

DEPARTMENT OF FAMILY MEDICINE AND PRIMARY HEALTH CARE

UNIVERSITY OF LIMPOPO (MEDUNSA CAMPUS)

**KNOWLEDGE, ATTITUDES AND PRACTICES OF GOMA UNIVERSITY
STUDENTS ABOUT CONDOM USE IN THE PURPOSE OF REDUCING HIV
INFECTION**

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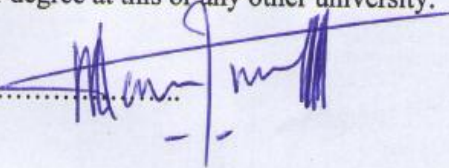
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DECLARATION

DECLARATION

I, Dr Masoda Maurice hereby declare that the work on which this research is based is original and that neither the whole work nor any part of it has been , is being or is to be submitted for another degree at this or any other university.

Signed:.....

A handwritten signature in blue ink, appearing to be 'M. Masoda', written over a horizontal line. The signature is somewhat stylized and includes a vertical stroke that extends downwards.

Date: 10th / February /2010

DEDICATION

This research is dedicated to my late father Sumuni Nyamalyongo who died few years ago, who would have been happy to enjoy this achievement.

I also dedicate this work to my parents for everything they did for my education.

I finally dedicate this work to my wife and children for their support, prayers and encouragement during these four years of study.

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To all my teachers, friends and colleagues. Thank you.

ABBREVIATIONS USED IN THE STUDY:

WHO: World Health Organisation

DRC: Democratic Republic of Congo

MD: Medical Doctor.

HIV: Human immunodeficiency virus

AIDS: Acquired Immune-deficiency syndrome

STDs: sexual transmitted diseases.

USA: United States of America.

HPV: Human papiloma virus

DEFINITION OF TERMS

The male condom is a thin sheet of latex that snugly fits over the penis during sex. The condom keeps the semen from entering the vagina.

Knowledge is defined by the Oxford English Dictionary as (i) expertise, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject; (ii) what is known in a particular field or in total; facts and information; or (iii) awareness or familiarity gained by experience of a fact or situation.

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for an item.

A cross-sectional study is a descriptive study in which disease and exposure state are measured simultaneously in a given population.

Cross-sectional studies can be thought of as providing a "snapshot" of the frequency and characteristics of a disease in a population at a particular point in time

LIST OF FIGURES.

Fig. 1: condoms awareness

Fig. 2: Price of Condoms

Fig. 3: Advantages of condom use

Fig. 4: Condom Disadvantages

Fig. 5: Acceptability of condoms

Fig. 6: Readiness to use condoms

Fig. 7: Readiness to use condoms if they are freely available

Fig. 8: Recommendation of university supplying students with condoms.

Fig. 9: Partner initiating condom use

Fig. 10: Engagement in sexual activities

Fig. 11: Unprotected sex

Fig. 12: Personal use of a condom

Fig. 13: personal regular use of condoms

Fig. 14: Personal use of condoms in previous month

ABSTRACT

Objectives

This study sought to determine the knowledge, attitude and practices of Goma University students about condom use for the purpose of reducing HIV infection.

Design

A descriptive cross-sectional quantitative study using a self-administered questionnaire.

Setting

Goma University/North Kivu Province, Democratic Republic of Congo (DRC).

Subjects

138 students from Goma University selected randomly completed the self-administered questionnaires.

Results

Their ages varied between 18 and 33 years. Most of them were males 111 (80 %), (93 %) were single; Most participants were protestant and Roman Catholic. The most important results were the following, The majority (99 %) of participants knew about condoms, 132 (96 %) knew that condoms are available and sold in Pharmacy, 72 (52 %) knew that condom can prevent at the same time HIV, Pregnancy and STI, 94 (68 %) said they know how to use a condom, 111 (80 %) stated that the price of condoms is not a barrier for condom use, 102 (74 %) suggested that the university should supply students with condoms, 91 (66 %) were engaging in sexually activity, 98 (71 %) of respondents reported that they had unprotected sex.

Conclusions

The main conclusions of this study can be summarized as follows:

Condom awareness was high with varying sources of information, Condom use was generally accepted as a means of preventing HIV/AIDS, sexual transmitted diseases and pregnancy, and Condoms in DRC are cheap and affordable for university students. In some ethnic groups, religions and cultures were not in favour of condom use. Consistent use of the condom was low among Goma University students.

The results of statistics test (Fisher test) have shown that there is no difference in condom knowledge, attitudes and practices among Goma University students depending on several socio- demographic factors (sex, marital status, field of studies, class of study, tribe, etc)

TABLE OF CONTENTS

Title Page.....	Error! Bookmark not defined.
DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS.....	iv
ABBREVIATIONS USED IN THE STUDY:	v
DEFINITION OF TERMS.....	vi
LIST OF FIGURES.....	vii
ABSTRACT.....	viii
TABLE OF CONTENTS	x
CHAPTER ONE: INTRODUCTION	1
1.1.BRIEF OVERVIEW OF THE TOPIC AND ITS RELAVANCE.....	1
1.2.PROBLEM STATEMENT	2
1.3. JUSTIFICATION FOR THE STUDY	3
CHAPTER 2. LITERATURE REVIEW	4
2.1. INTRODUCTION.....	4
2.2. ACCESS TO THE LITERATURE.....	4
2.3. CONDOMS CHARACTERISTICS	5
2.4. KNOWLEDGE ABOUT CONDOMS.....	7
2.5 ATTITUDES ABOUT CONDOM USE	9
2.6 CONDOM USE	13
2.7 FACTORS ASSOCIATED WITH CONDOM USE.....	14
2.8 RELATIONSHIP BETWEEN CONDOM KNOWEDGE AND CONDOM PRACTICE.....	16
CHAPTER 3. METHODS.....	17
3.1. Introduction.....	17
3.2. AIM.....	18

3.3. OBJECTIVES:	18
3.4. Design of the study	18
3.5. Setting of the study	18
3.6. Population and sampling	20
3.7. Collection of data	21
3.8. Data analysis	21
3.9. Validity and Reliability	22
3.10. Bias	23
3.11. ETHICAL CONSIDERATIONS	24
3.12 STUDY LIMITATIONS	25
CHAPTER 4 . RESULTS	26
4.1 INTRODUCTION	26
4.2. SOCIO-DEMOGRAPHICS OF THE PARTICIPANTS	26
4.3. KNOWLEDGE OF CONDOMS	28
4. 4. ATTITUDES TOWARDS CONDOMS	32
4.5. PRACTICES OF CONDOM USE	37
CHAPTER 5. DISCUSSION	41
5.1. INTRODUCTION	41
5.2. SOCIO – DEMOGRAPHIC CHARACTERISTICS	41
5.3. KNOWLEDGE ABOUT CONDOMS	42
5.3. ATTITUDE ABOUT CONDOM USE	44
5.4. PRACTICE ABOUT CONDOM USE	46
CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS	49
6.1. CONCLUSION	49
6.2. RECOMMENDATIONS	50
REFERENCES	52
APPENDICES	59

Questionnaire in English.....	59
Questionnaire in French	63
RESEARCH PROTOCOL.....	68
Informed consent form.....	81
Certificate clearance	82

CHAPTER ONE: INTRODUCTION

1.1.BRIEF OVERVIEW OF THE TOPIC AND ITS RELAVANCE

Sexually transmitted diseases continue to be a major public health problem worldwide particularly in adolescents and young adults. This has become even more evident with the emergence of HIV-AIDS infection in the 80's which is still putting at risk a large part of the world population in general and Africans in particular (UNAIDS and WHO, 2000).

Young adults represent one of the groups at highest risk for HIV infection.

Indeed, the results of a nationally representative household survey conducted in South Africa in 2003 revealed that more than 15% of young women and almost 5% of young men aged 15 to 24 years were infected with HIV (Pettifor AE, Rees HV, 2004)

Preliminary studies of the prevalence of HIV/AIDS infection in Eastern Congo have suggested a prevalence of 5.4 % among adults (Kisangani E, Lutala, Kambale, 2003). Until now, there is neither immunization nor curative treatment against this infection.

Anti retroviral treatment is very expensive and many developing countries like DRC have limited access to it. Prevention is the only one way to reduce morbidity due to HIV infection. It is without a doubt that the condom is the most affordable and effective means of preventing the spread of sexually transmitted diseases and HIV/AIDS around the world (UNAIDS/WHO, 2001).

It is for this reason that numerous groups concerned about the practice of safe sex are encouraging the use of condoms among sexually active teenagers and adults. For many years now, this campaign of condom use has been intensely and widely promoted in countries with large human population and increasing cases of HIV infection. It is unfortunate, though, that

not all people agree on the use of condom to prevent HIV/AIDS due to their different religious beliefs, cultures, level of education, personal perceptions (Zellner SL, 2003).

1.2.PROBLEM STATEMENT

The condom use is still meeting some challenges in the DRC. The promotion and distribution of condoms are limited. In 2001, 48% knew that condoms could prevent HIV (MICS, 2001). In a survey carried out in 2003 in the North Kivu Province (Congo), 63% stated that condoms were available in private pharmacies, while only 9% said that they could be obtained from health centres (Soeters, 2003). In the same study, they found that about 11% of women had a sexual partner other than their regular partner during the previous year, and that only 13% of these used condoms.

The condom is an accepted and efficient method of prevention, especially when it is used correctly during casual sexual intercourse. A large portion of Goma University students are single, and are exposed to casual sexual intercourse. Based on the researcher's casual observations of relationship behaviour of students at Goma University, it was postulated that students knowledge, attitudes and practices about condom use in the reduction of HIV/AIDS was lacking. The aim of this study was to determine the knowledge, attitudes and practices about condom use for the purpose of reducing HIV infection among Goma University students.

1.3. JUSTIFICATION FOR THE STUDY

The Democratic Republic of Congo is facing numerous challenges due to the increase in the number of HIV infected patients.

The fact that there is no cure, prevention is still the cornerstone to struggle against HIV /AIDS. It has been observed that HIV infections are increasing in DRC and this shows that the use of preventive measures e.g. condom use is very low (Kisangani E, et al; 2003). It is in that light that the researcher sought to investigate the knowledge, attitudes practices of Goma University students about condom use in the purpose of reducing HIV infection.

CHAPTER 2. LITERATURE REVIEW

2.1. INTRODUCTION

In this chapter, the researcher begins by presenting the means used to access to the literature. This is followed by a critical appraisal of relevant articles. This chapter will cover the following:

- (1) Access to the literature
- (2) Condoms characteristics
- (3) Knowledge about condom use
- (4) Attitudes about condom use
- (5) Practices about condom use
- (6) Factors associated with condom use
- (7) Relationship between condom knowledge and condom practices

2.2. ACCESS TO THE LITERATURE

The keywords used were: condom use in youth; knowledge, attitudes, practices of youth about condom use. The primary search engine was Google. A request for search was also requested from the Resource centre of Department of Family Medicine (Medunsa) with these keywords: knowledge, attitudes practices about condom use. In this literature, the researcher particularly used the WHO publications on condom use. The lack of financial resources to purchase full texts of some articles was a limitation for critical appraisal of some articles cited in this review.

2.3. CONDOMS CHARACTERISTICS

2.3.1 Definition of condom

The male condom is a thin sheet of latex that snugly fits over the penis during sex. The condom keeps the semen from entering the vagina. Latex condoms are the most common type of condom sold in North America and are the only types of condoms that prevent transmission of HIV/AIDS. They are an important part of practicing safer sex (Onja ,1995; Jewkes R, 2002; Geibel , 2004)

Female condoms are designed to be inserted in a woman's vagina. They are 100% Latex Free and offer the Female a contraceptive choice. They are over 95% Effective when used properly. Female condoms have many benefits. They are effective against sexually transmitted infections and pregnancy. Perhaps the best benefit of the female condom is that it's a female-controlled device that doesn't rely on prescription medications to prevent HIV infection and sexual transmitted diseases. Still, female condoms are not as widely used as male condoms. The average female condom costs more than \$3. This makes them significantly more expensive than male condoms, which cost an average of \$1 or less each. Female condoms contain more material, including two flexible plastic rings that keep them in place.

2.3.2. The history of condoms

The first known published description of the condom is due to Fallopius in the 16th century; different forms of condoms were used long before that time. The condom was certainly used first for prophylaxis rather than contraception, and there is evidence that it was for sale in houses of prostitution in the 18th century. With the vulcanization of rubber in the 1840s there was a great increase in the production and sale of condoms; further improvement in condom

manufacture occurred with the development of liquid latex in the early 1930s. In 1960 there were about 600 million condoms were produced annually in the US (Jemmot L, 1990; Sonenstein F, 1992)

Condom use is recent in Africa and in DRC particularly. Some unpublished sources indicate that the message about condoms appeared around 1987 in DRC and was associated with HIV prevention campaigns. However, before this date condom was known by a small group and was used for family planning and STD prevention.

2.3.3 Advantages of condoms

The advantages of condoms documented by available literature (Pendergrast,1992 , Norris,1993 ; Anderson, John E., Potter, Lloyd B; 1993; Karim A, Magnani R, Morgan G, 2003; Herman S, 2009) are many, some of them are cited below:

When used correctly, condoms are safe and effective at preventing both pregnancy and infection. Male condoms are the only reversible way for a man to protect himself against sexually transmitted infections and accidental pregnancy, Sexual intercourse may be enjoyed more because there is less fear of STDs, HIV, and pregnancy, Condoms may reduce the risk of cervical cancer because there's less risk of HPV infection, Condoms do not affect the long term fertility of either partner, Condoms are widely accessible, and usually inexpensive, A good contraceptive option during breast-feeding or with other methods as a backup, Condoms are cheap, and available without a prescription, Condoms do not involve any side effects

2.3.4. Disadvantages of condom use

The condoms disadvantages as found by (Meekers, 2002 ; Macintyre K, Rutenberg N, 2004; Simbayi, Seth C, 2004; Maharaj, 2004; Mnyika ,2004), are:

Some people claim that stopping sex to put on condoms is a disruption that spoils the mood.

