

# Knowledge, attitude and practice about sexually transmitted diseases among University students in Kampala

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## ABSTRACT

### Background:

Sexually transmitted diseases (STDs) remain an important cause of morbidity and mortality among women in the child-bearing age. In order to institute appropriate preventive measures there is need to establish the profile of knowledge of the predisposing factors and causation of STDs, attitude to sexual practice and sexual patterns among the susceptible young people, such as university students.

### Study population:

Non medical university students, Makerere University

### Design:

Descriptive cross sectional study

### Methods:

A detailed questionnaire identifying socio-demographic characteristics, sexual patterns, knowledge of STDs as well as attitudes towards prevention of STDs was administered to 400 non-medical students of Makerere University.

### Results:

Knowledge of the clinical features of gonorrhoea and AIDS was high; most knew the predisposing factors for STDs (multiple sexual partners 90%; unprotected sexual intercourse 93%; rape 81%; sex outside marriage 78%, and sex under the influence of alcohol 73%) but not so for syphilis. Males were three times more likely to contract STDs (27%) than their female (9%) counterparts. Whereas knowledge on methods of prevention was high (>90%) it was not followed by appropriate behavioural patterns. More female (33.5%) students had heard about *Trichomonas vaginalis* than males (23%); ( $\chi^2 = 17.1$ ;  $p < 0.0001$ ). This study has shown that more female than male students got information from their parents ( $\chi^2 = 25.3$ ;  $p < 0.001$ ) while more male students had their information from previous sexual intercourse ( $\chi^2 = 12.9$ ;  $p = 0.001$ ).

### Conclusion:

The level of knowledge about STDs and their prevention is not matched by sexual behavioural patterns, and male students undertake more risky sexual behaviour. Sexual education should be introduced at the university as a means of increasing students' awareness about the problem and prevention of sexually transmitted diseases including HIV/AIDS.

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## INTRODUCTION

Sexually transmitted diseases (STDs), unwanted pregnancies and other problems resulting from sexual activity have increased among adolescents. In Uganda, STDs including HIV/AIDS are among the leading causes of the burden of disease<sup>1</sup>. In 1971 over 25 % of Makerere University students reported STDs in one form or another; two-thirds contracted gonorrhoea from casual contacts or prostitutes and one third from friends or continuing partners<sup>2</sup>. Whereas there is increasing success in preventing and controlling gonorrhoea and syphilis, other STDs (such as herpes simplex virus, human papilloma virus and HIV) for which no cure is available are gaining prominence. These STDs have devastating effects on the capacity to reproduce, perinatal infection rates and incidence of genital cancers<sup>3</sup>. Both ulcerative and non-ulcerative STDs enhance the transmission of HIV AIDS.

While several workers have reported knowledge about STDs amongst university students, information

from East Africa remains sketchy. In Cameroon<sup>4</sup> seventy percent of the university students knew about STDs but only 16.1% could name the clinical features of common STDs. The same applied to knowledge about prevention and complications of STDs<sup>4</sup>. Elsewhere alcohol and peer influence were contributory factors<sup>5</sup>. While alcohol was thought to impair judgement<sup>6</sup>, there was a lack of perception of contracting HIV/AIDS<sup>7</sup>.

Sexual practice patterns among university students lags behind knowledge and attitude towards prevention of STDs and condom use<sup>8</sup>.

With the advent of STDs for which curative therapy is not available, primary prevention has assumed greater importance. Modifying selection of sexual partners and avoiding certain sexual practices theoretically reduces the risk of infection. The study was therefore designed to assess the level of awareness of university students about the problem of STDs.

The specific objectives were to assess the level of knowledge about the clinical features suggestive of STDs with special emphasis on gonorrhoea, syphilis and AIDS; assess awareness of the risk of and /or protection against STDs and the students' experiences on STDs, their treatment and prevention

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## METHODOLOGY

This was a descriptive cross sectional study carried out in January 1994 among Makerere university non-medical students living in the 9 halls of residence (3 for women and 6 for men).

A coded questionnaire addressing socio-demographic characteristics, knowledge of the features and complications of common STDs, various patterns of sexual practice as well as means of controlling STDs was self administered to those who consented to participate.

