

**SEXUAL BEHAVIOUR AND RISK OF SEXUALLY TRANSMITTED
DISEASES AMONG MOSHI RURAL DISTRICT SECONDARY SCHOOL
STUDENTS IN KILIMANJARO REGION, TANZANIA**

BY

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ABSTRACT

Tanzania is realizing an increase in adolescents engaged in multiple sex partner behaviour and premarital sex. The objective of this study was to assess sexual behaviour and risk factors among secondary school students in Moshi rural district in Kilimanjaro, Tanzania. Anonymous questionnaires were completed by 360 students in six secondary schools randomly selected by gender and students' grade. Statistical analyses were performed using descriptive statistics. Of 360 students, 55.3% reported ever having sexual intercourse, and 18.1% reported having multiple sex partners. Of all students who had engaged in sexual intercourse, 59.6% reported having a single sexual partner and 40.4% of them reported having multiple partners. Several demographic, family, peer and work influences, and student factors including knowledge and attitude toward sex were risk factors for students having sex. About 60% of the sexually active students in both sexes reported to have never used condoms in the previous year. Both pregnancy and induced abortion had been experienced by about 12% to 27% of the sexually active female students and about 10% of the sexually active students of both sexes reported to have been diagnosed with Sexually Transmitted Diseases (STDs). The results also show that students were likely to practice masturbation, start having sex at a younger age, and have sex with married men/women and/or men/women not their "sexual partner" at first coitus. With the risks of STDs and Human Immunodeficiency Virus (HIV) among young people, teaching sex education at secondary schools in Tanzania offers the best hope of raising awareness in students who are approaching sexual maturity.

DECLARATION

I, Ernest Joseph Karata, hereby declare to Sokoine University of Agriculture that this dissertation is a result of my own original work and it has neither being submitted nor being concurrently submitted for a degree award in any other institution.

Ernest Joseph Karata
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Date

The declaration above is confirmed by

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Date

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FIGURE

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LIST OF ABBREVIATIONS AND SYMBOLS

AIDS	Acquired Immune Deficiency Syndrome
DED	District Executive Director
DEO	District Education Officer
DVC	Deputy Vice Chancellor
HIV	Human Immunodeficiency Virus
REO	Regional Educational Office
SEDP	Secondary Education Development Programme
SPSS	Statistical Packages for Social Sciences
STD	Sexually Transmitted Disease
STI's	Sexually Transmitted Infections
SUA	Sokoine University of Agriculture
THIS	Tanzania HIV/AIDS Indicator Survey
UMATI	Uzazi na Malezi Bora Tanzania (Family Planning Association of Tanzania)
UNAIDS	United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
URT	United Republic of Tanzania
WHO	World Health Organizations

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

In recent years, Tanzania has experienced dramatic social changes associated with economic growth and reform. Prevalence of sexual transmitted diseases (STDs) and human immunodeficiency Virus (HIV) infection has recently increased in sub-Saharan Africa. Tanzania, a country with a current population estimate of 41 million is among the affected, having 8.8% compared to 7.5% in other sub-Saharan countries prevalence rate of HIV and AIDS. Studies have found that STDs are highly associated with high-risk sexual behaviour and patients with STDs are two to nine times more likely to be infected with HIV (UNAIDS/WHO, 2005).

Sexuality and sexual behaviours differ in context because of cultural and social environmental differences that exist in the society. In sub-Saharan countries there is a great variability in sexual behaviour which are always considered to go together with taboos and cultures (Mayaud and Mabey, 2004; Paul-Ebhohimhen *et al.*, 2008). Traditional attitudes towards sex, marriage, and family in most communities have changed. Attitude toward pre-marital sex, formerly an unacceptable behaviour in Tanzania, is currently being reported to grow among young people, including secondary school students. At least 50% of young people are estimated to be sexually active by the age of 16 years and 32% of secondary schools students have shown to be sexually experienced (Maswanya *et al.*, 1999; Mwakibete and Zephania 2006; Mmbaga *et al.*, 2007; Masatu *et al.*, 2009). In many developing countries, one-half or more of HIV infections occur among young people with less than 25 years; this includes Tanzania where about 6.5% of HIV/AIDS infections are

estimated to occur in people aged between 15 and 49 years and half of all new infections occur among the 15 and 24 year-old age group (TACAIDS, 2005; UNAIDS/WHO, 2007). Effective STDs and HIV prevention and understanding sexual attitudes and behaviours among adolescents are key and critical issues in this respect.

Adolescents typically engage in short-lived relationships that make them more likely to have sex with multiple partners, thereby placing them at a high risk of acquiring STDs including HIV infection (Mwakagile, 2001; Mmbaga *et al.*, 2007). In Tanzania only few quantitative researches have been published on sexual practice, prevalence, trends, and attitude and risk behaviours among difference social groups and much of these were conducted in urban areas (Msuya *et al.*, 2006; Lema *et al.*, 2008; Kazaura and Masatu, 2009, Mkumbo, 2010). Therefore, this study aimed to assess sexual behaviours, awareness, and associated risk factors for sexually transmitted diseases including HIV and AIDS among secondary schools' students in Moshi rural district in Kilimanjaro region. Knowledge on types of sexual practices among students may be useful in the design and implementation of appropriate measures towards improving adolescents' reproductive and sexual health.

1.2 Problem Statement

Multiple sex partners' behaviour among students portrays negative implications to the family and community at large. On individuals, it builds a state of disrespect, mistrust, and loss of dignity especially in the community one is dwelling. Such behaviour is associated with unintended pregnancy for girls and the risk of acquiring sexually transmitted diseases (STDs) including HIV/AIDS. There is an increase of

young people who engage in premarital sex and multiple sex partner behaviour. The vulnerability of young people to sexually transmitted diseases and HIV infection in Tanzania has made it urgent to conduct this research. Therefore, this work intends to investigate sexual behaviour and risk of sexually transmitted diseases among secondary schools students and the implied risks of STDs.

1.3 Justification for the study

Sexuality in indigenous Africa was looked upon as mysterious and sacred. According to Mbiti (1980), Africans do not regard sex as something evil and hence something to be suppressed, even if it must be kept under control. The justification of this research relies on the proposed curriculum for health education in Tanzanian Secondary Schools and also with secondary educational development programme (SEDP) (Bright, 2008). The study therefore, intends to examine sexual behavior and the risk of STDs among the students who engage with multiple sex partners'.

1.4 Objectives of the Study

1.4.1 General objective

This study aimed at examining sexual behaviour and risk of sexual transmitted diseases including HIV infection among secondary school students in Moshi rural district in Kilimanjaro region

1.4.2 Specific objectives

Specifically this study aimed to:-

- a) Examine the sexual partner, risk and determinant factors among secondary school students in Moshi rural district.

- b) Assess the sexual behaviour and awareness of sex among secondary school students.
- c) Assess risk behaviour characteristics to sexually transmitted diseases including HIV infection among secondary school students

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Determinants of School Children's Multiple Sexual Behaviour

Sexual behaviour is part of normal human experience; it is one kind of human behaviour which demands an understanding of the socio-cultural context in which it takes place (Coast, 2003). School children's sexual behaviour can be determined by a school child's demographic, socio-economic status, socio-cultural factors and individual life experience. For the purpose of this study, secondary school children refer to the age between 10 to 25 years because sexual problems and needs of school children tend to be more distinct than those of older youth. It is at this time when they discover sexual pleasure with opposite sex, engage in multiple sex partnerships, practice masturbation and other pleasurable self-stimulation. They form close friendships with opposite sex, same-sex peers and may experiment sexuality with them usually to satisfy curiosity. Since most of the risky sexual behavior that are associated with the transmission of the STDs/HIV infection are practised in a highly private context and the fact that these behaviors are also difficult to change, it is important to identify the barriers that prevent behavioral change and to ensure that as far as possible, a supportive environment for sustaining this exists (Heggenhougen and Lugalla, 2005).

