PATTERNS OF CONDOM USE AND ABSTINENCE AMONG UNMARRIED YOUTH AGE 15-24 IN UGANDA: EVIDENCE FROM 1995 AND 2000/1 UDHS FEMALE DATA

Tumwesigye M Nazarius, Nyovani Madise PhD, Homes David PhD

Abstract

Uganda has experienced the worst health hazard in its history with an estimated 2 million cumulative HIV cases resulting into a large number of AIDS cases. The HIV prevalence reduced from a median of 19.8% in 1995 to 5.5% in 2001 among women attending antenatal care at sentinel sites but the rate of decline was lower in 1996-2001 period (1.25% per year) compared to 1992-1995 (2.43% per year). Similar trend has been observed in all sites and age groups. The aim of this paper is to investigate the pattern and changes in condom use and abstinence among young unmarried women in 1995 and 2000/1 using DHS data. Many programmes have been targeting the young people with prevention messages of abstinence and condom use. Are factors commonly associated with condom use and abstinence in general population still significant among the unmarried youth? Could there have been a change in pattern of condom use and abstinence?

Cross-tabulations and logistic regression are used to analyse the patterns and differentials in abstinence and condom. Abstinence as measured over a twelve-month period was preferred over one and three months.

From 1995 to 2000/1 there was a drop in abstinence among unmarried and sexually experienced women. Condom use increased nearly three fold over the same period. Factors associated with reduced abstinence were, age 20-24, residence in central region and short stay at place of residence. Region of residence, current type of residence and education level were significant correlates of condom use. The pattern of abstinence and condom use did not significantly change over the years 1995 and 2000/1 after adjusting for main background characteristics.

Introduction

Uganda has experienced the worst health hazard in its history with an estimated 2 million cumulative HIV cases resulting into a large number of AIDS cases that have outstretched the already poor health services. The political intervention and foreign donor support has helped to reduce the prevalence from a median of 19.8% in 1995 to 5.5% in 2001 among women attending antenatal care at sentinel sites. However, the rate of HIV prevalence decline is lower in 1996-2001 period (1.25% per year) compared to 1992-1995 (2.43% per year). Similar trend has been observed in all sites and age groups.

In addition to high HIV prevalence rates, Uganda had the highest teenage pregnancy in Sub-Saharan Africa at 43% in 1995. The rate declined to 31% in 2000/1 but it is still among the highest in the world (UBOS & ORC Macro 2001). Intervention to reduce the HIV prevalence and reduce the teenage pregnancy among the youth has mostly focused on abstinence and condom use.

Most of the studies on condom use and abstinence in Uganda have reported an increase in both over the years. Notable among them is the behavioural monitoring study in Kampala, Jinja and Lira districts which showed an increase in condom use from 57.6% in 1995 to 76.0% in 1998 and 85% in 2001. In the same study age at first sex at the three sites remained the same (Kampala: 20, Jinja, 18 and Lira 18) but Uganda Demographic and Health Surveys (UDHS) in 1995 and 2000/1 showed an increase of age at first sex from 16.3 to 16.6 years for women and 17.3 to 18.5 for men. There was also a reduction of 11% in proportion of women sexually active in previous 4 weeks among age group 15-19 over the two study periods. There was no corresponding change among the 20-24 age group (ACP MOH 2002;MOFEP & ORC Macro 1996;UBOS & ORC Macro 2001). Most work on condom use and abstinence has covered the general population of young people or adults but little on young unmarried people.

Analysis of UDHS 1995 and 2000/1 by Susheela et al. show that although on average both condom use and abstinence have increased among young people the change was

inconsistent among those who were sexually experienced and never married. During the 1995-2000/1 the proportion of those who had ever used a condom rose from 25 to 42%, 39 to 46% and 44 to 62% among men aged 15-17, 18-19 and 20-24 respectively. The percentage of women that had ever had sex decreased from 46% to 34%, 82% to 77% and 97% to 96% for the age groups 15-17, 18-19 and 20-24 respectively. Sexually experienced young women aged 15-17 who were in a sexual relationship at the time of the study decreased from 82% to 68% in the two periods (Susheela S et al. 2003). The data analysed comprised of all women in the respective age groups and sexual activity was measured as having sexual intercourse in previous 3 months.Such a measure was insensitive to seasonality of sexual activity. An example of seasonality in sexual activity is a study in US which showed that loss of virginity is particularly likely during the summer(Rodgers et al. 1992). Months of male circumcision (*imbalu)* in Uganda create environment for sexual activity *(Ntozi PM J & Kirunga T C 1997).* This paper proves that pattern of condom use and abstinence of the never married youth, when measured as having sexual intercourse in previous one year differs from the general population of female youth in same age group.