### Recruitment

University undergraduate resident students holding a valid identification card and registered as residents for the 1993/94 academic years were selected for the study. Medical students as well as non-residents were excluded.

### Sample size estimation and sampling procedure

The sample size was calculated using a formula for cross sectional studies<sup>9</sup>. Assuming that 50% of the university students had sufficient knowledge of STDs, a sample size of 400 (200 males and 200 females) was obtained with 95 % confidence and 5 % standard error. The number of resident students in the various halls of residence was ascertained from the officers of the halls, and random sampling based on the halls of residence strata was used. From each hall a random sample using random number tables was taken in proportion to the residential capacity of the hall.

### Data collection and management

The questionnaires were pre tested in order to estimate the length of the interview and usefulness of the questions. The questionnaires were answered in English, the national language. An operational manual was provided to the interviewers to minimize students' bias. One medical student per hall explained the purpose of the study, distributed the questionnaire to those fulfilling the recruitment criteria and reviewed the completed questionnaires for omissions.

Eligible students received an explanation about the purpose and objectives of the study before being asked for consent and to fill in the questionnaire. Information was collected on socio - demographic characteristics, knowledge of common STDs and their complications, previous sexual experience, sexual practice patterns as well as knowledge about the prevention of STDs. Data was entered into the computer using Epi-info software.

### Data analysis

Statistical analysis was done using the chi-square test for categorical variables while the student's t -test was used for continuous variables. Descriptive statistics, mainly means and medians, were used for continuous variables and proportions were used for discrete variables. Univariate analysis was performed to obtain measures of frequency of variables such as risk factors; sexual practice and the corresponding crude measures of association were determined using hypothesis testing and/or interval estimation in a 2 x 2 analysis.

## Ethical considerations

Students were informed of the purpose of the study. It was emphasized that the study was an attempt to establish knowledge about common sexually transmitted diseases, their consequences as well as risk factors and sexual practice patterns among university students. Permission to carry out the study was obtained from Makerere University, the Department of Obstetrics and Gynaecology, the Makerere Medical School Ethics and Research Committee and the Uganda National Council for Science and Technology. Questionnaires were assigned unique codes and the results of each individual questionnaire were kept in strict confidence.

## RESULTS

Most students had heard about common STDs such as gonorrhoea, syphilis and HIV/AIDS while the rarer STDs were less well known (table 1). Significantly more females than males had heard about *Trichomonas vaginalis* ( $X^2 = 17.1$ ;  $p = 0.014$ ).

**Table 1 – Awareness about STDs among non-medical university students**

Disease	Male Students	Female Students	OR (CI)	P-value
	N=200	N = 200		
	No. (%)	No. (%)		
Gonorrhoea	192(96)	189 (95)	1.40(0.51-3.90)	0.481
Syphilis	191(96)	195 (98)	0.54(0.16-1.82)	0.276
AIDS	177(89)	177 (89)	- -	
Lymphogranuloma venereum	35(18)	36 (18)	0.97(0.56-1.66)	0.896
Pelvic Inflammatory Disease	51 (26)	58 (29)	0.84(0.53-1.33)	0.432
Trichomonas vaginalis	45 (23)	67 (34)	0.58(0.36-0.92)	0.014
Candidiasis	63 (32)	69 (35)	0.87(0.56-1.35)	0.523

OR = Odds Ratio

CI = 95% confidence interval

The students were fairly knowledgeable about the general symptoms of STDs with females significantly recognising abnormal vaginal discharge and menstrual disturbances as being suspicious of an STD while males identified painful micturition as the most suspicious feature (table 2).

**Table 2: Knowledge of symptoms of STDs**

Symptom	Male	Female	OR (CI)	P -value
	N=200	N=200		
	Yes (%)	Yes (%)		
Fever on and off	140 (70)	129 (65)	1.28(0.83-2.00)	0.241
Swelling in the groin	146 (73)	138 (69)	1.21(0.77-1.97)	0.378
Lower abdomen pain	148 (74)	145 (73)	1.08(0.68-1.72)	0.735
Vaginal discharges	128(64)	153 (77)	0.55(0.34-0.86)	0.006
Menstrual disorders	94 (47)	117 (59)	0.63(0.42-0.95)	0.021
Genital ulcers	130 (65)	118 (59)	1.29(0.84-1.97)	0.216
Itchy perineum	91 (46)	95 (48)	0.92(0.61-1.34)	0.688
Skin rash	143 (72)	141 (71)	1.05(0.67-1.65)	0.826
Painful micturition	82 (41)	59 (30)	1.66(1.07-2.57)	0.016