2.2 Overview of Sexual Behaviour in Transition with STDs/HIV

There is little literature available on the context of sexual behaviour in relation to STDs/HIV infection amongst students globally. Nevertheless, few researches done in some places in the world will shade light to us and provide a general picture.

According to a report published by UNAIDS/WHO working group on global HIV/AIDS and STIs surveillance in December 2006 there were 70,559 cases of STIs in Malaysia only by the end of 2005 (UNAIDS/WHO, 2006). Yan *et al.* (2009) conducted a research in China to examine the prevalence and determinants of multiple sex partners among female undergraduates. Out of 4,769 female students, 29.32% had sexual intercourse of which 5.31% had multiple sex partners. This research observed that, risk factors for having multiple sex partners included having current close friends that were living with boy friends, poor academic performance, working/living in a place of entertainment, and positive attitude towards multiple partners.

Anwar *et al.*, (2010) conducted a research in Pulau Pinang, Malaysia intended to examine the awareness of STDs and sexual behaviour among school students. The study observed that, out of 1,139 students aged between 15-20 years, 10.6% never heard about STDs, 12.6% had sexual experience of which 75.7% had their sexual debut at 15-19 years and 38.2% were having multiple sex partners. It has been observed that adolescents who start having sex early are more likely to have sex with high risk sexual partners or multiple partners, and are less likely to use condoms (UNICEF/UNAIDS/WHO, 2002).

In Kenya, a research conducted on premarital sex, schoolgirl pregnancy and school quality observed that premarital sex before age 20 has increased from 20% to 30% for those aged 20-24 years. The research revealed that the schools environment, lack of family-life education (sex education), poor academic performance and preference for early motherhood are causative factors for premarital sex and

schoolgirl pregnancy (Barbara, 2001). In Gombe Nigeria, Danjin (2010) conducted a research on HIV/AIDS risk behavioural tendencies among secondary school students. Out of 400 respondents aged between 13 and 24 years, 98.4% ever heard of HIV/AIDS before and 88.9% ever heard of condom use. Sex related risky behaviours were still prevalent among them. These included multiple sex partners (14.1%), low rate of condom use in last sex (22.7%), and diagnosed with STDs (6.8%). The researcher suggested the introduction of HIV/AIDS school education programs so as to curb this situation.

2.3 School Children's Sexual Experience in Tanzania

There is very little information available on the contexts within which sexual experience occurs within the school population. Nevertheless, research reveals that involvement of school children in petty trade activities, use of alcohol and lack of parental supervision during leisure, were factors which exposed them to the risk of promiscuous behaviour. Though with varying degrees, both urban and rural urban secondary school students' coital experience was associated with the need of girls to do well at school, offered by boys to academically weak girls in return for sexual favours; gifts or money from boys in return for sex; peer pressure; sugar daddy's and mummy's influence, poverty and cultural gender-related factors which govern power relationships with the opposite sex (Telack, 2007).

Nowadays, the secrecy governing the whole process of sexual advances between men and women has disappeared. Even taboos are no longer adhered to. What you see today is a bunch of young men and women going after each other in broad daylight, ridiculing each other in public by doing so, some young women use their

bodies as income generating machines, sleeping with whoever is ready to pay them. Unprotected sexual activities and engagement of students in sexual affairs with many sexual partners can easily lead to the infection with STDs/HIV/AIDS. 'Adolescents and secondary school students are at a high risk of HIV since they are at early stage of sexual behaviour, and changing partners frequently (Jeckoniah, 2008). According to Kazaura and Masatu (2008), multiple sexual practices in Tanzania among secondary school students is reported to be more than 15% and there is an increase in condoms use from 20% to 50% during the past decade.

2.4 Sexual Partners and Risk of STDs/HIV Infections

Human sexuality is influenced by many factors such as age, gender, religion, family, friends, culture, ethnicity, economic status, sexual orientation, and past experiences, positive relational experiences and abuse experiences, discrimination and oppression. As a result, sexual behaviours are expressed in a variety of ways namely heterosexual, same sex (lesbian and gay experience) and multiple sex partners (THIS, 2005). The age at first sexual intercourse is very important marker of high risk behaviour and sexually transmitted diseases (STDs). Early first sexual intercourse has been associated with risky behaviour such as not using contraception at first intercourse, having more sex partners, and having more frequent intercourse.

Multiple sex partners is a critical determinant of other sexual behaviours that place an individual at greater risk for sexually transmitted diseases, such as lack of condom use, less discriminating recruitment of sex partners and having multiple partners in short period of time (Jeckoniah, 2008). Pettifor *et al.* (2004) argue that, the greater the number of sexual partners young people have, the greater the

exposure to STDs and HIV/AIDS. Partner's reduction is therefore, one of the key factors of STDs/HIV prevention.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Description of the Study Area

The study was conducted in Moshi rural district in Kilimanjaro region. Kilimanjaro region is one among the economically advanced region in Tanzania. The climatic condition and the economy of the region offers a good working environment for teachers as a result almost all schools have sufficient number of teachers hence the good performance recorded within the region. This attracts students from different parts of the country to go for schooling in Kilimanjaro region particularly Moshi Rural District which has a total of 93 secondary schools, 60 are public owned and 33 private schools. Of all secondary schools, 9 are single sex-education schools and 84 are co-education schools. The total number of students enrolled in 2009 was approximately 41,850 of which 18,950 were females and 25,900 males.