Condom use is correlated with age, marital status, rural/urban residence, region of residence and education level (UBOS & ORC Macro 2001). Studies in other countries have shown similar associations. Lack of communication with partners, perception of barriers of condom use, not feeling confident to use the condoms, drinking alcohol, low age at sexual intercourse, poor social support and multiple partners follow on the list of factors that reduce condom use (Adih W K & Alexandar CS 1999) (Ali M K et al. 2003;Ali Mehryar Karim et al. 2003;Zellner LS 2003)

Abstinence in Uganda is determined by factors that include rural/urban residence, region of residence and education. When measured by age at first sex, abstinence slightly decreases with increasing age. Urban residents and people with secondary education have higher age at first sexual intercourse (UBOS & ORC Macro 2001). Else where studies have found that young people who are academically successful, feel a sense of connection to home, school, and community and who have high hopes for the future and involved in extra curricular activities are more likely to abstain from risky sexual behaviour. A study found a relationship between time of the day and sexual activity among young people. Sexual intercourse among school going students took place from 4:00pm to 7:00pm (Ehrlich G & Vega-Matos A C 2003).

This paper provides further information on impact of HIV/STD prevention projects that have for long targeted the adolescents countrywide. There is lack of sufficient in-depth reviews of progress in safe practices of the adolescents especially the never married youth. The unmarried young people have nearly the same exposure to risky behaviour and therefore this paper in a way assesses the effectiveness of preventive interventions in a specific group by excluding a probable confounding factor. The paper focuses on pattern and trends for the whole country unlike several studies that have targeted particular geographical areas.

The importance of selection of the unmarried females aged 15-24 lies in the fact that they are at a transition time to adulthood and are most vulnerable. According to 1991 census, the age group 15-24 comprised of 46.5% of all women aged 15-49. The never married constituted 19.4% of all women 15-49, 60.5% of those aged 15-19 and 20.0% of those aged 20-24. Nearly 70% of women have their first sexual intercourse and

first marriage within 15-24 age group (UDHS, 2000/1). Studies show that sexual behaviour before marriage influences sexual behaviour after marriage while general behavioral patterns adopted during adolescence often last a lifetime (IFPP 2001;WHO 1997)

In the analysis, this paper seeks to answer the following questions:
a) What is the pattern of abstinence and condom use among the never married?
b) Does the pattern of safe practice differ from that of general population in same age group?
c) Which factors are correlated with abstinence and condom use?
d) Does the pattern change over 1995 to 2000/1 study times?

Objectives of the study
The objectives of this study are to

a) describe patterns of condom use and abstinence among the unmarried female youth age 15-24 from the Uganda demographic health surveys 1995 and 2000/1 and
b) assess change in pattern of the preventive practices between the two periods

Methods and materials

The data was extracted from the data sets of females in the Uganda Demographic and Health surveys 1995 and 2000/1. The two data sets were merged and selection of records of women who have never married and aged 15-24 was carried out. For the analysis of condom use another criteria for having ever had sexual intercourse was added. Although the national sample sizes of the Demographic and health Surveys are large, the selected number of respondents is smaller but still big enough to allow advanced data analysis. The result of the selection was 2,575 records of never married female youth within age group 15-24. They make up the largest marital status category (40.1%) out of the 6,420 records of women aged 15-24 in the UDHS 1995 and 2000/1. Further selection of the sexually experienced women resulted into 967 women.

The data was obtained through face to face interviews. There could have been underreporting due to sensitivity of the information sought especially among the never married category. Sexual activity is a private and confidential affair and it is less socially acceptable among the never married people compared to other levels of marital status. Young people have a tendency to report what the interviewer wants to hear.

The data was analysed to meet objectives of this paper. To obtain the level and pattern of abstinence the proportions that had not engaged in sexual activity in previous one month, three month and one year were compared between 1995 and 2000/1. The same procedure was carried out for all women in the 15-24 age bracket as well as those who just never married and those who were both unmarried and sexually experienced. Condom use was measured by use at last sexual intercourse and was compared between the study times. Abstinence in previous one year and condom use at last sexual intercourse were analysed by background characteristics in bivariate and multivariate logistic regression. Change in pattern was assessed by the significance of the interaction with year of study in bivariate and multivariate analysis. Significant

factors that are associated with safe practice were determined by their influence in a multivariate logistical regression model using log ratio tests. All analysis was carried out using STATA v.8E statistical package.