Ineffective if used incorrectly or if the condom breaks. Some people experience allergic reactions to spermicidal, lubricants or the latex of the condom. Must have withdrawal immediately after ejaculation to prevent the condom from slipping off, May reduce sensitivity or pleasure. Some couples report their female condoms make a whistling or squeaking sound during intercourse. The biggest disadvantage of female condoms is that they have to be inserted into the vagina, for women or their partners who are not familiar with their anatomy; this can prove challenging or uncomfortable. Many women also worry if they have the condom inserted correctly. According to Planned Parenthood, it's also possible for the condom to slip all the way inside of the vagina.

2.4. KNOWLEDGE ABOUT CONDOMS

South African youth report they know that condoms prevent HIV, sexually transmitted infections (STIs), and unwanted pregnancy. (Pettifor A, Rees H, Kleinschmidt I, 2005) Large-scale information campaigns and condom distribution programs appear to be bearing fruit among South Africans aged 20-34 years old (Nichols D, Ladipo O, 1986). Such conclusions have been drawn in India by Avasthi A; Nehru R (1998) who assumed that better knowledge and more favourable attitude towards the use of condoms would decrease the prevalence of HIV/AIDS. This highlights the need for educational programs for enhancing the acceptability of condoms in sexual practice (Avasthi A; Nehru R, 1998). In Uganda, community education to change behaviour has increased condom use and this has been shown to be effective at decreasing HIV prevalence (Bozette SA,1998; Shafer,1991) have demonstrated that HIV/AIDS knowledge is associated with condom use. Low level of knowledge about the transmission and prevention of AIDS among adolescents was a predictor of non use of condoms. Speizer I, Mullen S, Vignikin E (2002) did a research in Lomé, Togo, the study was

conducted to examine the responses to personal experiences with AIDS. Multivariate results demonstrate that an important factor that distinguishes adolescent male condom users from non-users of condoms is the knowledge of someone who died of AIDS. Conversely, personal experience with AIDS was unrelated to reported condom use among adolescent women.

Ndola Prata, Vahidnia F and Fraser A (2005) did a research in Angola the aim was to identify determinants of condom use among Angolan adolescents and young adults. They found out that for both males and females, consistent condom use was positively associated with higher levels of education and believing that condoms did not diminish sexual pleasure. It was negatively associated with being married or in a cohabiting relationship. Females who equated condom use with lack of trust were less likely to use condoms consistently, and males who believed that condoms were safe and those who had multiple partners were more likely to be consistent users.

Urban residence, higher education, being in school and not equating condom use with lack of trust were important predictors of use at last intercourse in regular and casual relationships, whereas access to condoms was the most important factor in spousal relationships. Bankole, Akinrinola; Ahmed, Fatima H, et al; (2007) did a research among adolescents in four countries in Sub-Saharan Africa (Burkina Faso, Ghana, Malawi and Uganda) the aim was the analysis of knowledge of correct condom use and consistency of use. They found out that the strongest predictor of knowledge of correct condom use among both male and female adolescents is exposure to a condom use demonstration. In Burkina Faso, Ghana and Uganda, adolescents who have seen a condom demonstration are 2 to 5 times as likely as those who have not to have good knowledge of correct condom use. Age, ever received sex education in school, ever attended school and exposure to the radio are also significant predictors of knowledge of correct use, particularly among men. Shafer (1991) have demonstrated that

AIDS knowledge is associated with condom use. Low level of knowledge about the transmission and prevention of AIDS among adolescents was a predictor of non use of condoms. An examination of AIDS knowledge and sexual behaviour among secondary school and college students in Tanzania found that participants with "good" knowledge of how HIV is transmitted were unlikely to use condoms despite their awareness of the increased risk for HIV infection from such behaviour (Maswanya E, 1999)

The above authors have demonstrated that knowledge about condom use is useful in preventing HIV infection and STDs.

2.5 ATTITUDES ABOUT CONDOM USE

2.5.1. RELIGIONS AND CONDOM USE

Dzama H, Osborne C (2004) did a research in Malawi the objective was to review the interpretations made by different religions (e.g. Christian, Muslim, and traditional African religions) of their key scriptures and teachings related to sexual and reproductive health. They found out that Understanding the religious background to sexual and reproductive health issues leads to better-informed discussions with religious leaders and communities and a better grasp of the ethical issues involved in condom use. Various religions exist in the world today and each has its own set of practices and ideologies. When it concerns the use of condoms as contraception in family planning programs and as a method of preventing the spread of sexually infectious diseases, the views of each religion also differ. This issue has been hotly debated among the conservative religious groups and the liberated cause oriented organizations.

Various studies have shown that campaigns toward the prevention of the spread of HIV/AIDS notably among the younger generation could reap positive results if religious beliefs and

practices are incorporated. Religion is believed to have a strong influence on the behaviour of people including their sexual activities. It is important to note that apart from government leaders in countries with a high rate of HIV cases, religious leaders also have a big role to play in the prevention and reduction of HIV infections.

They are vital educators and counsellors in the various aspects of people's lives including the HIV/AIDS issue. The stance on condom use of different religions in this modern age.

Catholicism

The church's catechism is that all sex acts must be done only to unite a couple and allow them to have children. The Catholic Church has been opposed to condom use. For the Roman Catholic Church, only the natural family planning method and abstinence is acceptable (Meekers, 2002; Macintyre K, Rutenberg N, Brown L, 2004)

Protestantism

Protestants are more open to the use of artificial birth control and condom use. In the Philippines, the Council of Christian Bishops of the Philippines (CCBP) is an example of protestant groups approving the use of condom and other birth control devices in family planning and combating the spread of infectious diseases. The group is comprised of protestant religious leaders and has 20,000 churches around the country. CCBP president Bishop Fred Magbanua said they are prolife and they support any policy that will allow couples to plan well for their family. He pointed out that no life is taken away here as no fertilization actually takes place when condoms are used. Contraceptives, according to this protestant group, do not stop life at all.

Other Protestant denominations have made statements on their position concerning contraceptives. The Church of England believes contraception is not a sin and does not go

against God's purpose. The Evangelical Lutheran Church in America also allows its followers to use contraceptives if a married couple does not intend to have children (Dzama H, 2004)

Islam

Since HIV/AIDS has become so widespread these days, many Islamic religious groups have accepted the use of condoms notably in preventing the transmission of diseases. An example is the Islamic Medical Association of Uganda (IMAU) and South Africa which played a vital role in convincing the country's Muslim religious leaders on the importance of condoms to avert the spread of the AIDS epidemic. It started a program incorporating condom education and distribution (Bozette S, 1998)

2.5.2. PARENTS ATTITUDES ABOUT CONDOM USE

Teenagers' communication with their partners about sex and their use of condoms may be influenced by the discussions teenagers have with their parents about sex. However, little is known about the process of parent-teenager communication on this topic. Understanding both what parents discuss with their children and how they discuss it may lead to a greater understanding of teenagers' sexual behaviour.

Daniel J (1999) did a research in New York; Interviews were conducted with 372 sexually active black and Hispanic youth aged 14-17, to examine parent-teenager discussions about condom use. They found out that Parent-teenager discussions about sexuality and sexual risk were associated with an increased likelihood of teenager-partner discussions about sexual risk and of teenagers' condom use, but only if parents were open, skilled and comfortable in having those discussions.

Teenagers' communication with their partner about sexual risk also was associated with greater condom use. They concluded that the influence on teenagers of parent-teenager

discussions about sexuality and condom use depends on both what parents say and how they say it.

2.5.3. CULTURES, SELF EXPERIENCES

Kazembe A, Chipeta (2004) conducted a study in Malawi to assess condom attitudes, knowledge, and difficulties in use among female bank workers in Malawi. The researchers found out that negative attitudes about condom use and morality of using condoms and lack of knowledge about condoms and how to use them are barriers to condom use for urban women in Malawi that must be addressed in HIV prevention interventions.

Despite high HIV rates and wide availability, condom use by even urban women in Malawi continues to be very low, a major barrier to HIV prevention. Cultural beliefs can be a source of misconceptions, for example some cultures think that uncircumcised men cannot use condoms; others believe that religious people do not need to use condoms or that only homosexuals get AIDS (Stewart, 1991).

In a study including 359 participants in Ethiopia, it was shown that sexual activity often begins as early as eleven years of age with the mean age 16 and 18 years for females and males, respectively, providing that education should start very early. After sensitization young women 20-39 years (83%) were more receptive to changing their attitudes and practices, compared to older women aged 40 years and above (11%). In this same study it was also shown that in spite of adequate knowledge risky behaviour prevails (Negash Y, Gebre B, Benti D, 2003).

2.6 CONDOM USE

Meekers D, Klein M (2002) did a research in Cameroon with an objective to describe risk behaviour and condom use among Cameroonian urban youth, in order to illustrate the need for reproductive health programs targeting youth.

In a representative sample of 1,910 unmarried youth aged 15-24. They focused on gender differences in sexual behaviour and condom use, but also examine differentials by age, socio-economic status, and education. They found out that in urban Cameroon, sexual initiation is often early around 15 years.

Despite the HIV epidemic, a substantial fraction of youth, males in particular, continue to have high rates of partner change. Condom use in casual relationships is fairly high. However, condom use in regular relationships remains fairly low, even though many youth had multiple regular partners. Accessibility and knowledge about condoms have not translated into condom use for many youth (Pettifor, Audrey, MacPhail, 2005).

BO Olley, Rotimi O (2003) did a research in Nigeria University, the study evaluated condom use behaviour in a sample of students at the Faculties of Social Sciences and Arts. The study population comprised 262 (62.1%) males and 160 (37.9%) females with a mean age of 24.1 years.

Results show that 422 students (representing 55.2%) were sexually active within three months before the study. Seventy seven per cent of students reported ever using a condom, 89% of females reported condom use by a partner, while 70% of males had used condoms during sex with a partner.

Regarding the frequency of use, more males (30%) than females (11%) had never used condom. The authors concluded that the majority of sexually active university students in the

study do not use condoms. However, the females reported greater consistency of use of condom when compared to the males. Condom use behaviour in this sample did not differ markedly from other college student samples.

Meekers D (2001) did a research in Rwanda, The aim of the study was to describe sexual behaviour and condom use among students in Rwanda, survey conducted in October-November 2000 among a representative sample of 3013 students aged 15- 24 in secondary schools and universities in Butare and Gitarama. The authors focus on gender differentials in sexual behaviour and condom use and found that many youth are abstaining. Only 13% of males and 5% of females report having a sexual partner in the past year. Of those having sex, only 30% of males and 42% of females had ever used condoms.

However, among the small group who reported being sexually active in the past year, nearly half of males (46%) and 71% of females reported condom use in their last sex act with a regular partner.

Reported levels of sexual activity among Rwandan students are exceptionally low for the region. Among this population of relatively well-educated youth, condom use with casual partners is high. Use with regular partners is high for females, but fairly low for males.

2.7 FACTORS ASSOCIATED WITH CONDOM USE

Factors associated with high condom use are: knowing how to avoid HIV , having spoken with someone other than a parent or guardian about HIV/AIDS, and having life goals, beliefs about condoms, perceived susceptibility to HIV infection, perceived self-efficacy to use condoms, perceived barriers to condom use, and perceived social support, belief by adolescents that condoms effectively prevent HIV transmission. Younger teenagers, (a) thinking about condoms, (b) talking about condoms, (c) respondents' attitude towards condom

use with the partner, and (d) respondents' perception of the partner's attitude towards condom use, high education, white race, high socio economic level, higher intentions with higher access. Positive beliefs about condoms (believing that they don't reduce sexual pleasure)

Believing in the effectiveness of condoms, Perceiving that their peers approve of condom use

Feeling confident that they know how to use a condom correctly, and how to broach the subject with their partner, Not using drugs or alcohol during sexual activity. The type of relationship (teenagers use condoms more often in casual relationships than in long-term ones), communication between partners , fear and prevention of pregnancy, knowledge of someone who died of AIDS (Basen-Engquist,1992; Chao-Hsing, 2000; Ingham, 2001; Karim A, Magnani R, Morgan G, 2003; Maharaj, 2004; Mnyika, 2004; Jennifer, 2006; Herman S, 2009).

Factors associated with low condom use are: Not using condoms during their first sexual encounter, a history of unwanted sex , and believing that condom use implies distrust in one's partners, barriers that reflect physical, emotional, or accessibility concerns, difficulty in obtaining them, lack of sexual pleasure, and prohibitive price ,having multiple partners, and those who used tobacco, alcohol, and illicit drugs, older teenagers, woman's consistent use of hormonal contraceptives, ambivalence about avoiding pregnancy, longer length of sexual relationship, and greater overall trust in main partner., low education, gender lower condom use intentions among females), sexual intercourse while under the influence of alcohol or drugs, steady relationships , the perception that condoms were useful only during ovulation periods , perception that condom decrease sexual pleasure, females sometimes believe that having sex without condoms will endear them to their partners, prove that they trust them. Some young people think not using condoms is a sign that the relationship is a 'more serious', adult one. Not planning ahead. Some young people will decide that their partner 'looks clean'.

For many girls with self-esteem problems, it's a way to get the love they don't have. Young girls have reported that if their boy-friend should propose condom use they would feel 'insulted' - and boys are afraid their girlfriends will be insulted, believe that uncircumcised men could not use condoms (Jemmot, 1990; Stewart D, DeForge B,1991; Ku LC, 1992; Pendergrast,1992; Jennifer,2006; Sonya S, 2009; Herman S, 2009).