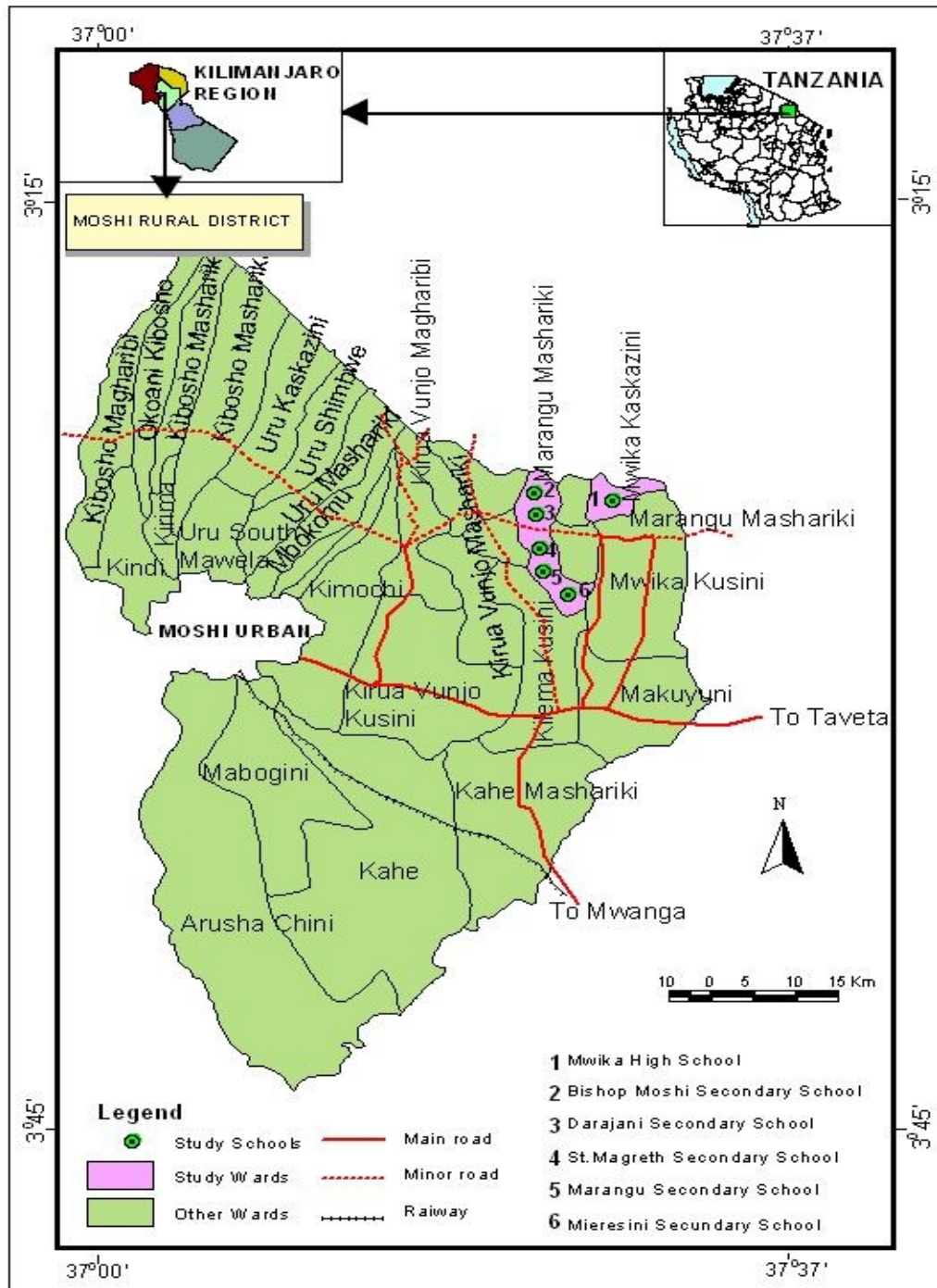


Figure 1: Map of Kilimanjaro region showing all districts and location of Moshi rural district

3.2 The Inclusion and Exclusion Criteria

To be eligible for the study, students needed to be unmarried and provide oral consent. Students from form I to IV in selected secondary schools were potential informants. The students who attend class session as Qualified Test students (QT) were not inclusive. Further, the married students and students aged above 26 years were also excluded from the study.

3.3 Study Design

A cross-sectional research design was used in this study. This method allows data to be collected at one point in time and establishes relationships between variables for the purpose of testing the hypotheses (Bailey, 1998). This method is considered to be useful because of time limitation and resource constraints.

3.4 Sample Size Determination

The number of students to be included in this study was determined by using formula according to (Fisher *et al.*, 1991). The sample size was estimated based on sexual behaviour of students which indicated that 32% of students are sexually experienced as noted in the literature review (Masatu *et al.*, 2009) with a margin of error of 1.96.

$$N = Z^2 \times p \times (q/d^2) \dots \dots \dots (i)$$

Where N = Sample size

Z = Standard normal deviate, set at 1.96 corresponding to 95% confidence interval.

p = Proportion in the target population estimated to have a particular characteristics (expected preference 0.32).

q = Expected non-prevalence ($1 - p = 0.68$)

d = Degree of accuracy desired, usually set at 0.05 or occasionally at 0.02.

Therefore, the sample size, N will be:

$$N = (1.96^2) \times 0.32 \times (0.68/0.05^2) = 334$$

An addition 10% was used to take care of the attrition rate. Thus the sample size was 366 students i.e. (334 + 32).

3.5 Sampling Procedures

Purposeful sampling procedures were used to select six (6) secondary schools to be included in the study. These include three government secondary schools and three private schools, of those are boarding, day, single-sex and co-education schools. Random sampling was used to select 60 students from each school giving each student equal chance of being selected (Kothari, 2004). In this procedure, a list of all students from each class was obtained from school records, the researcher and his assistants listed the names of all students. The number of students involved was determined, then wrote them in small pieces of paper, folded, shuffled them, and eventually picked one piece of paper at random. The name of students that were obtained through this method was written in a prepared sheet of paper and students were gathered in two classes. The Headmaster/headmistress took the researcher and research assistant to the respondents' class rooms for interviews and questionnaires were distributed to the students. These procedures were done for the same way in all surveyed secondary school.

3.6 Collection of Data

The study utilized one type of tool which is a structured questionnaire. Data collection was carried out over a period of four months from October 2009 to January 2011. The enrolled students in six (6) schools completed questionnaires in classrooms in a seating arrangement that assure privacy. Students were informed about the study and its purpose, assured that participation was voluntary, and reminded that the survey was anonymous they were not supposed to write their names on the questionnaire. The students' consent to participate was sought and they were given 30 minutes to complete the questionnaires. The questionnaires were prepared in English and translated into Swahili because both languages are used for communication in secondary schools. The questionnaire were pre-tested among students in one of the non-participating schools (Ashira Girls Secondary school) in Moshi rural district randomly selected from varying forms and then discussed for clarity before the field work started.

3.7 Data Analysis

A coded data obtained from structured questionnaire was analysed using the Statistical Package for Social Sciences (SPSS) software version 12 for windows and excel. Descriptive statistics such as mean, frequencies and percentages were computed to find the extent of sexual behaviour among secondary school students with different variables. Index scales were constructed to measure levels of risky sexual behaviour, misconception about means of transmission of STDs/HIV infection, attitude and barriers to sexual behavioural change. P-value was used to test the hypothesis at 95% Confidence Interval. The analysis has employed ethnographic approach that is relying on the direct information given by respondents according to the theme used during the discussion. Although in most cases the

analysis has used the summaries occasionally original statements have been included and used to obtain insights of the respondents.

3.8 Ethical Consideration

The area being studied is largely rural and is governed apart from regular administration by the municipal council. Before actual collection of data, the District Executive Director (DED) of Moshi Rural District and the Deputy Vice Chancellor (DVC) of Sokoine University of Agriculture were contacted to obtain their formal permission to conduct the study. The Moshi rural district Education Officer (DEO) and Headmasters or Headmistress of selected schools were notified for collection of preliminary information of their schools and the students were asked for their consent to participate in the study.

CHAPTER FOUR

4.0 RESULTS

4.1 Multiple Sex Partner and Risk Behaviour among Moshi Rural District Secondary School Students

4.1.1 Characteristics of respondents

Table 1 shows the social, demographic, sexual and risks behaviour characteristics among male and female secondary school students in Moshi rural district. A total of 360 students responded to the questionnaire. Of the total students about 37% were males and 63% were females with majority aged below 18 years old and lived in urban area before secondary school in the northern part of the country. About 90% of students reported that the parents had average income, that 8.6% were divorced, that 12.5% had a strict disciplinary style, and that 84.4% were disapproving premarital sex. Less than 50% had close secondary school friends who had either fallen in love or currently living with boyfriends. About 87 and 82% of student reported to disapproving premarital sex and multiple sex partners behaviour respectively, while nearly 19% worked at a place of entertainment. Using stratified sampling, adequate numbers across the six schools and the four years at secondary school education were achieved. About 72% reported feeling generally happy to be at school with nearly 67% had very good academic performance.