OR = Odds Ratio

CI = 95% confidence interval

However only 43.8% of those interviewed knew that gonorrhoea causes painful micturition (male 50%; female 37.5%) and 63% (male 54.5%; female 71.5%) knew that gonorrhoea causes vaginal pus discharge.

Seventy seven per cent of the students (same proportion in males and females) knew that syphilis is associated with genital sores while 61.2% (59.8% male; 62.5% female) linked it with an itchy skin rash. Clearly the students have misconceived the clinical features of this disease.

The majority of the students knew the clinical features of HIV/AIDS (table 3). This may be due to the publicity it has received in the mass media and the fear it has imparted on the students.

**Table 3 – Knowledge of features suggestive of HIV/AIDS**

Feature	Male Yes(%)	Female Yes(%)	OR (CI)	P-value
Fever on and off	183(92)	188(94)	1.46(0.64-3.35)	0.335
Weight loss	191(96)	193(97)	1.30(0.43-3.96)	0.610
Diarrhoea	186(93)	186(93)	-	-
Itch skin rash	188(94)	190(95)	1.21(0.48-3.11)	0.661
Sore throat	147(74)	172(86)	2.21(1.29-3.80)	0.002
Severe headache	130(65)	144(72)	1.38(0.89-2.16)	0.132

OR = Odds Ratio

CI = 95% confidence interval

Table 4 shows the main sources of information. More female students obtained information from their parents ( $X^2 = 25.3$ ;  $p = 0.000$ ) than did their male counterparts. Significantly more males than females obtained their information from previous intercourse ( $X^2 = 12.9$ ;  $p = 0.001$ )

**Table 4: Source of Information**

Source	Male Yes (%)	Female Yes (%)	OR (CI)	P-value
*Previous Sexual Encounter	59(29.5)	31(15.5)	2.28(1.36-3.83)	0.001
School Education	177(88.5)	179(89.5)	0.90(0.46-1.77)	0.749
Friends	185(92.5)	175(87.5)	1.76(0.86-3.64)	0.096
* Parents	70(35)	118(59)	0.37(0.24-0.57)	0.000
Medical personnel	130(65)	134(67)	0.91(0.59-1.41)	0.673
* Magazines	167(63.5)	182(90.5)	0.50(0.26-0.96)	0.025
Newspapers	175(87.5)	181(90.5)	0.73(0.37-1.44)	0.338
Religious Education	90(45)	106(53)	0.73(0.48-1.10)	0.110
*Television	135(73.8)	160(80)	0.52(0.32-0.84)	0.005

\* Difference is statistically significant.

OR = Odds Ratio

CI = 95% confidence interval

Knowledge of the factors predisposing to STDs is shown in table 5. These included multiple sexual partners, unprotected sexual intercourse, rape, lack of knowledge, extra marital sex and intercourse under influence of alcohol.

**Table 5 – Knowledge of Factors Predisposing to acquisition of STDs**

Factor	Male	Female	OR(CI)	P-value
	Yes (%)	Yes (%)		
Sexual promiscuity	136(68)	145(73)	0.81(0.51-1.27)	0.325
Multiplicity of Sexual partners	173(87)	184(92)	0.56(0.28-1.12)	0.076
Unprotected Intercourse	183(92)	188(94)	0.69(0.30-1.57)	0.335
Sex outside marriage	148(74)	144(72)	1.11(0.69-1.76)	0.652
Premarital Intercourse	114(57)	123(62)	0.83(0.55-1.26)	0.360
Lack of Knowledge	155(84)	157(91)	0.94(0.57-1.56)	0.809
Rape	159(80)	1661(83.5)	0.94(0.56-1.58)	0.803

OR = Odds Ratio  
CI = 95% confidence interval

Sexual practice patterns are shown in table 6. While 29.3% of the students had at one time suspected they had an STD only 13.8% had ever contracted it.