2.8 RELATIONSHIP BETWEEN CONDOM KNOWLEDGE AND CONDOM PRACTICE

Cleland (2006) found out that Condom promotion campaigns in Sub-Saharan Africa have affected the behaviour of young single women; the pace of change has matched the rise in contraceptive use by married couples in developing countries over recent decades.

Thus continuing efforts to promote condom use with emphasis on pregnancy prevention are justified. Shafer (1991) have demonstrated that AIDS knowledge is associated with condom use. Low level of knowledge about the transmission and prevention of AIDS among adolescents was a predictor of non use of condoms. Despite these constraints about the condom use, a study done in Gabon found that individual adherence to condom usage as a means of prevention against AIDS progressed from 64% to 95%. The students questioned wanted AIDS prevention information to be better integrated into their curriculum and, in particular, they wanted educational activities in this area in their school, either by their teachers or in special information areas (Milleliri, 2003).

A study done in Nicaragua found that 85% believe consistent condom use can prevent HIV infection , but only 21 % of them used a condoms during the period of the study (Rodolfo,1997).

CHAPTER 3. METHODS

3.1. Introduction

This chapter deals with the methods involved in this study. For the purpose of this study our method chapter will encompass several sub points:

Aim

Objectives

Design of the study

Setting of the study

Population and sampling

Data collection

Data analysis

Reliability, validity and objectivity

Bias

Ethical considerations

Study limitation.

3.2. AIM

The aim of the study was to determine the knowledge, attitude and practices of Goma University students about condom use for the purpose of reducing HIV infection.

3.3. OBJECTIVES:

The study had the following objectives:

- (a) To assess the knowledge of Goma University students on condom use in the prevention of HIV/AIDS infection.
- (b) To explore the attitudes of Goma University students on condom use in the prevention of HIV/AIDS infection.
- (c) To establish the practices of Goma University students regarding condom use in the prevention of HIV/AIDS infection.

3.4. Design of the study

This study is a descriptive cross-sectional study using self-administered questionnaires.

3.5. Setting of the study

Goma is a city in the eastern Democratic Republic of the Congo, on the northern shore of Lake Kivu, next to the Rwandan city of Gisenyi. The lake and the two cities are in the western branch of the Great Rift Valley, and Goma lies only 13 to 18 km (8-11 mi) due south of the crater of the active Nyiragongo Volcano. The recent history of Goma has been dominated by the volcano and the Rwandan Genocide of 1994, which in turn fuelled the First and Second Congo Wars. Goma is capital of North Kivu province, ethnically and geographically similar to South Kivu (capital Bukavu); the two provinces are known as "the Kivus".

Goma is currently populated by around 700,000 people; it has one state university called University of Goma in which our research took place. Apart the wars and volcano, this city and surroundings is also known for the high rate of sexual violence.

Informal businesses within the province, in the main cities of Congo and across the neighbour's countries are the main source of earnings. The province was in the past known by the farming of cows which have been killed during the past 10 years of conflicts, leaving owners in very poor conditions. Health system in the city is dominated by private and state's hospitals which are providing curative, preventive and at a low scale rehabilitative care. DRC is using a system of fees for service with no substantial support to alleviate the suffering of people.

The University of Goma receives students in 4 main fields including Medicine, Agriculture, Law and economics. Those students are coming from any part of the country but most of them are from North Kivu Province, South Kivu Province and remaining from Province Orientale.

Throughout history, study expenses are fully paid by student's families; government is just providing structure, salaries and/or incentives for professors and others cadres in the university.

Since the 1980's, the quality of education system was deteriorating due to several factors - the lack of good political leadership and clear vision on the future of higher education.

Sexual education, since recently was not included in the curriculum of high education. Even some subjects related to AIDS or reproductive health in general were left to medical fields within the university. After forty years with HIV AIDS some students are leaving universities without acquiring a clear idea about the work and development in STIs and HIV-AIDS.

Therefore the researchers conducted this study which aimed to provide information on condom use and practices at the University of Goma.

3.6. Population and sampling

Our study population in the present study was all students admit at the University of Goma during the study's academic year (2008-2009). The inclusion criteria were: Students, who are aged between 18 and 50 years old, and both sexes, who freely accept to participate in the study.

The exclusion criterion was students who claimed to be HIV positive because of assumed prior exposure to knowledge about HIV/AIDS.

The sampling used several steps to reach the sample used for this study. Stratified random sampling and simple random sampling within each stratum were done to reach our sample size.

For a start, we decided to select subjects by dividing up our population (students of Goma University) into groups (strata), and subjects within groups were randomly selected.

The size of the sample was priory calculated using the approach described in the table of Striker (1998). For our study, the population of Goma University is 988 students in total, depending of the mentioned table the sample size is 14% of the population size. Calculation gave a sample size of 138 students for this study. The proportions of students by field of study were as follow: Medicine represented: 40%, Law: 25%, Economics: 25% and agriculture; 10% of the population. The same proportions were respected when selected randomly participants. By marital status and sex male are 70% and female 30%, married represents 10% when 90 % are not married.

For this study, a list of all registered students was done based on administrative record of the university. A simple random sampling of the first participants was done from this list and subsequently every 6th students were selected using lists of students according to criteria described before (sex, faculty, and marital status) by considering the proportion of each criterion in the whole sample size until 138 participants were reached.

3.7. Collection of data

After constitution of sample, a pilot study has been conducted among students who were not selected for the current study. A sample size of 20 students was purposefully selected for this purpose (8 from medicine, 5 law faculty, 5 economics and 2 from agriculture faculties).

This step was used to detect any pitfall, unclear formulation of questions which can lead to multiple interpretation of the meaning of the sentence. This step helps us to reformulate some of the questions so that they can be understood and used accordingly. After getting all authorisations and consent which will be described down, the research team (researcher and assistant) distributed the questionnaire for self-administration of respondents. They were given envelopes in which answered questionnaires were placed and sealed for privacy reasons. It helps to reinforce anonymity and confidentiality of respondents and indirectly increase the internal validity of the study.

The research team was around during the whole time of administration and response for possible highlight possible questions raised by participants while answering to questionnaires.

The questionnaire was written and answered in French which is the official language in Congo, as well as the language used in education from the primary school level.

3.8. Data analysis

After collection of data with paper-pencils (pens), the data were captured after cleaning in excel spreadsheet before being coded and then saved in Statistical package for Social Sciences (SPSS version 17) for analysis. Descriptive statistics with means, proportions were used for analysis of data. Data were also represented in form of graphs using the same software.

3.9. Validity and Reliability

Validity is the extent to which a measurement truly reflects the phenomenon under scrutiny (Pope C and Mays N, 1995). It also refers to the accuracy of the study, the trustworthiness of the findings or the extent to which a research design is scientifically sound or appropriately conducted.

It includes the application of statistics to questionnaire construction as well as the use of statistical hypothesis testing (Struwig FW& Stead GB, 2001).

Reliability is the extent to which a measurement yields the same answer or result each time it is used (Pope C and Mays N, 1995).

Several strategies have been used in the current study to increase validity and reliability.

Reliability and validity were enhanced by administering the same questionnaire to all participants.

External validity (meaning the generalization to others situations or samples of the research findings) have been assured by taking a sample reflecting the student population of the university (all faculties considered, proportions of students by faculty considered in the sample size per field of study, sex as well as the marital status. Also, the sampling methods as described here are very appropriate to this study (stratification random sampling combined to simple random sampling). The 2 methods are probabilistic giving a high chance of representativeness of the whole population. Also, the sample size itself was representative of the student's population at the University of Goma.

Internal validity was assured by making the questionnaire understandable to every participant through a Pilot study prior the study itself followed by reformulation of the questionnaire, before and during the data collection researcher and his assistant were present there to explain to participants some points according to the difficulties they present.

Translating the questionnaire in French which is understood by all students.

Before participants completed the questionnaire, the researcher and supervisor met all of them clarify the meaning of questions one by one and by answering their questions.

History confounding variable was minimised by ensuring that students were completing the questionnaire on the day in which they were not writing an exam, because examination could interfere with their level of concentration when completing the questionnaire and possibly result in the students providing inaccurate responses.

Internal consistency reliability was ensured by requiring the participants to complete the questionnaire on one occasion.

The questionnaire was piloted on 20 Goma University students first to ensure that it is understandable before giving it to participants.

3.10. Bias

Information bias was reduced by ensuring that all questionnaires were administered on the same day so that there is no possibility for students influencing each other.

Misinterpreting bias was minimised by working with the supervisor.

Language bias was avoided by administering a French questionnaire, which is the teaching language in DRC. The accuracy of data was south during the whole process of research from the data collection by a systematic checking of data quality.

Acquiescence response set, random measurement error and response style bias were been minimised by making sure that questions for which response is yes or no are followed up by questions to validate them.

Evaluation apprehension bias was minimised by assuring anonymity and privacy during the filling of the questionnaire; this means that each responder had filled the questionnaire in secret with anonymity and responses enclosed in the envelope. We didn't note any case of non response, minimising the non-response bias for this study.

Hawthorne (guinea pig) effect bias will be minimised by informing the participants that there is no remuneration and ensuring anonymity.

Reporting bias was minimised by explaining the questionnaire thoroughly before completing the questionnaire, by being available during the completion of the questionnaire to answer to possible misunderstanding.

Sampling bias was minimised by choosing a representative sample enough to reflect the population under study. Also, the different origins of the participants also increased to some extent the meaning of the data and reduced this bias.

3.11. ETHICAL CONSIDERATIONS

Permission to conduct the study was obtained from the departmental research committee of the Department of Family Medicine & PHC of the University of Limpopo (Medunsa Campus)

Ethical clearance for this study was sought and approved from the Medunsa Campus Research and Ethics Committee (MCREC No. 30/2009).

Permission to conduct the study was sought from the rector's office of the University of Goma.

Each participant was approached with the informed consent form following a full explanation of advantages, disadvantages, possible consequences/risks of participating to this study.

The participants' identities was not be made known in the study report (anonymity), students participated out of their own free will, and

They were free to opt out of the study at any time while the study is in progress, they were not disadvantaged in any manner and no questions were asked about their decision for not participating.

3.12 STUDY LIMITATIONS

This study refers to a sensitive topic which is condom use. The data gathering tool used was a self-administered questionnaire. Some questions might have led the respondents to feel embarrassed or threatened and they might have found them difficult to answer. The study design which was a cross sectional study only allowed the researcher to obtain a snap shot of information about condoms use at that particular time. Financial resources issues narrowed the study to only one University in DRC. Some students did not provide answers to some questions.

The lack of financial resources to purchase full texts of some articles was a limitation for critical appraisal of some articles cited in this review.

CHAPTER 4 . RESULTS

4.1 INTRODUCTION

The results of the study are presented in this chapter. The participants of this study were 138 students from Goma University.

The sample was representative to research the knowledge, attitudes and practices of Goma University students about condom use for the purpose of reducing HIV infection.

4.2. SOCIO-DEMOGRAPHICS OF THE PARTICIPANTS

4.2.1. Age of participants

The students' ages varied between 18 and 33 years. 138 participants completed the questionnaires. Out of them, 101 were between 18-25 years old and 37 were between 26-33 years of age.

4.2.2. Sex and marital status of participants

Most of the students were male 111 (80.4%) with 27 (19.6%) being females. 128 (92.7%) were single while 10(7.3%) were married.

4.2.3. Education level and Faculty of participants

Among the participants 51 (36.9%) were from the faculty of Medicine, 42 (30.4%) from the faculty of Law, 26 (18.8%) from the faculty of Economics , and 19 (13.7%) from the faculty of Agriculture.

31 (22,4%) were in their first year of university study, 33 (23.9%) from the second year, 30 (21.7%) from the third year, 19 (13.7%) from the fourth year, and 15 (10.8) from the fifth year of university study.

4.2.4. Religion and Ethnic Groups of Participants

Most participants 61(44.2%) were protestant, 57(41.3 %) were Roman Catholic, 7 (5%) were Muslims and 13 (9.4%) from other denominations (revolving churches, Kimbanguist).

Participants came from different ethnic groups: Nande 37(26.8%) of participants, Havu 30(21.7%) of them, Shi 16 (11.5%), Hutu 13 (9.4%) participants, Hunde 8 (5.7%) participants, Tutsi 6(4.3%), Nyanga 5(3.6%) participants, and others 23 (16.6) participants.

4.2.5. The area where Students come from.

Thirty four (24.6%) are from rural areas, while the remaining 104(75.3%) are from urban areas.

4.3. KNOWLEDGE OF CONDOMS

4.3.1. Do you know what condoms are?

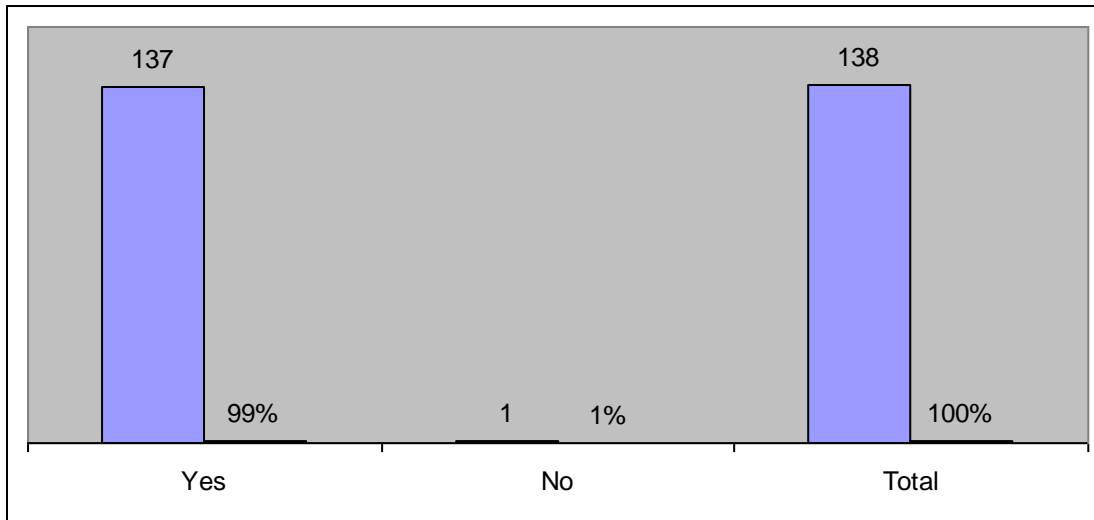


Fig. 1: condoms awareness

The majority 137 (99%) of participants knew what condoms are.