Results

Distribution

The overall sample for the two study periods had more females in the 15-19 age bracket (80.1%) than in 20-24 age group (19.9%) (See table 1). Distribution by religion showed Protestants (42.2%) with highest proportion followed by Catholics (39.2%), then Muslims and other denominations. Other denominations included Pentecostal, Evangelical and traditional African beliefs. Central region had the highest number of respondents (29.2%) followed by the western region (27.5%). More than a half (53.8%) resided in rural area at time of the survey but a higher proportion had rural childhood residence (71.3%). Uganda's population is 85% rural. Forty two percent of the sample had always lived at place of residence while 37.3% had stayed at the residence for less than 5 years. More than a half (54.6%) had attained some primary education while 39.2% had reached secondary level. Uganda's literacy level is 68% (UNDP 2003). Those who usually read newspapers were 63.9% while those who listened to radio every week were 54.3%.

When compared between 1995 and 2000/1 study times, there were no major differences in distribution with exception of childhood residence, newspaper readership and radio listenership. Urban childhood residence increased from 23.9% in 1995 to 32.3% in 2000/1. Newspaper readership reduced from 40.3% to 32.7% and radio listenership increased from 43.1% to 47.7% in the same period.

Table 1: Un-weighted Distribution of never-married female youth age 15-24 during 1995 and 2000/1 UDHS un-weighted data

Characteristic	Year		All
	1995 (n=1,129)	2000 (n=1,446)	2575
Age			
15-19	78.9	80.9	80.1
20-24	21.1	19.0	19.9
Religion			
Catholic	40.1	38.6	39.2
Protestant	42.7	41.4	42.0
Muslim	11.8	13.7	12.9
Other	5.4	6.8	6.0
Region			
Central	38.5	39.9	39.2
Eastern	20.7	19.3	19.9
Northern	14.1	12.8	13.4
Western	26.8	28.0	27.5
Residence			
Urban	48.1	44.7	46.2
Rural	51.9	55.3	53.8
Childhood residence			
Urban	23.9	32.3	28.6
Rural	76.1	67.6	71.3
Missing	0.1	0.1	0.1
Length of stay at place of residence			
<5 years	37.6	37.1	37.3
5-23	16.0	13.1	14.4
Always	40.1	44.1	42.4
Visitor	6.1	5.7	5.9
Missing	0.2	0.1	0.1
Education level			
None	8.8	4.3	6.3
Primary	54.9	54.4	54.6
Secondary+	36.3	41.4	39.2
Usually reads newspaper			
No	59.3	67.5	63.9
Yes	40.3	32.7	35.8
Missing	0.4	0.1	0.2
Listens to radio every week			
No	57.0	52.1	54.3
Yes	43.1	47.7	45.7
Missing	0.0	0.1	0.1
All	100.0	100.0	100.0

Abstinence levels in 1995 and 2000/1 by different measures

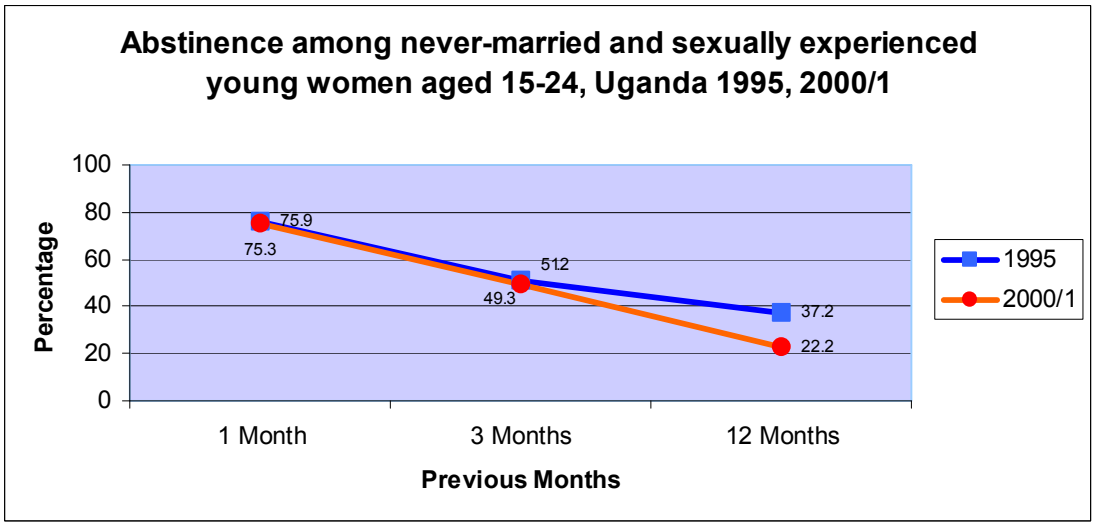
The level and trend of abstinence among women who have never married but sexually experienced differs from those of women who are just never married and those of general population of women aged 15-24 in 1995 and 2000/1(See figures 1-3). The level of abstinence is highest among the never married group in the two study periods because it includes virgins. It is lowest among the general population of women in 15-24 age group because of inclusion of the married and in-union women.