Table 1: Characteristics of secondary school student at Moshi rural district

Variable	Female (n=228)		Male (n=132)		Total (n=360)	
	Frequency	%	Frequency	%	Frequency	%
School						
Bishop Moshi secondary school	34	14.9	26	19.7	60	16.7
ST. Magreth secondary school	60	26.3			60	16.7
Darajani secondary school	37	16.2	23	17.4	60	16.7
Marangu secondary school	31	13.6	29	22.0	60	16.7
Mieresini secondary school	30	13.2	30	22.7	60	16.7
Mweka high school	36	15.8	24	18.2	60	16.7
Age (Years)						
< 18	205	89.9	102	77.3	307	85.3
19-22	23	10.1	24	18.2	47	13.1
> 22			6	4.5	6	1.7
Form						
I	60	26.3	30	22.7	90	25.0
II	56	24.6	34	25.8	90	25.0
III	57	25.0	33	25.0	90	25.0
IV	55	24.1	35	26.5	90	25.0
Home location (regions/zones)						
Northern	177	77.6	111	84.1	288	80.0
Others	51	22.4	21	15.9	72	20.0
Residence before secondary school						
Rural	80	35.1	65	49.2	145	40.3
Urban	148	64.9	67	50.8	215	59.7
Current residence						
Boarding/hostel	98	43.0	30	22.7	128	35.6
Others	130	57.0	102	77.3	232	64.4
Family economic status						
Poor	10	4.4	11	8.3	21	5.8
Average	211	92.5	114	86.4	325	90.3
Rich	7	3.1	7	5.3	14	3.9
Parent disciplinary style						
Strict	28	12.3	17	12.9	45	12.5
Average	195	85.5	107	81.1	302	83.9
Relaxed	5	2.2	4	3.0	9	2.5
Parent number of children (one child)						
Parents divorced	26	11.4	5	3.8	31	8.6
Parents disapprove premarital sex (yes)	193	84.6	111	84.1	304	84.4
Close classmates and friends disapprove premarital sex (yes)	176	77.2	85	64.4	261	72.5
Close friends falling in love (yes)	107	46.9	66	50.0	173	48.1
Current close friends living with boyfriend (yes)	107	46.9	60	45.5	167	46.4
Work at place of entertainment (yes)	42	18.4	25	18.9	67	18.6
Academic performance						
Excellent/ Good	152	66.7	88	66.7	240	66.7
Average	73	32.0	48	36.4	121	33.6
Poor	3	1.3	2	1.5	5	1.4
Feelings in school						
Generally happy	167	73.2	92	69.7	259	71.9
Average	47	20.6	36	27.3	83	23.1
Anxious/depressed	14	6.1	4	3.0	18	5.0
Taking subject in sex-related knowledge (yes)	54	23.7	39	29.5	93	25.8

4.1.2 Sexual partners and risk factors

Table 2 shows the 161 students who had sex and examine differences in risk behaviours between those with single and multiple sexual partners. It can be observed from Table 2 that for students who had one sexual partner and those with two or more sexual partners, the most at risk are the younger (lower forms), and there is significant difference in sex partner behaviour among students in different forms. Most students (66-90%) were from average economy family, average discipline style parents, having close classmates, friends and parents that do not supported premarital sex and working in place of entertainment. About 73-90% of students reported to have regular sex partner only and not using or rarely use condom during sexual intercourse. Exactly 40% of students with multiple sex partners compared to those with single sex partner reported to work at place of entertainment, they also approve premarital sex and multiple sex partner, had sex with married man/women, have history of pregnancy or abortions of partner themselves and having diagnosed with STDs in their life time.

Table 2: Sexual practices and risk factors among sexually actives secondary school student at Moshi rural district

Variable	Single sex (n=96)		Multiple sex (n=65)		P value
	Frequency	%	Frequency	%	
Sex					
Female	56	58.3	27	41.5	0.2514
Male	40	41.7	38	58.5	
Age (Years)					
<18	75	78.1	44	67.7	0.9875
19-22	16	16.7	21	32.3	
> 22	5	5.2			
Form					
I	25	26.0	15	23.1	0.0050
II	23	24.0	15	23.1	
III	24	25.0	10	15.4	
IV	24	25.0	20	30.8	
Residence before secondary school					
Rural	46	47.9	28	43.1	0.0878
Urban	50	52.1	37	56.9	
Current residence					
Boarding/hostel	42	43.8	19	29.2	0.4042
Others	54	56.3	46	70.8	
Family economic status					
Poor	7	7.3	10	15.4	0.7621
Average	86	89.6	55	84.6	
Rich	3	3.1	-	-	
Parent disciplinary style					
Strict	15	15.6	13	20.0	0.7271
Average	79	82.3	49	75.4	
Relaxed	2	2.1	3	4.6	
Parents disapproving of premarital sex (yes)	78	81.3	55	84.6	0.7195
Close classmates and friends disapproving of premarital sex	73	76.0	43	66.2	0.6253
Close friends falling in love	52	54.2	42	64.6	0.2715

Table 2 Cont.

Variable	Single sex (n=96)		Multiple sex (n=65)		P value
	Frequency	%	Frequency	%	
Current close friends living with boyfriend (yes)	56	58.3	38	58.5	0.2514
Work at place of entertainment (yes)	18	18.8	26	40.0	0.6637
Approve premarital sex (yes)	18	18.8	27	41.5	0.5399
Approve multiple sex partners (yes)	20	20.8	25	38.5	0.6463
Age of partner at first sexual intercourse					
Early (<17)	55	57.3	43	66.2	0.3443

Late (>17)	41	42.7	22	33.8	
The partner at first coitus was a boy/girl friend (yes)	58	60.4	35	53.8	0.2715
Ever had sexual intercourse with a married man/woman (yes)	21	21.9	46	70.8	0.6587
Meet a boy/girl friend over the internet (yes)	58	60.4	34	52.3	0.2650
Partner type					
Ever commercial	10	10.4	17	26.2	0.7420
Regular only	86	89.6	48	73.8	
Gender of sexual partner					
Homosexual/bisexual	48	50.0	26	40.0	0.0883
Heterosexual	46	47.9	36	55.4	
Use of condom					
Never/missing	62	64.6	27	41.5	0.5403
Sometimes	21	21.9	21	32.3	
Always	13	13.5	17	26.2	
Use of pills					
Never/missing	87	90.6	45	69.2	0.7472
Sometimes	7	7.3	11	16.9	
Always	2	2.1	9	13.8	
History of pregnancy of partner or themselves (yes)	12	12.5	23	35.4	0.7176
History of abortion of partner or themselves (yes)	11	11.5	20	30.8	0.7298
History of being diagnosed as having STDs (yes)	4	4.2	9	13.8	0.7854

Sexual behaviour characteristics for the studied secondary students are shown in Table 3. Of 360 students, 55.3% reported ever having sexual intercourse, and 18.1% reported having multiple sex partners. Of students who had engaged in sexual intercourse, 48.2% reported having a single sexual partner and 32.7% of them reported having multiple partners. Those with single sex partners were more likely to report masturbating than those with multiple sex partners (24% vs. 17%). These results of percentage of students practicing masturbation are higher by a factor of 2 to 3 times than those reported by Mkumbo (2010) for primary and secondary school students in Dar es Salaam and Mwanza. The prevalence of multiple sex partners among those who first had sex at age 15 or younger was 26.2%, while only 12.3% among students who first had sex at age older than 20 years. Those with multiple partners were also more likely to have had sex with a married man (70.8%) and about 25% had partners not being their boy/girl friend at first coitus, and 42% reported inconsistent use of condom during sexual intercourse.