4.3.2. Material from which condom is made

Most participants 92 (67%) knew the materials from which condoms are made, 46 (33%) did not know that condoms are made of.

4.3.3. Price of Condoms

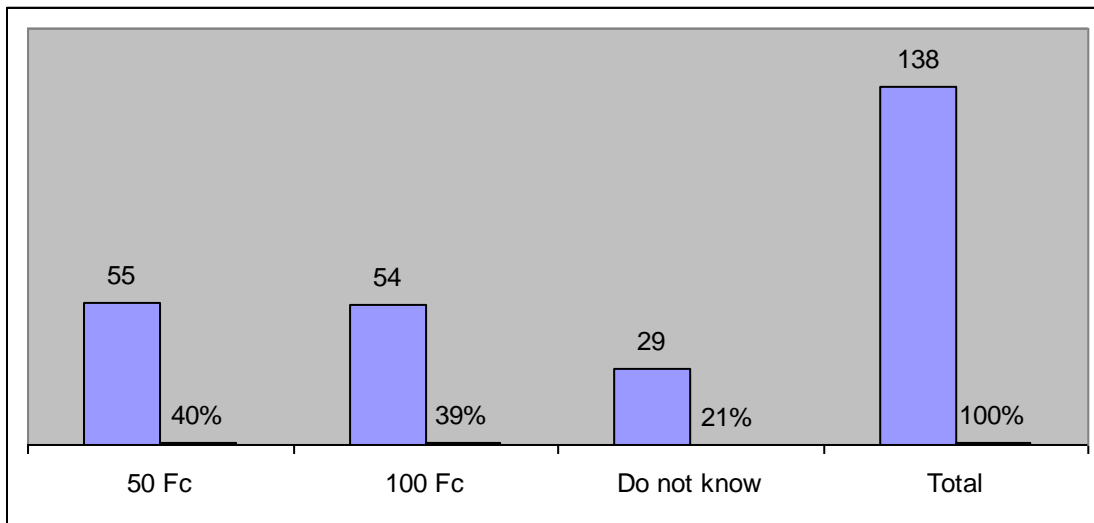


Fig. 2 Knowledge about the price of condoms

Fifty five participants (40%) said the price was 50 Congolese francs, 54 (39 %) said the price was 100 Congolese francs and 29 (21%) did not know the price.

4.3.4. Where can you buy a condom from?

132 (95, 6 %) knew that condom are available and sold in Pharmacies, 5(3.6 %) said it is available in shops, and only 1 (0.7%) said he does not where to buy condom in the area.

4.3.5. Advantages of condom use

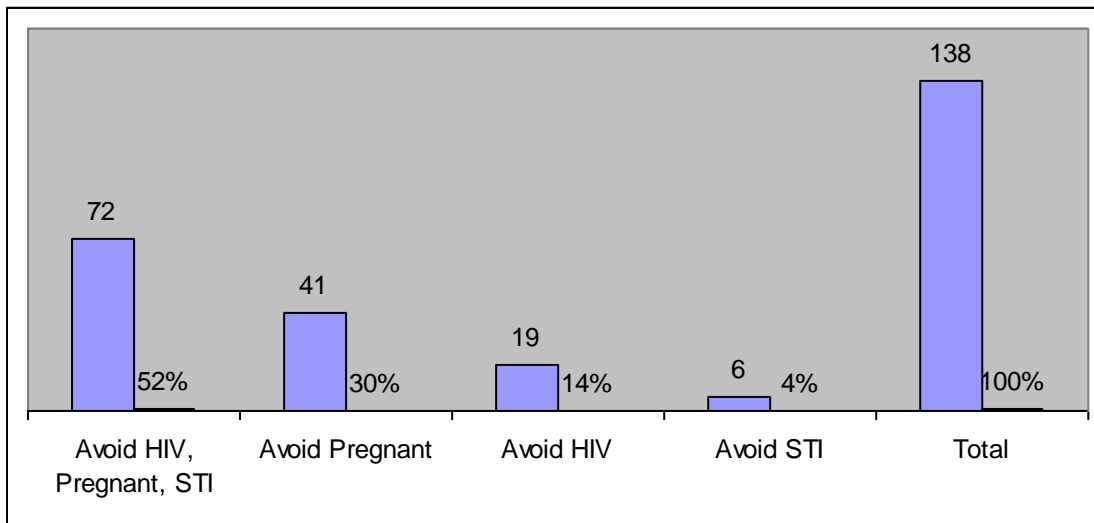


Fig. 3: Perceptions of the advantages of using condoms.

From this result, it can be seen that most of participants 72 (52 %) knew that condoms can prevent HIV, Pregnancy and STI, 41 (30 %) stated that condom can prevent pregnancy alone, 19 (14 %) stated that condom can prevent HIV only, 6 (4 %) stated that condom can prevent STI only.

4.3.6. Condom Disadvantages

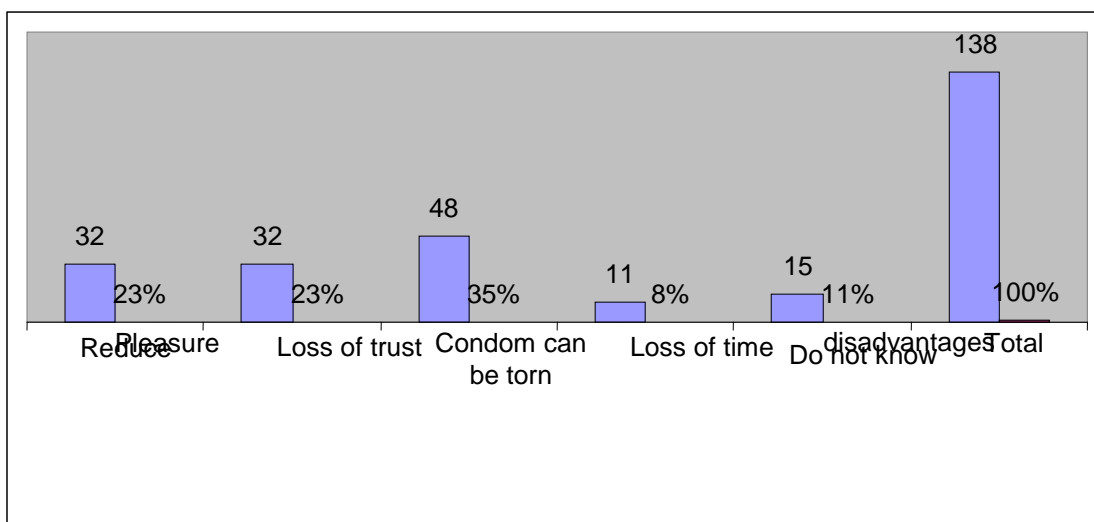


Fig. 4: Perception of Condom disadvantages

Pleasure reduction, loss of trust in partners, risk of loss or tearing are the most common disadvantages for using condoms. It was found that 32 (23 %) of the participants consider that condoms can reduce pleasure, loss of trust, can be torn, 32 (23 %) stated that condoms can be a source of losing trust in the partner, 48 (35 %) stated that condoms can be torn, 11 (8 %) said it can reduce sexual pleasure, 15 (11 %) do not know of any disadvantages of condom use.

4.3.7. Which source of information did you get most of your information about condoms from?

The main sources of information about condoms for Goma university students are: Television (41, 3%), Hospital and health centres (28, 9), School (22, 4), Parents (4 %), churches (3 %).

4.3.8. Can condoms be used to prevent HIV transmission?

105 students (76%) stated that condoms can prevent HIV infection and 33 (24%) said condoms cannot prevent HIV infection.

4.3.9. Do condoms have an expiry date?

All students (100%) knew that condoms have an expiry date.

After doing statistics test (Fisher test) No difference have been seen in condom knowledge among participants in this study depending on several socio-demographic factors: sex of participants (P: 0.8); marital states (χ^2 : 0.07, P: 0.932); field of study (χ^2 : 4.33, P: 0.825); class of study /study level (P: 0.996); religion (χ^2 : 1.431, P: 0.921); tribe's of participants (χ^2 : 2.75, P: 0.907), and background/ address of student's (P: 0.754).

4. 4. ATTITUDES TOWARDS CONDOMS

4.4.1. Are condoms acceptable to you?

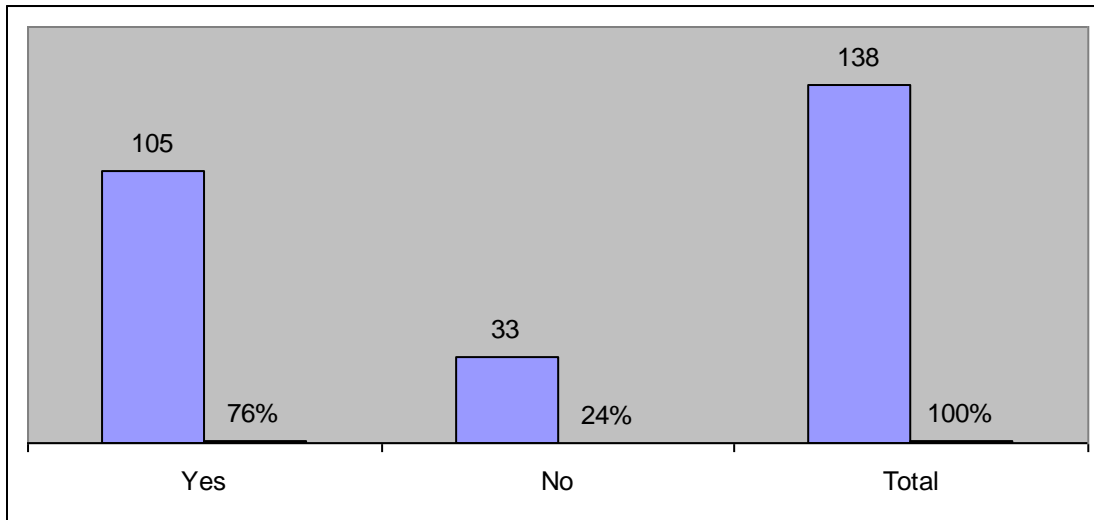


Fig. 5 : Acceptability of condoms as a contraceptive device.

33 (24%) have a negative attitude towards using condoms for contraception, 105 (76 %) stated that condoms are acceptable to them.

Among 33 who said condoms are not an acceptable form of contraception, 11(33 %) said this is because condoms can be torn inside the vagina and 8(24 %) said condoms can be retained within the vagina, 14 (42%) did not give any reason, why condoms cannot be used as a contraceptive device.

4.4.2. Would you use a condom?

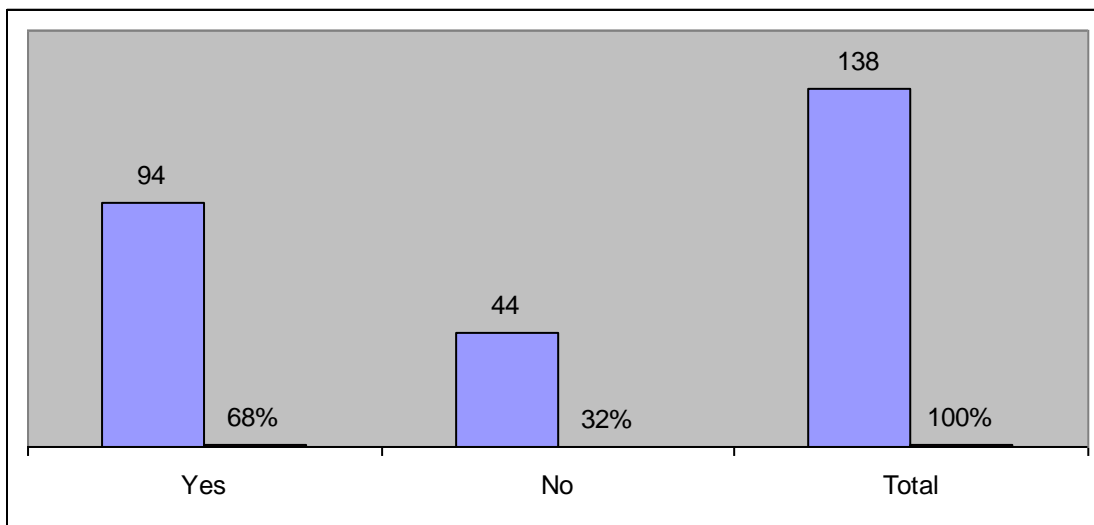


Fig: 6: Readiness to use condoms

94 students (68 %) stated they would use a condom and 44 (32 %) said they would not use condom. Among the 44 who would not use a condom, 28(64 %) said condoms reduce pleasure and it is uncomfortable, 6 (14%) stated they were restricted because of the price of condoms, 10(22 %) did not explain why they would not use a condom.