**Table 6 - Sexual Practice Patterns**

Feature	Male	Female	OR (CI)	P-value
	Yes (%)	Yes (%)		
Suspicion of having contracted STD	80(40)	37(19)	2.94(1.81-4.76)	0.000
Actually having had an STD	45(23)	10(5)	5.52(2.58-12.09)	0.000
Changed behaviour because of AIDS campaigns	173(87)	156(78)	1.81(1.04-3.16)	0.026
Other people changed behaviour	114(57)	116(58)	0.96(0.63-1.46)	0.840
Do you use a condom	114(58)	18(9)	13.40(7.43-24.44)	0.000
Intercourse with a new partner without a condom	67(34)	27(14)	3.23(1.90-5.50)	0.000
Regretted intercourse when drunk	37(19)	11(6)	3.90(1.84-8.41)	0.000

OR = Odds Ratio  
CI = 95% confidence interval

Knowledge on the prevention of STDs is shown in table 7.

**Table 7 - Prevention of STDs**

Means	Male	Female	OR (CI)	P-value
	Yes (%)	Yes (%)		
'Zero Grazing' (one faithful partner)	183(92)	183(92)	-	-
Condoms	187(94)	187(94)	-	-
Douching	27(14)	32(16.5)	0.82(0.45-1.48)	0.441
Treatment after intercourse	84(42)	97(49)	0.77(0.86-1.97)	0.192
Treatment of contacts	149(75)	157(79)	0.80(0.49-1.31)	0.346
Regular visits to STD clinic	154(77)	168(84)	0.64(0.37-1.08)	0.077
Sex Education	176	182(92)	0.73(0.36-1.45)	0.328

OR = Odds Ratio  
CI = 95% confidence interval

## DISCUSSION

In this study, we sought to establish the level of awareness of Makerere University non-medical students about the problem of STDs in view of the HIV/AIDS pandemic.

Of the 400 students interviewed, 70% were sexually active as reflected by the responses to the age at first intercourse and the number of sexual partners in life. Male students had a lower average age at first sexual intercourse (mean 16.1 years) than females (mean 17.8 years). They were also proportionately more sexually active than females. In a previous study, eight per cent of university students claimed to have begun sexual activity before 10 years and almost all were experienced by 20 years<sup>4</sup>. Cultural factors could have influenced the age at first intercourse. For example amongst the Baganda in Uganda, the paternal auntie or 'ssenga' was responsible for teaching and initiation of virgin girls about sexuality. This practice seems to have been eroded by rural to urban migration. In northern Uganda, the Acholi grandmothers were responsible for preparing young girls for adulthood including sexuality<sup>10</sup>, training girls to postpone intercourse until they were ready for marriage.

The median age for first intercourse showed a similar pattern. This might reflect the adventurous nature of males or the cultural practice of boys being expected to be sexually experienced before marriage<sup>11</sup>. The early age of first sexual intercourse in this study is disturbing as it may represent an increased risk of getting infected with HIV<sup>12</sup>. The mean number of partners amongst the sexually active group showed males to have more partners than females.

### **Knowledge of the clinical features suggestive of STDs**

The proportion of students who had heard of gonorrhoea and syphilis did not match their knowledge of clinical features. This may be due to the fact that the names of the diseases are common words used in adolescence. For example Bennet<sup>13</sup> reported 18 other terms for syphilis among the Baganda. These STDs have been overshadowed by the AIDS campaigns and little attention is paid to them in the mass media and educational programmes. This is unfortunate since we know that ulcerative STDs enhance HIV transmission<sup>14</sup>.

Knowledge about specific clinical features of common STDs was not in keeping with the proportion of those who had heard about them. The key questions, which students wanted to know about STDs in 1973, are still relevant in the current study. These included the historical origin of gonorrhoea, mode of infection, signs and symptoms, diagnosis, treatment, complications, prevention and immunisation, syphilis, non gonococcal-urethritis, chancroid, monilia, trichomoniasis, pubic lice and warts<sup>15</sup>. Only with respect to HIV/AIDS did students show a level of knowledge matching their education status.