Table 3: Sexual behaviour variables (%) for full sample, students who ever had sex, and students with single and multiple sex partners

Sexual behaviour	Full sample (n=360)	Ever had sex (n=199)	Single sex (n=96)	Multiple sex (n=65)	Odd ratios (95% CI)
Ever had intercourse (yes)	55.3	100	100	100.0	
Single sex partner (yes)	26.7	48.2	100	100	
Had multiple sex partners (yes)	18.1	32.7	67.7	100	
Practice masturbation (yes)	17.2	1.5	23.9	16.9	0.48 (0.24-0.97)
Age at first coitus					
11-15 years		4.5	29.3	26.2	0.61 (0.34-1.10)
16-20 years		93.5	38.5	61.5	1.08 (0.69-1.68)
above 20 years		2.0	32.3	12.3	0.26 (0.12-0.55)
Partner at first coitus not being boy/girl friend (yes)		90.5	81.3	24.6	0.21 (0.12-0.35)
Had sex with married man (yes)		18.1	21.9	70.8	2.19 (1.31-3.65)
Inconsistent condom use (yes)		48.7	64.6	41.5	0.44 (0.28-0.68)

4.2 Sexual Behaviour and Risks of Sexually Transmitted Diseases Among Secondary School Students in Moshi Rural District

4.2.1 Sexual behaviours

Table 4 shows that, of all respondents, 37.9% of males and 39% of females were sexually active and the proportion of male students who had experienced sex before secondary school was significantly greater in lower grade than higher grade students. The same trend, although involving a smaller proportion, was evident among female students. Among those who had been sexually active in the previous year, students were significantly more likely to have had regular sex partners only ($P < 0.001$) and this was more common for all four grade students in both sexes. Females were significantly more likely to have had multiple partners than males ($P < 0.001$); multiple partners were more common for lower form than higher form female students, but the opposite was the case for male students.

Condoms were never used by more than 60% of sexually active students in both sexes. Among female students, proportions of those who never or missing used condom declined from form I to form IV students (P value for trend analysis < 0.001). The trend in condom use was found to be high in form I and form IV for the male students than form II and form III. However, significant trend in condom use was found between the always users and never or missing users students (P value < 0.001). About 92% of female students never used contraceptive pills in the previous year.

Regarding the sexual orientation of partners, over 56% of respondents reported only having sex with members of the opposite sex during their lifetime, 33% of male and

31% of female respondents reported having had homosexual and/or bisexual relationships, with the rest failed to report a clear answer. Pregnancy had been experienced by 21.5% of female students and by 25% of male students' female partners over their lifetime. The prevalence of STDs among the sexually active students was similar (about 10%) in proportion for both sexes. The number for induced abortion was high for male student's female partner in lifetime than female students.

Table 4: Sexual behaviour (%) of Moshi rural district secondary school students by gender and form

Characteristics	..... Female (%).....				Total (n=228)	P value	.....Male (%).....				Total (n=132)	P value
	Form I (n=60)	Form II (n=56)	Form III (n=57)	Form IV (n=55)			Form I (n=30)	Form II (n=34)	Form III (n=33)	Form IV (n=35)		
Sexual experience												
Yes	35.0	35.7	49.1	36.4	39.0	0.0037	33.3	41.2	33.3	42.9	37.9	0.0005
No	65.0	64.3	50.9	63.6	61.0		66.7	58.8	66.7	57.1	62.1	
Time of first sexual intercourse												
Before secondary school	33.3	32.1	42.1	29.1	34.2	0.0008	40.0	32.4	30.3	25.7	31.8	0.1719
During secondary school	13.3	16.1	14.0	18.2	15.4		13.3	20.6	21.2	37.1	23.5	
Not specified	53.3	51.8	43.9	52.7	50.4		46.7	47.1	48.5	37.1	44.7	
Partner type												
Ever commercial partner	8.3	7.1	8.8	5.5	7.5	0.0001	3.3	2.9	15.2	5.7	6.8	0.0001
Regular partner only	43.3	51.8	61.4	47.3	50.9		56.7	50.0	54.5	57.1	54.5	
Missing	48.3	41.1	29.8	47.3	41.7		40.0	47.1	30.3	37.1	38.6	
Number of sexual partner												
Two or more	16.7	10.7	7.0	7.3	10.5	0.0012	20.0	35.3	24.2	42.9	31.1	0.9576
One	26.7	23.2	22.8	25.5	24.6		30.0	26.5	33.3	31.4	30.3	
Missing	53.3	62.5	68.4	63.6	61.8		46.7	44.1	54.5	31.4	43.9	
Use of condom												
Never/missing	80.0	76.8	75.5	74.5	76.8	0.0001	73.3	61.8	48.5	62.9	61.4	0.0002
Sometimes	11.7	12.5	7.0	16.4	11.8		6.7	20.6	33.3	17.1	19.7	
Always	8.3	10.7	17.5	9.1	11.4		20.0	17.6	18.2	20.0	18.9	
Use of pills												
Never/missing	96.7	85.7	96.5	87.3	91.7	0.0001	83.3	79.4	78.8	68.6	77.3	0.0001
Sometimes	1.7	7.1	3.5	10.9	5.7		6.7	14.7	15.2	22.9	15.2	

Characteristics	..... Female (%).....					Total P value	.....Male (%).....					Total P value
	Form I (n=60)	Form II (n=56)	Form III (n=57)	Form IV (n=55)	Total (n=228)		Form I (n=30)	Form II (n=34)	Form III (n=33)	Form IV (n=35)	Total (n=132)	
Always	1.7	7.1	0.0	1.8	2.6		10.0	5.9	6.1	8.6	7.6	
Gender of sexual partner												
Homosexual/bisexual	28.3	28.6	38.6	29.1	31.1	0.0001	33.3	38.2	24.2	37.1	33.3	0.0042
Heterosexual	61.7	60.7	57.9	65.5	61.4		50.0	50.0	66.7	57.1	56.1	
Missing	10.0	10.7	3.5	5.5	7.5		16.7	11.8	9.1	5.7	10.6	
History of pregnancy of partner or themselves												
Yes	21.7	21.4	17.5	25.5	21.5	0.0001	26.7	17.6	39.4	17.1	25.0	0.0005
No/Missing	78.4	78.6	82.4	74.5	78.5		73.3	82.3	60.6	82.8	75	
History of abortion of partner or themselves												
Yes	13.3	14.3	10.5	9.1	11.8	0.0001	30.0	29.4	27.3	20.0	26.5	0.0001
No/missing	86.7	85.8	89.5	91	88.2		70	70.6	72.7	80	73.5	
History of being diagnosed as having STDs												
Yes	11.7	12.5	5.3	10.9	10.1	0.0001	6.7	8.8	18.2	8.6	10.6	0.0001
No/missing	88.4	87.5	94.8	89.1	90		93.3	91.2	81.9	91.5	89.4	

4.2.2 Sexual Awareness

Sexual attitudes, awareness of sex, exposure to pornographic media (books/novel/magazine/video), and using internet to meet a boy/girl friend are compared between the grades and genders in Table 5. Students of both sexes in lower grades reported becoming aware of sex earlier than did students in higher grades, where males who became aware of sex before secondary school declined from 70% in form I to 51.4% in form IV students. The corresponding figures for females were 66.7% in form I and 49% in form IV. The proportion of students in both sexes who were exposed to pornographic media before or at the age ≤ 16 years was not significantly different from the students of age ≥ 17 years.