4.4.3. Is condom price a barrier to its usage?

111 (80 %) declared that the price of a condom is not a barrier to its use, but 27(20 %) said that condom price is a barrier to its usage.. Among the 27 who said price is a barrier, 12(44 %) said it is too expensive for students, 9 (33 %) said it is not always available at places of its sale, 6(22 %) did not answer the question

4.4.4. If condoms were free, would you use it regularly?

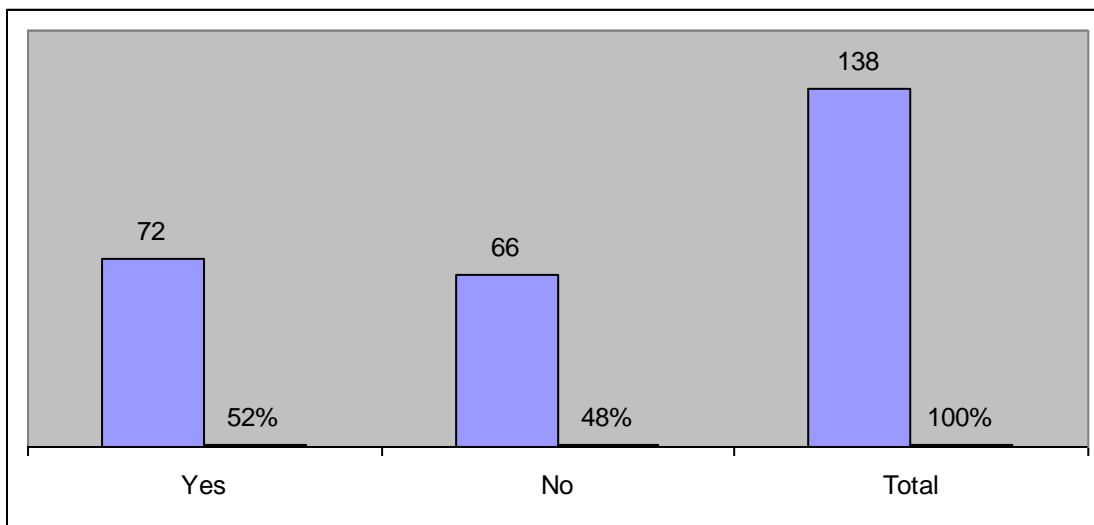


Fig. 7: Readiness to use condoms if they are freely available

This figure shows that 72 (52 %) would use condoms regularly if it were free, and 66 (48 %) would not use it regularly even if it were free.

4.4.5. Is the location where the condoms sold acceptable to you to you?

It was shown that 61 (44.2 %) of respondents were comfortable with the place where condoms are sold and 77 (55.7%) were uncomfortable with these sites. Among the 77 who were uncomfortable with the site of condom sales, 52 stated that there is no privacy at these retail sites.

4.4.6. Do your parents approve condom use?

Data shows that 47 (34 %) said their parents approved their condom use and 91 (66%) said their parents do not approve of their condom use. Among the 91 participants whose parents do not approve condom use, 74 said because condom use is against culture and they do not speak

with parents about condom use issues, and 12 said because it is against religions law, 5 did not give the reasons.

4.4.7. Does your religion approve of condom use?

It was shown that 28(20.3 %) said that their religion approve of condom use and 110 (79.71 %) said their religions do not approve of condom use. Among the 110 who said their religion do not approve condom use 55 (50 %) said it is against God's law, 42 (38.1 %) said because condom can allow prostitution, and 13 (11.8 %) said they do not know why their religion do not approve of condom use.

4.4.8. Do you recommend that the university supplies condoms to students?

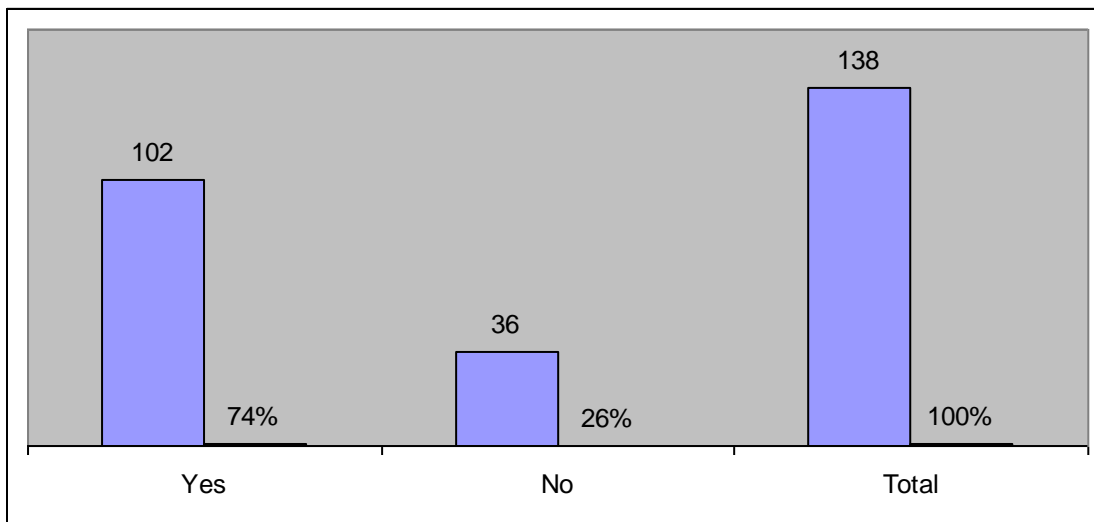


Fig: 8: Recommendation of university supplying students with condoms.

It was shown that 102 students (74 %) suggested that University should supply students with condoms and 36 (26 %) do not suggest that University should supply students with condom. Among 102 students who recommend condom supply, 58 said because it can prevent HIV, 34 said because it can prevent pregnancies during study, 10 said because it can prevent STI.

Among the 36 students who do not want condom supply by University, 29 said because it can allow prostitution among students, 7 did not give the reasons.

4.4.9. Does your tribe approve condom use?

72 students (52 %) said their tribes approves of condom use and 66 (48 %) said their tribe do not approve of condom use. Among 66 who said no, 34 said condom use is against God's law, 21 said it is against culture, 11 did not indicate a reason.

4.4.10. Who usually initiates condom use?

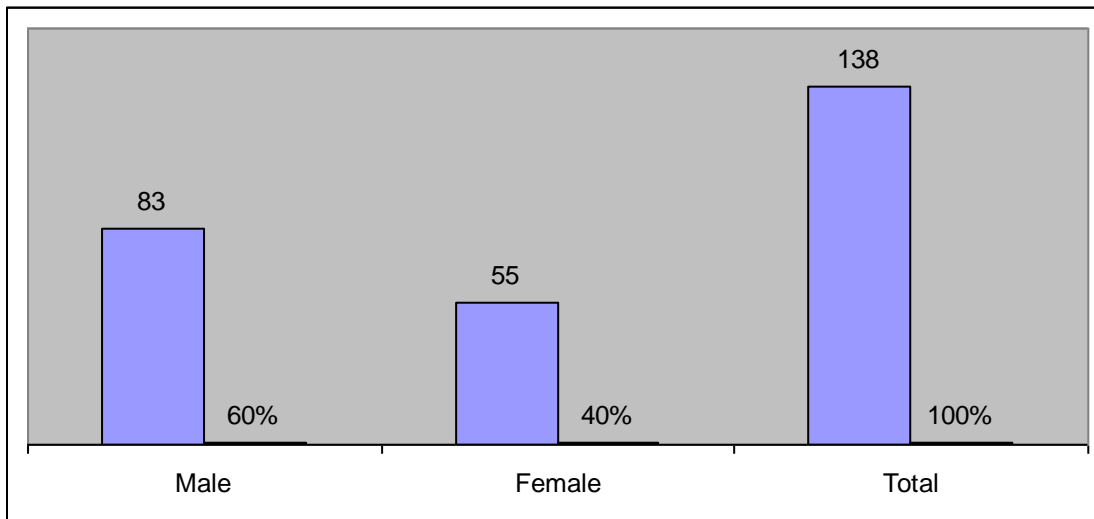


Fig. 9: Partner initiating condom use

This figure have shows that 83 (60 %) males usually initiate condom use, and 55 (40 %) said females usually initiate condom use.

The statistic test (Fisher Test) found that Participants are a bit similar in their attitude on condom use regarding many socio- demographic factors. No difference have been found between attitude and sex (Fisher exact test: P 0.617); age ranges (χ^2 : 0.527, P: 0.769); marital status (χ^2 : 3.218, P: 0.2); faculty (χ^2 : 3.074, P: 0.93); class of study (χ^2 : 6.095, P: 0.529); tribe (χ^2 : 10.688, P: 0.153) and student's background (P: 0.393).

4.5. PRACTICES OF CONDOM USE

4.5.1. Are you sexual active?

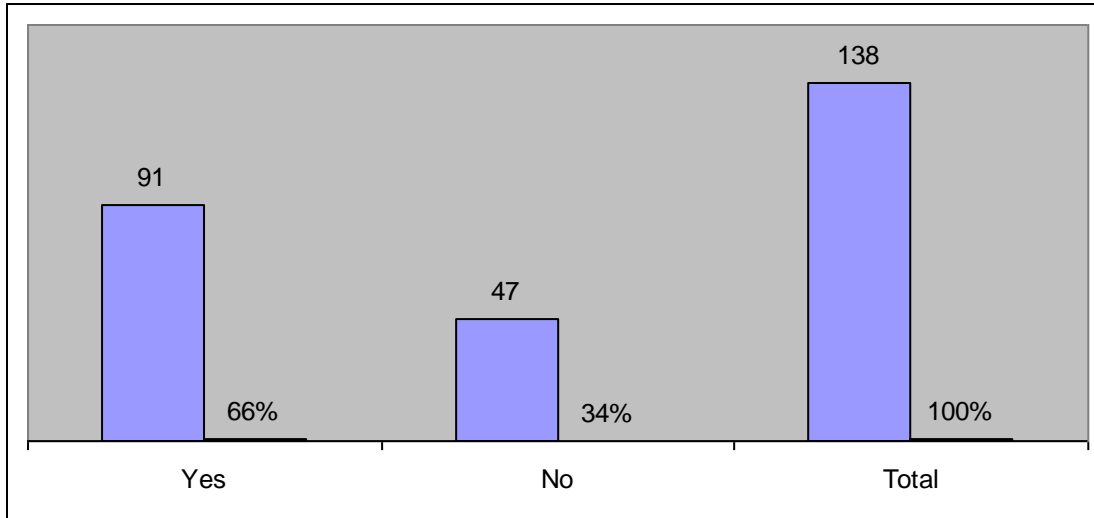


Fig. 10: Engagement in sexual activities.

Figure 10 shows that 91 (66 %) are sexually active, and 47 (34 %) are not sexually active.

4.5.2. Have you ever had unprotected sex?

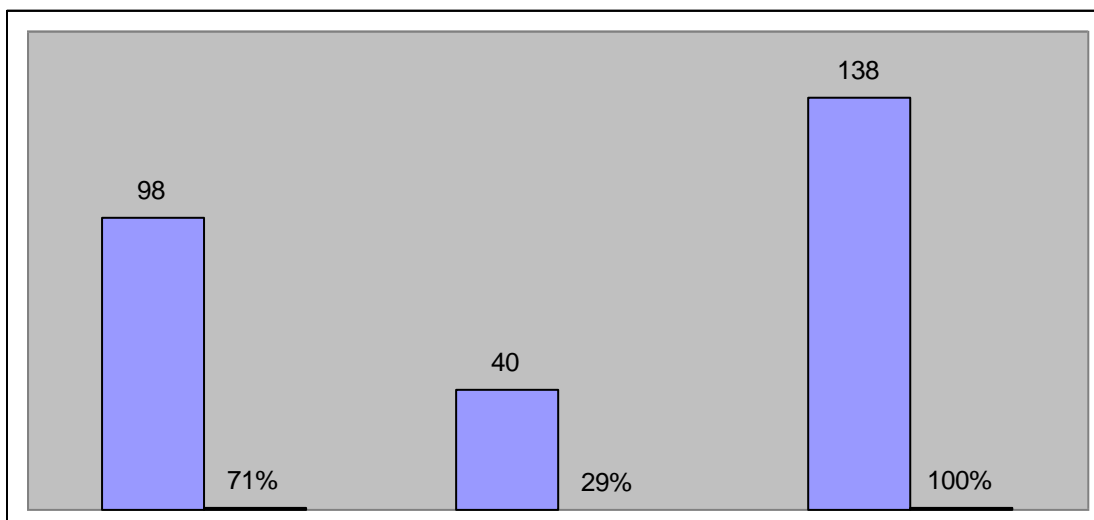


Fig. 11. Unprotected sex

This figure shows that 98 (71%) had unprotected sex while 40 (29%) did not have unprotected sex.

4.5.3. If yes, would you have used a condom if you had one at the time?

Among 98 who had unprotected sex, 59 (60%) said they would not use a condom even if it were available at the time, and 39 (40 %) said they would use a condom if it was available.

4.5.4. Have you ever bought a condom?

Data shows that 71 (51%) have bought a condom and 67 (49%) said they did not buy a condom ever.