The results show that the level of abstinence was higher in 1995 than 2000/1 among women who had never married but sexually experienced and those who were just never married. When measured for one's whole life, abstinence decreased among the never married group but increased in general population of women in age group 15-24 due to inclusion of ever married group who might not be 'at risk of ' of not having sex. Proportion of those that have never had sex increased from 38.4% to 47.9% among women aged 15-19 from 1995 to 2000/1. The corresponding proportion among women aged 20-24 was low and did not change much (3.2% to 3.7%).

The drop in abstinence from 1995 to 2000/1 is highest among the never married and sexually experienced women compared with the never married group and the general population. Whereas abstinence for 1 month and 3 months increased in the general population of women for the year 2000/1 compared to 1995, it reduced considerably among the never married and sexually experienced women. The difference in level of abstinence between study periods increased with length of time used to measure abstinence for each exposure group. It is for this reason that the subsequent analysis uses abstinence at 12 months.

Among women that have never married but sexually experienced the difference in level of abstinence between 1995 and 2000/1 increases with duration used to measure the abstinence. The difference is highest with duration of 12 months. The 1995 data shows that the rate of decline in abstinence from 3 to 12 months is lower compared to one from 1 to 3 months. The rate of decline in abstinence does not change in the 2000/1 survey.

Figure 1



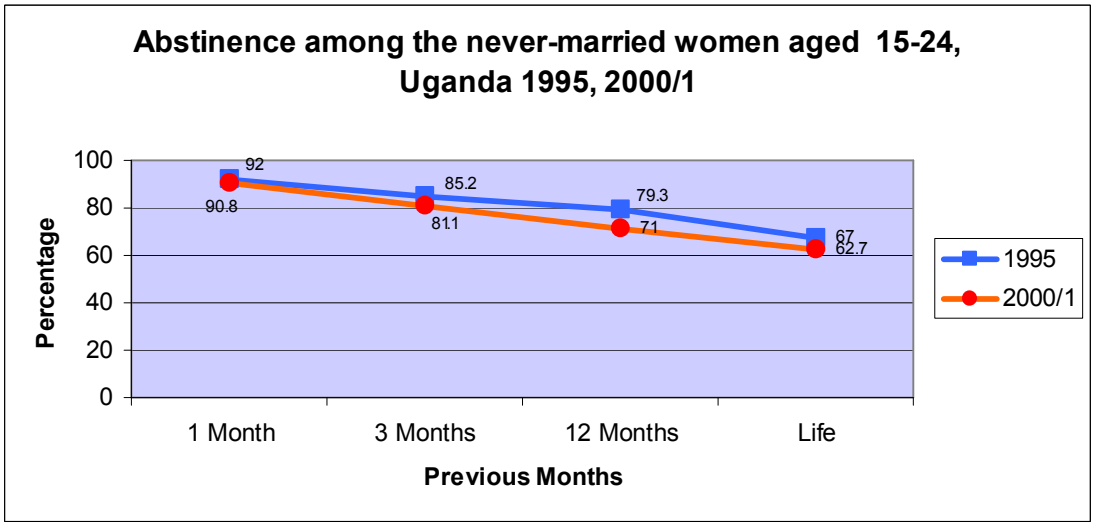
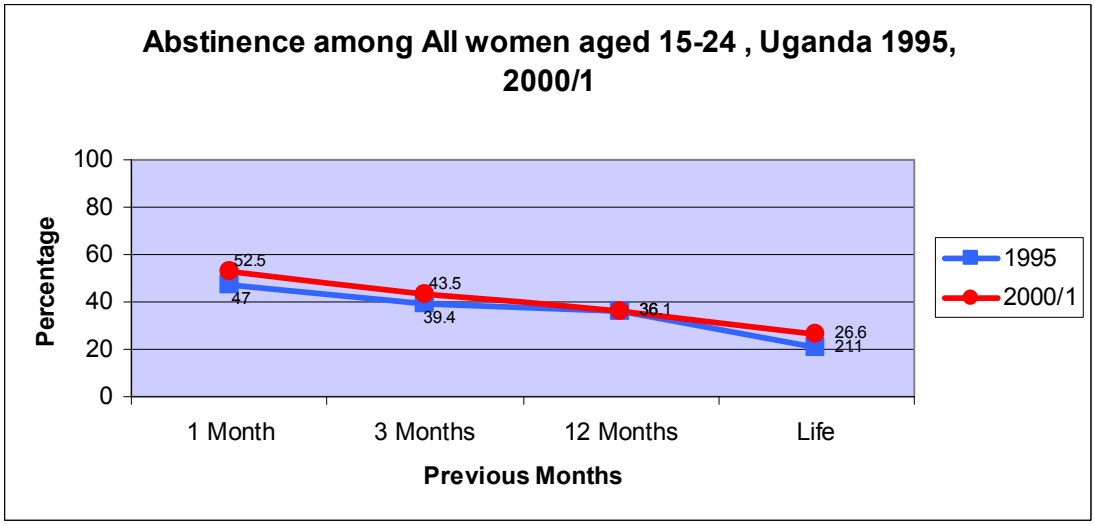


