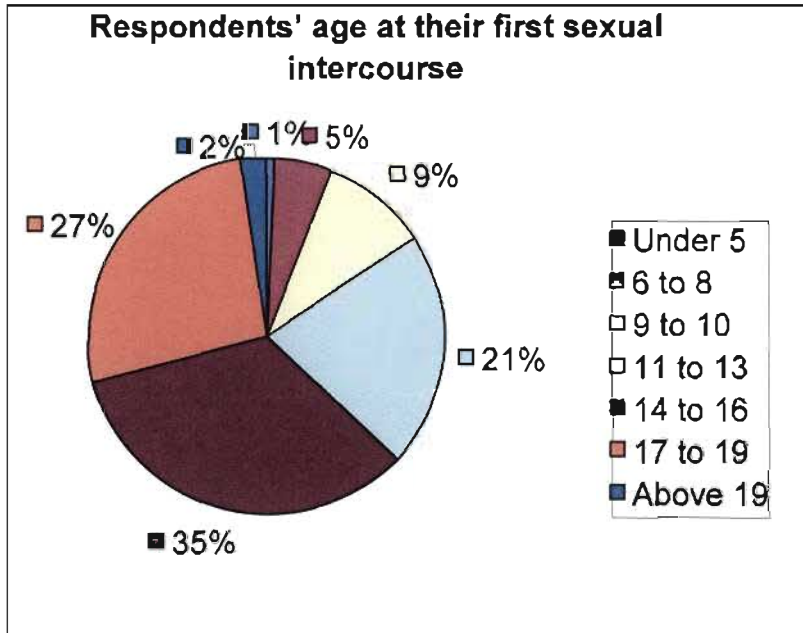
proportion increases with the age/adolescence. The highest proportion (89%) falls under the category of the respondents between 13 and 18 years old.



**Figure 4.4** Age at first opposite sexual arousal

To a very sensitive question on whether respondents have had sexual intercourse, the findings revealed that 44% of them reported having had sexual intercourse.

Figure 4.5 shows how sexual intercourse is initiated at earlier age. The majority of respondents had already had sexual intercourse before 18 years old and the highest percentage of 35% fall between 14-16 years old.



**Figure 4.5** Distribution of respondents' age at their first sexual intercourse

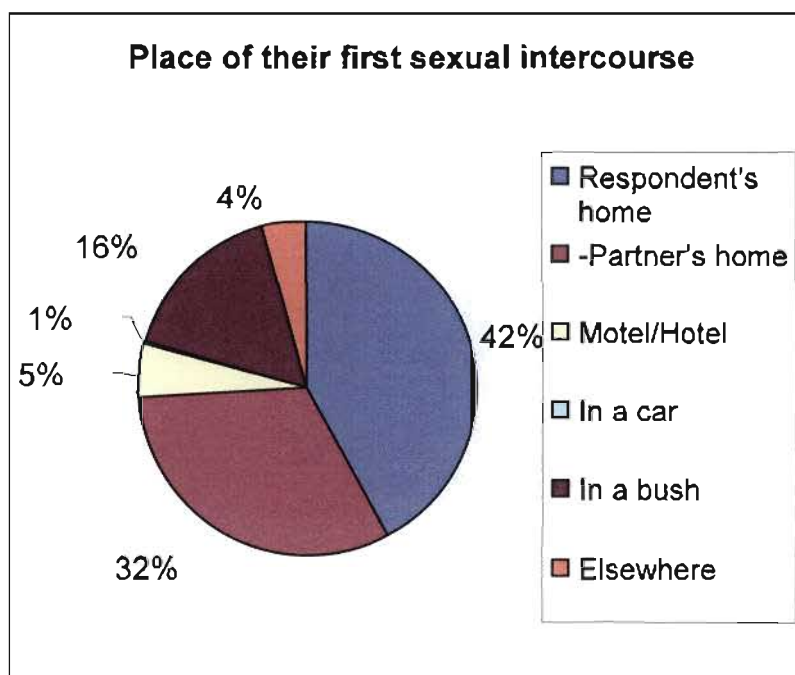
According to the figures in table 4.7 on gender and age of respondents at their sexual intercourse initiation, a gender imbalance was found amongst respondents. There were more males who responded to that particular question than girls. This difference is seen from earlier age (6 years old) and gradually up to 13 years old. However, an almost equal percentage is observed at the age between 14 and 16 years.



**Table 4.7 Distribution of respondents' age at their first sexual intercourse**

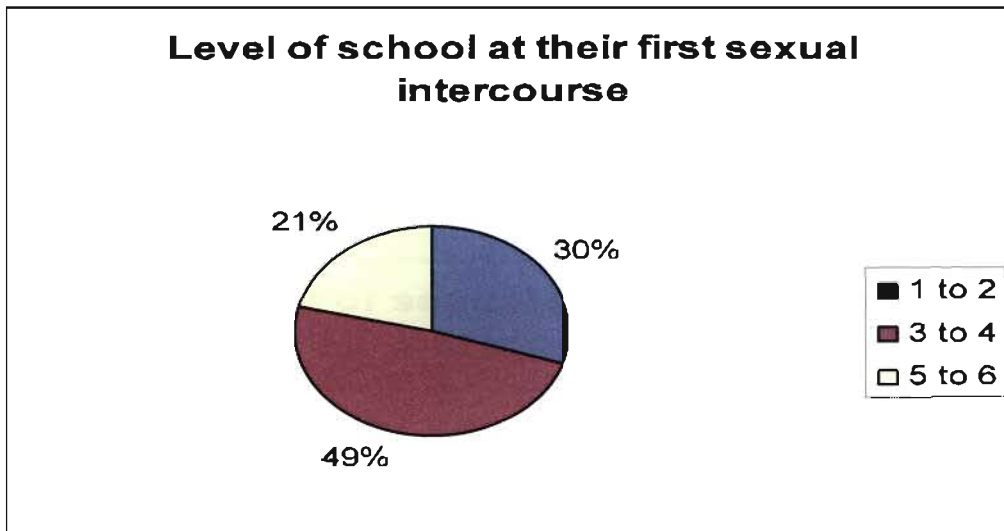
Age of first sexual intercourse	Gender		Total
	Male	Female	
Under 5	1 (1%)	1 (1%)	2 (1%)
6-8	15 (9%)	3 (3%)	18 (7%)
9-10	17 (10%)	7 (7%)	24 (9%)
11-13	37 (33%)	17 (18%)	54 (21%)
14-16	55 (33%)	31 (33%)	86 (33%)
17-19	37 (22%)	31 (33%)	68 (27%)
Above 19	6 (4%)	4 (4%)	10 (4%)
<b>Total</b>	168 (100%)	94 (100%)	262 (100%)

It has been discovered that very few respondents used a hotel/motel (5%) or a car (1%) as the preferred places for having sexual intercourse. Rather, a large proportion (74%) used their homes or their partners' home and 16% of the respondents had their first sexual intercourse in a bush. More details are found in Figure 4.6.



**Figure 4.6 Distribution of respondents by where their first sexual intercourse took place**

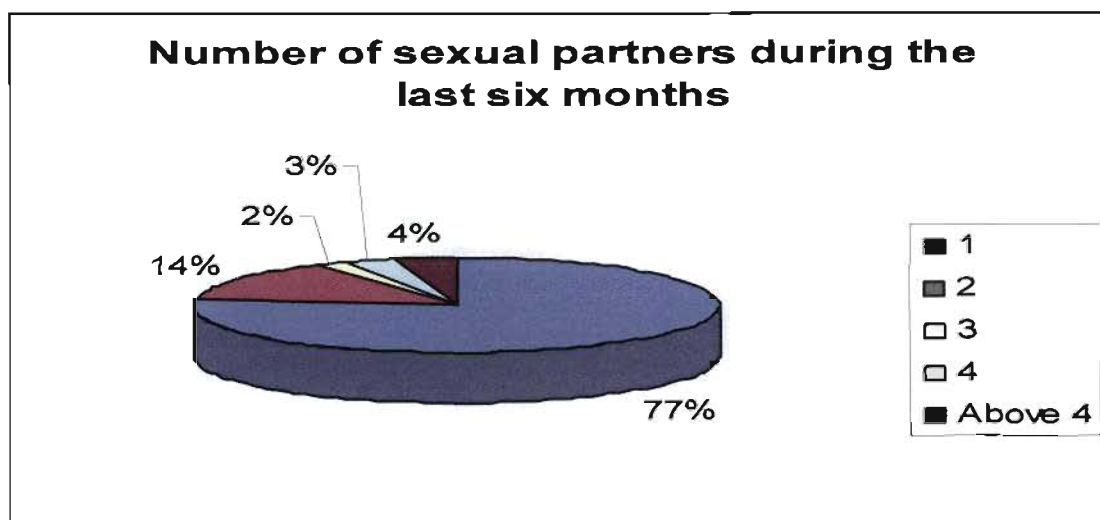
The data in Figure 4.7 shows that sexual intercourse is started when respondents are in a low grade at school. This is confirmed by the fact that 30% of respondents had their sexual intercourse when they were in the first or the second year of high school while 49% and 21% had sex in their 3-4 and 5-6 years respectively.



**Figure 4.7** Distribution of respondents by level of school at their first sexual intercourse

A total of 107 or 41% of the respondents had sexual intercourse whether at first time or not during the six months that preceded the survey.

The majority (77%) of the respondents, who confirmed to have had sex during the six months preceding the survey, had only a single partner. The remaining proportions in Figure 4.8 show, however, that there are respondents at high risk because a total of 7% of the respondents who had had sex with 4 and above different sexual partners.



**Figure 4.8** Distribution of respondents according to the number of sexual partners during the last six months

Amongst respondents who have had sexual intercourse, only 28 % used condoms. Observably at least 80% of respondents did not experience any of the listed risk behaviours in table 4.8 during their sexual intercourse. However, still there are many respondents who had encountered sexual intercourse within risky conditions. For example forced sex, sex while drunk and or on drugs count for 11%, 12% and 7% respectively.

**Table 4.8** Distribution of conditions for sex as described by the respondents

Sex conditions	Sometimes		Last two months		Never		N
	Freq	%	Freq	%	Freq	%	
Having sex in exchange for goods	26	10	3	1	221	88	250
Paying for sex	10	4	6	2	234	94	250
Forced sex	22	9	4	2	224	90	250
Had sex while drunk	21	8	9	4	219	88	249
Had sex while on drugs	13	6	2	1	253	94	250

#### **4.2.1.5 Factors influencing respondents' knowledge, attitude and behaviour**

While performing cross tabulations on items from the different tables above, the chi-square tests showed few significant differences between the variables. The findings under the following section include only the four items that showed a statistically significance:

- A correlation between respondents' gender and HIV/AIDS knowledge as a sexually transmitted infection was noted (value: 28.97, df: 3 and p: 0.000).
- A strong significant relationship was found between respondents' age and first sexual intercourse (value: 20.77, df: 24, p: 0.000).
- A strong significant relationship was found between respondents' gender and sexual arousal (value: 38.17, df: 1 and p : 0.000)
- A strong significant relationship was found between respondents' gender and the number of sexual partners (value: 27.01, df: 5, p = 0.000).

## **4.3 QUALITATIVE DATA PRESENTATION**

### **4.3.1 Introduction**

Qualitative data were generated by asking each respondent to write down on a piece of paper any concerns or experiences with HIV/AIDS, which they wanted to share. Without names, all respondents expressed their thoughts freely on these papers (n = 613).

It was realized, however, that generally, respondents were more concerned about their reproductive health issues rather than HIV/AIDS as specific topic. These reproductive health matters will not be presented here since the topic does not directly fit in this research.

Furthermore, interviews were conducted with some key informants amongst the respondents. Interviews were documented by the researcher who made detailed notes during the interviews.

The qualitative data was entered into NVIVO and research questions 1 and 2, were used as the main categories to code the data: knowledge, risk behaviour and VCT attitudes. Once the major themes had been identified, sub-themes emerged and were coded. These themes and sub-themes will now be described.

### **4.3.2 HIV/AIDS knowledge**

#### **4.3.2.1 General awareness and knowledge**

The respondents were aware of HIV's impact on the human body. During one counselling group, two respondents reacted to the images which had been shown at their school and said:

*"I do not want to watch video cassettes on people living with HIV/AIDS because they terrify me with terrible pictures"* Another respondent says *"When I saw one video of a man who*

*suffered from HIV/AIDS and other sexual infections, I could not believe it. I thought I was going to be affected exactly the same and got very scared”.*

These two respondents recommended that what they called “terrible” videos not be used and requested rather to be shown videos that give hope for those living with HIV/AIDS. On the other hand, as reflective in the next section, there are different statements made by respondents which show that the level of the respondents’ knowledge was very limited.

#### **4.3.2.2 Knowledge about HIV/AIDS transmission**

Despite the researcher’s assumption that educated people have excellent knowledge with regard to HIV/AIDS in general, the statements from the respondents listed below depict the extent to which the respondents hold erroneous knowledge about HIV transmission.

A number of statements from the respondents indicate a knowledge deficiency. These statements are as follows:

- *“An instrument used by PLWA and re-used two days later can transmit HIV”*
- *“In-depth kissing causes infection”*. One of the respondents when asked to explain this mentioned that it is *“because each partner swallows about 10 litres of saliva”*.
- *“HIV/AIDS is transmitted through blood. Are the female or male organs producing blood when having sexual intercourse”?*

- *“Sharing food and/or bath with a very ill person who has wounds in his mouth can cause infection”.*
- *“HIV virus cannot be seen before 3months. Does it mean that an infected person cannot transmit that virus at the same time”?*
- *“I have a doubt on the condom effects. I don’t think it protects well against HIV/AIDS”.*
- *“There is strong blood that resist/immune to HIV virus”.*

#### **4.3.2.3 Knowledge prevention and cure of HIV/AIDS**

Statements on the beliefs and misconceptions of the respondents have been summarized and quoted to show that respondents have poorly conceived issues around HIV/AIDS and reproductive health:

- *“Multiple sexual intercourses even between couples can later result in HIV/AIDS infections”*
- *“Teaching young people about HIV/AIDS can increase sexual practices. That is why we have been advised by our parents or seniors to avoid attending HIV/AIDS teaching sessions”.*
- *“A small boy under 15 years old who has never ejaculated cannot contract HIV/AIDS”.*
- *“AIDS can be cured by special prayers”.*

### 4.3.3 Attitudes

#### 4.3.3.1 Attitudes towards sexual intercourse

When asking why they engage in sexual intercourse and why they do not abstain from sex, respondents expressed similar attitudes but in different ways. There are some who could not believe that a person can be a teenager without having sexual intercourse. However their responses could be summarized in six main reasons:

- Gaining experience
- Curiosity
- Peer pressure
- Partner empathy
- Monetary gain
- Coercion.
  
- **Experience**

Respondents assumed that they would not be good marriage partners if they did not practice in sexual intercourse at early age. This seems to be supported mainly by boys. Some statements were:

*“A player without training does not know how to play. Thus we need to train our selves before we get into marriage”.*

*“To be a perfect driver, it is necessary to learn how to drive so, it should be the same for a boy to learn how to have sex so that he would be able to satisfy his future wife”.*



*“We boys should learn how to have sex and get used to it because one might marry a specialized wife and if she does not get satisfied, she could go out with other men”.*

- **Curiosity**

As one of reasons for having sexual intercourse, curiosity was mostly expressed by the respondents who wanted to test it for the first time. One of the respondents said:

*“If sex was not good nobody could get married. I guess, sex is very good even though I haven't done it”.*

- **Peer pressure**

Both girls and boys experienced peer pressure. They confirmed that they have long talks about sexual issues between them, either separately in terms of gender or in mixed groups. There are the respondents' quoted statements:

*“We are highly sexually tempted by old people especially university respondents who request us to be their girlfriends and we do not know how to overcome such temptation. We only realize later on that we did wrong”.*

*“I'm in love with one boyfriend for quite long time, almost two years. He gives me some stuff and we share whatever belongs to me as well. I love him and he loves me too much. Very recently, he asked me to have sex with him before we go for vacation and I refused. But now I*

*am being tempted to accept at least once as he requested since he became very angry with me and I still love him”.*

*“I have three girlfriends and I love them and they love me too but I haven't had sex with none of them. Now they have started to qualify me as erectile dysfunctional person. I wonder whether I should try one day but after having been tested together with my partner. I'm really scared of HIV infection”.*

- **Partner empathy**

Some of the interviewed girls confirmed that they had sexual intercourse because of empathy with their boyfriends. They expressed their belief that boys became sick if they were refused sex. These views are reflected in the following statement:

*“We help our boyfriends because after some times sitting with them they start to fall in a sleep or to sweat. Which means they are suffering and we accept to have sex with them”.*

- **Monetary gain**

In contrast with the statement above on empathy by girls, some boys accused the girls of having sex for gain. Girls agreed that some of them spend beyond their financial capacity. They express the wish to own expensive clothes, perfumes, jewellery and cell-phones. One of the respondents who strongly was supported by his colleagues reported:

*“In these days girls misbehave too much. They do not even want to establish relationships with us as their counterparts but due to the fact that they want costly stuff, they go find even ridiculous cheaper labour workers such as motorcycle drivers, hairdressers, bicycle drivers, taxmen. And that is where they get HIV/infection and later come back to infect some of us”.*

- **Coerced sex:**

Under this reason for sex, boys complained that girls dress in very short clothes which causes them to be sexually aroused and sometimes they get sexual urges which leads them to force their girls' to have sex.

Being forced into having sex was also confirmed by some girls. The most often mentioned group to have forced them to have sex were relatives or family friends from their respective homes. Some said they would not have sexual intercourse again because it was not enjoyable. Unfortunately the researcher did not have the opportunity to explore whether this statement came from the forced group.

Others said that they were forced to have sex with their teachers in order for them to pass classes.