4.5.5. Have you ever used a condom?

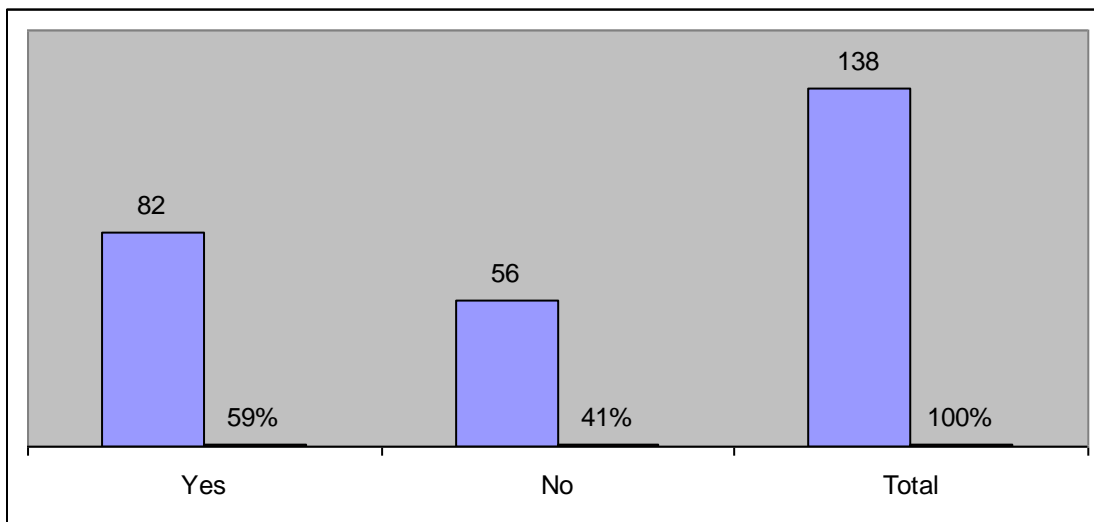


Fig: 12: Personal use of a condom

It has been shown in this figure that 82 (59 %) have used a condom, but 56 (41%) did not ever use a condom

4.5.6. Do you use condoms regularly?

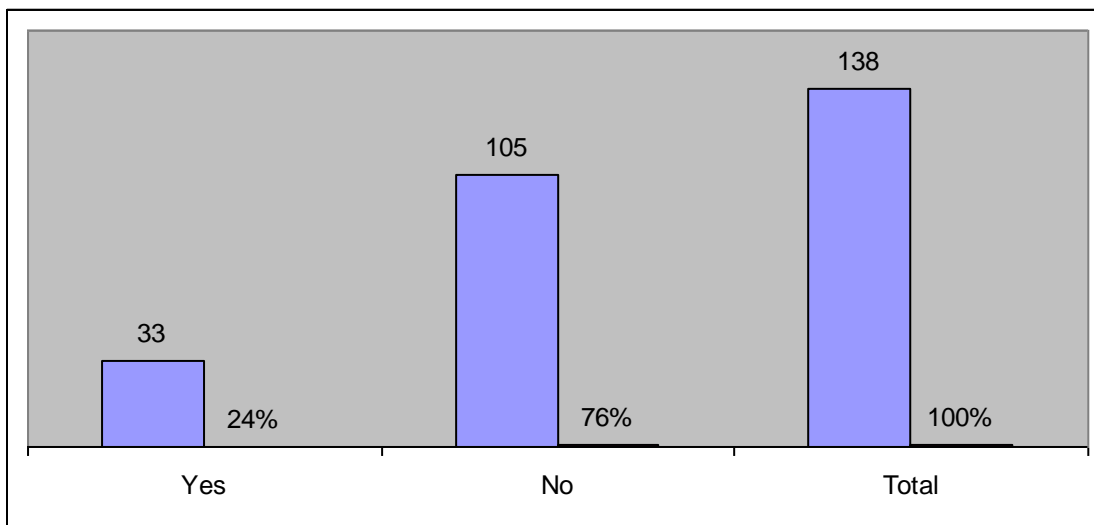


Fig. 13: personal regular use of condoms

This figure shows that 33 (24 %) use condoms regularly, and 105 (76 %) do not use condoms regularly. Among those who said they do not use condom regularly, 32 said the condom sometimes is available, 58 said condoms reduce pleasure, 15 said the partner may think he/she is a prostitute

4.5.7 Do you want to use a condom in your future sexual encounters?

87 (63 %) want to use a condom in their future sexual encounters, and 51 (37 %) do not plan to use a condom in their future sexual encounters.

4.5.8. Would you be comfortable telling your sexual partner that you want to use a condom?

89 (64 %) are comfortable to tell their sexual partner that they want to use a condom, 49 (36 %) are not comfortable to tell their sexual partner that they want to use condom.

4.5.9: Would you abstain from having a sexual encounter if your sexual partner refused to use a condom?

It was shown that 95 (69 %) will abstain from having a sexual encounter if his or her partner refused to use a condom, 43 (31%) said they would not abstain from having a sexual encounter if the partner refused to use condom.

4.5.10. How often did you use condoms last month?

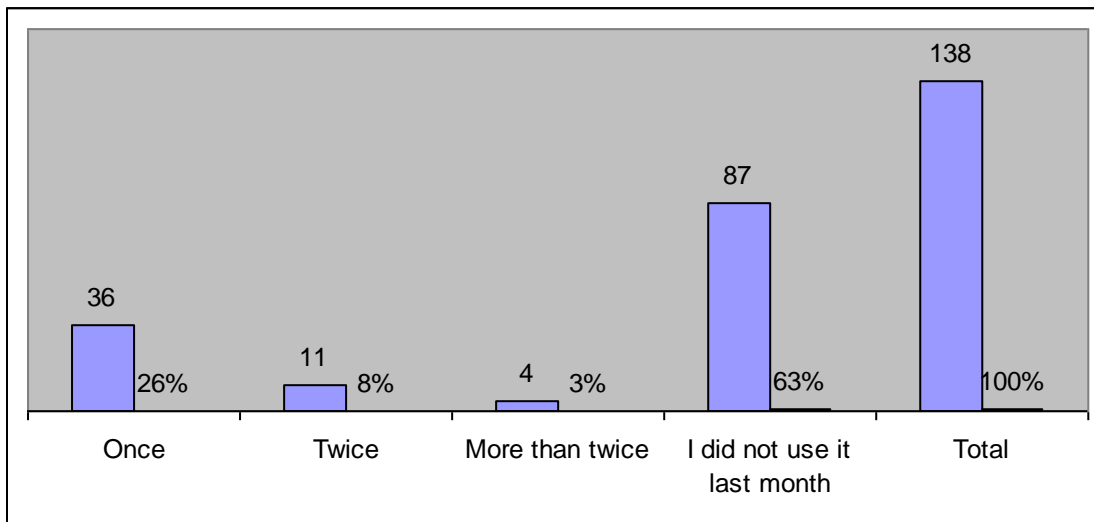


Fig. 14: Personal use of condoms in previous month

This figure shows that 36 (26 %) have used a condom once last month, 11(8 %) have used a condom twice in the last month, 4(3%) have used a condom more than twice last month, and 87 (63 %) did not use condoms last month.

The Fisher test shows that condom use didn't differ with all those above factors among them the age ranges (χ^2 : 2.254, P: 0.689); the sex of participants (χ^2 : 0.245, P: 0.885); the marital status (χ^2 : 3.261, P: 0.515); the field of studies (χ^2 : 14.899, P: 0.532); the religions (χ^2 : 9.867, P: 0.452) and the participant's tribe (χ^2 : 17.168, P: 0.247)

CHAPTER 5. DISCUSSION

5.1. INTRODUCTION

This study examined Goma University students' knowledge, attitudes and practices about condom use in the purpose of reducing HIV infection. This particular group of people was chosen because it is a unique group with a unique lifestyle. There is documented increased incidence of transactional, indiscriminate and or unprotected sex among university students leading to unwanted pregnancy, STDs and HIV/AIDS (Arya O, Lawson J, 1977; Barton, 1999). Condom use has also been reported low among University students (Judy, 1996; BO Olley, 2003; Bankole, 2007)

5.2. SOCIO – DEMOGRAPHIC CHARACTERISTICS

The participants' age in our sample is between 18 to 33 years. This result is the same as the findings of previous studies done in Madagascar about condom use where age of university students was from 18 to 45 years. (Onja Holisoa Rahamefy, 1995). There were predominantly males 80 % versus 20 % for female students, the ratio of males to females is 4:1. Previous studies done in Africa found almost similar results (Mutiti, 1999). Early marriages among girls, the gender inequality in DRC are some of the reasons why most of Congolese families prefer to educate boys first.

Single students represent 92.7% versus 7, 3 % married students. Single students are supported by their parents. It is possible that married students are few because of financial issues (family support by husband, no scholarship). The majority of married students are women; it may be that they are supported by their husbands. The majority of students in our study are from the medicine faculty (36%); medicine faculty contains the highest number of students in Goma University. The majority of Goma University students are Protestants 44%, Catholics are

41%, and the two religions are the main religions in the DRC. The majority of students are from Nande tribe (28.8%), which is the biggest tribe in North Kivu/ Goma city. The majority (75%) of students are from urban areas, versus 25% from rural areas. This reflects the difficulties facing the rural population in accessing higher education and the higher poverty level in rural areas and the lack of a scholarship system in DRC.

5.3. KNOWLEDGE ABOUT CONDOMS

A significant relationship between education and knowledge on condom use is well established. The higher level educated people are more likely to have better knowledge on condoms (Pettifor, Audrey, MacPhail, Catherine, et al. 2005).

One of the operational reasons why educated people are more knowledgeable with regard to condoms may be the language used in IEC materials, books, and televisions. Most available material for condom information communication in DRC is in French, the official language, making it difficult for uneducated people to access this information.

People with higher education have more access to information and external influence and tend to be more liberal minded than the less educated. Those who have attained higher education like University students would be able to discuss issues about condoms and HIV, understand and appreciate the importance of condom use.

This study showed that 99 % of the respondents know what condoms are. Many studies on condom use have shown similar findings (Shafer,1991; Judy A, 1996; Pettifor, Audrey, MacPhail, Catherine,et al. 2005; Akinrinola, Singh S, et al. 2009) in which the rate of knowledge varied between 65 to 99%.

This high knowledge of Goma University students about condoms could almost entirely be attributed to intensive efforts of DRC government, and Nongovernmental organisations

(NGO's) in sensitizing students about HIV and condom use. However more efforts are needed to reach a higher rate of knowledge about condom use among Goma University students.

Most Goma University students (76%) in this study know that condoms prevent HIV, STDs, and unwanted pregnancies and that it is important to use a condom every time they have sexual intercourse. These results are the same as the result found in South Africa, Nigeria, Rwanda, (Van Rossem, 2000; Meekers, 2001; James, 2004; Akinrinola, Singh S, et al. 2009).

The majority 67% of participants know that condoms are made of latex. This could be explained due to the fact that this topic is still taboo, students may pretend not to know yet they have the knowledge.

Those whom do not know the condom material could be those who are not interested or those who do not use condoms. Their lack of in depth knowledge of condoms possibly results in superficial teaching.

79 % of participants know the price of condom ranging from 0.05 to 0.1 \$US in DRC and 81% said they could afford this. This condom price is lower compared to other places where the condom price is above 1 \$US for a box of three (Chao-Hsing Yeh; 1997). In general, condom price is not a barrier to its use in the DRC compared to Ukraine where the price of condoms has increased by 40% to 60%, possibly as a result of the declining value of Ukrainian currency and that increases in condom price in Ukraine has led some advocates to express concern about a possible corresponding rise in the spread of HIV and other sexually transmitted infections (Russia Today reports, 2008).

95% stated that condom is sold in drug shops (pharmacy) and 3% said it is sold in non pharmaceutical shops. In DRC condoms are on the essential drugs list and are sold without a medical prescription. The legislation in DRC is that condoms should be sold in pharmacies

only. This legislation may be a barrier to condom availability especially at night because the majority of pharmacies are closed at night. (Kisangani E, Lutala P, Kambale, et al. 2003).

The disadvantages of condoms as reported by our participants are: tearing, decreased sexual pleasure and decreased trust in the partner. Other studies have found similar results (Taffa N, Klepp KI, Sundby J, 2002; Karim A, Magnani R, 2003; Macintyre K, Rutenberg N, 2004; Maharaj, 2004; Jennifer, 2006).

The sources of information ranged in decreasing order are : television(41,3%), Hospital and health centres (28,9%), School (22,4%) , Parents (4%), churches (3%). This shows that the churches and parents gave the least information about condom use in Goma. Some studies have shown churches are a big barrier in many countries regarding condom use (Onja, 1995; Jewkes, 2002; Meekers, 2002; Maharaj, 2004; Mnyika, 2004).

In many African countries poor communication between parents and children is also a barrier to condom use (Anderson, John E., Potter, 1999; Herman S, 2009; Sonya S, 2009).

The results of statistics test (Fisher test) have shown that there is no difference in condom knowledge among Goma University students depending on several socio- demographic factors (sex, marital status, field of studies, class of study, tribe, etc)

5.3. ATTITUDE ABOUT CONDOM USE

76% of participants said a condom is an acceptable method of contraception and for preventing HIV infection. This result is similar to those of Shafer (1991) who has demonstrated that AIDS knowledge is associated with condom use. Low level of knowledge about the transmission and prevention of AIDS among adolescents was a predictor of non use of condoms.

68 % of participants stated they could use a condom, while 32% said they could not use condoms because of their religion, culture and because condom use is uncomfortable during sex. 80% of participants said condom price is not a barrier for them to use condom, because condoms are cheap, while 20% said condom price is a barrier for condom use.. 52% of participants stated that if condoms were provided freely, they could use it regularly and 48% said even if condoms were distributed freely they could not use it regularly. These results are the same found by Sara (2003) who conducted a study in Cote d'Ivoire to determine whether the accuracy of men's and women's knowledge about AIDS predicted condom use at their most recent sexual intercourse. They found out that the accuracy of knowledge about AIDS did not significantly predict condom use. Accessibility and knowledge about condoms have not translated into condom use for many young people (Pettifor, Audrey, MacPhail, Catherine, et al. 2005).

The regular use of condoms is a big challenge among Goma University students, these results are similar to results found by (Onja, 1995; Jewkes, 2002; Geibel S; 2004) in which consistent and regular condom use was very low.

56% of participants stated that the places where condoms are sold are not comfortable for them because of lack of confidentiality and privacy.. It is important that Condoms could be sold in confidential locations in Goma/ DRC.