The internet has positive impacts on modern society but its easy accessibility poses greater risks and dangers for youth as compared to other forms of media (Greenfield and Yan, 2006). In this study the internet was actively used to find dates; 49.2% of male respondents and 38.2% of female respondents reported having found a girl/boy friend over the internet. More than 80% of all students and of both sexes disapproved secondary school students having sex. Premarital sex was considered unacceptable by 74.2% of male and 82.9% of female students and the corresponding values for unacceptable commercial sex was 83.3% vs. 73.7% respectively. There are significant differences for both sexes observed between students who approve and those who disapprove sex before secondary school and before marriage.

Table 5: Sexual awareness of secondary school students in Moshi rural district by gender and form

Variable	.....Female (%).....						.....Male (%).....					
	Form I (n=60)	Form II (n=56)	Form III (n=57)	Form IV (n=55)	Total (n=228)	P value	Form I (n=30)	Form II (n=34)	Form III (n=33)	Form IV (n=35)	Total (n=132)	P value
Became aware of sex												
Before primary school	16.7	16.1	17.5	14.5	16.2	0.2132	20.0	20.6	15.2	5.7	15.2	0.2904
Primary school	50.0	50.0	49.1	34.5	46.1		50.0	35.3	51.5	45.7	45.5	
Secondary school	33.3	33.9	33.3	50.9	37.7		30.0	44.1	33.3	48.6	39.4	
First exposure to pornographic media												
Early (≤ 16)	53.3	51.8	17.5	41.8	41.2	0.7803	46.7	50.0	51.5	37.1	46.2	0.0929
Late (≥ 17)	23.3	25.0	64.9	36.4	37.3		33.3	23.5	30.3	48.6	34.1	
Never/age unknown	23.3	23.2	17.5	21.8	21.5		20.0	26.5	18.2	14.3	19.7	
Meet a boy/girl friend over the internet												
Yes	21.7	33.9	22.8	76.4	38.2	0.2605	6.7	70.6	81.8	34.3	49.2	0.8965
No/missing	78.3	66.1	77.2	23.6	61.8		93.3	29.4	18.2	65.7	50.8	
Approve sex before secondary												
Approve	11.7	12.5	7.0	12.7	11.0	0.0001	10.0	26.5	18.2	17.1	18.2	0.0001
Disapprove	86.7	85.7	89.5	83.6	86.4		86.7	70.6	81.8	82.9	80.3	
Don't know	1.7	1.8	3.5	3.6	2.6		3.3	2.9	0.0	0.0	1.5	
Approve sex before marriage												
Approve	13.3	14.3	5.3	12.7	11.4	0.0001	16.7	26.5	21.2	20.0	21.2	0.0001
Disapprove	81.7	82.1	89.5	78.2	82.9		80.0	70.6	72.7	74.3	74.2	
Don't know	5.0	3.6	5.3	9.1	5.7		3.3	2.9	6.1	5.7	4.5	
Approve commercial sex												
Approve	6.7	3.6	1.8	96.4	26.3	0.2112	10.0	11.8	9.1	17.1	12.1	0.0001
Disapprove	93.3	96.4	98.2	3.6	73.7		83.3	85.3	84.8	80.0	83.3	
Don't know	-	-	-	-	-		6.7	2.9	6.1	2.9	4.5	

4.2.3 Risk Characteristics

Table 6 shows the unadjusted odds ratios for relationships between risk behaviours included statistically and significant variables among female and male students in form I to form IV. The results show that students in all forms are likely to be more sexually active or unprotected and to have become aware of sex earlier before secondary school education. Sexually active female secondary school students who were in form III have been exposed to pornographic media at earlier age than students in other forms. Most striking differences between forms (odds ratio > 3) were observed in "become aware of sex before secondary school" among female and male students in all forms and "being exposed to pornographic media at age \leq 16 years" among form III female students.

The multiple partnerships and condom use in the previous year were further analysed and the results shows that there are strongest associations between having multiple sexual-partners and never use condom during sex intercourse for students in form I to Form IV and for both sexes. This is because students who became sexually active early (before secondary school) are more likely to ever have multiple partnerships than students who were initiated late. These analyses showed that significant risks between the number of sexual partners with odds ratios ranged from 0.11 – 0.91 for females and 0.31 – 1.55 for males, both $P < 0.001$. The odds ratios for condom use in the previous year ranged between 0.13 – 0.62 for females and 0.17 – 2.08 for males, both $P < 0.001$. These results suggest that the risk of students in both sexes and forms to have multiple partnerships and not using condom are higher; this is most likely due to an increase in the number of students who become aware of sex at early age.

Table 6: The risk characteristics of Moshi rural district secondary school students by form and gender (Odds ratios-95% CI)

Risks characteristics	Form I	Form II	Form III	Form IV	P Value
Female					
Having first sex before secondary school	0.9 (0.68 - 1.38) 7	0.9 (0.64 - 1.35) 3	0.8 (0.60 - 1.25) 7	0.8 (0.60 - 1.25) 6	0.000 1
Ever had sex with a commercial sex partner	0.7 (0.46 - 1.27) 6	1.0 (0.64 - 1.80) 7	1.5 (0.94 - 2.70) 9	0.9 (0.53 - 1.51) 0	0.769 8
Having had two or more sexual partners	0.5 (0.32 - 0.91) 4	0.4 (0.27 - 0.82) 7	0.4 (0.27 - 0.80) 6	0.2 (0.11 - 0.44) 2	0.000 1
Never or rarely used condom	0.25 (0.13 - 0.47)	0.3 (0.16 - 0.56) 0	0.3 (0.18 - 0.59) 3	0.3 (0.19 - 0.62) 4	0.000 1
Became aware of sex before secondary school	5.00 (2.57 - 9.74)	5.2 (2.60 - 10.50) 2	4.7 (2.41 - 9.18) 0	5.8 (2.82 - 12.23) 8	0.198 7
Exposed to pornographic media ≤ 16 year old	0.88 (0.53 - 1.45)	0.9 (0.55 - 1.56) 3	4.7 (2.41 - 9.18) 0	1.3 (0.82 - 2.36) 9	0.768 4
Disapproved sex at secondary school	0.15 (0.07 - 0.32)	0.1 (0.08 - 0.35) 7	0.1 (0.05 - 0.27) 2	0.2 (0.10 - 0.39) 0	0.000 1
Male					
Having first sex before secondary school	1.14 (0.69 - 1.89)	0.8 (0.52 - 1.34) 4	0.9 (0.58 - 1.52) 4	0.7 (0.44 - 1.13) 1	0.000 1
Ever had sex with a commercial sex partner	1.31 (0.64 - 2.65)	1.0 (0.52 - 1.94) 0	1.2 (0.61 - 2.35) 0	1.3 (0.69 - 2.57) 3	0.032 1
Having had two or more sexual partners	0.76 (0.38 - 1.55)	0.6 (0.31 - 1.22) 2	0.7 (0.37 - 1.45) 4	0.6 (0.34 - 1.30) 7	0.001 0
Never or rarely used condom	0.36 (0.17 - 0.80)	0.6 (0.31 - 1.22) 2	1.0 (0.54 - 2.08) 6	0.5 (0.30 - 1.16) 9	0.000 1
Became aware of sex before secondary school	4.00 (1.68 - 9.52)	3.8 (1.72 - 8.66) 6	5.6 (2.23 - 14.04) 0	6.0 (2.40 - 14.97) 0	0.382 2
Exposed to pornographic media ≤ 16 year old	1.14 (0.57 - 2.31)	1.0 (0.52 - 1.94) 0	0.9 (0.48 - 1.84) 4	1.6 (0.86 - 3.32) 9	0.122 6
Disapproved sex at secondary school	0.15 (0.06 - 0.42)	0.4 (0.20 - 0.86) 2	0.2 (0.09 - 0.52) 2	0.2 (0.09 - 0.49) 1	0.000 1