#### **4.3.3.2 Attitudes towards condom use**

Almost every single person considered him or herself to be at risk for HIV/AIDS infection. A number of risk behaviours have been identified. The worst risk behaviour was that of unprotected sexual intercourse. The reason was that they failed to use the condom several

times when they wanted to have sex with a same partner. Several cultural issues were also mentioned. One young man said:

*“In the Rwandan culture it is not easy to negotiate sex with a lady. It requires often forcing her to have sex especially for the first time and we realize that in such a situation, there is no way to put on condom”.*

Another negative view on condoms has been expressed in these terms:

*“I heard that condoms have been contaminated by American ill-intentioned people just to destroy Africans. That is why some of us do not use them. We think that we can take a chance for not contracting HIV with casual sexual intercourse rather than acquiring it passively from condoms”.*

#### **4.3.3.3 Attitudes towards Voluntary Counselling and Testing (VCT)**

The findings revealed that most of the respondents recognized the importance of VCT, and some of them had positive attitudes with regard to VCT and had put forward some positive suggestions.

Most of the respondents wanted to know how the test is conducted, how long it takes, and the quantity of the blood to be withdrawn, and what instruments are used.

Further statements, questions or suggestions that reflect different VCT considerations are presented below:

*“While undergoing HIV test, the virus can be masked if a patient has taken some hot milk, two hours before the test. It could therefore happen that one of the partners lie to another”.*

*“Everyone should be tested even if he or she has not had sexual intercourse just to enforce abstinence”.*

*“I am 21 years old. I had sex with somebody that I am not trusting at all. Now, I am very scared with HIV/AIDS infection. What can I do to get tested at school if possible”?*

*“It has been reported that unserious health workers sell someone’s negative result and give to another a false positive result.*

*“HIV test should precede any relationship between two partners”*

*“Why keep test results secret? They should be published to create awareness to the rest of the community”!*

*“I have never had sex and nor have I received an injection. Is it necessary to go for HIV test?”*

#### **4.3.4 Risk behaviours**

With regard to risk behaviours encountered at school, girls are very tempted by material things, which their peers have, but they cannot afford. As a result they engage in risky behaviour for financial reasons.

One fourth form female respondent said that there are so many challenges they face while at school. She then described the situation to the researcher in confidence:

*“There are about two girls in fifth form who have a mission to hunt young girls in our dormitory in responding to outside men's request as a matter of business. They have cell-phones, which they strictly hide and keep on vibrator mode. At the time when everybody has gone to bed, they give a signal to the men as a proof that they have girls for them. Arrangements would be made to a specific place where a car could pick them up. Early in the morning around 5 am they bring them back to the school. She continued to say that they are only given small stuff like body lotion, perfume, dresses, etc”.*

A very negative belief with regard to sexual practices aimed to HIV/AIDS risk reduction and which was frequently voiced by the respondents was described as follows:

*“One pushes slowly the penis in the vagina (ikivumbikisho in kinyarwanda language) and leave it inside the vagina without any movement done but keep on only kissing one, another until ejaculation comes or a girl gets satisfied. Ejaculation, however, should not be done in the vagina. By using this technique we would have avoided creating entry points/wounds and contact of sperms with the vagina”.*

Another risky belief came from one respondent where he states:

*“I heard that a girl who has good experience in sexual intercourse consequently her vagina becomes big. So while having sexual intercourse she can escape from HIV infection because with big vagina she would not be traumatized thus no entry point for the virus”*

Further thoughts in the line of justifying sexual intercourse are listed as follows:

*“Sexual intercourse cures nodules that often appears on the face of ladies and also cures pain during menstruation”.*

*“There is no other way that a boy knows that a girl loves him without sex”*

*“Interruptive coital technique is one of the best ways for sexual satisfaction and also avoiding not only a pregnancy but HIV infection”*

*“Ponyoto, a term used to say masturbation is a way of avoiding risk infection. Although some of the young boys confirmed that they used this technique on a regular basis, most of the respondents expressed their concern about it as it could further affect their health status”.*

*“Caressing partner’s sex/ masturbation is a way of avoiding sex and therefore reduces the risk for infection”.*

In addition to the above risk behaviours, respondents pointed out a number of risky conditions they come across for having sex while at study. On one-hand boys (“petit poussins” in French which means little darling) reported that are tempted by widowers who have lot of money and who take them in hotels or motels for sex. On the other hand, the fact that some schools do not have enough space in their dormitories, they are obliged to live off school premises in small houses sometimes in slums under difficult conditions. It is there where they encounter temptations through seeking for help such as lift for transportation and other financial assistance.

Others accused nightclubs of being the focal point for all sexual seduction and drugs consumption.

Finally criticisms were directed at some respondents who set goals for having sex with different types and/or a large number of girls.

#### **4.4 VOLUNTARY COUNSELLING AND TESTING IMPLEMENTATION DESCRIPTION (Research questions 4 and 5)**

##### **4.4.1 Introduction**

This section gives a comprehensive description of Voluntary Counselling and Testing (VCT) as the major intervention of this study. It was carried out from February to June 2005. Its demand was higher than expected. In schools where sensitization was done, it appeared that peer influence played a big role. By the time a VCT session was due, a large number of respondents wanted to jump into the buses hired to transport respondents to the Health Centre/Clinic. The student manager had to intervene and insisted that only respondents, who had confirmed their attendance sometimes earlier (experimental group), were catered for. The interest in attending may have been influenced by the eagerness to get out of the school compound rather than genuine desire to be tested.

In conformity with the conceptual framework for this research and specifically its research Question 4, each step of the VCT implementation is described first and then the problems encountered during each step are described.



#### **4.4.2 Sensitization phase**

In summary, the sensitization phase included the following steps:

- The introduction of the researcher and obtaining permission
- The baseline survey
- The discussion with managers and Anti-AIDS clubs' leaders
- The spreading of the health message
- The special meeting and spreading of the testing message
- The registration process.

This phase started with the baseline data collection. It continued with the meetings the researcher had with school top-management and anti-AIDS club leaders who were responsible for spreading the message about the VCT programme in their respective schools. In this regard a health message as shown in Table 4.9 was addressed to the audience.

**Table 4.9 The health message**

Item	Message
Are you aware of VCT programme in the country?	The best answer to any of these questions is to attend VCT programme in your school.
Are you struggling with overcoming fear of being HIV positive?	
Have you been exposed to risks for HIV infection?	
Are you aware of current risk behaviours of your peers regarding HIV infection?	
Do you suspect your partner (s) of contaminating you with HIV?	
Would you like to know more about the magnitude of HIV/AIDS? Its transmission and prevention measures?	
Are you sexually active?	
Would you like to adopt positive behaviour with regard to sexual practice on the following ABC “Abstinence, Be faithful and Condom use” model?	
Would you like to know how to deal with HIV positive or negative results?	

To meet the respondents and take the process one step further, the researcher made a tour of the six schools that constituted the experimental sample for this research. During this visit, it was found that the testing message had been sufficiently circulated in four schools out of the six. Three schools had used their usual time for communicating with respondents on important issues, which is during lunch or supper time when all respondents are present. The other schools had posted the testing message on the notice board. In addition to these channels, it could be assumed that peer-communication also played a role in spreading the information. This testing message is displayed in Table 4.10

**Table 4.10 The testing message.**

<b>Item</b>	<b>Message</b>
Would you like to know your HIV serological status?	<b>Join the available VCT programme in your school</b>
Is there any benefit of knowing one's HIV status as early as possible?	
Do you know what the HIV test is all about?	
Have you ever been tested for HIV?	
Have you been exposed to risks for HIV infection?	
Are you aware of anti-retroviral therapy programme for People Living With HIV/AIDS (PLWA) in the country?	
Are you aware of exiting support services/clubs/association of PLWA?	

Although the testing message, in the form of an invitation to attend a special meeting, was initially addressed only to the 51 respondents per school who had participated to the baseline survey, a range of 62 to 110 respondents per school gathered for the information meetings as indicated in Table 4.11. The experimental group was drawn from the respondents who attended such meetings. Furthermore it is indicated that in most cases the number of attendees increased with the number of meetings. These meetings were usually held in the school amphitheatre or in a similar large available venue. To avoid interference with the school programme, the researcher used free time to hold these meetings. Most meetings took place on Wednesday afternoons. In one school, however, 1 hour was allowed during the morning break at 10:30am.

**Table 4.11 Respondents' attendances at sensitization sessions per school**

School	Session 1			Session 2			Session 3			Great total
	Males	Females	S/Total	males	Females	S/Total	Males	Females	S/Total	
<b>A</b>	26	12	<b>38</b>	37	10	<b>47</b>	36	26	<b>62</b>	<b>147</b>
<b>B</b>	39	20	<b>59</b>	25	22	<b>47</b>	57	31	<b>88</b>	<b>194</b>
<b>C</b>	30	36	<b>66</b>	46	26	<b>72</b>	38	32	<b>70</b>	<b>208</b>
<b>D</b>	-	-	-	14	18	<b>32</b>	48	39	<b>87</b>	<b>119</b>
<b>E</b>	68	31	<b>99</b>	53	34	<b>87</b>	62	43	<b>105</b>	<b>291</b>
<b>F</b>	42	33	<b>75</b>	43	47	<b>90</b>	65	45	<b>110</b>	<b>275</b>
<b>Total</b>	205	132	<b>337</b>	218	157	<b>375</b>	306	216	<b>522</b>	<b>1234</b>

Besides the testing message for VCT, the meeting focused on other topics related to HIV such as basic knowledge and prevention measures. In all the schools this phase was successfully conducted. It was found that respondents were keen to have an HIV test and many wanted to register to be tested. This particular task (registering respondents for VCT) was performed by the anti-AIDS clubs assisted by respondent management services. Its progress was further monitored by the researcher by telephone. Finally the lists were submitted to the researcher.

**Problems with the sensitization phase:**

In two schools VCT sensitization was delayed because:

- One school was about to close for a short vacation. It closed three weeks earlier than the government calendar indicated, because building maintenance was taking place.
- In the other school, the staff in charge of respondent management was not actively engaged and respondents alone could not manage the process. It required three trips to this school for the researcher to have the special meeting organised.

### **4.4.3 VCT Programme**

#### **4.4.3.1 Organization**

After permission was granted by three consecutive authorities, National Research Ethics Committee, the Department of Education in Kigali City and each School Principal, the researcher started to work with the staff in charge of respondent management as well as with at least 3 board members of each Anti-AIDS club to plan all VCT sessions for a particular school. The planning included:

- Identification of respondents who volunteered to attend VCT sessions
- Transport arrangements
- Number of sessions necessary to deal with the group who registered
- Planning for refreshments since respondents were to spend a whole day at the health centre
- Dealing with crisis/emotions in case of respondent testing positive
- Planning the schedule for follow-up meetings after tests.

Apart from one school which did not need transport since it was very close to the health centre, buses were hired as a means of transporting the respondents in the experimental group to the Health Centre. This transport strategy helped to manage the groups of respondents in terms of discipline and time.

A prior booking was made by the researcher at an appropriate Health Centre on either a Saturday or a Sunday to ensure that respondents were taken care of, without having to wait with the rest of the clients. The sessions were organized in groups per school with an average of 40-50 respondents per session (for detail see annexure 3). Kacyiru Health Centre was

judged appropriate since it is a newly established Health Centre, well-equipped and with the capacity to receive large groups of clients. This arrangement helped to harmonize the VCT because it was offered by the same staff, hence, it facilitated the collection of data in the same way for different groups. As the vacation period approached, however, a larger number (82) of respondents from one school was taken to a specialized private VCT service for youth namely “SIDA alert”; since the number was beyond the capacity of a health centre. This was an arrangement to overcome the expected problems with regard to uncertainty of the sample size due to its strong concept of ‘voluntary’ participation characterizing this study as described earlier on the methodology section. The initial idea was that if more than expected number of respondents accepted to go for testing, the researcher would find it difficult to deal with all acceptances. In such a situation, the respondents who really wanted to know their sero-status and who were not retained in the study sample, would be referred to other HIV pre and post-test counselling services that are available in the city.

All government VCT centres are free of charge. The private VCT services, however, charge approximately USD 3.50 per person.

At both the government and the private health facilities, a testing session was organized according to the Ministry of Health directives. These directives which require a maximum of eight clients per counsellor per session. It was also arranged that two laboratory staff members be present per session to deal with the testing. The policy of the Ministry of Health with regard to rapid testing in VCT at Health Centres was followed in this intervention. This includes:

- The first technique is the use of **Determine**: If the test is negative, a negative test result is confirmed. If the test is positive, the second technique follows.
- **UNI-GOLD**: This normally confirms the test by giving the same positive result as the previous. If it gives a negative result, they move on to the third test.
- **Capillus**: If this test confirms a positive result, it is declared positive. If the test gives a negative result, it is declared negative. In other words, if two tests out of the three give a positive result, the results are declared to be positive and if two tests out of the three give a negative result, the conclusion is that the client is negative.

On the other hand, if the above three step procedure fails and gives a confusing result, which the laboratory staff qualify as “invalid” or “undetermined”, a blood sample has to be sent to the National Laboratory (TRAC) for the Enzyme-Linked Immunosorbent Assay (ELISA) test. Kacyiru Laboratory staff, however, informed the researcher that they had recently introduced another test “Rapid First Test” which is not yet available in other Health Centres. It is more powerful than the first line (Determine) and is able to detect the type of the virus based on the antibodies identified.

Moreover, the staff said that careful attention is paid to avoid mistakes in the interpretation of the results. They said that so far they had not encountered difficulties leading to a challenge of test results. An efficient quality assurance mechanism run by TRAC is in place. Every month, the 10<sup>th</sup> blood sample of the tests declared positives and every 10<sup>th</sup> blood sample of the tests declared negatives from all Health Centres are sent to TRAC for re-check and feedback is given immediately. This is a simple random technique, which is systematically applied from

two sets of the test results: One for those who tested positive and the other for the negative test results.

Finally to ensure the quality of the counselling sessions, the Centre for Research and Treatment (TRAC) provides standard guidelines as follows:

- Reception of clients
- Group counselling on HVI/AIDS/STIs and sexual reproductive issues
- Individual counselling in a confidential environment
- Identification of risk factors
- Withdrawal of a blood sample after obtaining the client's informed consent
- Laboratory test
- Results given plus post-test counselling
- Discuss with the client his/her result and provide support as far as possible
- If the client tests positive an appointment is given for CD4 count followed by decision on ARV medication and further emphasize prophylactic measures
- If results are negative, prevention measures are reinforced and (11) follow-up/ support is offered to positive and negative clients.

In the course of each session, the respondents were assisted by both a school staff member in-charge of respondent management and the researcher.



### **Problems with the organization of the VCT phase:**

- The necessary funds for transport and refreshments for experimental group were granted after long waiting time. In terms of rolling out this kind of programme nationally, lack of funds for these two components might be a barrier.
- It was not always possible to use the Health Centre in the catchments' areas where schools are based. There is an obvious advantage for facilitating particularly HIV positive respondents to be part of a regular follow-up programme at a Health Centre that is more geographically accessible to their school but the Health Centres are generally too small to deal with large groups of respondents coming at the same time.
- One Principal caused a long delay because he refused to allow respondents to move away from the school premises despite the assurance of common transport to and from the health centre as well as the assistance of respondents by his school respondent management staff. More about this issue is described under ethical consideration section for this study.

#### **4.4.3.2 Pre-test counselling session**

A total number of 434 respondents went for testing. An interactive group counselling session with a maximum of 51 respondents who attended the VCT on a particular day was conducted before commencement of the pre-test individual counselling (eight respondents per counsellor). Many questions on issues around HIV/AIDS, Sexually Transmitted Infections (STIs), and reproductive health were asked by the respondents. The counselling staff of the Health Centre responded using available teaching aids. Respondents looked as though they

enjoyed the interaction with the counsellors very much. One could see boys and girls expressing their thoughts and feelings freely.

On completion of all respondents' registration by code, consecutive numbers from 1 to 8 and 9-16, etc; were attributed to respondents. This interval is in line with 8 respondents allocated per counsellor. Therefore each counsellor could easily identify his/her respondents by simply calling the numbers of its group and at the same time each respondent could easily recall his/her counsellor during the pre and post counselling session.

#### **Problems during the pre-test counselling phase:**

- Most of the time a group counselling session had to be stopped due to time constraints. Between 45 and 60 minutes were usually spent on this phase.
- There was sometimes a shortage of forms especially for the laboratory, coding forms or informed consent forms. It required the researcher to make photocopies in town far from the Health Centre.
- As the VCT was offered during weekends, there were some delays in starting when the staff came late.

#### **4.4.3.3 Testing session**

Individual counselling sessions were conducted in different offices and enough time (20-30 minutes) was allowed for further discussion with each respondent on particular concerns with regard to the HIV test, its implications and how its outcomes should be addressed. Thereafter laboratory staff were called to withdraw a sample of blood and the next respondent was

called. At the end of this session respondents were given refreshments organized by the researcher while waiting for the results. This was again a good time for the researcher to interact with them. Some respondents told the researcher that they were very scared about obtaining their results in a couple of minutes, which they assumed were likely to be positive.

After approximately an hour and half, the results were ready and the last session (the post-test counselling) started. In this session, RPR which stand for syphilis test status was given in addition to that of HIV. A further appointment was made by the counsellors for the respondents who had tested HIV or RPR positive for CD4 testing or for the syphilis management and the orientation on available support services. Then one by one, respondents according to the numbers allocated, entered the same room where the pre-counselling session had taken place, for post-test counselling.

**Problems with the testing session:**

- According to the Ministry of Health policy, a tested person has the right to access his/her results. Proof of having been tested is given in writing, but the specific test result is not mentioned. This practice does not help some respondents, especially those who tested negative and who wanted to show the results to their partners or classmates.
- The respondents who communicated with the researcher in this regard said they did not believe whatever status was told to them by classmates. Four respondents (one female and three male) asked the counsellors to share their results with their

girls/boyfriends. This was significant to the researcher since it shows the level of sexual partnership they were engaged in.

- Despite the refreshments provided by the researcher, the waiting period was an anxious time for the respondents.

#### **4.4.3.4 Post-test counselling session**

A total of 12 respondents, n= 434 (eight males and four females) tested positive which represent 3 % of all the respondents. Reactions from some of the tested respondents are discussed in this paper. Further results indicated that 5 respondents tested syphilis positive.

To ensure emergency assistance after respondents have been tested, the researcher's contact details (Mobile phone, email and work office address) were made available to them. These contact details became useful to respondents who were HIV positive and who wanted further assistance. More detail is given on the follow-up section below.

