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HIV Infection Associated with Gap in Knowledge and Risky Sexual Behaviour among Youth in Uganda: A Gender Perspective

Paper Submitted By

Ms. Shraboni Patra

Research Scholar, Ph.D,

**International Institute for Population Sciences (IIPS),
Mumbai, India**

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Introduction

The increasing prevalence of HIV in Uganda during the last decade (7.5% in 2004-05 to 8.3 in 2011% among women and 5.0% in 2004-05 to 6.1% in 2011 among men of 15 to 49 year age) clearly shows that women and girls are disproportionately affected by HIV epidemic.^{1,2} In Uganda, HIV infection cases begin to intensify in the age group 15-19 year and high in the 25-30 year age group. Girls, aged between 15 and 19 years, are two to six times more susceptible to be infected than boys of that age by the end of 1999.³ Uganda Demographic and Health Survey (2000-2001) reported that 11% of women aged 15-24 year had first sexual partner of 10 year older than them.⁴ The higher rate of HIV transmission among women advocates either discrepancy in the rates of transmission between women and men, higher rates of female sexual disclosure to infected men, or longer survival among HIV-positive women compared to men.⁵ The most shocking fact is that, women at their early reproductive span are more infected with HIV, by endangering their reproductive health, childbirth and health of their children.⁶

In a situation, when a country is hit by an increasing number of new HIV infections, where women are disproportionately infected with HIV, it is important to focus on current situation and contributing factors of HIV prevalence at the national level. Notably, growing difference in the HIV prevalence among young men and women also requires in-depth research and attention of the researchers and policy makers.

Objectives:

The present study has attempted first time to assess the current prevalence of HIV among adolescents and youth (15-24 year) according to their demographic and socio-economic characteristics and by their sex from the latest round of AIDS indicator survey in Uganda. Furthermore, the study has also tried to measure the differentials in the HIV prevalence by risky sexual behaviour, knowledge, and awareness of HIV transmission among young men and women.

Methods

Data and sample

The study is based on data, sourced from Uganda AIDS Indicator Survey (UAIS), 2011.¹⁸ The UAIS, 2011 is a nationally representative, demographic, HIV serological survey. The total samples of men and women (15 to 24 years age), interviewed and tested for HIV, are 3450 and 4504 respectively.

Whereas, the analysis of risky sexual behaviour is based on 1941 men and 3127 women who have ever had sex and were tested for HIV.

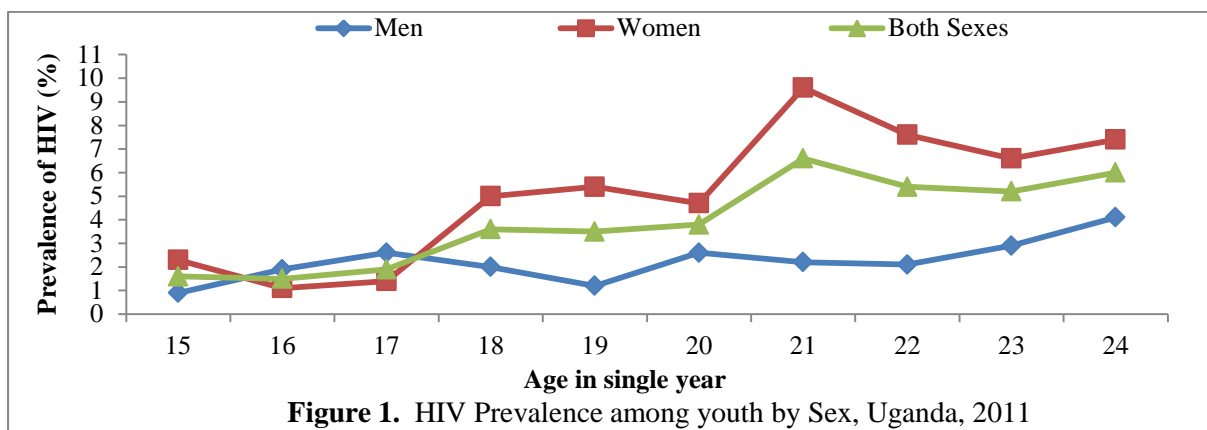
Statistical analyses

Bivariate and multivariate analyses are used. Significance level of the bivariate association has been shown by Pearson's Chi-square test, whereas significance level of multivariate association is shown by binomial logistic regression analysis. All the statistical analyses in the present study are performed by using the statistical package SPSS, version 20.