66% of participants stated parents do not accept condom use because of culture, religion. There is a need for sex education to be encouraged in families and for improvement of communication between parents and their adolescent children on sex-related matters. The same need has been identified in many other studies in Africa (Omu, 1981; Oshodin, 1985; Pillai, 1993; Fantahun, 1995; Mturi, 2003).

80% of participants stated that their religions are against condom use because condom use is against God law and religious regulations, these results are similar to Daniel J (1999) results who found that religions opinions are a barrier to condom use in developed and developing countries.

74% of participants suggest that University should provide condoms to students, while 26 % of students do not agree that the University should provide condoms because it will allow students to be more promiscuous.

52 % of participants stated that their ethnic communities accept condoms use,, this depends on their cultural opinion.

The question about who should initiate condom use , 60% stated it is the male who initiates condom use. More men could initiate condom use because in African culture women are under the responsibility of men, and man is perceived to be the head of household, although more recently due to female emancipation, women are now more empowered which explains the 40% responsibility in initiating condom use .

5.4. PRACTICE ABOUT CONDOM USE

66% of participants stated that they are sexual active meaning they are engaging in sexual intercourse. Those who are not sexually active said it is because of religious issues, cultural issues and lack of a partner because having a partner has financial implications.

71% of participants stated they had unprotected sex, because of non availability of condoms, condoms reduce sexual pleasure, partners do not like condom use, this result is similar to that of Meekers D, Silva M, Klein M (2003) who did a research in Madagascar. Fewer than 15% of the youth used a condom in their last sexual intercourse with their regular partner. Kegeles

(1989) has indicated that despite the increasing levels of AIDS knowledge, adolescents do not use condoms consistently.

Among those who had unprotected sex, 60% said that if a condom was available at the time they would use a condom, while 40% said even if condoms were available at the time they would not use it. Condom availability is necessary but it would not lead to its use by 100% as found by Pettifor, Audrey, MacPhail, et al.(2005) that accessibility and knowledge about condoms have not translated into condom use for many young adults. 51% of participants stated that they have already bought a condom, 59% of participants stated they have already used condoms, while 41 % said they did not as yet use condom, 24% of participants said that they regularly use a condom and 76% said they do not use condoms regularly.

Among those who do not use condoms regularly, 28% said they used other forms of contraception such as calendar, abstinence, intra uterine device, while 72 % said that they do not use any form of contraception.

In response to the question on whether respondents would use a condom in future casual sexual encounters, 63% stated that they want to use condom in the their future sexual encounter, but 37% stated they do not want to use condoms in their future casual sexual encounters, because of religion, culture, partner issues and condom disadvantages.

64% of participants said they would be comfortable to tell their partners that they want to use a condom, while 36% said they are not comfortable telling their partner that they want to use a condom. It may be that sex in the DRC is considered by many as a taboo, and the fear that the partner will think that he or she is promiscuous are reasons why he/she is uncomfortable to tell partners to use condoms.

43 % stated that even if the condom were distributed freely they would not use it regularly.

These results are similar with Kegeles (1989); who found that despite the increasing levels of AIDS knowledge, adolescents do not use condoms consistently. Akinrinola (2007) studied among young men in 18 Sub-Saharan African countries, this study examined condom use and reasons for using the method at last intercourse among sexually active young men aged 15 to 29. Most young men were aware of the condom (73%-98%), but its use at last intercourse was quite variable, ranging from 6% in Madagascar to 74% in Namibia.

Regular condom use is a challenge, and more sensitization is needed among Goma University students about consistent condom use. As regards how often did the respondent use a condom in the last month, 63% said they did not use a condom last month.

69% of participants stated that they received training about how to use a condom. Bankole, Akinrinola; Ahmed, et al. (2007) found that the strongest predictor of knowledge of correct condom use among both male and female adolescents is exposure to a condom use demonstration.

In Burkina Faso, Ghana and Uganda, adolescents who have seen a condom demonstration are 2 to 5 times more likely as those who have not, to have good knowledge of the correct condom use. For those who received the lecture, 33% stated that they received the information at school, 29 stated that they received the lecture at health centres and hospitals, and 23 % stated that they received the information on television.

The results of statistics test (Fisher test) have shown that there is no difference in condom attitudes and practices among Goma University students depending on several socio-demographic factors (sex, marital status, field of studies, class of study, tribe, background of students, etc)

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1. CONCLUSION

Condom use is a sensitive topic in Goma (DRC) because of its social and moral implications. Talking about it among students is difficult. It is known that prevention is better than cure or treatment. However, prevention should be based on sound knowledge of the baseline data. To conduct preliminary studies on the subject of condom use among University students is the first step towards addressing the problem in the country. This study addressed this topic.

The main conclusions of the present study can be summarized as follows:

Condom awareness was high with varying sources of information, though procedures for correct use were not high. Condom use was generally accepted as a means of preventing HIV/AIDS, sexual transmitted diseases and also an effective measure to prevent unwanted pregnancies. Condom price in DRC was cheap and affordable by University students. Ethnic groups, religions, culture were not in favour of condom use. The disadvantages of condoms use as reported by Goma University students are: condoms reduces pleasure, condoms can be torn. Consistent use of condom was low among Goma University students.

The results of statistics test (Fisher test) have shown that there is no difference in condom knowledge, attitudes and practices among Goma University students depending on several socio- demographic factors (sex, marital status, field of studies, class of study, tribe, background of students, etc)

6.2. RECOMMENDATIONS

The following are the recommendations from the findings of this study:

To initiate sex education programs in DRC Universities curriculum's because such education is critical to help reduce the prevalence of unsafe sex. Students will be empowered with the necessary knowledge. To insist on the dangers of unsafe sex and advantages of condom use

More programmes on health education, condom promotion and VCT should be encouraged and integrated so that more students are captured by these integrated programs.

Some emphasis should be made on explaining to Goma University students on some of these false beliefs held by them about condoms such as: condoms reduce pleasure.

Communities which practice cultures that are against condom use should be educated about the risks involved in having sex without protection.

More media attention should be used such as films, radios, posters should be provided as should organisation of depictive plays, songs and poems more fitting among Goma University students. Female condoms should be promoted among students

ABC strategy (Abstinence, being faithful to your partner and together with condom use) should be continuously reinforced.

Further research is needed to ascertain clearly the reasons why condom use among students remains low despite good knowledge about condom.

Prevention programs should increase University student's awareness about other STDs,

Inform them about the link between these STDs and HIV/AIDS and promote the use of condoms among them.

Efforts to increase educational attainment in Goma / DRC may be more effective in increasing condom use than a focus on improving the accuracy of AIDS knowledge.

Our findings point to the importance of exposing youths to sexuality education before their sexual initiation as well as voluntary counselling and testing and programming that supports young adults, particularly young women, in making informed decisions about sexual intercourse and condoms.

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APPENDICES

Questionnaire in English

KNOWLEDGE, ATTITUDES AND PRACTICES OF GOMA UNIVERSITY STUDENTS ABOUT THE USE OF CONDOMS FOR THE PURPOSE OF REDUCING THE RISK OF HIV INFECTION

ID No 0 0 0 1

Questionnaire

DEMOGRAPHIC DATA

1. Date of Birth:

2. Gender: Male Female

3. Relationship status: Married Single widowed Boyfriend/Girlfriend

Divorced Engaged

4. Do you have children? Yes No

5. Faculty: Medicine Law economics Sociology

6. Year of study: First Second Third Fourth Fifth Sixth

7. Religion: Catholic Protestant Muslim Adventist

Jehovah Witness Other

8. Ethnic group: Nande Havu Shi Hutu Tutsi Hunde Other please specify:

9. Residence : Village City

10. Nationality:

KNOWLEDGE

1. Do you know what a condom is? Yes No

2. What material are condoms made out of? _____

3. Please write an exhaustive list of what condoms are used for?.....

4. What is the cost of condoms?.....

5. Where can you buy condoms in your area:

6. What would you say are the main advantages of using condom?

Please list.....

7. What would you say are the disadvantages of using condoms?

Please list:

8. Which source do you get most of your information about condoms?

9. Can condoms be used prevent HIV transmission? Yes No

10. Do condoms have an expiration date? Yes No

ATTITUDES

11. Do you find condoms to be an acceptable form of contraception? Yes No

If no; why?.....

12. Would you use a condom? Yes No

If no, why?.....

13. Does the cost of condoms a barrier of using it?

14.If condoms were free, would you use it regularly? Yes No

15.Does the locations where they sell condoms comfortable to you? Yes No

16. Do your parents approve of condom use? Yes No

If no why.....

17. Does your religion approve of condom use? Yes No

If no, please explain why?

18. Would you recommend that your university supply students with condom? Yes No

If no, why?.....

If yes, what do you perceive the benefit of this to be?

19. Do your tribe approve of condom use? Yes No

If no, please give reasons:

20. Who usually initiates condom use? Man Female

PRACTICES

21. Are you sexually active? Yes No

22. Have you ever had unprotected sex? Yes No

If yes, would you have used a condom if it was available at the time? Yes No

23. Have you ever bought a condom? Yes No

24. Have you ever used a condom? Yes No

25. Do you use condoms regularly? Yes No

26. Do you want to use a condom in your future sexual encounters? Yes No

27. Would you abstain from having a sexual encounter if your partner refused to use a condom? Yes No

28. If condoms were free, would you use them regularly? Yes No

29. How often do you use condoms per month?.....

30. Have you ever been taught on condom use? Yes No

If yes, where and by whom?.....

31. Where do you get condoms from? Pharmacy , Market , Hospital , Health centre ,
University , Friend , Sibling/family member

32. Can you afford to buy condoms? Yes No

33. Are you comfortable when using condom? Yes No

34. Did you use condom during your last sexual intercourse? Yes No

If no please explain why.....

Questionnaire in French

VERSION FRANCAISE DU QUESTIONNAIRE

a) Questions démographiques

1. Année de naissance:
2. sexe : Male Femelle
3. Statu marital : Marie Célibataire Veuf Veuve Divorcé Séparé Engagé,
Ami
4. Avez-vous des enfants ? Oui Non
5. Faculté : Médecine Droit Economie Sociologie Sciences politiques
Agronomie Relations Internationales Science de l'éducation Autre précisé
6. Promotion: G1 G2 G3 L1 L2 D1 D2 D3
7. Religion : Catholique Protestante Musulmane Adventiste , Témoin de
Jéhovah Eglise de réveil , Autre précisé
8. Tribu: Nande Havu Shi Hutu Tutsi Hunde Nyanga Autres preciser

9. Adresse des parents: Village Ville
10. Nationalité :

b.1. Connaissances

1. Savez vous le Condom? Oui Non

2. Le condom est fabriqué avec quel matériel ?.....

3. Quel est le prix du condom dans votre milieu?.....

4. Où est ce que on peut acheter le condom dans votre milieu ?.....

5. Enumérer les principaux avantages d'utiliser le condom ?.....

6. Enumérer les désavantages d'utiliser le condom ?.....

7. Où est ce que vous recevez les informations relatives au condom ? Ecole ,

Tv , Eglise , Parents , Frères , Amis , Centre de Santé Hopital Docteur

Infirmier Livres Journaux Autres sources préciser

8. Quelle est la source qui vous donne plus d'informations en rapport avec les condoms ?....

9. Est ce que l'utilisation de condom peut prévenir la transmission du VIH/SIDA? Oui Non

10. Est ce que le condom a une date d'expiration ?. Oui Non

b2. Attitudes

11. Est ce que le condom est une methode de contraception acceptable ? Oui Non

Si non, Pourquoi?.....

12. Pouvez vous utiliser le condom? Oui Non

Si non, pourquoi?.....

13. Est-ce que le prix du condom vous empêche à utiliser le condom ?... Oui Non

Prière expliquer votre réponse :.....

14. Si le condom était distribué gratuitement, pourriez vous l'utiliser régulièrement ? Oui

Non

15. Est ce que les endroits de vente de condom dans votre milieu vous encourage à acheter le condom? Oui Non

Si non pourquoi ? :.....

16. Est ce que vos parents acceptent l'utilisation de condom? Oui Non

Si non pourquoi ? :.....

17. Est ce que votre religion accepte l'utilisation de condom? Oui Non

Si non pourquoi?.....

18. Pouvez-vous recommander que l'Université distribue des condoms aux étudiants ? Oui

Non

Si non, pourquoi ?.....

Si oui, quel serait les bénéfices de cette action ?.....

19. Est ce que votre tribu accepte l'utilisation de condom? Oui No

Si non, pourquoi ?.....

20. Qui d'habitude initie l'utilisation de condom ? Homme Femme

Pourquoi ?.....

b.3. Pratiques

21. Etes vous sexuellement actif ? Oui Non

22. Avez-vous déjà fait un rapport sexuel non protégé ? Oui Non

Si oui, pourriez vous utiliser le condom si il y a n'avait ? Oui Non

23. Avez vous déjà utiliser un condom ? Oui Non

Si non , Pourquoi ?.....

24. Est ce que vous utilisez le condom régulièrement ? Oui Non

25. Voulez vous utiliser le condom lors de votre prochaine relation sexuelle? Oui Non

Si non, si votre partenaire demandait que vous utilisiez le condom , pourras tu accepter sa demande ? Oui Non

26. Pourriez vous être confortable à dire a ton partenaire que tu veux utiliser le condom ? Oui Non

27. Pouvez vous refuser de faire le rapport sexuel si votre partenaire refuse d'utiliser le condom ? Oui Non

28. Si le condom était gratuit, pourriez vous l'utiliser régulièrement ? Oui Non

29. Combien de fois vous utilisez le condom par mois?.....

30. Avez vous déjà été enseigner comment utiliser le condom? Oui Non

31. Où est ce que vous trouvez le condom? Pharmacie , Marché , Hôpital , Centre de Santé , Université Amis Frères , Membre de famille , Hotel , Autre Préciser :

32. Etes vous capable financièrement d'acheter un condom? Oui Non

33. Est ce que l'utilisation de condom est confortable pour vous? Oui Non

Si non, Pourquoi?.....