- **Immediate coping reactions with HIV test results**

Although respondents reacted with shock and sadness on being told about their positive status, all were assisted through counselling to manage these emotions before they left the counselling room. Each respondent was told by his/her counsellor to strive as much as possible to hide his/her result before he/she walked out of the door especially when the result was positive. This was well done because not a single person who tested positive could be identified by his/her physical reactions while driving back to their respective schools. On the

other hand, some who tested negative would jump with joy and shouted loudly. This show of emotion, however, did not necessarily persuade others to believe them to be negative.

The researcher was questioned by curious respondents who wanted at least to know the number of HIV positive among the group. They wanted to have an idea on the magnitude of the infection among schoolmates. Consequently the researcher promised to reveal the average number per school during the follow-up sessions.

The Social Package for Social Sciences software (SPSS) was used to analyze quantitative data from the checklists. The Table 4.12 summarizes the results on the feelings/emotions expressed by respondents during pre and post-testing sessions. On the one hand the analysis revealed ten out of twelve items that ranged from 72% to 100%. The other items “being sexual active” and “testing for two or more times” had frequencies of 55% and 5% respectively. On the other hand the post test results indicated only one out of 12 respondents who tested positive felt guilty, but ten (83.3%) were anxious. None presented with anger. Finally all positive respondents were committed to avoiding spreading the virus to other people.

**Table 4.12 Responses of respondents during pre and post-test counselling**

Pre-test session			Post-test session		
Item	Freq.	%		Freq.	%
<b>The respondent understands each of the following items:</b>			<b>The respondent is:</b>		
... the reasons for test	259	99.2	... ready to cope with positive results	9/12	75
... the basic concepts in relation to HIV/AIDS including the window period	245	93.8	... guilty	1/12	8.3
... the meaning of the test	261	100	... angry	-	-
... confidentiality of the results	261	100	... anxious	10/12*	83.3
... safe sex including use of condoms	261	100	... committed to avoid transmitting/spreading (if positive), the virus to other people	12/12*	100
... self evaluation/assessment of risks or exposures to HIV infection	261	100	... committed to abstinence and or avoid unprotected sex for maintaining his/ her negative status	12/12*	100
The respondent makes a plan to disclose to his/her result	240	72.1	... planning to change his/her behaviour	258	98.8
The respondent makes a plan to cope with results	261	100	... convinced by his/her results	<ul style="list-style-type: none"> <li>❖ Yes 259 99.2</li> <li>❖ No 2/12* 16.6</li> </ul>	
The respondent is sexually active	145	55.5	... ready to re-do the test if done during the window period	7/249	2.8
Frequency of test:			The testing results are:		
❖ First	249	95.4	❖ Positive	12*	4.6
❖ Second time or more	12	4.5	❖ Negative	251	95.4
The respondent sign an informal consent	261	100			
N = 261 (Number of responses)					

\* Number of respondents who tested positive

Most of the counsellors reported that the post-test counselling went smoothly because a large number of the respondents had tested negative. These negative respondents, however, did not allow time for counsellors to discuss with them further on strategies regarding maintaining their HIV negative status. The counsellors said that after the respondents were told about their negative status most of them were just excited, giving impression of being impatient to leave in the counsellors' office.

Furthermore, for collecting qualitative data, focus group with counsellors on completion of each counselling session and interviews with the counselling organizers considered as key informants amongst the counsellors were conducted. Interviews were documented by the researcher who took copious notes. The qualitative data was analyzed by reading it through and identifying themes. Four major themes that encompass the reactions of the respondents were identified. There were respondents who were:

- Surprised at negative results
- Not surprised at negative results
- Not surprised at positive results
- Surprised at positive results.
  
- **Surprise at negative results**

One counsellor indicated that a respondent, who was overwhelmed with being negative, asked "Did you really test my blood well?" She could not believe the negative result because she had engaged in sex several times without protection. And another who expected to be positive

due to the fact that both of her parents had already died from HIV/AIDS, expressed her happiness by loud cries in the counsellor's office, when she found she was HIV negative.

- **Not surprised at negative results**

Some of respondents were confident that they would be HIV negative when they come for test and they were not scared of the results. This is illustrated by one statement made to the counsellor when he carelessly injured himself after withdrawing the blood sample. The respondent told him "...*don't worry. I know my blood is free of HIV*".

- **Not surprised at positive results**

By contrast, one HIV positive respondent reacted just once "*Eh I am positive!*" and she kept quiet. Ten minutes later, she said to the counsellor, "*It's not surprising, because I had sex with my boyfriend long time ago but the only worry I have now is how to tell this story to my new boy friend whom I have very recently agreed to marry! I am thanking God because I haven't had sex with him*". She asked for the counsellor's telephone number so that she could continue to seek further psychological support from her.

- **Surprised at positive results**

The quotations that fall under this item are the same as some of responses given by the respondents to the question "How respondents felt of being HIV/AIDS positive while studying". To avoid repetition, these quotations are therefore found under the subsection "Informal contact initiated by respondents" in the forward pages.



During follow-up sessions, the researcher managed to collect 96 pieces of papers that were distributed and completed by respondents. The aim of distributing these papers was to generate information with regard to their reactions across the VCT process. The items listed in the table 4.13 were used as to collect additional information to the checklists used by the counsellors.

The findings displayed in table 4.13 indicate a cumulative percentage of 43% of the respondents who were scared before they knew their results. While among 29% and 14% were extremely happy and very surprised for testing negative respectively, 55 % were not surprised for testing negative. Finally 2% and 5% were surprised for testing positive and not surprised for testing positive respectively.

**Table 4.13 Reactions of respondents during VCT**

	Frequency	Percentage
<b>Before test</b>		
Very scared	32	33
I suspected myself	10	10
Sure of being negative	56	58
<b>After test</b>		
Extremely happy	28	29
Very surprised about testing negative	14	14
Not surprise about testing negative	53	55
Surprise about testing positive	2	2
Not surprise about testing positive	5	5
Total of respondents (n)	96	

- **Formal follow-up session (later coping mechanisms with HIV status)**

Two-month follow-up sessions for all respondents tested were organized according to each school's schedule. This was in agreement with the management of the school and the team leader for each Anti-AIDS club. Except in one private school, every Wednesday afternoon was free. Boarding respondents were free to choose any activity such as sport, doing washing,

prayer/choir, and other social activities including Anti-AIDS clubs. It is during this particular time that the researcher met with the respondents in their respective schools. They became very comfortable with the researcher and had many discussions with him on either the testing and VCT messages or reproductive health issues. Some video cassettes on the prevention of HIV infection, care and living positively with HIV/AIDS, were shown.

In order to give every respondent a chance to benefit from the follow-up meetings, at least two sessions were conducted per school during school break times (12.00-14.00). Notice of the meeting was given through the school management and Anti-AIDS club leaders. At the end of each session, further individual contact was made possible either by telephone, email or face to face with the researcher. Therefore, of the 12 respondents who tested positive, seven attended individually. Data of those who attended meetings per school is found in Table 4.14.

**Table 4.14 Follow-up attendance of respondents per school per sessions**

School	Session 1			Session 2			VCT attendees
	Males	Females	S/Total	Males	Females	S/Total	
<b>A</b>	17	10	27	14	10	24	48
<b>B</b>	22	10	32	12	47	59*	52
<b>C</b>	40	22	62	37	32	69	83
<b>D</b>	25	18	43	17	20	27	46
<b>E</b>	66	42	108*	82	40	102*	96
<b>F</b>	68	21	89	75	40	115*	109
<b>Total</b>	-----						434

\* Respondents exceeding VCT attendees

- **Informal contact initiated by respondents**

One respondent who was RPR positive, emailed the researcher to ask about adequate treatment for Syphilis. Seven HIV positive respondents out of the twelve (58%) (five males and two females) met the researcher for different reasons. One respondent (A) called to say that he wanted to join a support club for People Living With HIV/AIDS (PLWA) and another (B) came directly to the researcher's office requesting information on existing financial support service particularly for respondents. The third (C) asked about how to disclose his results to his uncle who pays school fees for him. The researcher managed to meet these respondents and attempted to address their problems.

As discussed earlier in the conceptual framework and methodology for this study, a list of supporting services was prepared prior to the study and some had been contacted already by the researcher prior to the counselling sessions. Therefore these seven respondents were introduced to the relevant services that took care of them adequately. During the sensitization and also follow-up sessions, the existing support services were always mentioned to candidates for VCT. To date there have been no further queries received from the seven respondents who tested positive and sought further help.

In trying to assess the respondents' coping level with their HIV positive status, the researcher asked each of the seven respondents the following questions "How do you feel about being HIV positive while studying?" and "How did you get infected?"

**Respondent A said** *"It was indeed difficult for me to believe it because I could not at all think I would be infected at this young age. I am only 19 years-old and the fifth born in senior*

five (S5). *I thought I would enjoy my future life like other boys of my age now I don't think I will make it despite the fact that you said there are antiretrovirals". He continued to explain that "After two days I told myself I have to forget about my status otherwise I am going to lose everything. Since then I started to prepare my quizzes".*

**Respondent B** said *"Listen, I only accepted it when I went to another testing service than the one we used with you. I am young, 20.5 years-old. I think to have been infected by one older cousin of my Mom who used to stay in our house for study. She initiated me for having sex with her when I was sixteen but since then I never had sex. I am very concerned and I would like just to meet other young persons who are infected like me because I was told by the counsellors that it helps".*

**Respondent C** revealed *"I do not know how I should tell my uncle that I am HIV positive. He is very serious and I don't think he will tolerate me. Honestly I don't even know how I got infected".*

**Respondent D** replied *"My mum died of Tuberculosis and my father died before her I am not sure if they both died of HIV/AIDS. We are three of us and I am the last born of 18 years old. I did not expect to be HIV positive at the moment and I do not know how to share this bad news with my siblings".*

**Respondent E** states *"When I was told I was HIV positive, I could not know what to do but later on in my bed I just wondered how can God punishes me in this way although I am not as much a sinner than other girls of my age who have been sexually active for years. I only met one man who is married but healthy until now".*

**Respondent F**, a boy of 19 years continued to refute his result and said *“I don’t really trust the test because I cannot understand how I can be infected. I never engaged myself in risk conditions like sex. Maybe I got it from hair cut? I don’t know, I will re-check from another health facility. Currently I am not just sure of anything”*. The researcher encouraged this respondent to evaluation and in meantime, further information on the HIV transmission modes rather than unprotected sex was given as to introduce the possibility of other factors which might have resulted in Respondent F becoming infected.

Finally **Respondent G** stated *“I was not surprised at all. I was only scared to be told my status. As soon as I knew I was HIV positive, all my fear disappeared. I suspected myself because I suffered for STIs some times ago. I have been treated but I am not sure if I am cured. There are some nodules on my penis and a woman that I used to have sex with is dead. So there is nothing I can do now, but I would like to consult for ARVs medication. This testing programme came on the right time for me because before I was scared to go alone”*.

- **Behaviour Change**

In terms of behaviour change, results from the interactions with respondents and the baseline survey indicated that most of the respondents were classified as being at the second (contemplation) of the five stages of behaviour change described earlier in the conceptual framework. It was found out that respondents were aware of the fact that HIV/AIDS is a terrible disease with no cure or vaccine prevention. They knew its mode of transmission and thus prevention measures. They could also evaluate losses since many of them (91%) knew at least one person who suffered from HIV/AIDS in their community of origin.

- **Strengthening Anti-AIDS clubs**

Most of the respondents in the experimental group the researcher spoke to after VCT, showed greater willingness to take some actions to change. From the sensitization phase up to the follow-up, respondents mentioned two HIV prevention measures which are condom use and abstinence. Most of the education message either from the researcher or from respondents' peer group, emphasized these prevention measures using open discussions and demonstrations, sketches, videos and poems.

Sometimes the researcher used the strong Anti-AIDS club of the Kigali Health Institute (KHI), a higher learning institution for health sciences, to invite respondents to the meetings. The secondary school respondents enjoyed meeting higher education respondents and exchanged some experiences with regard to sexual risk behaviours and strategies to overcome them. To strengthen anti-AIDS clubs, the researcher managed to establish a link between the KHI Anti SIDA club leaders (eight) and their club counterparts of secondary schools in Kigali (18 , three per school). KHI club has respondents from different backgrounds in health related issues (including nursing and midwifery, laboratory, dental, physiotherapy and environmental health) which would help to assist and empower the junior respondents with skills to handle HIV and AIDS issues among themselves on a long-term basis.

All these efforts allowed the respondents to move from the second stage (contemplation) to the third (preparation) which stipulates the readiness to change and taking prevention

measures as priorities. One statement by a respondent captures this moment: *“after knowing that I am HIV negative, I have once and for all decided to quit alcohol because I had unprotected sex when I was drunk”*.

Despite the existence of structures aimed to youth programmes’ development at the national level, there were concerns that VCT clubs exist but almost not functioning. On the question of why their organisation was not successful? The researcher was told by the respondents that many people come to meet them but there is no continuity of their actions and no clear and sustainable plan was available so far. They pointed out their complaints that *“...most who come to us are University respondents from psychology, social and public health for their research”*. *“They only come to confuse us”*. Respondents continued to say *“others are health workers including white people we don’t see regularly”*. They again argued that *“sometimes guided by our teachers who are also members of the club, we do many interesting things but later we don’t know what happens we don’t continue”*. The other reason they gave was that active respondent counterparts in the club were not permanent they keep on either changing schools or after completing their study they leave.

All this was mentioned to the researcher because they said at least he has been assisting them for quite a long time (almost two years). They were very keen to receive outside persons for further assistance. Until now they are still sending emails. The researcher hopes to continue working with them as much as possible even after completing this thesis. The researcher also acknowledges enjoying working with respondents, and got to

be known by most of them especially those staying in the school residences. In addition, the researcher became familiar to them since they could stop him anywhere on the street just to greet him and to remind him where they met. One respondent told others in a group and said *“when I see this man coming at our school, I am just afraid of being infected by HIV/AIDS”*. This information was revealed to the researcher during a follow-up group counselling session when that particular respondent found out that she was HIV negative.

It was clear that where school principals were responsive in helping Anti-AIDS clubs, the rest of VCT activities went smoothly. Only in one school, after sensitization, the Principal refused the researcher to bring the respondents to the Health Centre for testing. The researcher insisted with no luck until this Principal said *“the respondents are not my children you have to apply for another permission from the department of education. The previous permission you obtained is not enough”*. The researcher went back to the above department and a permission letter was granted. Then the VCT activities were carried out like in other schools. It took some time to clear this situation. In the mean time the researcher was called by either the respondents who had registered and were waiting for the VCT to take place or by a staff in-charge of discipline in that school who did not want to engage himself in the discussion with the Principal in sorting out the problem but wanted to know what was the final decision so that he could schedule to accompany the respondents to the Health Centres. He said also that he was being asked by the respondents why VCT sessions delayed to take place. This showed the researcher the extent of VCT demand in respondents.



- **Behaviour change**

The fact that respondents requested condoms from the counsellor during individual counselling session shows that these respondents could be classified as being in the fourth stage (action) of the behaviour change model. Other findings indicating this stage are described through the analysis of the respondents' commitment/action plans towards behaviour change after VCT. Qualitative data analysis on interviews done at follow-up meetings was performed as follows:

When reading through the statements made by respondents in connection with their willingness to take further steps in changing their behaviour, it was realized that most of the statements fall under the ABC (Abstinence, Be faithful and Condom use) model. Thus using the QSR Nvivo software, the concepts of this model were applied as the main categories to code and analyze the findings. A node namely "other decisions" was added since it encloses the statements which did not fit well in the ABC model. Below is the detail of this analysis.

- **Abstinence**

This concept was repeatedly mentioned by different respondents and further pointed out with statements related to other concepts of the above model. The following expressions were made:

*"I have to prevent myself from HIV/AIDS infection by abstinence with all my energy".*

*"I will abstain until I get married".*

*"My ultimate goal is abstinence or condom use if failure".*

*"Avoid sexual intercourse and other methods of HIV/AIDS transmission".*

*"Never put myself on the risk of HIV/AIDS infection".*

*"Abstinence is number one, until I get married to a girl whom I will also have ensured her HIV/AIDS negative status before".*

*"Since I discovered that I am HIV negative, I will try my best to prevent against this infection as much as I can"*

*"I have decided to be away from sexual behaviour".*

More so, strong statements on religious beliefs were made as the main reason for maintaining abstinence which include:

*"I swear I was born in a Christian family and my parents told me that having sexual intercourse is a big sin. This helped me very much to avoid sex. I don't think I will fall in a sin that I haven't done before in my younger age. I fear God to punish me if I am engaged in sexual behaviours. I have to pray hard so that I am protected as much as possible by God himself".*

*"I have to avoid behaving contrary to the will of God".*

*"Condom protects against HIV/AIDS but does not protect against sin"*

*"I am a boy of 18 years-old; I am praying hard that God helps me never to have sexual intercourse before marriage".*

*“VCT reinforced my right knowledge I got from the Bible”.*

- **Be faithful**

Although most of respondents were not married, they believe in being faithful to their partners.

This practice could express the fear of respondents in connection with HIV infection. The following statements, however, show that the faithfulness does not serve as a guarantee for not using condom while having sexual intercourse with their partners.

*“I can only have sexual intercourse with only one boy and whom I am aware of his negative status”.*

*“Use condom and not have different girlfriends, just one”.*

*“I have only one girlfriend and all the time we have sexual intercourse we use condoms.*

*“I will try my best to avoid sexual intercourse with other partners beside the one girl I have”.*

- **Condom use**

Condom use was the most common tactic to escape from HIV infection. A total of 40 (24%) responses were noted. The following various statements on the decision to use condoms were formulated:

*“Since it is not easy for me as a young gentleman to avoid sex completely, I use condoms when I meet somebody else beside my regular and permanent girlfriend”.*

*“I will day-by-day walk with condoms because as a human being highly sexual active, anything can happen on my way, I can fall in love and have unexpected sexual intercourse”.*

*“I will use condoms because it prevents against pregnancy and HIV/AIDS at the same time”.*

*“As I know that I am negative, I will never go back to unprotected sexual intercourse”.*

*“I have to be very careful with regard to sexual practices. If it happens that I have sex, I will use a condom. This will be strictly maintained until I get married”.*

*“I will never have sexual intercourse without a condom”.*

- **Other decisions**

Statements made by respondents reflect their decision on the implementation of the acquired knowledge on various prevention strategies to mitigate HIV infection especially its mode of transmission. These strategies are summarized in seven points as follows:

- VCT advocacy
- Educating others
- Stigma reduction
- Avoid sharing skin penetrating instruments and using unauthorized health practitioners called “MAGENDU”
- Avoid any situation leading to sexual intercourse

- Protect others against HIV/AIDS.