Results

Gender differentials in HIV prevalence among youth in Uganda

The present study has found considerable difference in the prevalence of HIV/AIDS among young men and women in Uganda. Huge gap in HIV prevalence among men and women by their risky sexual behaviour, and awareness and knowledge of HIV transmission is also observed. Young women are more HIV positive than young men are in their early reproductive period (**Figure 1**).



The results of logistic regression analysis show that young women (4.9%) are almost two times more vulnerable than young men (2.1%) in acquiring HIV/AIDS (OR=1.762, $p<0.001$). HIV prevalence is significantly higher among youth aged 20-24 year than youth aged 15-19 year (OR=1.753, $p<0.001$). The prevalence of HIV is found higher among women than men in all age groups, irrespective of the place of residence, marital status, level of education and economic status. Women married and living with their husband are significantly more (OR=1.591, $p<0.001$) vulnerable to HIV than women who were never in a union. Further, women widowed or divorced or no longer living together or separated are significantly three times more (OR=3.234, $p<0.001$) at the risk of acquiring HIV than the women who were never in an union (**Table 1**).

Table 1. HIV prevalence (percentage) among youth (15-24 years) by their background characteristics, Uganda, 2011

Background Characteristics	Men		Women		Both Sexes		Exp β for HIV Positive
	HIV Positive	Number	HIV Positive	Number	HIV Positive	Number	95% CIs for Exp β
Men [®]							1.0
Women							1.762***(1.308-2.307)
Age group in 5 years							1.0
15-19 [®]	1.7	2055	3.0	2393	2.4	4448	1.0
20-24	2.8	1395	7.1	2111	5.4	3506	1.753***(1.290-2.383)
Place of Residence							1.0
Urban [®]	1.7	724	5.9	1082	4.2	1806	1.0
Rural	2.3	2726	4.6	3422	3.5	6148	0.772(0.499-1.193)
Marital Status							1.0
Never in union [®]	1.7	2849	2.8	2332	2.2	5180	1.0
Married and living with partner	3.6	523	6.2	1875	5.6	2399	1.591***(1.135-2.230)
Widowed/Divorced/No longer living together/Separated	7.6	78	13.1	297	12.0	375	3.234***(2.091-5.001)
Level of education							1.0
No education [®]	0.0	58	3.1	164	2.3	222	1.0
Primary	2.3	1944	5.5	2658	4.2	4602	1.950(0.828-4.594)
Secondary	2.0	1279	4.3	1481	3.2	2760	1.380(0.565-3.373)
Higher	1.2	169	2.5	201	1.9	370	0.763(0.245-2.375)
Wealth Index							1.0
Poorest [®]	1.1	538	4.5	669	3.0	1207	1.0
Poorer	1.3	600	4.5	797	3.2	1397	0.902(0.573-1.421)
Middle	3.6	667	2.8	789	3.2	1455	1.051(0.657-1.680)
Richer	2.6	727	5.7	940	4.4	1666	1.439(0.909-2.279)
Richest	1.7	919	6.0	1310	4.2	2229	1.365(0.790-2.359)
Religion							1.0
Catholic [®]	2.5	1375	5.4	1734	4.1	3109	1.0
Anglican/Protestant	2.5	1196	4.4	1552	3.6	2748	0.931(0.693-1.251)
SDA	8.3	60	2.4	82	4.9	142	0.928(0.364-2.371)
Pentecostal	1.0	202	4.8	373	3.5	575	1.098(0.677-1.779)
Other Christian	0.0	112	5.5	110	2.7	222	0.679(0.289-1.591)
Moslem	0.4	485	4.5	617	2.7	1102	0.735(0.478-1.129)
Other	1.5	22	4.9	37	3.2	57	0.925(0.217-3.933)
Ethnicity							1.0
Baganda [®]	2.3	599	6.0	810	4.5	1409	1.0
Banyankore	2.9	345	6.7	477	5.1	822	1.497(0.848-2.645)
Iteso	0.8	236	2.5	317	1.8	553	0.334**(0.119-0.939)
Lugbara/Madi	1.3	152	1.4	207	1.4	359	0.751(0.278-2.013)
Basoga	1.5	339	3.9	406	2.8	745	0.952(0.483-1.875)
Langi	2.6	228	8.4	275	5.8	503	0.630(0.195-2.030)
Bakiga	2.9	170	4.6	260	4.0	430	1.040(0.506-2.136)
Karimojong	0.0	26	3.4	58	2.4	84	0.397(0.072-2.190)
Acholi	1.4	138	3.5	198	2.7	336	0.626(0.193-2.030)
Bagisu/Sabiny	1.1	275	4.4	272	2.7	547	1.425(0.664-3.058)
Alur/Jopadhola	4.8	147	4.1	241	4.4	388	1.469(0.722-2.990)
Banyoro	1.0	206	4.1	193	2.5	399	0.965(0.472-1.971)
Batoro	2.7	147	9.8	163	6.5	310	1.889*(0.944-3.780)
Other	1.3	3451	3.7	2381	2.4	1070	0.921(0.561-1.514)
Region							1.0
Central 1 [®]	4.0	351	8.0	486	6.3	837	1.0
Central 2	3.1	325	5.2	443	4.3	768	0.776(0.467-1.291)
Kampala	0.3	307	5.7	422	3.4	729	0.555**(0.316-0.976)
East Central	1.5	396	3.7	457	2.7	852	0.580(0.287-1.171)
Mid Eastern	1.4	424	1.8	454	1.6	878	0.316***(0.145-0.690)
North East	1.3	228	3.7	326	2.7	554	1.102(0.427-2.845)
West Nile	2.0	199	2.2	268	2.1	467	0.406**(0.167-0.985)
Mid Northern	2.3	350	6.8	453	4.9	803	1.611(0.510-5.091)
South Western	2.9	384	4.6	548	3.9	933	0.622(0.332-1.167)
Mid Western	2.1	486	5.4	646	4.0	1132	0.580*(0.328-1.026)
Total	2.1	3450	4.9	4504	3.7	7954	