CHAPTER FIVE

5.0 DISCUSSION

5.1 Multiple Sex Partner and Risk Behaviour among Secondary School Students

In the present study 44.7% of the surveyed students who were sexually active thought premarital sex was acceptable. This prevalence is higher than that reported in other studies (Kazuara and Masatu, 2009). Of the 161 students who had engaged in sexual intercourse, about (48.2%) reported having a single sexual partner and 32.7% having multiple partners. The prevalence of multiple sex partner behaviour among secondary school students in Moshi Rural district is relatively low than that reported in other developing and developed countries (Eaton *et al.*, 2003; Lydie *et al.*, 2004; Weinstock *et al.*, 2004; Paul-Ebhohimhen *et al.*, 2008). This could be possibly due to their conservative attitude concerning multiple sex partner behaviour (only 16.9% approve of this behaviour). Although the results show that older students were more likely to have had sex than younger students, those reporting multiple partners were more likely to have started having sex at younger age than those with only one partner.

Other investigators found that younger age is a risk factor for HIV infection (Mmbaga *et al.*, 2007); this may reflect a tendency toward long-term, monogamous relationships at older ages. Earlier initiation of sexual intercourse among youth is shown to be associated with greater frequency of sexual activity, larger number of sex partners, the advent of teen pregnancy at younger ages, and increase in the frequency of incidences of STDs in youth (Nyanzi *et al.*, 2001; Palen *et al.*, 2008;

Mkumbo, 2010). In this study, students who first had sex at age ≤ 20 years were more likely to have multiple sex partners than students who first had sex at age > 20 years, thereby significantly increasing their risk of acquiring STDs including HIV infections and unplanned pregnancy. This suggests that secondary school students should be targeted with preventive interventions as youth to discourage premature initiation of sexual activity. This study shows that there is clearly a need for more sex education in Kilimanjaro region if not the whole country.

The results confirm that students who agree or accept multiple sex partner behaviour are more likely to report more sex partners. Peer influences are important, and students whose friends falling in love and who work at places of entertainment (where alcohol and sex are present likely available) are also likely to report sex partners. Also several variables that differentiate students who do and those who do not engage in premarital sex were identified, and additional interventions can be developed targeting these students. For example, students coming from richer families and from families of divorce can be identified upon admission to school. Teachers can be encouraged to refer students with low academic performance or who seem depressed for special counselling.

It is important to keep in mind that 44.7% of subjects having sex and 40.4% reporting multiple sex partners were inconsistent in their condom use (either reporting to have never used or regularly used condoms when having sex). Increasing knowledge, attitudes, and skills associated with condom use are important objectives of a sex education intervention in Tanzania, and condoms should be easily accessible to students in secondary schools. As noted earlier, this

study was limited by its cross-sectional design. Determining causality must be based on future longitudinal research. Secondly, sexual behaviour is a sensitive subject and socially unacceptable in Tanzania cultural settings, thus it is possible that students underreported their behaviours. However, by ensuring privacy during the completion of the questionnaire and using the anonymous self-administered survey, were attempts made to minimize the bias.

5.2 Sexual Behaviour and Risk of Sexually Transmitted Diseases among Secondary School Students

The rates of sexual experience reported by the secondary school students who responded to this study were 37.9% males and 39% females. The results clearly indicate that there have been changes in the sexual behaviours and awareness of secondary school students, with female students in form III and male students in IV becoming more aware of sex. As for the multiple partnerships the form I and form IV female and male students respectively had multiple sex partners than students in other forms. If this trend continues, it may expand the subpopulation of students who have multiple sex partners in a year, expanding the sexual network among them.

The study also revealed prevalent unsafe sexual practices among respondents; 61.4% and 76.8% of males and female respectively reported never/missing using condoms during sexual intercourse in the previous year. This, together with the low contraceptive pill use among respondents, is probably the basis for the prevalence of both pregnancy and induced abortion, which were both as high as 21.5% among sexually active female respondents and 25% of the female partners of male

respondents. Since pregnancy rates were almost identical to rates of induced abortion for the female of the male respondents, it is possible that most pregnancies were artificially aborted, highlighting the importance of introducing safe sex education.

In contrast to rates of induced abortion and the prevalence of STDs among sexually active students diagnosed with during their lifetime was below 10% for female students. As to the male students the prevalence of sexually active students diagnosed with STDs was nearly 11%. This may be due to under-reporting, to the presence of STDs remain largely asymptomatic especially among students, to embarrassment or financial costs preventing students from seeking medical care, to the limited availability of testing for STDs in the study area, or to the fact that the secondary school students' sexual network was not developed enough to allow the spread of STDs.

Previous studies indicating that an early age of sexual debut is associated with negative outcomes such as unwanted pregnancy, induced abortion, and STDs (Singh *et al.*, 2000; Carret *et al.*, 2004). Research done in African countries has demonstrated that having sex at an early age is significantly associated with an increased incidence of HIV infection (Bulterys *et al.*, 1994; Pettifor *et al.*, 2004). These trends of lower form students to be sexually active, aware of sex, and accept adolescent sex earlier compared to higher form students were closely associated with the proportion of students who were exposed to pornographic media such as books/magazines/videos and websites at a young age. This suggests that

pornographic media may have had some influence on respondents' sexual awareness and practices.

The internet is a new, fast-developing media in Tanzania, and the population of users has dramatically increased during the last several years. This may be the cause for earlier exposure to pornographic websites in secondary school students. This study also revealed that about half of respondents in both sexes had used the internet to meet a girl/boy friend this is associated with risky sexual behaviours that could lead to STD/HIV infection. Careful monitoring will be needed in the country regarding the possible future impact of the internet and pornographic media on the sexual attitudes and behaviours of secondary school students and the young people in general.

This study found significant gender differences in rates of sexual multiple partner (male > female) and approval of commercial sex (female > male). These suggest the importance of targeting prevention efforts toward students and need to carefully monitor possible changes among students of both genders. Students appear to be rapidly changing in sexual awareness and behaviour, as the proportion of secondary school students who became aware of sex before joining secondary school education was much higher.

Finally, the current study revealed that about 33% of male and 31% of female students had experienced homosexual and/or bisexual activities while 6.8% of males and 7.5% of females reported that their sexual encounters in the previous year involved commercial sex and casual sex. Though the proportions of these sexual

practices were relatively small, prevention should clearly target these subpopulations since HIV/ STDs epidemics has already been found in populations of commercial sex workers in Dare es Salaam, Tanzania (Mhalu *et al.*, 1991; Akarro, 2009). The liberal attitudes that both sexes have about commercial sex and premarital sex are of serious concern in this respect, and should be adequately addressed in any future prevention program.