Below is a pertinent sample of respondents' statements:

- **VCT advocacy**

*"After been tested, I have decided to sensitize other friends of mine to go for VCT, so that they know their status. If HIV positive, they should not be desperate because at least these days there are support services and treatment for the AIDS symptoms. Then, for those who are negative to adopt positive behaviours".* An approximation of this statement was made by 13% of the respondents in experimental group. It showed that many of them understood the importance of VCT and their willingness to advocate for it.

*"I will help others to understand the side effects of HIV/AIDS and sensitise them for VCT".*

*"I will sensitize others for VCT because ARVs are now available".*

- **Educating others (IEC)**

Most of the statements made by respondents show their willingness to share their experience with friends or classmates. Thus their contribution was reflected by the concept "sensitisation" which they mostly used to express their actions as revealed below.

*"I will stick to my strategy of abstinence that I have adopted before and teach others my experience".*

*“I have decided to assist my friends with information about HIV/AIDS preventive measures”.*

*“I will provide information to others with regard to the importance of abstaining from sexual intercourse which is the primary source of HIV infection”.*

*“I will sensitize others for HIV/AIDS prevention because it’s a terrible disease”.*

*“I will sensitize others to avoid sexual intercourse and infected people to avoid spreading the infection”.*

- **Stigma reduction**

The following statements made by respondents revealed that they had sympathy towards their infected peers:

*“Never reject a person infected with HIV/AIDS”.*

*“Help as much as possible a person living with HIV/AIDS”.*

*“Show love to people living with HIV/AIDS as well as those affected with AIDS such as orphans”.*

*“Help infected people to cope with AIDS in their daily life because they would like to live like others”.*

*“Assist and comfort people living with HIV/AIDS as much as possible”.*

- **Avoid skin penetrative instruments and unauthorized health practitioners**

A number of respondents believed that HIV/AIDS is not only transmitted through sexual intercourse and therefore came up with statements on the above item. The following statement was the most voiced:

*“Avoid anything that can harm my health and which can lead to HIV infection such as informal/unauthorized healers and instruments used by other people”.*

- **Avoid any situation leading to sexual intercourse**

In striving to make plans for avoiding unintended sexual relationships with their partners, respondents formulated the following statements:

*“Avoid closeness with girls because it pushes one to think about making sexual intercourse”.*

*“Avoid kissing”.*

*“Avoid extensive leisure with girlfriends”.*

*“Avoid alcohol and any type of drugs”.*

- **Protect others against HIV/AIDS**

Only one statement was made by an infected respondent as noted:

*“As I discovered to be unlucky HIV positive boy, I will try my best to not infect other innocent schoolmates or other people”.*

The final stage (Maintenance) of behaviour change model that stipulates actively continuing to change ones' lifestyle is thought to be beyond the scope of this study because from the researcher's point of view, it would require another time to evaluation the implementation of the above decisions taken by respondents and thus provide appropriate information.

### **Problems during the follow-up:**

- Despite the measures put in place by the researcher to follow-up HIV positive respondents, only seven contacted the researcher for support. Among the seven, four communicated with him especially about their positive status and three sought direct assistance. The reasons why the other five respondents who tested HIV positive did not communicate with the researcher after the post-test counselling are not known. They might have been afraid that their status might be discovered by their classmates if they had made contact with the researcher (stigma problem). They also may have sought support on their own, since information was widely circulated to each participating respondent in this study. The researcher could not enquire whether they had contacted Anti-AIDS club leaders, since that could disclose their status.
- It was not easy to comfort a young respondent who presented emotions when he or she was not expecting to be infected with HIV. Since the researcher could not contact them, and had to depend on them making the first contact, one felt that support might not have been enough.
- Anti-AIDS club members expressed the need for increase their capacity to assist their schoolmates more efficiently. Although being members of the club allowed them to benefit from information more than others, they lacked practical skills with regard to HIV/AIDS. In one school, a group of Anti-AIDS club members indicated that they got confused with contradictory information during training



sessions by different health workers or their teachers. They wanted to have access to accurate information from relevant readings.

## **4.5 OUTCOMES OF VCT IN SCHOOLS (EVALUATION)**

### **4.5.1 Introduction**

Evaluation results/evaluation before and after intervention are presented in four main categories:

- Experimental vs. comparison group before intervention
- Experimental group
- Comparison group
- Experimental vs. comparison group after intervention.

Each of these categories has four sub categories:

- HIV/AIDS awareness addressed by five statements/items
- Respondents' knowledge of physiological effects of HIV/AIDS (six items)
- Respondents' knowledge on HIV/AIDS transmission (15 items)
- Respondents' risk behaviours with regard to HIV infection (6 items).

The analysis of the 2<sup>nd</sup> and 3<sup>rd</sup> subcategories above which comprises answers on a likert scale format (strongly agree...strongly disagree), was recorded into different variables. Values ranging from four to one or vice-versa were attributed according to the positive or negative given answer at each item/statement. Then a sum of the scores was compared per subcategory.

In addition to the compared means of paired samples t-test, the analysis of the other subcategories was done by comparing the frequency and corresponding valid percentages. Table 4.15 recapitulates the respondents' sample size before and after intervention.

**Table 4.15 Sample of respondents before and after intervention**

Item	Experimental	Comparison	Total	
Baseline	Schools	6	6	12
	Individuals	306	307	613
Post –test intervention	Schools	6	6	12
	Individuals	263	245	508
% of lost of respondents at evaluation		43 (14%)	62 (20%)	

#### 4.5.2 Experimental vs. comparison group before intervention

In this section a total of 245 respondents who had completed the study in the comparison group was compared with the same total number in the experimental group at the commencement of the study.

Except for only three out of the 15 items 'People with the AIDS antibody, but no symptoms, can transmit the disease to another person' ( $t = 14.949$ ,  $df = 244$ , and  $p = 0.000$ ); 'You can get AIDS from mosquito bites' ( $t = -2.318$ ,  $df = 244$ , and  $p = 0.021$ , and 'a women with HIV can pass the virus to her foetus or unborn child' ( $t = 2.156$ ,  $df = 243$ , and  $p = 0.032$ ), a compared means of paired samples t-test did not show a statistical significance difference between items in tables (4.16, 4.17 and 4.18) under this section.

**Table 4.16 Respondents' awareness of HIV/AIDS**

Item	t	df	p
Heard about infection transmitted through sexual intercourse - Heard about infection transmitted through sexual intercourse *	1.069	243	.28
Heard about HIV transmission	.301	243	.76
Is it possible to protect from AIDS	1.512	243	.13
Recognition of PLWA from respondent's community	.944	243	.34
Care for AIDS patient by the respondent	-.110	243	.92

\* *Repeated paired item (variables in two groups in all tables)*

**Table 4.17 Respondents' knowledge of physiological effects of HIV/AIDS**

Item	t	df	p
People infected with the virus always show symptoms	-1.256	244	.21
Virus destroys the body's immune system	-1.416	243	.15
People do not die of the AIDS virus itself, but of diseases their bodies don't fight off	1.038	244	.30
AIDS destroys a person's disease fighting ability	-.460	244	.64
AIDS is caused by a virus	.723	242	.47
Most people who have the AIDS virus quickly show signs of being sick	-1.141	244	.25

**Table 4.18 Respondents' knowledge of HIV/AIDS transmission**

Item	t	df	p
People with the AIDS antibody, but no symptoms, can transmit the disease to another person	14.949	244	.000*
A blood test can tell if you have the HIV antibody	.734	244	.464
You can get AIDS from mosquito bites	-2.318	244	.021*
AIDS is a sexually transmitted disease	-1.842	244	.067
AIDS is transmitted through body fluids (blood, semen, vaginal fluids and breast milk).	-.820	244	.413
Keeping in good physical condition is the best way to prevent getting the AIDS virus	.077	244	.938
A person can get AIDS by touching or hugging someone with AIDS	-1.061	244	.290
Condoms reduce the risk of getting the AIDS virus	1.288	244	.199
A person must have lots of different sexual partners to be at risk for AIDS	1.684	244	.093
Only people who have sexual intercourse with gay (homosexual) men get AIDS	.617	244	.538
You can get AIDS from kissing	-.276	243	.783
People who get AIDS virus through needle sharing can spread the virus to others during sex	-1.842	244	.067
A women with HIV can pass the virus to her foetus or unborn child	2.156	243	.032*
Teenagers are less likely to get AIDS than persons over 20 years old	-1.427	243	.155
If a woman uses birth control pills; it lowers her risk of getting AIDS	-1.973	244	.069

*\* p is significant when it is lower than .05 (all categories).*

#### 4.5.3 Experimental group results after intervention

Under this section the change from the baseline measurement to the post intervention measurement in the experimental group is statistically compared on each individual item and in the four categories.

When a paired t-test after the intervention was performed for each of the listed items in the table 4.19, it showed a statistically significant difference on one single item: "Heard about HIV transmission" ( $t = 2.473$ ,  $df = 262$ ,  $p = .014^*$ ).

**Table 4.19 Respondents HIV/AIDS awareness**

Items	t	df	p
Heard about infection transmitted through sexual intercourse	-1.859	262	.064
Heard about HIV transmission	2.473	262	.014*
Is it possible to protect yourself from HIV/AIDS	-1.867	262	.079
Recognition of PLWA from respondent's community	.714	262	.476
Care for AIDS patient by the respondent	-1.652	262	.100

As shown in Table 4.20 a t-test indicated statistically significant differences on all the listed six items. The compared means of paired samples t-test also indicated a significance difference between variables (t-value = -49.57, df = 262, p = 0.000).

**Table 4.20 Respondents' knowledge of physiological effects of HIV/AIDS**

Item	t	df	p
People infected with the virus always show symptoms	-7.610	262	.000*
HIV virus destroys body immune system	-3.216	261	.001*
People do not die from the virus itself but from diseases their bodies don't fight off	-3.046	262	.003*
AIDS destroys a person's disease fighting ability	2.065	262	.040*
AIDS is caused by a virus	-5.514	260	.000*
Most people who have the AIDS virus quickly show the signs of being sick	-10.795	262	.000*
SUM1 – SUM1B	-49.517	262	.000*

#### 4.5.3.1 Knowledge of HIV/AIDS transmission

The compared means of paired t-test depicted statistical significance on the sum of scores (t-value = -13.504, df = 262, p-value = 0.000) and on most of the listed statements in table 4.21 except for the following: (1) “AIDS is transmitted through body fluids” (t-value = 0.064, (2) “Keeping in good physical condition is the best way to prevent getting the AIDS virus” (t-value = -942, df = 262, p = 0.353) and (3) “you can get AIDS from kissing” (t-value = -9.40, df = 261, p-value = 0.348).

**Table 4.21 Respondents’ knowledge of HIV/AIDS transmission**

Items	t	df	p
People with AIDS antibody but no symptoms can transmit the disease to another person	-14.427	262	.000
A blood test can tell if one has HIV antibody	-5.436	262	.000
You can get AIDS from mosquito bites	-6.376	260	.000
AIDS is a sexually Transmitted Infection	2.839	262	.005
AIDS is transmitted through body fluids (blood, semen, vaginal fluids and breast milk)	-1.859	262	.06
Keeping in good physical condition is the best way to prevent getting the AIDS virus	-942	262	.35
A person can get AIDS by touching or bugging someone with AIDS?	-4.497	262	.000
Condom reduces the risk of getting the AIDS virus	-2.343	262	.020
A person must have lots of different sexual partners to be at risk for AIDS	2.910	262	.004
Only people who have sexual intercourse with gay (homosexual) men get AIDS	-3.266	262	.001
You can get AIDS from kissing	-.940	261	.34
People who get AIDS virus through needle sharing can spread the virus to others	-3.765	262	.000
A women with HIV virus can pass the virus to her foetus or unborn child	-2.966	261	.003
Teenagers are less likely to get AIDS than persons over 20 years old	-7.362	262	.000
If a woman uses birth control pills; it lowers her risk of getting AIDS	-6.725	262	.000
A person must have lots of different sexual partners to be at risk for AIDS	2.910	262	.004
Only people who have sexual intercourse with gay (homosexual) men get AIDS	-3.266	262	.001
SUM2 – SUM2B	-13.504	262	.000

The compared means of paired samples t-test did not indicate a statistical significant difference on any of the risk behaviours regarding HIV/AIDS listed in Table 4.22.

**Table 4.22 Respondents' risk behaviours regarding HIV infection**

<b>Items</b>	<b>t</b>	<b>df</b>	<b>p</b>
Sex in the last two months	.697	262	.487
Condom used during last sexual intercourse	.507	262	.612
Having sex in exchange for money or goods	.925	18	.367
Sexual coercion	-1.000	18	.331
Had sex while drunk	-1.756	18	.096
Had sex while on a drug high	-1.372	18	.187

#### 4.5.4 Comparison group results before and after intervention

This section deals with respondents allocated to the comparison group only, before and after intervention.

There was no statistical significance difference found for compared means of paired-samples t-test for the listed statements referring to HIV/AIDS awareness in Table 4.23.

**Table 4.23 Respondents' HIV/AIDS awareness**

<b>Items</b>	<b>t</b>	<b>Df</b>	<b>p</b>
Heard about infection transmitted through sexual intercourse	.377	243	.706
Heard about HIV transmission	-.301	243	.764
Is it possible to protect from AIDS	-1.266	243	.207
Recognition of PLWA from respondent's community	-.762	243	.447
Care for AIDS patient by the respondent	-.816	243	.415

According to results displayed in table 4.24, a compared means of paired samples t-test did not indicate any statistical significance difference. The same observation is made for the comparison of sum scores of all variables before and after intervention.

**Table 4.24 Respondents' knowledge of HIV/AIDS effects on a human body**

Item	t	df	p
People infected with the virus always show the symptoms	.591	243	.555
Virus destroys the body's immune system	-.156	242	.876
People do not die of the virus itself but of diseases their bodies don't fight of	.060	242	.953
AIDS destroys a person's disease fighting ability	.000	243	1.000
AIDS is caused by a virus	.723	242	.471
Most people who have the AIDS virus quickly show signs of being sick	-.313	242	.755
SUM1 – SUM1B	.907	244	.365

Only one out of the fifteen statements in Table 4.25 (including the sum of scores) was significantly statistically different. This statement is “People with AIDS antibody but no symptoms can transmit the virus” ( $t = 6.482$ ,  $df = 243$  and  $p = 0.000$ ). However, while analysing the one item that tested significantly different, the researcher realised that there was a typing error on the questionnaire at evaluation phase on this particular item. A negation form “can’t” was added instead of an affirmative form “can” transmit the infection. Thus to avoid an interpretation bias, this item was omitted from the analysis.



**Table 4.25 Respondents' knowledge of HIV/AIDS transmission**

Item	t	df	p
People with AIDS antibody but no symptoms can transmit the virus	6.482	243	.000*
A blood test can tell if you have the HIV antibody	-.072	2411	.942
You can get AIDS from mosquito bites	.926	242	.356
AIDS is a sexually transmitted infection	-.746	242	.456
AIDS is transmitted through body fluids (blood, semen, vaginal fluids, and breast milk)	-.996	242	.320
Keeping in good physical condition is the best way to prevent getting the AIDS virus	-.092	243	.927
A person can get AIDS by touching or hugging someone with AIDS	.385	243	.701
Condoms reduce the risk of getting the AIDS virus	-.105	243	.917
A person must have lots of different sexual partners to be at risk for AIDS	-.206	242	.837
Only people who have sexual intercourse with gay (homosexual) men get AIDS	-.352	242	.725
You can get AIDS from kissing	-.130	242	.897
People who get AIDS virus through needle sharing can spread the virus to others during sex	.624	242	.533
A women with HIV can pass the virus to her foetus or unborn child	.181	241	.856
Teenagers are less likely to get AIDS than persons over 20 years old	.584	241	.560
If a woman uses birth control pills; it lowers her risk of getting AIDS	.234	241	.815
SUM2 – SUM2B	1.805	244	.072

According to the findings displayed in Table 4.26, a compared means of paired samples t-test indicated a statistical difference in the way respondents responded on the item “Coerced sexual intercourse” ( $t = 2.545$ ,  $df = 43$  and  $p = 0.015$ ).

**Table 4.26 Risk behaviours of respondents with regard to HIV/AIDS infection**

Item	t	df	p
Sex in the last two months	-.235	244	.814
Condom use during last sexual intercourse	-.301	242	.764
Number of people had sex with	-.488	36	.628
Having sex in exchange for money or goods	.154	43	.878
Paying for sex	-.227	43	.822
Coerced sexual intercourse	2.545	43	.015*
Had sex while drunk	.422	43	.675
Had sex while on a drug high	-.233	43	.720

#### 4.5.5 Experimental vs. comparison groups' results before and after intervention

As shown in Table 4.27, the compared means of paired t-test performed on both experimental and comparison groups showed a statistically significant difference on the item 'Heard about HIV transmission' ( $t = -2.475$ ,  $df = 243$ ,  $p = 0.014$ ).

**Table 4.27 Respondents' HIV/AIDS awareness**

Items	t	df	p
Heard about infection transmitted through sexual intercourse	-1.739	243	.083
Heard about HIV transmission	-2.475	243	.014*
Is it possible to protect from AIDS	-2.679	243	.008
Recognition of PLWA from respondent's community	-.589	243	.556
Care for AIDS patient by the respondent	0.601	243	.548

The compared means of paired t-test samples in both groups did not show a statistical significant difference for only one item in Table 4.28; whereas strong p-values (0.000), for the other five statements were discovered. The comparison of scores also revealed a statistically significant difference ( $t = 8.810$ ,  $df = 244$ ,  $p = 0.000$ ).