Note: [®]-Reference category of different characteristics; Significance level : ***p<0.001; **p<0.01; *p<0.05

Risky sexual behaviour and HIV prevalence among youth in Uganda

The study has found increased prevalence of HIV among Ugandan youth associated with their higher risky sexual behaviour. Women are significantly two times more (OR=2.578, $p<0.001$) likely to be HIV positive for their higher risky sexual behaviour than men. Women who had their first sex at below 15 year's age (7.3%); had more than two sex partners (9.2%, $p<0.001$) and did not use a condom during last sex (6.4%) are found to be more HIV positive than other groups of women and men. Either partner consumed alcohol during sex (OR=1.509, $p<0.01$, for men 6.2% and for women 6.9%), and women had higher risk sex, i.e. had sex with a non-marital and non-cohabiting partner (6.3%) were very high threat to get HIV infected (**Table 2**).

Table 2 : HIV prevalence among youth (15-24 years) who ever had sex and tested for HIV by risky sexual behaviour, Uganda, 2011

Risky sexual behaviour	Men		Women		Both sexes		Exp β
	HIV Positive	N	HIV Positive	N	HIV Positive	N	95% CIs for Exp β
Men [®]							1.0
Women							2.578***(1.787-3.720)
Age at first sex [#]							1.0
Below 15 [®]	1.7	412	7.3	590	5.0	1002	1.0
15-17	1.9	893	6.1	1679	4.6	2572	0.861(0.603-1.230)
18-20	3.0	558	5.8	761	4.6	1319	0.979(0.654-1.465)
Above 20	2.6	77	0.0	62	1.4	139	0.365(0.087-1.533)
No. of sex partner							1.0
0 [®]	0.9	441	6.6	350	3.4	791	1.0
1	2.2	1156	6.1	2636	4.9	3792	1.067*(0.634-1.795)
2 and above	4.1	344	9.2	141	5.6	485	2.036**(1.096-3.782)
Condom used at first sex						5069	1.0
No [®]	2.6	1291	5.9	2061	4.6	3352	1.0
Yes	1.7	650	6.8	1066	4.9	1716	1.207(0.888-1.640)
Condom used at last sex							1.0
No [®]	2.8	1006	6.4	2345	5.3	3351	1.0
Yes	2.4	494	4.9	432	3.6	926	0.804(0.509-1.269)
No sex in last 12 months	0.9	441	6.6	350	3.4	791	-
Consume alcohol during sex							1.0
No alcohol used [®]	2.2	1327	6.2	2387	4.7	3714	1.0
Either partner was drunk	6.2	165	6.9	370	6.6	535	1.509**(1.025-2.223)
Neither was drunk	-	9	-	21	-	30	0.697(0.094-5.182)
No sex in past 12 months	0.9	441	6.6	350	3.4	791	-
Higher risk sex [†]							1.0
Had higher risk sex [®]	2.2	1061	6.3	859	4.0	1756	1.0
Had sex but not higher risk	3.5	440	6.1	1918	5.6	2522	1.079(0.752-1.548)
Not had sex in recent	0.9	441	6.6	350	3.4	791	-
Total	2.3	1941	6.2	3127	4.7	5068	