34. Avez-vous utiliser le condom lors de votre dernier rapport sexuel ? Oui Non

Si non, pourquoi ?

DEPARTMENT OF FAMILY MEDICINE AND PRIMARY HEALTH CARE.

UNIVERSITY OF LIMPOPO

(MEDUNSA CAMPUS)

RESEARCH PROTOCOL

Student: Dr Masoda Nyamalyongo Maurice

Student number: 200438638

M Med Family Medicine

Supervisor: Dr AJ Mbokazi

Co-supervisor: Mrs NH Malete

Co-supervisor DRC: Dr Kapamba Monique.

Site: Goma/ Democratic Republic of Congo

TITLE: KNOWLEDGE, ATTITUDES AND PRACTICES OF GOMA UNIVERSITY STUDENTS ON THE USE OF CONDOMS FOR THE PURPOSE OF REDUCING THE RISK OF HIV INFECTION IN GOMA DEMOCRATIC REPUBLIC OF CONGO

1.1.Statement of the research problem

HIV/AIDS infection has become a pandemic, which is putting at risk a large part of the world population in general and Africans in particular (1).

Those between ages 18 and 49 are the most affected, which means that it is affecting the young and active part of our population.(1).

Ninety percent of students of Goma University belong to this age group between 18 years and 49 years (2).

The city of Goma is located in the east of the Democratic Republic of Congo (DRC). Wars and the movements of Rwandan refugees in 1994 in DRC have exacerbated promiscuity and prostitution.

Preliminary studies about prevalence of the HIV/AIDS infection in Eastern Congo have revealed a prevalence of 10% (2).

Until now, there is neither immunization nor treatment against this infection and the Congolese population cannot afford to pay for antiretroviral drugs.

Prevention is the only one way to reduce morbidity due to HIV infection.

The condom is an accepted and efficient method of prevention, especially when it is used accurately during casual sexual intercourse. Also it is easy to manipulate. A large portion of Goma students are single, and are exposed to casual sexual intercourse.

Based on the researcher's observations on sexual practices of students at Goma University. It was assumed that student's knowledge, attitudes and practices about condom use in the reduction of HIV/AIDS was lacking.

The aim of this study seeks to determine the knowledge, attitudes and practices about condom use for the purpose of reducing HIV infection among Goma University students.

2. Literature review.

The struggle against AIDS in Africa is one of the greatest moral tests of our time.

Many African societies are collapsing (3).

For example in Zimbabwe and Botswana , as many as 70 % of teenagers are expected to die from HIV/AIDS (1).

South Africa has the highest number of people living with AIDS of any country in the world (4).

In Goma, DRC the prevalence is about 10%(2).

There is no vaccine and no cure for HIV/AIDS. Therefore, prevention must be central to HIV/AIDS infection. Prevention strategies are less expensive than antiretroviral treatment(4).

These preventive methods include delayed onset of sexual activity, reduction in sexual partners, abstinence and safer sexual practices including the use of condoms. Condom use is low, and this has resulted in a rising of prevalence among pregnant women in South Africa up to 25%(5).

The use of condom during sexual intercourse is very limited in Goma town, only 30,5% of adults and 18,8 % among young use condoms systematically during occasional sexual intercourse (2).

Large-scale information campaigns and condom distribution programs appear to be bearing fruit among South Africans aged 20-34 years old (5).

Such conclusions have been drawn in India by Avasthi who assumed that better knowledge and more favourable attitude towards the use of condoms would decrease the prevalence of HIV/AIDS.

This highlights the need for educational programs for enhancing the acceptability of condoms in sexual practice (6).

In Uganda, community education to change behaviour has increased condom use and this has been shown to be effective at decreasing HIV prevalence (7).

In a study including 359 participants in Ethiopia, it was shown that sexual activity often begins as early as eleven years of age with the mean age 16 and 18 years for females and males, respectively, providing that education should start very early. After sensitization young women 20-39 years (83%) were more receptive to changing their attitudes and practices, compared to older women aged 40 years and above (11%). In this same study it was also shown that in spite of adequate knowledge risky behaviour prevails (8).

In contrast some other authors showed that education about preventive advantages of condom use do not necessarily result in its use. In Zambia, teachers are dying as fast as they are being trained (2).

A study done in Nicaragua found that 85% believe consistent condom use can prevent HIV infection, but only 21% of them used a condom during the period of the study (9).

According to this study, education about condom use does not necessarily result in its use.

In a study done in Zimbabwe ; the authors tried to look for factors that hinder the use of condoms despite a good knowledge. Over 80% of women said they will have to seek permission from their partners to use the condom (10).

In the same study it was found that other obstacles were problems with inserting the condom and were with lubrication, size , appearance, how to dispose of used condom, high cost of condom, lack of information regarding side effects, and proper use(10).

In a study conducted among people from an urban family practice found that 50% believed that condoms decrease sexual pleasure for men and 31% thought condoms made sex inconvenient or embarrassing.

The same study showed that 26% of women were embarrassed to use condoms (11) .

Cultural beliefs can be a source of misconceptions, for example some cultures think that uncircumcised men cannot use condoms; others believe that religious people do not need to use condoms or that only homosexuals get AIDS(11).

Despite these constraints about the condom use, a study done in Gabon found that individual adherence to condom usage as a means of prevention against AIDS progressed from 64% to 95%. The students questioned wanted AIDS prevention information to be better integrated into their curriculum and, in particular, they wanted educational activities in this area in their school, either by their teachers or in special information areas (12).

We think that condom use education must be encouraged among students and we want to assess knowledge, attitudes and practices of Goma University students about condom use in the purpose of reducing HIV/AIDS infection.

3. Purpose of the study.

To assess Goma University students' knowledge, attitudes and practices regarding the use of condoms for the purpose of reducing the risk of HIV infection.

4. Objectives

-To assess the knowledge of Goma University students on condom use in the prevention of HIV/AIDS infection.

- To explore the attitudes of Goma University students on condom use in the prevention of HIV/AIDS infection.

-To establish the practices of Goma University students regarding condom use in the prevention of HIV/AIDS infection.

5. Research question

What is the knowledge, attitudes and practice of Goma University students on the use of condoms for the purpose reducing the risk of HIV infection?

6. Methods

6.1. Study Design: This will be a descriptive, cross-sectional quantitative study using a questionnaire for data collection.

Materials

We will use: A computer, Papers, Pens

6.2. Sample/ Study population

Population size is around 1000 students from Goma University.

According to our study population which is around 1000 students, we will use the sampling guideline as reported by Stoker DJ, in which for a study population with 1000 persons ,the percentage suggested is 14%, then our sample size will be 140 students (14).

The students who will participate in this study are chosen among those who are registered at Goma University regardless of faculty.

Participants in the study will be randomly selected using a stratified sampling technique. Thus, each individual will have an equal chance of being included in the study.

A list of all students of Goma University will be obtained from the director of Goma University.

The sample of 140 students will be stratified by faculty, marital status and gender.

In Goma University , there are 4 faculties, Medicine represents 40%, Law represents 25%, Economics 25%, Agriculture 10%

Male are 70% and female 30%, married represents 10% when 90 % are not married.

These proportions will be reflected in our sample.

Therefore, the 140 questionnaires will be distributed as follows:

-In Medicine faculty; we will administer 56 questionnaires, 2 questionnaires to married women, 15 questionnaires to non married women , 4 to married men, and 35 to non married men.

-In law faculty; we will administer 35 questionnaires , one to married woman, 9 to non married women, 3 to married men and 22 to non married men.

-In economics faculty; we will administer 35 questionnaires, one to married woman, 9 to non married women, 3 to married men and 22 to non married men.

-In Agriculture faculty; we will administer 14 questionnaires, 4 to women and 10 to men.

All students in each group will be assigned a number and a random number table will then be used to randomly select study participants.

We will get his name and school from the general list of students given by the Director of Goma University. Then every participant will get an identification number from 1 to n.

Inclusion criteria are: Students who are aged between 18 and 50 years old, male and female, single and married, who accept willingly to participate and without any remuneration.

Exclusion criteria are: students who claim to be HIV positive

6.3. Data Collection

A pilot study will be conducted among students and those who participate in the pilot study will not participate in the actual study.

20 students will participate in the pilot study, 8 from medicine faculty, and 5 from law faculty, 5 from economics and 2 from agriculture faculty.

The pilot study will assist in establishing any pitfalls regarding completion of the questionnaire.

The questionnaire will be self- administered but the researcher and an assistant will be available for clarification.

Respondents will receive envelopes in which to put the completed questionnaires which they sealed in the privacy before returning them to the researcher;

This will help to assure them that the researcher will protect their anonymity and confidentiality.

Transport for participants will be paid by the researcher. Only the research team will handle the data.

The questionnaire will be done in the French language, which is the teaching language in DRC.

6.4. Data Analysis

Data collected will be captured electronically (Epi Info- 2000 Statistical program), statistics calculated using Chi- square(X^2) will be used to confirm or deny dependence of crossed variables when analysing data.

Confidence interval will be 95% and P value will be 5 %.

Answers will be categorized before analysis.

6.5. Validity and Reliability

Reliability and validity will be enhanced by administering the same questionnaire to all participants.

External validity meaning the generalisability of the research findings will be assured because the sample is representative of faculties, sex , marital status

Internal validity will be assured by making the questionnaire understandable to every participant through:

-Pilot study

-Translating the questionnaire in French which is understood by all students.

-Before participants complete the questionnaire, the researcher and supervisor will meet all of them clarify the meaning of questions one by one and by answering their questions.

History confounding variable will be minimised by ensuring that students will complete the questionnaire on the day in which they are not writing an exam, because examination could interfere with their level of concentration when completing the questionnaire and possibly result in the students providing inaccurate responses.

Internal consistency reliability will be ensured by requiring the participants to complete the questionnaire on one occasion.

The questionnaire will be piloted to some Goma University students first to ensure that it is understandable before giving it to participants.

6.6. Bias

Information bias will be reduced by ensuring that all questionnaires are administered on the same day so that there is no possibility for students influencing each other.

The researcher will attempt to avoid misinterpreting bias, by working with the supervisor.

Language bias will be avoided by administering a French questionnaire, which is the teaching language in DRC.

Data capturing will be verified randomly for accuracy.

Acquiescence response set, random measurement error and response style bias will be minimised by making sure that questions for which response is yes or no are followed up by questions to validate them.

Evaluation apprehension bias will be minimised by assuring anonymity and privacy during the filling of the questionnaire ; this means that each responder will fill the questionnaire in secret with anonymity and he will put responses in the envelope.

Non-response bias will be minimised by making sure that all the 140 participants fill the questionnaire by paying them transport, by following the non responders to fill the questionnaire to the place of their choice.

Hawthorne(guinea pig) effect bias will be minimised by informing the participants that there is no remuneration and ensuring anonymity.

Reporting bias will be minimised by explaining the questionnaire thoroughly before completing the questionnaire, by being available during the completion of the questionnaire to answer misunderstanding.

Sampling bias will be minimised by choosing a representative sample (15).

7. Ethical Considerations

Approval will be sought from the Medunsa Campus Research and Ethics Committee (MCREC).

9. Budget

	Total(USD)
Personal research assistance	
Transport	250.00
Computer access	150.00
Stationary	200.00
Meals and other expenses related to field work	200.00
Communication	220.00
Miscellaneous	200.00
	1220.00

Assistance need:

- Statistician
- An assistant.

10. References

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Informed consent form

UNIVERSITY OF LIMPOPO (Medunsa Campus) CONSENT FORM

Statement concerning participation in a Research Project.

Name of Study

KNOWLEDGE, ATTITUDES AND PRACTICES OF GOMA UNIVERSITY STUDENTS ON THE USE OF CONDOMS FOR THE PURPOSE OF REDUCING THE RISK OF HIV INFECTION.

I have read the information on the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

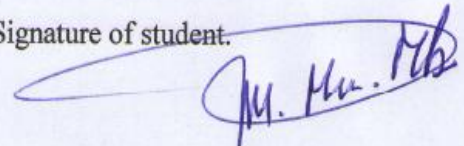
I understand that participation in this Study is completely voluntary and that I may withdraw from it at any time and without supplying reasons.

I know that this Study has been approved by the Medunsa Campus Research and Ethics (MCREC), University of Limpopo (Medunsa Campus) / Dr George Mukhari Hospital. I am fully aware that the results of this Study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Study.

Name of student: Murisho Mbo

Signature of student.



Place.

GOMA/DRC

Date.

18th september/2009

Certificate clearance

UNIVERSITY OF LIMPOPO
Medunsa Campus



MEDUNSA RESEARCH & ETHICS COMMITTEE

CLEARANCE CERTIFICATE

P O Medunsa
Medunsa
0204
SOUTH AFRICA

MEETING: 04/2009

PROJECT NUMBER: MREC/M/30/2009: PG

Tel: 012 - 521 4000
Fax: 012 - 560 0086

PROJECT :

Title: Knowledge, attitudes and practices of Goma University students on the use of condoms for the purpose of reducing the risk of HIV infection.

Researcher: Dr M Maurice
Supervisor: Dr AJ Mbokazi
Co-Supervisor: Mrs Nomsa Maletle (Family Medicine)
Hospital Superintendent: Ngwala Lúkanu (Kidpase Health)
Involved department head: Prof Kasai (Dean of Goma University)
Department: Family Medicine and Primary Health Care
School: Medicine
Degree: M MED (Family Medicine)

DECISION OF THE COMMITTEE:

MREC approved the project.

DATE: 06 May 2009

N. Ebrahim

PROF N EBRAHIM
DEPUTY CHAIRPERSON MREC



Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.