**Table 4.28 Respondents' knowledge of physiological effects of HIV/AIDS**

Items	t	df	p
People infected with the virus always show symptoms	5.881	243	.000*
HIV virus destroys body immune system	4.666	242	.000*
People do not die of the virus itself but of diseases their body do not fight off	2.475	242	.014*
AIDS destroys a person's disease fighting ability	-1.857	243	.065
AIDS is caused by a virus	3.911	241	.000*
Most people who have the AIDS virus quickly show signs of being sick	9.620	242	.000*
SUM 1b –SUM 1bb	8.810	244	.000*

The compared means of paired t-test samples illustrates statistical significance difference on 11 out of the 16 listed items in Table 4.29 including the sum of scores. These statements are as follows: (1) "People with AIDS antibody but no symptoms can transmit the infection to another person" ( $t = 6.524$ ,  $df = 243$ ,  $p = 0.000$ ), (2) "A blood test can tell if you have the HIV antibody" ( $t = 2.267$ ,  $df = 242$ ,  $p = 0.024$ ), (3) "You can get AIDS from mosquito bites" ( $t = 4.394$ ,  $df = 240$ ,  $p = 0.000$ ), (4) "AIDS is a Sexually Transmitted Infection" ( $t = -2.034$ ,  $df = 242$ ,  $p = 0.043$ ), (5) "AIDS is transmitted through body fluids" ( $t = 2.193$ ,  $df = 242$ ,  $p = 0.029$ ), (6) "A person can get AIDS by touching or hugging someone with AIDS" ( $t = 3.487$ ,  $df = 243$ ,  $p = 0.001$ ), (7) "Only people who have sexual intercourse with gay (homosexual) men get AIDS" ( $t = 3.414$ ,  $df = 242$ ,  $p = 0.001$ ), (8) "People who get the AIDS virus through needle sharing can spread the virus to others during sexual intercourse" ( $t = 2.684$ ,  $df = 242$ ,  $p = 0.008$ ), (9) "Teenagers are less likely to get AIDS than persons over 20 years old" ( $t = 6.689$ ,  $df = 241$ ,  $p = 0.000$ ) and (10) "If a woman uses birth control pills; it lowers her risk of getting AIDS" ( $t = 5.308$ ,  $df = 241$ ,  $p = 0.000$ ).

**Table 4.29 Respondents' knowledge of HIV/AIDS transmission**

Item	t	df	p
People with AIDS antibody but no symptoms can transmit the infection to another person	6.524	243	.000*
A blood test can tell if you have the HIV antibody	2.267	242	.024*
You can get AIDS from mosquito bites	4.394	240	.000*
AIDS is a sexually transmitted infection	-2.034	242	.043*
AIDS is transmitted through body fluids (blood, semen, vaginal fluids and breast milk)	2.193	242	.029*
Keeping in good physical condition is the best way to prevent getting the AIDS virus	1.021	243	.308
A person can get AIDS by touching or hugging someone with AIDS	3.487	243	.001*
Condoms reduce the risk of getting the AIDS virus	1.256	243	.210
A person must have lots of different sexual partners to be at risk for AIDS	-1.084	242	.279
Only people who have sexual intercourse with gay (homosexual) men get AIDS	3.414	242	.001*
You can get AIDS from kissing	1.295	242	.196
People who get AIDS virus through needle sharing can spread the virus to others during sexual intercourse	2.684	242	.008*
A women with HIV virus can pass the virus to her foetus or unborn child	.882	241	.379
Teenagers are less likely to get AIDS than persons over 20 years old	6.689	241	.000*
If a woman uses birth control pills; it lowers her risk of getting AIDS	5.308	241	.000*
SUM2B – SUM2BB	7.385	244	.000*

As indicated in table 4.30, the compared means of paired t-test samples indicated only one statistically significant difference on the item 'paying for sex' ( $t = -2.517$ ,  $df = 19$ , and  $p = 0.021$ ).

**Table 4.30 Respondents' sexual risk behaviours**

Item	t	df	p
Sex in the last two months	-.484	244	.629
Condom use during last sexual intercourse	-.980	242	.328
Having sex in exchange for money or goods	-1.453	19	.163
Paying for sex	-2.517	19	.021*
Forced sexual intercourse	1.453	19	.163
Had sex while drunk	.567	19	.577
Had sex while on a drug high	-1.000	19	.330

#### **4.5.6 Results from frequency distribution**

The findings presented under this section are related to behaviour change. The frequency distributions showed the slight differences on some variables that was referred to earlier. It is, however, necessary to remind oneself that the applied test statistics did not show any significant difference between variables that are reflected below. These are findings on frequency distribution analysis of respondents in both groups after the research intervention:

- A decrease of sexual intercourse while drunk by 6.5% among the experimental group while it increased by 1% in comparison group.
- A total of 42 (17%) of respondents in the experimental group reported to have had sexual intercourse within six months of the intervention study against 44 (18%) of respondents in the comparison group who reported the same at the baseline data collection that they had had sexual intercourse during the six months preceding the study.
- The use of condoms dropped in the comparison group from 10.6% at the baseline measurement to 9.9% at the second measurement while it increased from 11% to 13% in experimental group.
- Whilst none of the 245 respondents reported to have experienced coercive sexual intercourse before intervention, a cumulative percentage of 11% reported differently after intervention in comparison group.
- None of the respondents in the experimental group against three in the comparison group were found to have had sexual intercourse while on a drug high.
- Eight respondents in the experimental group against four in comparison group reported to have paid for sexual intercourse.

- Seven respondents in the experimental group against 11 respondents in the comparison group reported to have had sexual intercourse with more than one partner.

## 4.6 CONCLUSION

In striving to address all research questions pertinent to this study, various findings have been presented.

Analysis of the demographic characteristics showed that the age of respondents was higher than the standard in secondary school. The school payment conditions and deaths of one or both parents were reported as major constraints in schooling.

The awareness of respondents with regard to HIV/AIDS was high in both groups (experimental and comparison) at baseline data collection and the evaluation phases. In general, respondents have heard about this infection, and they knew people infected and affected by HIV/AIDS. However, with regard to HIV/AIDS knowledge, there were a number of respondents who still had either erroneous beliefs or insufficient knowledge of the very basic concepts. Qualitative data on HIV/AIDS awareness corroborate the quantitative findings on this variable. Some direct quotes have been presented to confirm the insufficient knowledge of certain respondents.

Despite the positive findings mentioned above, frequencies and percentages displayed in the different tables indicate a gap between the awareness and behaviour change. Six main reasons (experience, curiosity, peer pressure, partner empathy, monetary gain, and coercion) for having sexual intercourse were generated during group interviews. Attitudes leading to risk

infection that respondents presented have been described in this study. Just as few examples, it was discovered that male respondents failed to use condoms several times when they wanted to have sexual intercourse with the same partner; whereas living in an environment which was conducive to unwanted sexual intercourse (off the school premises) was a threat put forward by girls. Further misconceptions regarding HIV/AIDS transmission and the risk of infection which reflected the respondents' sexual experiences in general have been explored in this study.

Findings revealed that most of respondents in the experimental group recognized the importance of VCT since they showed great interest in attending its testing sessions. Peer influence played a very important role because it resulted in a higher demand of VCT than the researcher had expected. According to the VCT model described earlier, step by step VCT sessions have been described and the different problems encountered during its implementation process have been mentioned. These problems, however, were successfully dealt with. A large number of respondents who voluntarily attended the testing sessions, tested negative. The support provided to those who tested positive (3%) has been described in this paper.

The statistical tests applied to compare the experimental and comparison groups led to the following conclusions:

- Similar findings in both groups at the baseline data collection. The paired samples t-test applied on variables under this section did not show a statistically significant difference

- At the evaluation phase, there was no significant difference on respondents' HIV/AIDS awareness. Significant differences on respondents' knowledge of HIV/AIDS physical effects as well as on its transmission were noticed. Qualitative data analysis showed trends in respondents' behaviour change but quantitative data analysis did not. A slight change was observed when analyzing frequencies and percentages
- There was no significant difference between respondents within comparison group on HIV/AIDS awareness, knowledge of physiological effects, transmission and sexual risk behaviours
- The experimental vs. comparison groups' results before and after intervention did not show any significant difference on respondents' HIV/AIDS awareness scores. A significant difference, however, was observed on most of the items used to evaluate respondents' knowledge on the HIV physiological effects and transmission.



## **5 CHAPTER FIVE: DISCUSSION OF FINDINGS, RECOMMENDATIONS AND CONCLUSION**

### **5.1 INTRODUCTION**

The discussion of the findings was guided by the sequences of the theoretical framework for this study. Whilst in the field, however, two more steps were deemed necessary: “access to schools” to start the model with, and “group counselling” to come before individual counselling. This second step is actually in line with the recommendation among routine procedures from the Ministry of Health to all VCT centres in Rwanda.

The usefulness of the other concepts of the model for this study was ensured as will be clear from the discussion in this chapter. In general, this model was important since it allowed the researcher to systematically collect the information necessary to plan for an ideal intervention on HIV/AIDS prevention in schools. It emphasizes step-by-step the issues to be raised by counsellors from the sensitization phase to the follow-up VCT sessions, while bearing in mind the stages of behaviour change as its theoretical foundation. Four main concepts of the model were used to organise this chapter:

- Access to schools
- Sensitisation and baseline data
- Testing
- Behaviour change and data at the evaluation phase.

Based on each step of the study process, recommendations were formulated in such a way that each recommendation is dealt with immediately after its related point. This was done to ensure a good flow of sequences in the discussion. Finally, best practice guidelines were

developed, and are attached in annexure. These could be used as a protocol if any other researcher wished to intervene in schools on the current research topic.

## **5.2 DISCUSSION OF FINDINGS**

### **5.2.1 Access to schools**

This step was deemed necessary to be dealt with due to various problems encountered while striving to access schools and respondents. Some activities were delayed by problems in getting permission either from the National Ethics Committee or from some school Principals. The difficulties in getting permission may be related to the bureaucracy, lack of commitment of some of the members of the National Ethics Committee, and the irregularities of their meetings schedule. Most of the Principals appreciated the importance of the study being conducted in their respective schools, but some delayed the process by repeatedly postponing the meetings between the respondents and the researcher.

As mentioned in the ethical consideration section, permission to involve adolescent respondents in this study was not given due to ethical reasons. However, bearing in mind the access of adolescents from 14-19 years to VCT elsewhere (Population Council, 2001; South African AIDS Helpline, 2002; Van Dyk, 2001), the researcher decided to collect information from several trusted organizations which are actively engaged in mitigating HIV/AIDS at national and international levels to provide further input on this ethical dilemma. Among the services contacted were the Ministry of Health (Treatment and Research Centre 'TRAC', and VCT INTEGRE), National Commission in charge of HIV/AIDS 'CNLS', PSI-Rwanda, Impact-Rwanda, UNICEF-Rwanda and Ministry of Education (Unit in charge of HIV/AIDS in schools). The people occupying the highest positions in these services were targeted for interviews. All people interviewed agreed that young adolescents should be allowed to access

VCT services. Thus a brief report on the interviews was compiled and submitted to the President of the National Ethics Committee. Two extracts from directives on VCT were also included in the report one from the *Ministere de la Sante* (2002:11) clearly specifying that “VCT services can be offered to youth of 15 to 18 years if a counsellor estimates that a client under this age is mature enough to comprehend VCT procedures and its results implications”. Other sections from the ‘*Ministere de l’Education, de la Science, de la Technologie et de la Recherche Scientifique*’ (2002:9) policy guidelines on HIV/AIDS in schools, stipulating that “young adolescents should have confidential access to Voluntary Counselling and Testing services including other Sexual Transmitted Infections”. According to FHI (2003), a country would ideally determine informed consent procedures for using VCT which is one of the key issues in whether to involve a youth’s parents in the process of approval for testing and reporting of results. In Kenya national VCT guidelines issued in 2001 advise that “mature minors” do not need parental consent. “Mature minors” include those individuals younger than 18 years who are married, pregnant, parents, engaged in behaviour that puts them at risk, or are child sex workers. The guidelines say that HIV test results should generally be disclosed only to the client but that counsellors should encourage those under age 18 to inform their parents or guardians about the results. However, a study in Uganda and Kenya by Population Council (2001) revealed that respondents did not want to inform their parents about their interest in VCT to avoid stigma with regard to sexual activity. FHI (2003) further states that there is no ideal VCT model. Youth centres, youth-friendly services, outreach efforts, social marketing, and other approaches might be helpful. Innovative efforts are needed to reach such groups as young pregnant women, young people using drugs, and out-of- school youths. FHI (2003) recommended, documentation and evaluation of successful VCT approaches with young people, more information on how young people who test

positive cope, with whom they share their results, who provides emotional support, whether they can access support services, and long-term outcomes.

With regard to the current study, once permission was given to be conducted on respondents of 18 years and above, the activities with these respondents went smoothly. This means that they were keen to know their HIV/AIDS status and were interested in participating in programmes focusing on their health in general. However, to have full access to them, a proper channel of communication has to be established in the form of the collaboration with the respondent management services and the respondent representatives. This allows one to reach as many respondents as possible. Access of respondents would not have been effective if the above groups had not been involved.

Each school has its own small clinic, but all schools also have easy access to other health facilities especially Health Centres. This means that geographical accessibility is not a serious problem if school-based health programmes, including VCT, need to be implemented in collaboration with the nearest Health Centre. Respondents can reach their nearest Health Centre within approximately five to 20 minutes.

Financial accessibility is another constraint that may limit the access of respondents to health programmes in general. There has been a concern about certain “rewards” given by some NGOs or well funded researchers to respondents in their study. Some respondents who had been exposed to this practice expected the same in the present research. It was therefore important for the researcher to explain the purpose of the research, what was expected from them and the range of benefits for respondents. This problem, however, did not affect recruitment to this study.

## **Recommendations**

- A comprehensive ethics study should be done whereby the debate on age to access VCT services should be systematically addressed.
- A strong collaboration should be established between the respondents, the Health Centre and the school managements to establish a systematic, sustainable, accessible VCT and reproductive health service to respondents.

### **5.2.2 Sensitisation for testing and baseline data**

This phase was critical for the success of VCT. Prior to the commencement of the study most of the people such as staff from San Francisco Project in Rwanda and VCT INTEGREE Staff, the researcher collaborated with were worried about VCT acceptance. It was assumed that few respondents would attend VCT sessions because of being scarred of the test while at school. With intensive sensitization sessions, however, a large number attended. Furthermore the baseline data (quantitative and qualitative) for this study, collected during the sensitization phase, helped the researcher greatly in dealing with respondents and in addressing some of their concerns about HIV/AIDS transmission, prevention and reproductive health issues all along the research process effectively.

Sensitization associated with voluntary acceptance of VCT may be considered as a confounding factor since respondents at higher risk/potential of infection may not have registered for the test. In other words, it may have happened that if any respondent suspects him/herself of being infected, he or she did not want to attend the VCT service. Informal contacts with counsellors, however, do not support this interpretation. Counsellors at Kacyiru Health Center told the researcher that respondents do come for VCT on their own volition.

Some come with complaints of Sexually Transmitted Infections and/or wanting the HIV test especially when they know they had been exposed to the risks of infection through unprotected sexual intercourse. An analysis of routine information at the Rwandan Ministry of Health may yield information on the prevalence rate among these respondents who attended Health Centres independently. The researcher was unable to access their data base.

Peer influence played an important role in encouraging schoolmates to attend VCT sessions. A high rate of attendance of the VCT service was noted, with respondents encouraging their friends to join them and further findings from this study indicated the great willingness of respondents to advocate for VCT.

In contrast with the idea of allowing a choice of VCT settings and enforcing strict conditions of privacy as reported in a Ugandan and a Kenyan study (Population Council, 2001), respondents in this study did not show much concern in that regard. They were just happy to be tested at any health facility that provided VCT services. Some even showed a preference to be tested at the dispensary in their respective schools. In other words, the place for VCT did not make any difference: at hospital, at a Health Centre or at a school, the most important for them was just to know their serology status.

### **Recommendation**

- Counsellors should take time to sensitize respondents for VCT away from their schools.

### 5.2.2.1 Socio-demographic data

Although there were some schools with more boys than girls or vice versa, in general, respondents were balanced in terms of gender. In other words, there was a small difference in numbers about gender representation. This can be associated with the government policy aimed at increasing the number of females at different levels of school.

Results revealed that, in general, respondents were older than their education level would lead one to expect and a large number have lost either one (72%) or both parents (29%). It means that many mature individuals were delayed completing their secondary school education as a consequence of the Rwandan war and genocide of 1994. Respondents might be inadequately supported psychologically and might be at risk of participating in risk behaviours that could eventually lead to HIV/AIDS infection.

In addition to the effects of war and rape during the war and genocide of 1994 in Rwanda, there was an assumption that the rapid increase of HIV/AIDS infection was also due to the fact that many Rwandan refugees returned home from various other African countries. These movements, including those of personnel military and refugees, contributed to the increase of people infected or affected by HIV/AIDS in Rwanda. Young people and respondents in particular did not escape from these problems.

Although religiosity is out of the scope of this study, the sourced information could stimulate one to learn about it in the context of HIV/AIDS prevention in Rwanda. However, the motivation to look at religious affiliation was based on the fact that some churches, especially

the Roman Catholic (RC) Church, discourage the use of condoms in preventing HIV/AIDS. They argue that it increases the tolerance of committing adultery among Christian community members. The opposition of the RC church on the use of condoms, started before the 1990s. Chandler and Dart (1989: 1) report "Countering a controversial earlier position, a committee of RC bishops issued a draft of a new policy paper on the AIDS crisis that strongly rejects any use of condoms to prevent the spread of the fatal disease". There were some church leaders who believed that the RC Church could prevent the spread of AIDS in community by realistically addressing the problem. However Chandler and Dart (1989) reported an interesting point of view of a retired United Methodist Bishop in the same paper. He called it "totally irrational" to think that providing condoms to people who are sexually active will undermine the church's teachings on abstinence.