Figure 3



Abstinence by socio-demographic characteristics among the never married women

Abstinence as measured by not engaging in sexual intercourse for at least one year varies by age, region, residence, education level and access to print and electronic media.

Unadjusted bi-variate results show that young women were 29% less likely to abstain in the year 2000/1 compared to 1995 (see table 2). When adjusted for year of study, the following were associated with abstinence: age 15-19, current and childhood residence in rural areas, residence outside central region, long length of stay at place of residence (>5 years) and belonging to protestant and other religions. The relationship between religion and abstinence may look spurious due to small number of respondents (6%) and this call for further investigation. Attainment of primary or secondary education, reading newspapers and listening to radio are associated with reduced abstinence.

In a multivariate analysis, factors that are associated with reduced abstinence emerged as age 20-24, residence in central and eastern regions, short stay at place of residence and belonging to established religions (Catholic, Protestant and Muslim). Education level, reading newspapers and listening to radio did not have a significant relationship with abstinence in the multivariate model.

Change of pattern by year of study was examined using an interaction term. The term was not significant at 5% for any of the factors above implying that there was no evidence to show change of pattern in abstinence among the never married women between the years 1995 and 2000/1.

Table 2: Bi-variate and Multivariate logistic regression of abstinence on key socio-demographic factors for never married women aged 15-24 in UDHS 1995 and 2000/1

Characteristic	ORs adjusted for year of study	ORs in multivariate model†
Year of study		
1995		
2000/1		0.66***
Age		
15-19	1	1
20-24	0.29***	0.32***
Region		
Central	1	
Eastern	1.39**	1.19
Northern	3.14***	2.47***
Western	2.96***	2.35***
Region*Year	---	
Residence		
Urban	1	
Rural	1.91***	
Residence*year	---	
Childhood residence		
Urban	1	
Rural	1.63**	
ChildRes*Year	---	
Length of stay at place of residence		
<5 years		
5-23	1.35*	1.24
Always	2.32***	1.65***
Visitor	0.84	0.84
Education level		
None	1	
Primary	0.69	0.80
Secondary+	0.38***	0.66
Education*year	-----	
Usually reads newspaper		
No	1	
Yes	0.66*	
Read*Year	---	

Listens to radio every week		
No	1	
Yes	0.61***	
Religion		
Catholic	1	
Protestant	1.25*	1.21
Muslim	0.85	1.0
Other	2.27***	2.52***

†=inclusion criteria for variable was p=0.2 *=p<0.05 **= p<0.01 ***= p<0.001
---= Odds ratios for several interaction variables tested for significance

Abstinence by socio-demographic characteristics among the never married and sexually experienced women

The pattern of abstinence among women who have never married differs from those who are both unmarried and sexually experienced. Women aged 20-24 have a higher chance of abstaining that the younger ones whereas with the just never married group the reverse is true. The difference is due to inclusion of virgin women in the just never married group. Virgins are more likely to be in the 15-19 age group. Current residence, childhood residence, length of stay, education level, newspaper readership and listening to radio do not influence abstinence as in the previous model of the never married women. Age, region and year of study remain significant correlates of abstinence.

A test of interaction shows that there was no significant change of pattern of abstinence levels between 1995 and 2000/1.

Table 3: Bivariate and Multivariate logistic regression of abstinence on key socio-demographic factors for the never married and sexually experienced women age 15-24.

Characteristic	ORs adjusted for year of study	ORs in multivariate model†
Year of study		
1995		
2000/1		0.51***
Age		
15-19	1	1
20-24	1.78***	1.75***
Age*Year	----	
Region		
Central	1	
Eastern	0.98	0.98
Northern	2.04**	1.99**
Western	1.88**	1.84***
Region*Year	---	

†=inclusion criteria for variable was p=0.2 *=p<0.05 **= p<0.01 ***= p<0.001
---= Odds ratios for several interaction variables

Condom use levels and patterns in 1995 and 2000/1

The results show a nearly three fold increase in condom use in the year 2000/1 compared to 1995 among young women (See table 5). In the bivariate model condom use is associated with central region, urban residence, higher educational attainment, reading newspapers and listening to radio. Age group, length of stay and religion were

not significantly associated with condom use. Condom use is nearly same level among age 15-19 (44.7%) and 20-24 (42.3%) for the two survey periods. Respondents who attained secondary education and above (60.0%) had a higher level of condom use compared to those with primary or no education (28.7%). Those who read newspapers or listened to radio were more likely to use condoms than those that did not. In the final multivariate model, year of study, region of residence, current type of residence and education level were significant predictors of condom use.