This study has shown that more female than students got most of their information from their parents ( $p = 0.000$ ). The girls are brought up to perform well defined roles, carry out domestic chores and look after their younger brothers and sisters; they are always reminded 'not to do this or that because they are not boys'<sup>16</sup>. In Buganda, adolescent girls are taught sexuality and how 'to please their partners' by their paternal auntie *ssenga*.

Male students had their source of information from previous intercourse. This agrees with Kisekka<sup>12</sup> who noted that boys were expected to be sexually experienced before marriage. Some male students at Makerere University felt it was impossible to stay without sexual activity for 3 months believing that sex was necessary to gain experience before marriage, for proper development of the sexual organs, and for emotional stability<sup>17</sup>. Overall, awareness about factors predisposing to acquisition of STDs was high while adaptation to appropriate sexual behaviour was low.

### **Perception about the risk of getting STDs**

Eighty two per cent of the students reported to have changed their sexual habits as a result of HIV/AIDS campaigns, which was not corroborated by a corresponding increase in those practising safer sexual practice. This confirms the saying 'knowledge does not predict behavioural outcome'<sup>18</sup> and that 'the best predictor of behavioural change is time rather than knowledge'. Condom use by both males and females was unexpectedly low. This agrees with an earlier study at the same University where, despite having been educated about the condoms, only a small number used them regularly because they were 'cumbersome, messy, not acceptable morally, culturally and religiously'<sup>2, 19</sup>. In Uganda the low percentage of those using condoms was ascribed to religion not allowing family planning: that children are gifts from God and should not be limited. The desire to expand the clan<sup>20</sup>, women being embarrassed and shy about suggesting use of condoms to their partners, myths and misconceptions about condom use, all limit the universal use of condoms<sup>21</sup>.

In most parts of Uganda women are expected to be faithful to their husbands though the same does not apply to men<sup>16</sup>. Extramarital relations are considered to be normal for men amongst most tribes in Uganda<sup>22</sup> and women occasionally had extramarital affairs if the partner was a polygamist or migratory worker as a means of avoiding sexual deprivation. Some university students preferred prostitutes because the cost of such a relationship was much less than the cost of maintaining a steady relationship with a university girlfriend<sup>22</sup>.

In Kenya it was noted that STDs followed extramarital intercourse which commonly occurred among married men and those with multiple sexual partners, more so between married men and unmarried women<sup>23</sup>. This was ascribed to non-usage of condoms and most men contracted STDs from prostitutes and casual sex partners while most married women contracted STDs from their husbands.

Arya<sup>17</sup> noted the myths offered by the students for not using condoms as 'being cumbersome, not satisfying, degrading or insulting to women, a sign of mistrust, unhygienic or might come off and stick in a woman'. Some students used condoms only with their steady girlfriends but not with casual contacts for fear of pregnancy rather than STDs<sup>2</sup>.

The Baganda culturally believed that proper sex must involve vaginal penetration by the penis, skin-to-skin contact and mixing of vaginal and seminal fluids<sup>22</sup>.

Elsewhere non use or rejection of condoms has been associated with 'one not being afraid of getting infected, not enjoying it, not being available at hand,

partner's refusal<sup>24</sup>, decreased sexual pleasure and sensitivity and being under influence of alcohol<sup>25</sup>.

Others include the belief that their partner was not infected<sup>26</sup>, that condoms are instruments that women may influence but do not ultimately control, and that their safety is often predicted on their ability to 'negotiate' condom use with an unwilling partner. Social, economic, cultural and emotional forces were said to limit a woman's ability to negotiate successfully on their own behalf. Some men believe protection against pregnancy allows a woman to become promiscuous.

## CONCLUSIONS

While the majority of university students had heard about STDs, their knowledge was inadequate. Males had a greater number of sexual partners than females but a lower age at first intercourse.

School education, peer groups and mass media remain the main ways by which students learn about STDs. However, parents play a crucial role in the education of female students about sexual matters.

Whereas students knew the risk factors for STDs, they had a high degree of risk taking sexual behaviour evidenced by the very low percentage using condoms and a large proportion having multiple partners. Male students were more likely to practice risky sexual behaviour. There is urgent need to introduce sexual education at the university in order to increase students' awareness about the problem and prevention of STDs including HIV/AIDS.

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