In the current study, however, there was no significant relationship between religious domination and the use of condoms. Therefore this research suggests that the educational message influences preventive methods against the HIV/AIDS pandemic when sexual intercourse cannot be avoided. A study conducted by Kinsman, Nakiyingi, Kamali, and Whitworth (2001) in both rural and urban schools of Uganda revealed that Roman Catholics (46% of the sample) were less knowledgeable and less positive about condoms than non-Catholics, and that the boys in this group, but not the girls, were also much less likely to say they would use one. The current study therefore seems to differ from this finding. This idea is supported by other findings reported by Dunne, Edwards, Lucke, Donald and Raphael (1994) who found that in Australian respondents there was strong evidence that religiosity among adolescents is associated with delayed onset of sexual activity. However, research on correlation between religiosity and contraceptive practices was limited and inconsistent. Findings of Dunne et al. (1994) revealed that those who perceived religion to be important in



their lives were less likely to have had intercourse. Among the sexually active sample, religious youth did not differ from their peers in recent condom use, the age at which they first used condoms or the rate of partner change. Their conclusion was contrary to several assertions in reviewed articles and other empirical studies which did not show that religious youth were less likely than non-religious youth to take precautions during sex.

In 1996, while embracing traditional deductive natural law theology, the French bishops, came to the conclusion that they need to take into consideration specific circumstances, in this case the deadliness of the HIV virus and the usefulness of condoms in stopping its spread during the sex act. In other words, the French bishops have also embraced inductive moral reasoning. The Vatican wants nothing to do with such reasoning (National Catholic Reporter, 1996).

Very recently AllAfrica (2005:1) cited a South African Catholic Bishop who supports the use of condoms in the fight against HIV/AIDS contrary to the church's stand and who has called for new a theology for the pandemic. Bishop Kevin Dowling told the Chicago Tribune that such a theology would be based on an ethic of "human dignity and justice and human rights instead of just an ethic of sexuality." He said that abstinence and faithfulness in marriage, the church's answer to HIV/AIDS, "are the only way to be sure you won't get infected. I have no problem with that. [But] in a diocese full of desperately poor women with few options beyond prostitution to feed their children, using condoms seems to me a pro-life option in the widest sense". According to AllAfrica (2005:1), Pope Benedict XVI has made it clear that he

supports a continuing ban on the use of condoms, and the South African Bishops Conference calls condoms an “immoral and misguided weapon against the disease”.

Christianity is important in Rwanda since a high proportion in the population is Christian. The 3<sup>rd</sup> Report on Census of Housing and Population of Rwanda (Mugabo, Nkaka and Lamle, 2002), indicated that the most predominant religious group is the Catholic faith which attracts almost half (49.5%) of the resident population of the country. In descending order, the other religious groups are Protestants (27.2%), Adventists (12.2%), other Christians (4%), no religious affiliation (3.6%) and Muslim (1.8%). Adherents of the Jehovah Witness faith, traditionalist/animists, and of the other religions barely make up as much as 1% of the population each. Thus, christian religious groups have the following of some 93% of the population of Rwanda.

### **Recommendation**

- Conduct a study on religiosity and HIV/AIDS prevention in youth in Rwanda

#### **5.2.2.2 HIV/AIDS awareness, knowledge and attitudes**

Ninety percent of respondents answered yes to each of the four items (Heard about STIs, Heard about HIV transmission, Is it possible to protect from AIDS, and Knowledge of a PLWA from a respondent’s community) listed to evaluate respondents’ general awareness of HIV/AIDS. A further 24% of the respondents indicated that respondents had provided care to a Person Living With AIDS (PLWA). This information confirms what has been found in other studies: that the youth is widely aware about HIV/AIDS and other Sexually Transmitted Infections. It suggests that the prevalence of HIV in the Rwandan community is higher than expected. Besides the erroneous beliefs on HIV/AIDS transmission that respondents had, they described high risk behaviours and especially unprotected sexual intercourse. In a U.S study,

Opt and Loffredo (2004:389) state: “Although respondents are knowledgeable about HIV/AIDS, they have little personal concern about becoming infected and do not take appropriate safe sex precautions”. This discrepancy between awareness and behaviour was also reported in a study conducted in secondary school respondents in KwaZulu-Natal (James, Reddy, Taylor and Jinabhai, 2004: 264), the current study findings, however, contradict those from a Kenyan study by Kaizer and Lopez (2000:36) where it was reported that “many respondents are not yet convinced the disease is real” and that “it is extremely difficult to convince young people that the pandemic affects them because they do not see their friends suffering”. Maybe if the Kenyan study was repeated today (five years later) it might yield the same results as this one in Rwanda.

Although the level of HIV/AIDS knowledge seems to be fair, it is surprising to find many false answers even though the items addressed very basic HIV/AIDS knowledge and the group represents a well-educated sector of the population. Hence, despite wide and repeated messages countrywide by different activists or stakeholders, these findings contradict an assumption that the causes, transmission and prevention of HIV/AIDS are known to all people. Crame (2003) reported similar findings that while respondents displayed a wide range of STIs/HIV knowledge, they often mixed correct information with misconceptions about HIV being transmitted through kissing and mosquito bites. Such misconceptions may cause these respondents confusion on the proper HIV/AIDS preventive measures they should be undertaking.

### 5.2.2.3 HIV/AIDS risk behaviours

According to the findings on gender and the age of the respondents' first sexual intercourse, gender imbalance was found amongst respondents. Males initiated sexual intercourse at an earlier age than females. This difference is seen from six years old and gradually up to 13 years old. Although the aim of this study was not to investigate whether the variables in gender and age were associated with sexual intercourse initiation as it is often argued that in Rwandan culture only a boy initiates sex. During the sensitisation phase, male respondents pointed out that it is even more difficult to use condom when having sexual intercourse for the first time because the female partner does not want to show her interest in talking about sex even if she actually wanted to participate. Similar findings have been reported in the Caribbean whereby Kurtz, Douglas and Lugo (2005) found that males initiated sexual activity at a much younger median age than females (11 years for males vs. 14 years for females), and were twice as likely to have had sexual intercourse by 16 years. A study in secondary schools by Lugoe and Klepp (1996) in Arusha, Tanzania concluded that school age boys were more likely to become sexually active than girls and very few sexually active respondents used condom. Respondents who have casual sex used condoms infrequently. In this study, of the sexually active respondents, only 27% reported ever having used a condom and only 22% reported use of condoms during their most recent sexual encounter. Our findings (28%) in terms of condom use are higher than the Tanzanian (22%) but lower than the findings reported from a study conducted in Kenyan respondents by Kaizer and Lopez (2000) that condoms were used by 60% of the respondents. Although these three studies are older from one and the other, their findings indicate that condoms use posed problems from time to time and places.

The 5% of respondents who used a hotel/motel for having sexual intercourse may be related to the “petits poussins” phenomenon, where wealthy women or men hunt young boys or girls for sexual gratification. If such a woman is infected there is little chance for a boy to discuss with her about HIV prevention prior to sexual intercourse due to his age disadvantage. The large proportion (74%) of respondents used their homes or partners’ home and 16% who had sexual intercourse in the bush may explain prevalence of casual sexual intercourses happening in the respondents’ environment. It is also normal with teenager developmental process that he/she embarks on on-going sexual explorations. This could be related to one of the reasons raised by respondents for having sexual intercourse, namely “curiosity”.

The majority (77%) of respondents, who confirmed that they had had sex during the six months preceding the survey, had only a single partner (boys and girls). Although this practice reduces the risks of infection, it is not sufficient for one to be sure of being free of HIV infection. During group discussions and based on their statements, a number of respondents were less worried about HIV infection when they had a single partner. A large proportion of respondents (80%) believed that a person must have lots of different sexual partners to be at risk of HIV infection. The reduction of partners and faithfulness is encouraging to some extent since it fits in with UNAIDS promoting strategies (UNAIDS, 2002). However, the remaining proportions show that there are respondents at high risk because a valid percentage of 7% represent respondents who had had sex with four and more different sexual partners. Furthermore the 41% who had sexual intercourse during the last six months that preceded the present study, gives an idea of the level of sexual activity in these respondents. It shows that the respondents continually engage in sexual activity. A study carried out in Mwanza, Tanzania, by Matasha and Ntembelea (1998) revealed very high rates of sexual activity in primary School boys (80%) and of primary School girls (68%) who were

already sexually active. The corresponding figures were 89% for secondary school boys and 48% for secondary school girls. Vaginal sex was the most common first sexual act reported by secondary school respondents, but 40% of primary school respondents reported oral-genital sex and 9% of secondary school respondents reported anal sex as their first sexual act. Almost half of primary school girls have had sex with adults, including teachers and relatives. Coerced sex was reported by nearly half of the primary school and secondary school girls.

Vaginal sex as the most common first sexual act corroborates the results in the present study but the reported figures on the other items are much higher than that in our study because the category of respondents at risk ranged from coerced sexual intercourse, to sexual intercourse while drunk and/or on drugs which count for 10%, 12% and 7% respectively. The fact that 43% of the respondents believed that teenagers are less likely to get HIV/AIDS than persons over 20 years old, it increases their exposure to the infection since a large number may consider themselves as teenagers and therefore may have careless unprotected sexual intercourse.

The risk behaviours described by many of respondents as presented in detail in this study show clearly that youth in secondary schools do not ensure either abstinence or effective safe sexual intercourse. The risk behaviours reported by respondents cannot be divorced from their relative lack of knowledge. It can be associated with incorrect beliefs such as “big vagina,... no trauma..., no entry points” or “pushing slowly the penis in the vagina and not ejaculating inside” hence these practices do not allow HIV infection. This is a problem that should be taken into consideration when providing counselling services and other health education messages.

A cross-sectional questionnaire survey examining the knowledge, attitudes and intended use of condoms was conducted among 1,821 respondents (mean age = 14.2 years, range = 9-24) from 27 primary and secondary schools in rural southwestern Uganda. This study revealed that condom education was not provided in Ugandan schools, but both boys and girls had relatively high overall levels of knowledge, even though boys demonstrated a higher level than girls. This suggests that respondents had successfully obtained reliable information from other sources. Boys and girls had similar and fairly positive attitudes towards condoms, although considerable shyness was expressed, both about discussing condoms with a partner and buying them. Fifty-eight per cent said that they themselves would use a condom if one was available, but girls were far less likely than boys to say so. Voluntary Counselling and Testing (VCT).

According to WHO (2004) HIV testing and counselling services are a gateway to HIV prevention, care and treatment. The benefits of knowledge of HIV status can be seen at the individual, community and population levels. They include the following:

- For the individual, enhanced ability to reduce the risk of acquiring or transmitting HIV; access to HIV care, treatment and support; and protection of unborn infants.
- For the community, a wider knowledge of HIV status and its links to interventions can lead to a reduction in denial, stigma and discrimination and to collective responsibility and action.
- At the population level, knowledge of HIV epidemiological trends can influence the policy environment, normalize HIV/AIDS and reduce stigma and discrimination.

In the communities that have been longest and hardest hit by the epidemic, an increasing number of people with HIV are becoming ill and need care, treatment and support. However, most people with HIV are unaware of their HIV status. Scaling up HIV testing and counselling services is a critical step for scaling up a range of interventions in HIV/AIDS prevention, care, treatment and support (WHO, 2004).

During the field work phase, many adolescents requested VCT attendance but were not allowed due to permission refusal earlier discussed. Many of those who attended VCT service testified that it helped to reduce their anxiety with regard to HIV infection. This is supported by the findings that close to half of the respondents who were scared before they knew their results and were surprised of testing negative. It shows again that these respondents considered themselves of being at risk for HIV/AIDS.

In reference to statements made by respondents, it is clear that they have realized the importance of VCT and they have the intention to even invite their friends to go for it. Although respondents had to spend long hours waiting for the test (approximately five), there was no complaint on how the VCT was conducted. In a group of plus or minus fifty per session, these respondents were well prepared for VCT and set aside their time for it. On the other hand, the health staff also did not complain about the number. They were able to accommodate all of them in terms of equipment, staffing and testing process. It could thus be advised that health centres be used if one wants to embark on HIV/AIDS prevention in schools through VCT.

A lower infection rate (3%) in respondents was registered on completion of VCT sessions compared to the national rate (5%) (Programme Nationale de Lutte contre le SIDA "PNLS",



1997). This lower infection rate may be hypothesized as being in relation to education whereby educated young people who have access to health information adopt safer sexual behaviour than their counterparts with less education. It could also be linked with the assumption under the section of sensitization where it was mentioned that a respondent who suspected him or herself to be positive did not register for group VCT. However, FHI technical Report (2003) indicates that in Rwanda, a youth centre that opened in January 2001 had about 1,600 visitors who chose to be tested, 93 % tested negative, 3 % positive, and 4 percent indeterminate. About 7 percent were repeat visits to confirm their test results. This centre also offers peer education, counselling on STIs, sports activities, skills-building courses (literacy, hairstyling, etc.), and activities for parents. In these efforts to provide VCT services to young people, key programmatic challenges were confidentiality, parental consent, adequate counselling, and ongoing support. In spite of the reported rates in Rwanda, international organizations and research findings continue to support that VCT should continue for several reasons.

A negative result gives peace of mind especially for sexually active people and could help one to keep his or her negative status. For those infected with the virus, they could take steps to ensure that they do not infect anybody else and avoid being re-infected. They could be encouraged to adopt a lifestyle aimed at reducing the effects of HIV/AIDS in order to live normally with AIDS (South African Helpline, 2003; Population Council, 2001, UNAIDS, 2001) On the other hand, for a fatal and terrible infection like HIV/AIDS, Hamad Medical Corporation (2005) advises that screening for a such diseases aims at the early identification of conditions for which early and timely interventions can lead to the elimination or reduction of associated mortality, morbidity and disabilities. The term "screening" is used to represent

the skilful use of empirically based procedures such as standardized tests, biological assessment, self report techniques and interviews for identifying the problems. Similarly Weill Cornell Physicians (2003) defines the screening for a disease as a test performed for detecting potential health disorders or diseases in persons who do not have any symptoms of disease. The goal is early detection and lifestyle changes or surveillance, to reduce the risk of disease, or to detect it early enough to treat it most effectively. Gordis (2004:71) states “to understand how a disease is transmitted and develops and provide appropriate and effective health care, it is necessary to distinguish between people in the population who have the disease and those who do not”. It is therefore in this regard that the researcher believes that VCT services should be continually offered to school communities as a systematic test performed in the screening context for HIV/AIDS infection.

As displayed in the model, the sequences for this study were performed successfully. The group counselling that has to be part of the process as described on the VCT implementation section, was enjoyed by respondents. They appreciated the opportunity to discuss their health concerns with counsellors and at the same time to benefit from health information.

Although the model for this study anticipated the possibility of a respondent deciding not to continue the VCT process after he or she had received individual counselling, none of the respondents made such a decision.

Most of the VCT centres do not apply the principle of signing consent forms. They only rely on the verbal consent of clients.

With regard to immediate crisis intervention, strong mechanisms were put in place. Van Dyk (2001:246) says, “Not many things in life could be as stressful as going back for HIV test results. For many clients it feels as if the counsellor holds the key to the future in his or her hands”. It was feared that a major crisis which may result in suicide could happen since the research involved young adults. However, the respondents who tested positive and came for counselling managed to keep their status confidential and dealt with their new knowledge, stress and emotions well. Follow-up visits were made possible, but due to their fear of stigma it was realized that the school environment was only conducive to group counselling sessions. Since the researcher was not in a position to conduct permanent follow-up counselling, information about relevant health and support services was given. As a result, face-to-face counselling was possible with a few of the respondents who tested positive. To ensure individual counselling and to overcome stigmatisation, it could be advised that interested persons use the closest Health Centre to a particular school since any respondent who seeks help can easily join a counsellor at the Health Centre.

### **Recommendations**

- Since the demand for VCT was high among respondents, routine HIV testing sessions should be conducted at Health Centres based on the catchment areas where schools are situated. All schools in Kigali are near Health Centres, all are within walking distance (5-20 minutes) from the Health Centre. There is no cost implication since VCT has been declared free of charge at all government health centres. Joint service planning can be done between School and Health Centre managements. Successful collaboration between the two parties will ensure the sustainability of the entire VCT programme.

- For the success of a VCT programme in schools one should promote ownership by the respondents of the VCT programme.
- Apply systematically written and signed consent forms to every client.

### **5.2.3 Research Outcomes**

The comparison analysis of the findings in both groups reached the conclusion that the two groups were similar at the baseline measurement. Respondents in both groups were aware of HIV and other sexually transmitted infections. They knew people infected with HIV/AIDS and some had taken care of them. Furthermore, they presented the same proportions of positive and insufficient knowledge on HIV/AIDS transmission modes, its physiological effects and the risk behaviours leading to HIV/AIDS infection. This is logical since the respondents in general were exposed to almost the same conditions and presented the same characteristics. The researcher, however, had an assumption that there could be some differences between schools run by various religious denominations and the official/governmental schools, but the statistics test (cross-tabulation with  $X^2$  test) did not show such differences.

The experimental group showed no significant difference on the items regarding HIV/AIDS awareness before and after intervention. Strong significant differences, however, were found in most of the items used to evaluate the knowledge of respondents in the experimental group on physiological effects of HIV/AIDS. Their knowledge on HIV/AIDS transmission was also found to be statistically significant. Although this result may not be attributed to the research alone, all educational efforts invested in this research by the researcher and his research assistants including the schools' managements contributed significantly. This indicated that

respondents who fully participated in most of the sessions acquired more knowledge than those who were in the comparison group since the statistical tests performed within the experimental group and/or with the comparison group revealed a significant difference at the evaluation phase.

The respondents who were assigned to the comparison group were only informed on the existing testing services whether private or governmental health facilities during the baseline data collection. Only three respondents confirmed they had been tested for HIV serological status at the evaluation phase. There was no way to identify and communicate with these three respondents to ask them about their status or learn about the experience they had. The limitation was due to the anonymous questionnaire used as the main tool for data collection. These respondents did receive the special assistance given by the researcher like those in the experimental group did. As a result, the statistical test for the group did not show any significant difference; meaning they did not improve their knowledge on either the physiological effects of HIV/AIDS or its modes of transmission. Furthermore, they still have the erroneous myths about HIV/AIDS as described earlier. This is an area where stakeholders and other people involved in mitigating the HIV/AIDS pandemic may orient their actions.

The level of HIV/AIDS knowledge vs. awareness was high during the baseline data collection. This may have led to the absence of a significant difference between baseline and second measurement.