Change in pattern of condom use over the two study periods was investigated by testing the significance of the interaction with year of study in the bivariate models. Pattern of condom use by region was found to have changed significantly over the two study periods. On examination of level of use in the two study periods, it can be deduced that strong interaction by region was due to a dramatic increase in condom use from 0% to 37.5% in northern region and Eastern region where it doubled.

Table 4: Bivariate and Multivariate logistic regression of condom use on key socio-demographic factors among never married women aged 15-24

Characteristic	ORs adjusted for year of study	ORs in multivariate model†
Year of study		
1995		
2000		2.86***
Age		
15-19	1	1
20-24	0.95	0.75
Region		
Central	1	1
Eastern	0.64*	0.72
Northern	0.23***	0.35***
Western	0.38***	0.57
Region*Year	---**	---
Residence		
Urban	1.0	
Rural	0.45***	0.61**
Residence*year	---	
Childhood residence		
Urban	1.0	
Rural	0.52***	
ChildRes*Year	---	
Education level		
None	1.0	
Primary	3.0*	2.29
Secondary+	9.9***	6.99**
Education*year	---	
Usually reads newspaper		
No	1.0	
Yes	2.58***	
Read*Year	---	
Listens to radio every Week		
No	1.0	1
Yes	1.87***	1.27
Radio*Year	----	

†=inclusion criteria for variable was p=0.2 *=p<0.05 **= p<0.01 ***= p<0.001
---= Odds ratios for several interaction variables

Discussion

Previous studies on abstinence in Uganda that base their measurement on previous one month and three months may have missed the true picture of variation in abstinence. One possible reason for investigation could be seasonality in sexual activity. Several studies have reported increasing abstinence but have ignored variation by marital status or exposure to sexual activity. Abstinence, when measured for one year, shows a decline over the 1995-2000/1 period among young women who have never married and those who are both never married and sexually experienced. There is no much difference when measured at one or three months. One possible explanation for decreased abstinence could be massive advertisement of condoms and their improved accessibility and availability with little attention to abstinence as another way to avoid HIV/AIDS. It is estimated that Uganda needs 80 million condoms annually and it is the target purchase of the government. As the rest of women are taking caution against HIV/STD with increased abstinence, the never married, sexually experienced women are dropping the practice.

Among the never married women, younger age (15-19), residence in northern and western region and permanent residence are associated with increased abstinence. However, among young women who are both sexually experienced and have never married, those aged 20-24 were more likely to abstain compared to the younger ones and length of stay in a place of residence is not a significant factor. Possible explanation could be that the former category includes women who have never had sex while in the latter group older youths are more mature and have seen more people known to them living with HIV or even died.

It is encouraging to note that condom use is still on the rise as it increased nearly three fold from 1995 to 2000/1 among the never married women. The strong association of condom use with Urban residence and higher education (secondary and higher) is not surprising given that condoms are more available and affordable in urban areas than in rural. More educated people are more aware of HIV risk, are more likely to have a source of income to buy the condoms and there are more places where condoms can be obtained compared to urban areas. Residence in northern region was associated with low level condom use. The Northern region has suffered a lot under a rebellion and many people are displaced. Social Services have been severely disrupted even in safer parts of northern region. In such conditions, level of access and availability of condoms would be low. Age group, childhood place of residence, length of stay, religion did not have significant association with condom use.

The results obtained on condom use do not vary much from studies carried out by other researchers. In a study of risk perception and condom use in Uganda, results showed a significant relationship between ever use of condom with place of residence and education level(Najjumba M I et al. 2003). In Rakai district, Uganda, condom use was found to be the same by religion, but higher for those with more than 7 years education. They found out that condom use increased 3.5 times between 1989 and 1990 but has remained fairly constant after that despite a sustained condom campaign (Konde-Lule JK et al. 1993).

Conclusion

For young unmarried people, abstinence is the best prevention strategy but it is recognised that this strategy may be difficult for those who are already sexually active. It is recommended that efforts should be put to encourage abstinence with at least the same effort as put in condom promotion since there levels of abstinence appear to be dropping. Given that condoms are not used consistently, a drop in abstinence levels can result in an increase in sexually transmitted infections including HIV among young people in Uganda.