This study had several limitations. First, its cross-sectional design was limited in evaluating cause-and-effect associations. Second, the results obtained in this study should not be generalized to all secondary schools or students, since our sample was limited to secondary school students within one district and socio-demographic or socio-economic characteristics are greatly diverse among Tanzania districts and regions. Finally, the possible bias introduced by under-reporting should be noted, and proportion of non-respondents may have considered questions about sexual behaviours to be too sensitive as all of them were unmarried.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The results from this study conclude that, most secondary school students are sexually active and are involved in risk sexual partnership behaviour and the main determinant factors include poverty and leisure life. Sexual behaviour and awareness of sex among secondary school students is undergoing dramatic change, becoming more active and risky, mostly driven by earlier initiation of sex, engaging in multiple partnership and less condom use, which fosters the spread of STDs and HIV infection among secondary school students. The study also shows that the risk behaviour characteristics to sexually transmitted diseases and HIV infections include having multiple sex partners, inconsistent in using condoms during sexual intercourse, frequency access to pornographic media, use of contraceptive pills for girls and induced abortion among sexually active female students. It was noted that secondary school student's risky sexual behaviours are also associated with age and sex. The students less than age 16 are more at risky than above the age and males students are much more involved in risky sexual behaviour compared to female students. Generally, the results from this study suggests that, though sexual activity is still moderate among secondary school students, sexual behaviours are poorly protected and the adverse risks of sexual activity and behaviours are under possible rapid changes.

6.2 Recommendations

Based on the findings from this study, the following are recommended:

- i. To develop policies at all levels, sensitization programmes and strategies to address risk sexual behaviour issues, to help students realize their vulnerability to STDs/HIV/AIDS.
- ii. Students must be provided with reliable sources for information about STDs and HIV/AIDS.
- iii. Secondary school students should be targeted with preventive interventions when they are still in primary schools so as to discourage their sexual initiation.
- iv. Health and sex education must include material that will increase sex-related knowledge.
- v. Interventions must attempt to address attitudes and peer's influences, and aim to increase consistent use of condoms among students who choose to engage in premarital sex.
- vi. Secondary schools can institute programs for students from richer families, from families of divorce, who are doing poorly in school, and/or who appear depressed, as these factors are associated with risky behaviour. A policy restricting students from working at places of entertainment should also be considered.

For future research the following study areas are recommended.

- i. There is a need for more studies on the same subject in other districts and regions in Tanzania to enable generalization of the observations.
- ii. Research on programmes that underscore the effectiveness of the students based initiatives to address STDs/HIV/AIDS in some secondary schools and student perception is needed.

- iii. There is a need for Longitudinal surveys and surveillance on sexual behaviour and risky of STDs and HIV infection among students to develop trends and enable policy makers and school authorities to have long term plans for the diseases.
- iv. Further surveys on sexual behaviour, its consequences, therefore, should be carried out among Tanzanian secondary schools to develop targeted and effective prevention to protect them from adverse reproductive outcomes of acquiring STDs and future infection of HIV

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APPENDIX

Appendix 1: Questionnaire

SOKOINE UNIVERSITY OF AGRICULTURE (SUA)

DEVELOPMENT STUDIES INSTITUTE

Questionnaire for Assessment of Multiple Sex Partner Behaviour and Awareness of
Moshi Rural Secondary School Students in Transition with Implied Risk of Sexually
Transmitted Diseases

School name: _____ Interview date: _____ Questionnaire number

Demographic Data

Age (yrs)	Sex	Class (Form)	Stream	Tribe
≤18	1.M	1= I 3=III	1. Science	.....
19-22	2.F	2= II 4=IV	2. Arts	.....
23 – 25			3. Commerce	.....
≥ 26			4. ....	.....

SECTION A: MULTIPLE SEX PARTNER BEHAVIOUR

- A. Your home location-Zone 1. Northern 2. Eastern 3. Southern highlands 4.
Central 5. Cost region 6. Southern regions
- B. Family economic status 1. Poor 2. Average/intermediate 3. Rich
- C. Parent disciplinary style 1. Strict 2. General 3. Relaxed

- D. Do you stay with your both parents? 1. Yes 2. No.
If No are they 1.Divorced 2.One has passed away 3. Born out of wedlock
- E. How many children do your parents have 1. One 2. Two iii) Three 3. Four 4. More than four
- F. Do your parents disapprove/dislike/hate premarital sex? 1. Yes 2. No
- G. Do your close classmates or friends disapprove/dislike/hate premarital sex? 1. Yes 2. No
- H. Do your close classmates or friends falling in love? 1. Yes 2. No
- I. Do your have current close friends living with boyfriend/girlfriends 1. Yes 2. No
- J. Ever you worked at a place of entertainment 1. Yes 2. No
- K. What is your academic performance? 1. Excellent 2. Good 3. Average 4. Poor
- L. How do you feel being at school? 1. Generally happy 2. Average 3. Confused 4. Pressured 5. Anxious 6. Depressed
- M. Do you have any subject related to sex knowledge? 1. Yes 2. No.
If Yes, How do you rank yourself? 1. Excellent 2. Good 3.Moderate 4. Poor
- N. Do you approve/support/accept premarital sex? 1. Yes 2. No
- O. Do you approve/support/accept multiple sex partners? 1. Yes 2. No
- P. Have you ever have sexual intercourse? 1. Yes 2. No
If No, how do you satisfy your sexual urges? 1. By masturbation 2. Others: specify_____
- Q. What was your age at first coitus? 1. 11-15 years 2. 16-20 years 3. above 20
- R. The partner at first coitus was your boyfriend/girlfriend? 1. Yes 2. No
- S. Do you have multiple sex partners? 1. Yes 2. No

T. Have you ever had sexual intercourse with a married man/woman? 1. Yes 2. No

U. Do you consistently use condom when making sex? 1. Yes 2. No

SECTION B: SEXUAL BEHAVIOUR AND RISK OF SEXUALLY TRANSMITTED DISEASES AND HIV INFECTION

A. Residence before secondary school? 1. Rural 2. Town 3. Urban 4. City

B. Current residence 1. Boarding/hostel 2. Others: _____

C. Do you have sexual experience? 1. Yes 2. No

D. Time of first sexual intercourse 1. Before secondary school 2. During secondary school 3. Not specified

E. Partner type (in previous year) 1. Ever commercial/casual partner 2. Regular partner 3. Only Missing

F. Number of sexual partners (in previous year) 1. Two or more 2. One 3. Missing

G. Did you use condom during sexual intercourse? 1. Never/Rarely 2. Sometimes 3. Often/Always 4. Missing

H. Pills use in previous years (For girls only 1. Never/Rarely 2. Sometimes 3. Often/Always 4. Missing

I. Gender of sexual partner (lifetime) 1. Homosexual/Bisexual 2. Heterosexual only 3. Missing

J. History of pregnancy of partner or yourself 1. Yes 2. No/don't know 3. Missing

K. History of induced abortion of partner or yourself 1. Yes 2. No 3. Don't know 4. Missing

L. History of being diagnosed as having STDs 1. Yes 2. No 3. Missing

SECTION C: PERIOD OF FIRST AWARENESS OF SEX

A. Period you became aware of sex 1. Before primary school 2. Primary school
3. Secondary school

B. First exposure to pornographic media 1. Early (\leq 16 year-old) 2. Late (\geq 17
year-old)

3. Missing 4. Age unknown/Missing

C. Meet a girl/boy friend over the internet 1. Yes 2. No 3. Missing

D. Approve of sex during secondary school 1. Disapprove 2. Approve/ don't
know 3. Missing

E. Approve of sex before marriage 1. Disapprove 2. Approve/don't know 3.
Missing

F. Approve of commercial sex 1. Disapprove 2. Approve/don't know 3.
Missing