The analysis of risk behaviours did not indicate any significant difference in the groups. Respondents in both groups presented the same risk behaviours at the baseline as well as at the evaluation phase. A slight difference in variables was found while performing the frequency and percentage count. One would wonder whether there could be an appropriate

behaviour change-based approach or whether the six-month interval to the follow-up was sufficient for the behaviour change to have taken place? Respondents indicated that they were keen to change their behaviours, but the practices were different since the same proportions of unprotected sexual intercourse and other risk conditions of sexual infections including HIV/AIDS were noted at the evaluation phase. Similarly, Visser (2005) reports a study in 24 schools in South Africa that on the one-year outcome evaluation, learners' knowledge of HIV/AIDS increased and their attitudes were more positive. However it was concluded that the programme, as implemented in the area, did not succeed in changing high-risk behaviour patterns among school-going young people. The current study findings are also similar to that of a very recent comprehensive South African review of sexual behaviour among adolescents whereby Hartell (2005) found that adolescents appear to have a high level of awareness about HIV/AIDS but this has not been translated into substantial behaviour change. The author found that respondents had more than one sexual partner, in fact between 40% and 60% of adolescents had more than one partner within a 6-month period. Few perceived themselves to be at risk, few took the need for safer sex seriously, and did not see AIDS as a personal threat, although most adolescents acknowledge the disease's severity. A two-year PSI intensive programme in Madagascar aiming for behaviour change and use of health clinic had similar results. PSI (2004) reported that their programme did not contribute to the observed trend of increased reported condom use. It did, however, result in increasing of the use of modern family planning. Cramer (2003) reported the same findings in Zambia that while condom use increased, its consistent use remained low, which means that change of behaviour did not occur.

In the present study, however, it does not mean that there was no change of behaviour at all. Based on positive statements made by respondents themselves, the researcher believes that for

some respondents, the VCT service reinforced their preventive measures against ISTIs/HIV/AIDS and for others it allowed them to take decisions on changing their behaviours. This is supported by different statements from respondents about advocating for VCT to their school or classmates as well as adopting positive behaviours after getting general sexual health information. Among the shortcomings for this study, it must be mentioned that it was not easy to do individual follow up. The research design did not link the first measurement and the second measurement of individuals, because of a regard for anonymity. Only a group with group comparison was therefore possible. This might have underestimated the evidence of change.

Stages of behaviour change were used to explore how respondents acquired skills which would contribute towards behaviour change. The qualitative findings showed respondents' willingness to embark on behaviour change but quantitative data did not confirm that such changes had occurred. In other words, the intervention carried out in the present study did not translate into a significant difference between risk behaviour exhibited by respondents before and after the intervention. Among the questions that arise are that maybe the time span (seven months) was too short for positive behaviours to take place or that the approach was not appropriate or there are other unknown contributing factors to youth behaviour change.

**Recommendations :**

- To start with baseline data collection whenever one plans to implement a VCT programme as an intervention for prevention against HIV/AIDS in schools. The fact is that having data at hand on respondents' levels of awareness and knowledge of the AIDS pandemic is helpful while conducting related education programmes. It was found that many respondents are already sexually active and hold misconceptions

about preventive measures. Preventive information and sex education, including knowledge of STIs, should therefore be targeted to all respondents.

- An interesting area of research could be a comparison study on HIV/AIDS prevention between School respondents and out-of-school youth. Little information is available on differences between these two groups.
- Behaviour change is still problematic as reported in most sourced literature and this was also revealed by the present study. Further approaches and or studies to address this problem are highly recommended.

### **5.3 CONCLUSION**

Chapter Five covers the most important aspects of data and discussion on the possible related implications.

The discussion was done systematically according to the theoretical framework of the present study and at every step comparison with findings from literature was done. Under each step recommendations were formulated. These steps include: access to schools, sensitization for testing and baseline data, VCT and research outcomes.

The next sections will include the conclusion and limitations of the whole study.



## **5.4 OVERALL CONCLUSION**

This study has demonstrated that respondents are among youth groups that should be accessed if one wishes to prevent HIV/AIDS while using VCT strategy. Procedures to go about it have been described, the problems encountered are mentioned and the way these problems were addressed has been reported in this study.

In reference to the UNAIDS (2001) point of view of VCT as the cornerstone of HIV prevention programmes, the outcomes described in this study serve as evidence of a successful VCT programme but a failure in terms of behaviour change in young adult respondents in Kigali, Rwanda. Different statements presented in this study, however, credited the on-going education sessions of this study with bringing the respondents to perceive themselves at risk of HIV infection. Furthermore the organized sessions helped respondents to talk openly about their concerns about HIV/AIDS, which, as planned at the beginning of this study, served as an occasion to break the silence about HIV/AIDS.

In spite of existing efforts in addressing HIV/AIDS by different programmes, organizations and media in Rwanda, results from this study have indicated that the level of basic HIV/AIDS knowledge was not yet sufficient. There are a number of respondents who hold erroneous beliefs which might be barriers to them adopting HIV infection preventive measures. The outcomes of the present study, however, demonstrated that regular meetings resulted in improving respondents' knowledge. This was confirmed by the significant differences depicted by statistical tests which were applied while comparing the experimental and comparison groups before and after the study intervention.

The sexual practices and reasons for sex that fall in line with risk behaviours reported in this study show the extent to which HIV is likely to be spread among respondents attending secondary schools.

Although knowledge is necessary, it alone was not sufficient to ensure appropriate behaviour. As already mentioned in the many pieces of literature documenting the extent to which sex education increases young people's knowledge, it was not associated with behavioural change.

The researcher believes this study shows that appropriate interventions, including counselling and other school-based interventions, could utilize the combined VCT and behaviour change model to effectively address the needs for the common fight against the HIV/AIDS pandemic in Rwandan population, in youth and respondents in particular. The developed best practice guidelines will facilitate the implementation of such programmes.

## **5.5 LIMITATIONS OF THE STUDY**

In striving to target a younger age-group with the aim of “sexual debut”, as recommended in most of the literature on HIV/AIDS, the researcher had considered it important to draw a sample of respondents attending the third and fourth year from each secondary school. According to Van Dyk (2001), these respondents are expected to be 14-16 years old and at the age when decisions about sexual behaviour are being made. This author wrote that the young adolescent has a better understanding of illness in general and HIV and AIDS in particular than the child in the middle childhood years (Van Dyk, 2001). As described on the methodology for this study, the major barrier encountered was that permission to involve the targeted population was refused. There is no information on whether or not Rwandan

adolescents would benefit from VCT which has been considered as cornerstone of HIV/AIDS prevention by the UNAIDS (2001).

The other challenge was the pressure of working with respondents meaning that one has to consider the fixed terms of school calendar. It was not easy to generate information at individual level of performance either about knowledge or behaviour change. Rather, results presented in this study refer to group comparisons.

Another shortcoming is on follow-up. The desire to protect anonymity and at the same time prevent stigma did not allow the researcher to contact all respondents who tested positive.

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## **APPENDIX 1 VCT Best guidelines practices**



## LIST OF APPENDICES

### APPENDIX 1: VCT BEST GUIDELINES PRACTICE IN SCHOOLS IN RWANDA

#### INTRODUCTION

The guidelines below are based on lessons learnt and the experiences from a three-year intensive study on VCT implementation in secondary schools in Kigali, the Capital City of Rwanda. It could be utilized by other persons wishing to embark on HIV prevention using VCT in respondents of high school elsewhere in the country.

Although the guidelines may not have exhaustive information, they cover the relevant information which may be adapted according to the objectives that one wishes to achieve. They have been set up according to the seven steps of the theoretical framework of the above mentioned study. At each step, objectives are firstly spelled out, actions and cautions follow respectively.

#### GUIDELINES FOR VCT PRACTICES IN SCHOOLS

##### *Preliminary contacts allowing access to schools*

- Education Department at Provincial level
- Health District
- Health Centres' leaders
- Principal (s) of the targeted school (s)
- Respondents' Management Service (Préfet ou animateur chargé de discipline)
- Anti-AIDS club leaders (teaching staff if any exist and respondents in particular).

## **STEP 1      SENSITISATION**

### **1.1      OBJECTIVES**

- Create an awareness in respondents about the VCT programme in their schools
- Enrole respondents who voluntarily accept to attend VCT services

### **1.2      ACTIONS:**

- Identify key persons (Respondent Management Service and Anti-AIDS Club leaders) who will link the campaigner and respondents.
- Organize meetings/general assembly with respondents at their respective schools to give health and testing messages.
- Anti-AIDS club leaders assisted by Respondent Management Service, to establish lists of respondents willing to attend VCT sessions and submit them to the campaigner.
- The campaigner to contact Health Centre leaders to get prepared for respondents' testing, negotiate with them about the suitable time for respondents which is normally during weeks or free period of exams.
- The three parties (Respondent Management Service, Anti-AIDS clubs and the campaigner) meet to schedule VCT sessions.

### **1.3      CAUTIONS**

Full collaboration between the School Management Service, Anti-AIDS club and the campaigner, is necessary to prevent problems which may result from the combination of VCT and school programmes. Since they live within the respondents' environment, these people will know better than anyone else, the reality facing respondents be it school timetable or social activity. They will then contribute to plans for meetings, spreading of health and testing

messages. They will finally contribute in terms of testing arrangements and communication to respondents.

**Please note:** Step 2 to step 5 of the model are done according to VCT directives of the Ministry of Health. However, in reference to Van Dyk (2001) the following are the fundamental points one needs to consider:

## **STEP 2      INDIVIDUAL PRE-TEST COUNSELLING**

### **2.1    OBJECTIVES**

- Assess respondents' reasons for testing and their previous behaviours
- Provide individuals with information on the technical aspects of testing
- Explain the implication of results whether positive or negative

### **2.2    ACTIONS**

- Help the respondent tell his or her story using among other techniques of counselling: listening, paraphrasing, probing and summarizing.
- The content of individual pre-test counselling should reflect the following concepts:
  - Reasons for testing
  - Assessment of previous risk conditions
  - Information about the test
  - Exchange ideas by anticipating test results and implication of an HIV test result to the future life of the respondent/client
  - Confidentiality of results
  - Informed consent
  - Information about on-going support
  - Waiting period.

## **2.3 CAUTIONS**

A successful pre-test counselling allows a counsellor to deal with psychosocial responses that a certain respondent/client may have while going through the process of Voluntary Counselling and Testing.

## **STEP 3 DECISION TO TEST**

### **3.1 OBJECTIVE**

Respect the right of each respondent as required by research ethics

### **3.2 ACTIONS**

- Inform each respondent of or her right to withdraw from the course of VCT and allow him or her to do so if he or she takes such decision. This person may be scared as a result of information on the testing procedures and its implications received during the pre-test counselling session.
- If “no” to test is the decision, provide information on HIV/AIDS preventive measures.

### **3.3 CAUTION**

If respondents are not ready for the test, they may not be able to cope with their emotions/feelings. They may end up in difficult conditions including committing suicide.

## **STEP 4 INDIVIDUAL RAPID TEST**

Refer to laboratory technique guidelines.

## **STEP 5      INDIVIDUAL POST-TEST COUNSELLING**

### **5.1 OBJECTIVES**

- Offer test results and appropriate counselling
- Support respondent dealing with his or her emotions

### **5.2 ACTIONS**

- The same counsellor offers post-test counselling because the established relationship between the client and counsellor provides a sense of continuity for the client. The counsellor will also have a better idea of how to approach the post-test counselling because of what he or she experienced in the pre-test counselling. Depending on the test results a trained counsellor has to cover the following:
  - Sharing the news with the client
  - Respond to client needs
  - Providing support to the client through his or her crisis especially if he or she tests positive
  - Assisting the client to plan for actions.
- Explain that a negative result that is good news for him or her but he or she must know that it may be by chance if that particular client confessed to have engaged in risky behaviour. Furthermore, alert the client that he or she is lucky for being negative at one point in time. However, if he or she put him or herself in unprotected sexual intercourse or other risks of contracting the infection, he or she may revisit the testing services and get different results, meaning positive.

### **5.3 CAUTIONS**

Well conducted post-test counselling reduces the risk of transmitting HIV from infected clients to unknown people. It facilitates clients coping with their emotions with positive results. For HIV negative clients, it is a relief but is also an opportunity for introspection and to plan for future. It is an experience that may bring both positive and negative clients to testify and help others to protect themselves against HIV infection.

## **STEP 6 GROUP FOLLOW-UP COUNSELLING AND SUPPORT**

### **6.1 OBJECTIVES**

- Help respondents/clients continually cope with their HIV serological status
- Orient HIV positive clients to the existing support services
- Counsel HIV positive respondents about preventive measures in terms of re-infection or infecting others

### **6.2 ACTIONS**

- Counsellors organize meetings with respondents at schools and invite individuals to consult them at Health Centres for private matters
- Distribute pamphlets containing pertinent information to the needs of clients and/or lists with contact details of available supporting services and explain the supporting system at the local and country levels

### **6.3 CAUTIONS**

After VCT, HIV positive respondents are in dire need of information regarding areas of help. If they do not get help, they find themselves in a hopeless condition which may completely alter their lives.

## **STEP 7 STAGES OF BEHAVIOUR CHANGE**

### **7.1 OBJECTIVES**

- Assess gradual respondents' behaviour change
- Measure effects of VCT intervention among respondents
- Provide health education according to respondents' responsiveness.

### **7.2 ACTIONS**

- Conduct baseline data collection
- Conduct systematic surveys, interviews and/or questionnaires to categorize respondents according to their current and previous behaviours. To do this an individual coded file is needed
- Establish a regular reporting system from anti-AIDS clubs on pre-established and objectively oriented actions in their respective schools. These actions should have been agreed upon with anti-AIDS clubs.

### **7.3 CAUTION**

The stages of behaviour changes are used to allow focused VCT intervention. It is used in monitoring and benchmarking VCT intervention in schools.

## **OTHER IMPORTANT PARTICULARS FOR THE VCT PROGRAMME SUSTAINABILITY IN SCHOOLS**

- Establish strong collaboration between School and Health Centre Management.
- Fully involve respondents' representatives in all intended actions concerning VCT to make them aware of the benefits.
- Schedule VCT sessions from the beginning of each school year and possibly throughout the year.
- Set up a follow-up mechanism/monitoring of the above mentioned schedule
- Emphasize setting up the mechanisms of support to HIV infected respondents
- VCT is free of charge at government Health Centres and most of the schools have access to Health Centres. However, there are some items that need to be budgeted for since they are directly linked to VCT services. These are for instance respondents' refreshments and/ or per diem for counsellors especially when weekends work is taken into account. Telephone and teaching audio-visual aids need to be paid for when necessary. Furthermore, it is important to consider costs related to the assistance of respondents who test positive especially when psychological assistance is needed. These costs include telephone and transport if they are to seek for assistance from different organizations/institutions.

## **STAKEHOLDERS AND POTENTIAL SOURCES OF FUNDS**

National Youth Council, Ministry of Education, UNICEF, MAP, USAID, UNESCO, Networking for PLWA, CNLS, TRAC and VCT intégré.





## **APPENDIX 2 Research questionnaire**

## APPENDIX 2 : RESEARCH QUESTIONNAIRE

### SECTION A. SOCIO-DEMOGRAPHIC DATA

- A. 1 what is your sex? 1. Male 2. Female
- A. 2 How old are you?
1. 12-13 2. 14-15 3. 16-17 4. 18-19 5. 20-21 6. Above 21
- A. 3 In which country were you born?
1. Uganda 2. RD Congo 3. Rwanda 4. Burundi  
5. Tanzania 6. Kenya 7. Other.....
- A. 4 Do you belong to a religious denomination?
1. Catholic 2. Protestant church 3. Seventh Day Adventist Church  
4. Muslim 5. Jehovah's witness 6. Hindu 7. None  
8. Other (Specify.....)
- A. 5 Who pays for your studies?
1. Father  
2. Mother  
3. Brother/Sister  
4. Insurance  
5. Ministry of welfare  
6. Religious organization  
7. Family member  
8. FARG  
9. Caregiver  
10. Other (Specify.....)
- A. 6 How do you get your school fees?
1. All the time easy 2. Sometimes-difficult 3. All the time difficult

A. 7 Which of your parents is (are) still alive?

1. Father                      2. Mother                      3. Both parents                      4. None

**SECTION B: HIV/AIDS KNOWLEDGE**

**Please tick in the appropriate box to your answer in the following table**

<b>Questions</b>	<b>Yes</b>	<b>No</b>
B.1 Have you heard of infections that are transmitted during sexual intercourse		
B.2 Have you ever heard of HIV/AIDS		
B.3 Can people protect themselves from getting AIDS		
B.4 Do you know a person that has had AIDS in your community		
B.5 Have you ever taken care of a person who had HIV/AIDS		

**How far do you agree with the following statements?**

<b>Statement</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
B.6 People infected with the virus that causes AIDS always show symptoms of the disease?				
B.7 The virus that causes AIDS destroys the body's immune system?				
B.8 People with the AIDS antibody, but no symptoms, can transmit the disease to another person				
B.9 A blood test can tell if you have the HIV antibody				
B.10 You can get AIDS from mosquito bites				
B.11 AIDS is a sexually transmitted disease				
B.12 AIDS is a transmitted disease from one person to another through body fluids (blood, semen, vaginal fluids and breast milk).				
B.13 People do not die of the AIDS virus itself, but of diseases their bodies don't fight off.				
B.14 AIDS destroys a person's disease fighting ability				
B.15 AIDS is caused by a virus?				
B.16 Keeping in good physical condition is the best way to prevent getting the AIDS virus				
B.17 A person can get AIDS by touching or hugging someone with AIDS?				
B.18 Condoms reduce the risk of getting the AIDS virus?				
B.19 Most people who have the AIDS virus quickly show signs of being sick				
B.20 A person must have lots of different sexual partners to be at risk for AIDS				
B.21 Only people who have sexual intercourse with gay (homosexual) men get AIDS				
B.22 You can get AIDS from kissing				
B.23 People who get AIDS virus through needle sharing can spread the virus to others during sex				
B.24 A women with HIV can pass the virus to her foetus or unborn child				
25 Teenagers are less likely to get AIDS than persons over 20 years old				
B.26 If a woman uses birth control pills; it lowers her risk of getting AIDS				

B.27 Where could you go to be tested for the AIDS virus infection?