Further work

More analysis comparing safe sexual behaviour different categories of marital status could give a more insight into the differences between categories.
Multi-level analysis could provide more information on hierarchical effects on condom use and abstinence.
A data set with length abstinence or condom use with information on circumstances surrounding the sexual practices could provide dynamics of the safe practices.

The influence of other religions (Pentecostal, Evangelical and born again-christians) calls for further investigation.

Appendix

Table 1: Percentage of the female youth age 15-24 abstaining for different periods and study population in 1995 and 2000/1 Uganda DHS

Never married and sexually experienced				
Year	**1 Month**	**3 Months**	**12 Months**	**Life**
1995	75.9	51.2	37.2	---
2000/1	75.3	49.3	22.2	---
Never married				
1995	92	85.2	79.3	67
2000/1	90.8	81.1	71	62.7
All women				
1995	47	39.4	36	21.1
2000/1	52.5	43.5	36.1	26.6

Table 2: Patterns of abstinence* among never-married female youth age 15-24 according to UDHS 1995 and 2000/1 unweighted data

Characteristic	**Year of study**				**All**	
	1995		2000			
	%	Stratum size N	%	Stratum size N	%	N
Age						
15-19	81.8	891	75.4	1,171	78.2	2,062
20-24	57.6	238	46.6	275	51.7	513
Region						
Central	67.9	433	59.7	577	63.0	1,010
Eastern	72.2	234	68.8	279	70.4	513
Northern	10.1	159	79.5	185	84.3	344
Western	14.2	303	81.5	405	83.3	708
Residence						
Urban	72.6	543	60.8	646	66.2	1,189
Rural	80.6	586	77.3	800	78.6	1,386
Childhood residence						
Urban	72.2	270	61.2	467	65.3	737
Rural	78.1	858	74.0	977	75.9	1,835
Length of stay at place of residence						
<5 years	73.6	424	59.0	536	64.4	960
5-23	72.9	181	79.9	638	72.2	370
Always	83.0	453	71.4	189	81.2	1,091
Visitor	63.8	69	59.8	82	61.6	151
Education level						
None	86.9	99	79.0	62	83.4	161
Primary	78.6	620	76.3	786	77.3	1,406
Secondary+	71.5	410	60.5	598	65.0	1,008
Usually reads newspaper						
No	78.8	670	73.5	976	75.6	1,646
Yes	73.6	455	62.4	468	67.9	923
Listens to radio every Week						

No	81.7	643	73.9	754	77.5	1,397
Yes	70.2	486	65.5	690	67.4	1,176
Religion						
Catholic	76.1	452	66.4	557	70.8	1,009
Protestant	76.6	482	73.9	598	75.1	1,080
Muslim	75.2	133	61.6	198	67.1	331
Other	86.9	61	82.6	92	84.3	153
All	76.8	1,129	69.9	1,446	72.9	2,575

*is defined here as the event of not having sexual intercourse for more than a year

Table 3: Patterns of abstinence* among never married female youth age 15-24 according to UDHS 1995 and 2000/1 for the sexually experienced women

Characteristic	**Year of study**				**All**	
	1995		2000			
	%	Stratum size N	%	Stratum size N	%	N
Age						
15-19	29.9	231	18.4	353	23.0	584
20-24	43.6	179	28.3	205	35.4	384
Region						
Central	33.5	209	17.3	284	24.1	493
Eastern	25.3	87	23.0	113	24.0	200
Northern	50.0	16	30.9	55	37.9	87
Western	47.6	82	29.3	106	37.2	188
Residence						
Urban	37.1	237	20.7	319	27.7	556
Rural	34.1	173	23.9	239	28.2	412
Childhood residence						
Urban	37.0	119	21.3	230	26.7	349
Rural	35.2	290	22.6	328	28.5	618
Length of stay at place of residence						
<5 years	39.8	186	17.6	267	26.7	453
5-23	31.0	71	25.0	72	28.0	143
Always	36.4	121	27.3	176	31.0	297
Visitor	19.4	31	23.3	43	21.6	74
Education level						
None	45.8	24	27.8	18	38.1	42
Primary	38.7	217	26.2	252	31.0	469
Secondary+	30.8	169	18.1	288	22.8	457
Usually reads newspaper						
No	37.2	226	24.3	342	29.4	568
Yes	34.1	182	18.1	215	25.4	397
Listens to radio every Week						
No	34.1	179	23.1	256	27.6	435
Yes	37.2	231	20.7	300	27.9	531
Religion						
Catholic	38.3	175	19.1	231	27.3	406

Protestant	32.3	167	26.4	212	29.0	379
Muslim	28.3	46	18.3	93	21.6	139
Other	61.9	21	27.3	22	44.2	43
All	35.9	409	22.0	558	27.9	967

*is defined here as the event of not having sexual intercourse for more than a year

Table 4: Bivariate and Multivariate logistic regression of abstinence on key socio-demographic factors for the never married and sexually experienced women age 15-24.