1. Public hospital /clinic      2. Private Hospital/ Clinic      3. TRAC      4. CHU  
5. PSI      6. School clinic      7. Other

(Specify.....)

**SECTION C: RISK BEHAVIOUR/SEXUAL PRACTICES**

**Please tick in the appropriate box to your answer in the following table**

**First sexual intercourse experience**

Question	Yes	No
C.1 There comes a period when one is unusually attracted to some one of the opposite sex and want to be physically closed to them. Have you ever experienced this?		

C.2 If yes, How old were you when first experienced this type of attraction?..... Years.

Question	Yes	No
C.3 Have you had sexual intercourse?		

C.4 How old were you when you had your first sexual experience?.....years old.

C.5 Where did your first sexual experience take place?

1. At home      2. At my partner's home      3. At a motel/Hotel  
4. In a car      5. In a park      6. In an office  
7. In a shop      8. At school      9. Elsewhere (Specify  
.....)

C.6 In what level of schooling were you then?..... Year

**Recent sexual intercourse practices**

<b>Questions</b>	<b>Yes</b>	<b>No</b>
C.7 During the past 6 months, have you had sexual intercourse?		
C.8 During the past 6 months, with how many people have you had sexual intercourse?		
C.9 Now, thinking back about the last time you had sex did you or your partner use a condom?		

**Please tick the appropriate answer in the table below.**

<b>C.10 Have you experienced any of the following?</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
- Having sex in exchange for money or goods				
- Paying for sex				
- Forced sexual intercourse				
- Had sex while drunk				
- Had sex while high on a drug				

## **APPENDIX 3    Schedule of the testing sessions**

**Schedule of the VCT sessions per school**

School	Session	Gender		Place	Dates	Total
		Male	Female			
A	1	29	19	Kacyiru	12/3/2005	<b>48</b>
B	1	24	28	Kacyiru	18/3/2005	<b>52</b>
C	1	26	17	Kacyiru	19/3/2005	<b>83</b>
	2	20	20	Kacyiru	25/3/2005	
D	1	27	19	Kacyiru	26/3/2005	<b>46</b>
E	1	27	22	Kacyiru	31/3/2005	<b>96</b>
	2	25	22	Kacyiru	1/4/2005	
F	1	44	29	SIDA ALERT	29/4/2005	<b>109</b>
	2	15	21	Kacyiru	22/4/2005	
<b>Total</b>		<b>237</b>	<b>197</b>			<b>434</b>



## **APPENDIX 4 University ethical approval**



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**RESEARCH ETHICS COMMITTEE**

Student: D Kamanzi

Student No: 201508530

Qualification: PhD

Research Title: The implementation and outcomes of a Voluntary Counselling and Testing programme in secondary schools in Kigali, Rwanda.

A. The proposal meets the professional code of ethics of the Researcher:

YES  NO

B. The proposal also meets the following ethical requirements:

	YES	NO
1. Provision has been made to obtain informed consent of the participants.	<input checked="" type="checkbox"/>	
2. Potential psychological and physical risks have been considered and minimised.	<input checked="" type="checkbox"/>	
3. Provision has been made to avoid undue intrusion with regard to participants and community.	<input checked="" type="checkbox"/>	
4. Rights of participants will be safe-guarded in relation to:	<input checked="" type="checkbox"/>	
4.1 Measures for the protection of anonymity and the maintenance of confidentiality.	<input checked="" type="checkbox"/>	
4.2 Access to research information and findings.	<input checked="" type="checkbox"/>	
4.3 Termination of involvement without compromise.	<input checked="" type="checkbox"/>	
4.4 Misleading promises regarding benefits of the research.	<input checked="" type="checkbox"/>	

Signature of Student: [Signature] Date: 17/09/2003

Signature of Supervisor: [Signature] Date: 17/09/2003

Signature of Head of School Committee: [Signature] Date: 17/09/2003

Signature of Chairperson of the Committee: [Signature] Date: 140c'03

## **APPENDIX 5 National ethics committee approval**

National Research Ethics Committee  
Kigali, Rwanda

24<sup>th</sup> March 2004

Mr Désiré KAMANZI  
Kigali Health Institute  
P.O. BOX 3286 Kigali,  
Rwanda

**RE: PERMISSION FOR RESEARCH**

Mr D. KAMANZI,

On behalf of the National Research Ethics Committee, I would like to inform you that permission is granted to conduct your research project entitled "*The implementation and outcomes of a VCT programme in secondary schools in Kigali, Rwanda*".

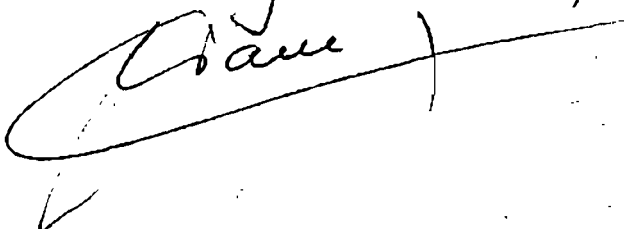
It is noted, however, that you are allowed to consider in your sample only students aged 18 years and above and confidentiality must be preserved.

I wish you success in that research which actually falls in the country health priorities.

Regards,

Dr Jean Damascène NTAWUKULILYAYO  
Minister of Infrastructures  
President of the National Research Ethics Committee  
Kigali, Rwanda.

P.O. Pr Justin Wane, Secretary of E.C.



**APPENDIX 6 Approval letters from the  
Department of Education,  
Kigali City**

**VILLE DE KIGALI  
DIRECTION DE L'EDUCATION**

Kigali, le 30/03/2004

Monsieur **KAMANZI Désiré**  
C/O: Kigali Health Institute  
P.O Box 3286 KIGALI  
**KIGALI.**

**Objet** : Votre demande d'autorisation de recherche

Monsieur,

Référence faite à votre lettre du 24/03/2004 relative à la demande d'autorisation de mener une étude sur le VCT dans les écoles secondaires de la Ville de Kigali dans le cadre de votre thèse de doctorat, ainsi qu'à l'accord que vous avez obtenu auprès du comité national d'éthique en matière de recherche,

Nous avons le plaisir de vous communiquer notre avis favorable, et nous vous demandons de contacter les Directeurs des institutions retenues dans votre échantillon, muni de la présente lettre, avant toute activité liée à votre étude. Toute fois, vous êtes tenu de respecter les règles de déontologie et d'éthique pendant la collecte de vos données.

Tout en espérant d'utiliser les résultats de votre étude, nous vous souhaitons plein succès dans votre recherche.

Directeur de l'Education dans la  
Ville de Kigali  
**HAVUGUZIGA Charles**

**Copie pour information:**

- Monsieur le Maire de la Ville de Kigali
  - Monsieur le Secrétaire Exécutif de la Ville de Kigali
- KIGALI**



**VILLE DE KIGALI  
DIRECTION DE L'ÉDUCATION**

**Kigali, le 20/06/2005**

A Monsieur **KAMANZI Désiré**,  
C/O Kigali Health Institute  
P.O Box 3286 Kigali  
**KIGALI**

**Objet:** Autorisation pour conduire  
les élèves aux services du VCT

Monsieur,

Référence faite à votre lettre du 25/04/2005 demandant l'autorisation pour conduire les élèves désireux de bénéficier le service du Conseil et du Dépistage Volontaire du VIH/SIDA (VCT) dans les formations sanitaires de Kigali, j'ai le plaisir de vous communiquer qu'il n'y a pas d'objection à votre demande.

Je vous recommande de contacter les directeurs des écoles vous intéressant pour les modalités pratiques.

Tout en vous souhaitant plein succès dans cette action, veuillez agréer Monsieur, l'assurance de mes sentiments distingués.

Directeur de l'Éducation dans la Ville de Kigali

**HAVUGUZIGA Charles**

**Copie pour information :**

- Monsieur le Maire de la Ville de Kigali
- Monsieur le Secrétaire Exécutif de la Ville de Kigali

**APPENDIX 7 Approval letters from  
Muhima health district**



KAMANZI Désiré  
Kigali Health Institute  
B.P 3286 Kigali, Rwanda  
Tel. 08868207  
Fax. 571787

Kigali, le 01/03/2005

Année.....	2005
Date d'entrée.....	01.03.05
Provenance.....	KAMANZI Désiré
Traité par.....	
N° Classement.....	122-05/DSM

Accord pour visiter  
les CS dans le cadre  
de son travail

le 01/03/05

  
11/03/05

A Monsieur le Médecin Directeur du District de Santé  
de Muhima  
**KIGALI**

Objet : Demande d'autorisation pour une recherche

Monsieur le Médecin Directeur,

J'ai l'honneur de venir auprès de votre autorité en vue de vous demander d'autoriser les titulaires des centres de santé à m'appuyer dans la collecte des données de ma recherche sur le conseil et dépistage volontaire du VIH/SIDA (VCT).

En effet, Monsieur le Directeur, je suis entrain de mener une recherche sur le conseil et dépistage volontaire du VIH/SIDA auprès des élèves des écoles secondaires du milieu urbain de Kigali. Ladite recherche s'inscrit dans le cadre de mes études doctorales entamées il y a deux ans.

Après une phase intensive de sensibilisation en faveur du VCT dans 6 écoles, je compte amener les élèves dans les Centres de santé pour y recevoir le service du dépistage volontaire et conseil en matière du VIH/SIDA à ma charge, durant la période du 20/03/2005 au 30/06/2005. Les jours seraient fixés en accord avec chaque titulaire et moi-même.

Vous trouverez en annexe de la présente, les photocopies des lettres m'autorisant à mener cette recherche.

Désiré KAMANZI



**APPENDIX 8 Checklist used during  
individual counseling &  
testing session**

**CHECKLIST INDIVIDUEL DE COLLECTE DES DONNEES DE RECHERCHE  
PENDANT LE CONSEIL ET DEPISTAGE VOLONTAIRE DU VIH/SIDA DANS  
LES CENTRES DE SANTE DU 20 mars -30 juillet 2005**

Veillez marquez devant chaque point ci-dessous le signe soit « X » pour signifier que cette notion ne s'applique pas au client, soit « √ » pour signifier que la notion concerne le client.

**1. AVANT LE TEST, Le client comprend bien:**

- ❖ les raisons de son test
- ❖ les concepts de base de l'infection a VIH/SIDA y compris la période de fenêtre.
- ❖ les éléments liés au test
- ❖ la signification des résultats et se prépare a recevoir ses résultats.
- ❖ ce qu'il peut faire à l'issue du test (résultat positif ou négatif).
- ❖ la confidentialité de ses résultats.
- ❖ les rapports sexuels protégés (utilisation du préservatif)
- ❖ l'auto-évaluation des risques possibles liés à l'infection VIH/SIDA
- ❖ sa décision personnelle pour accepter le test ou pas
- ❖ Partager les résultats du test avec une personne intime

**2. APRES LE TEST, Le client présente des sentiments de :**

- ❖ conviction de son résultat tel qu'il se présente
- ❖ pas du tout convaincu de son résultat
- ❖ être prêt a vivre positivement avec un résultat positif du VIH/SIDA.
- ❖ ne connaître que des rapports sexuels protégés pour maintenir son statut sérologique négatif
- ❖ culpabilité
- ❖ colère
- ❖ peur
- ❖ ne pas être sujet de propagation de l'infection si VIH positif
- ❖ être prêt à refaire le test s'il a été réalisé pendant que le client était en période de fenêtre

## **APPENDIX 9 Individual consent form**

Kigali, 08<sup>th</sup> October 2003

Dear Pupil,

For some time I have been interested in participating in HIV/AIDS prevention and I would very much like you entirely to take part in the research on Voluntary Counselling and Testing that I am currently conducting in your school. Your identity and all information you provide will be *totally confidential*.

The product of our work will be of direct benefit in knowing personal HIV status that will permit the control of self-sexual behaviour, thus, ensures HIV prevention. On the other hand, the knowledge of a positive HIV status should help one to adopt earlier strategies for self-care.

Should you be willing to co-operate in this research, please complete and sign the attached consent form and hand it to myself.

I hope you will respond favourably to my request for some of your time.

Yours sincerely,

Désiré KAMANZI

Kigali Health Institute  
PO. Box 3286  
Fax (250) 571787  
Tel (250) 572172  
Cell (250) 08535870  
Email: [kamazides@yahoo.fr](mailto:kamazides@yahoo.fr)



**INDIVIDUAL CONSENT FORM**

Names :-----

School :-----

Year of study :-----

After understanding the purpose of the research undertaken by Désiré KAMANZI in our school, I accept to participate voluntarily (without any pressure) in that research.

Signed:-----

Date:-----

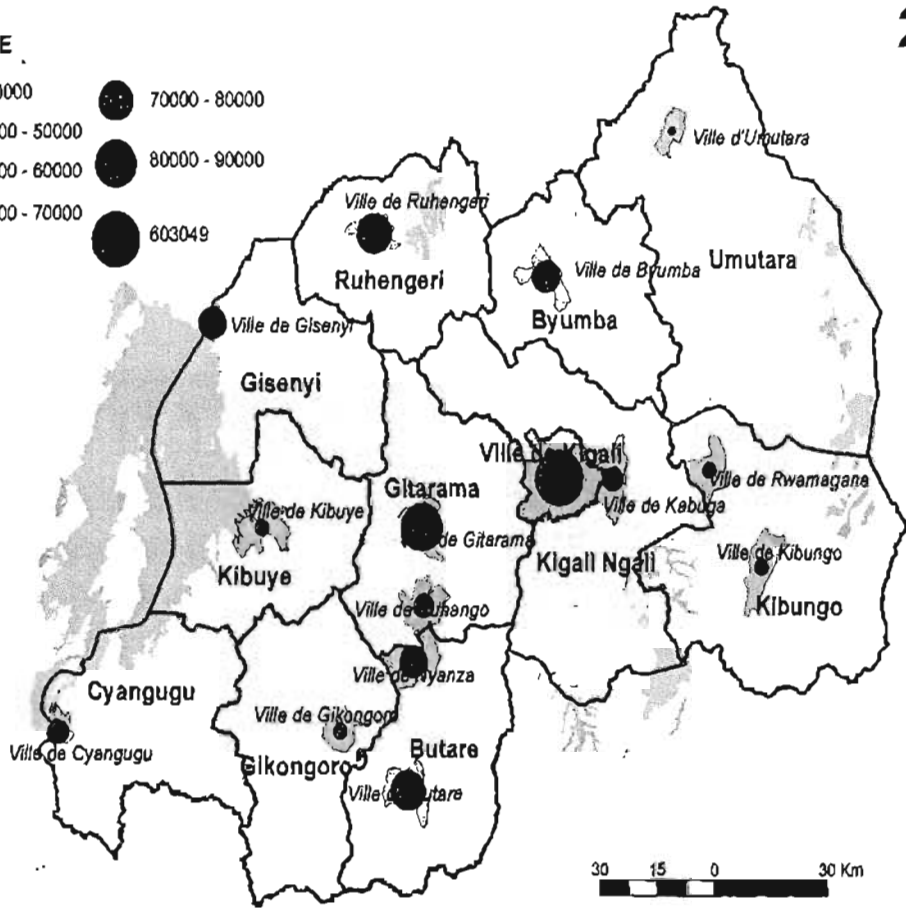
**APPENDIX 10      Map of Rwanda**

REPARTITION DES VILLES SELON LEUR POIDS DEMOGRAPHIQUE

2

LEGENDE

- < 10000
- 10000 - 50000
- 50000 - 60000
- 60000 - 70000
- 70000 - 80000
- 80000 - 90000
- 603049





**APPENDIX 11      Letters to Principal**



*Ministère de l'Éducation, de la Science,  
de la Technologie et de la Recherche Scientifique*  
**KIGALI HEALTH INSTITUTE**  
B.P. 3286 KIGALI  
Tél : 57 2172 & Fax : 57 1787.

A Monsieur le Directeur du  
Lycée de Kigali

**Objet** : Conseil et dépistage volontaire du VIH/SIDA  
dans les écoles secondaires de Kigali

Monsieur le Directeur,

J'ai l'honneur de vous demander de bien vouloir autoriser l'offre du Conseil et Dépistage Volontaire (VCT) au sein de votre institution.

En effet, le VCT a déjà prouvé ailleurs, qu'il est l'une des meilleurs stratégies ayant fait des bons résultats dans la prévention contre le VIH/SIDA chez les jeunes. Ainsi, la formation des formateurs à laquelle vous avez récemment délégué deux enseignants au Centre de Formation Continue du Kigali Health Institute « CEFOCK » et la sensibilisation au VCT par un enseignant du KHI en même temps étudiant au programme de doctorat, ont abouti à une demande importante dudit VCT par les élèves. Les listes que nous disposons font état d'une moyenne de 130 élèves par école.

Ledit VCT est offert par le KHI en collaboration avec le Conseil National de la Jeunesse, le VCT intégré ainsi que le TRAC.

Le calendrier que vous trouverez en annexe de la présente a été arrêté après concertation des membres des club anti-SIDA des écoles respectives.

Espérant une suite favorable à notre demande, je vous prie d'agréer, Monsieur le Directeur, l'assurance de ma franche collaboration.

BISHIMIMANA Thérèse  
Directrice du Kigali Health Institute

Kigali, 08<sup>th</sup> October 2003

The Principal  
School of .....

I am a PhD student at the University of Natal, Department of Nursing, Faculty of Community and Development Disciplines, South Africa. I am currently conducting a research with title: **“The implementation and Outcomes of a Voluntary Counselling and Testing programme in secondary schools in Kigali, Rwanda”**.

This research therefore, requests a permission to collect the data on one to one voluntary individual counselling and testing with pupils. Other methods of data collection will be a self-administered questionnaire and follow-up group counselling session.

The identity and all information provided by pupils will be *totally confidential*.

It will highly appreciated if my request receives your favourable consideration.

Yours sincerely,

Désiré KAMANZI  
Kigali Health Institute  
PO. Box 3286  
Fax (250) 571787  
Tel (250) 572172  
Cell (250) 08535870  
Email: kamanzides@yahoo.fr