Characteristic	ORs adjusted for year of study	ORs in multivariate model†
Year of study		
1995		
2000	0.51***	0.51***
Age		
15-19	1	1
20-24	1.78***	1.75***
Region		
Central	1	
Eastern	0.98	0.98
Northern	2.04**	1.99**
Western	1.88**	1.84***
Region*Year	---	
Residence		
Urban	1	
Rural	1.03	
Residence*year		
Childhood residence		
Urban	1	
Rural	1.00	
ChildRes*Year		
Length of stay at place of residence		
<5 years		
5-23	1.00	
Always	1.24	
Visitor	0.75	
Education level		
None	1	
Primary	0.81	
Secondary+	0.54	
Education*year	-----	
Usually reads newspaper		
No	1	
Yes	0.78	
Read*Year	---	
Listens to radio every Week		
No	1	
Yes	1.00	
Religion		
Catholic	1	
Protestant	1.08	

Muslim	0.78
Other	2.06*

†=inclusion criteria for variable was p=0.2 *=p<0.05 **= p<0.01 ***= p<0.001
---= Odds ratios for several interaction variables

Table 5: Patterns of condom use at last sexual intercourse among the never married female youth age 15-24 according to UDHS 1995 and 2000/1

Characteristic	Year				All	
	1995		2000/1			
	%	N	%	n	%	N
Age						
15-19	27.4	215	55.7	253	44.7	452
20-24	30.5	167	50.3	145	42.3	298
Region						
Central	38.7	194	61.3	212	51.9	397
Eastern	23.2	82	56.3	80	42.0	157
Northern	0.0	30	37.5	40	23.4	64
Western	21.1	76	36.4	66	31.1	132
Residence						
Urban	37.0	216	61.3	225	51.6	426
Rural	18.1	166	43.9	173	33.3	324
Childhood residence						
Urban	42.2	109	61.1	162	56.3	263
Rural	23.5	272	48.7	236	37.0	486
Length of stay at place of residence						
<5 years	33.3	171	59.6	188	48.8	346
5-23	31.8	64	58.3	48	47.7	109
Always	22.6	115	41.9	124	35.1	225
Visitor	19.4	31	57.9	38	40.6	69
Education level						
None	8.7	23	15.4	13		
Primary	19.2	203	39.4	175	28.7	390
Secondary+	44.2	156	68.1	210	60.0	360
Usually reads newspaper						
No	19.6	214	45.1	235	36.6	363
Yes	41.0	166	66.3	163	48.4	252
Listens to radio every Week						
No	20.8	173	46.8	188	38.3	300
Yes	35.4	209	60.3	209	44.5	317
Religion						
Catholic	29.6	159	54.1	172	44.0	316
Protestant	29.1	158	52.1	146	43.1	295
Muslim	25.0	44	62.7	67	48.6	109
Other	25.0	20	23.1	13	30.0	30

All	32.4	352	53.8	398	43.7	750

Table 6: Bivariate and Multivariate logistic regression of condom use on key socio-demographic factors among the never married women age 15-24

Characteristic	ORs adjusted for year of study	ORs in multivariate model†
Year of study		
1995	1	
2000	2.88***	2.86***
Age		
15-19	1	1
20-24	0.95	0.75
Region		
Central	1	1
Eastern	0.64*	0.72
Northern	0.23***	0.35***
Western	0.38***	0.57
Region*Year	---**	---
Residence		
Urban	1.0	
Rural	0.45***	0.61**
Residence*year	---	
Childhood residence		
Urban	1.0	
Rural	0.52***	
ChildRes*Year	---	
Length of stay at place of residence		
<5 years	1	
5-23	0.96	
Always	0.52	
Visitor	0.73	
Education level		
None	1.0	
Primary	3.0*	2.29
Secondary+	9.9***	6.99**
Education*year	---	
Usually reads newspaper		
No	1.0	
Yes	2.58***	
Read*Year	---	
Listens to radio every Week		
No	1.0	1
Yes	1.87***	1.27
Radio*Year	----	
Religion		
Catholic	1.0	
Protestant	0.95	
Muslim	1.16	
Other	0.48	

†=inclusion criteria for variable was p=0.2 *=p<0.05 **= p<0.01 ***= p<0.001
---= Odds ratios for several interaction variables

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