Note: Percentage not shown for fewer than 50 unweighted cases and values not available; # Excludes missing cases; † sex with a non-marital, non-cohabiting partner ; ®-Reference category of different characteristics; Significance level : *** $p<0.001$; ** $p<0.01$; * $p<0.05$

Gap in knowledge and awareness among young men and women

From the bivariate analyses, a considerable gap in the knowledge and awareness of HIV/AIDS between young men and women is also found. Results showed though 99% women and 97.9% men had heard about HIV, still 14.2% women and 11.8% men think that HIV can be acquired by sharing food with a person who has AIDS. About 90.8% men and 91.0% women of 15 to 24 year age think

that the risk of getting HIV can be reduced by not having sex with many partners. Significantly less percentage (81.3%) of women as compared to men (83.8%) think that always using a condom during sex can reduce the risk of getting HIV/AIDS. Besides, 26.8% women and 28.5% men think that HIV can be spread through mosquito bites (**Table 3**).

Table 3: Comprehensive knowledge and awareness of HIV among youth (15-24years) by sex, Uganda, 2011

Knowledge and awareness	Men		Women		Both		χ^2
	%	N	%	N	%	N	
Ever heard of AIDS							
No	2.1	83	1.0	52	1.5	135	
Yes	97.9	3398	99.0	4563	98.5	7961	15.241***
Reduce risk of getting HIV: do not have sex at all							
No	7.0	2374	8.2	384	7.7	621	
Yes	90.3	306	89.2	4037	89.7	7101	3.934
Don't Know	2.7	97	2.6	142	2.7	239	
Reduce risk of getting HIV: always use condoms during sex							
No	8.0	264	8.8	422	8.5	686	
Yes	83.8	2850	81.3	3640	82.4	6490	9.060**
Don't Know	8.2	284	9.9	501	9.2	785	
Reduce risk of getting HIV: have 1 sex partner only, who has no other partners							
No	4.1	139	5.6	278	4.9	417	
Yes	90.8	3082	91.0	4103	90.9	7185	22.340***
Don't Know	5.1	177	3.4	182	4.1	359	
Can get HIV from mosquito bites							
No	61.0	2086	60.4	2736	60.7	4822	
Yes	28.5	961	26.8	1223	27.5	2184	10.346***
Don't Know	10.5	351	12.8	604	11.8	955	
Can get HIV by sharing food with person who has AIDS							
No	80.7	2753	77.5	3522	78.9	6275	
Yes	11.8	405	14.2	656	13.2	1061	12.772***
Don't Know	7.5	240	8.3	385	7.9	625	
A healthy looking person can have HIV							
No	7.8	268	9.7	456	8.9	724	
Yes	88.5	3005	87.0	3942	87.6	6947	8.216**
Don't Know	3.7	125	3.4	165	3.5	290	
Total	100	3398	100	4563	100	7961	

Note: Significance level :***p<0.001; **p<0.01; *p<0.05

Discussions

The findings of the study show that on an average, HIV prevalence is 2.8 percent higher among young women (4.9%) than among young men (2.1%) in Uganda. Further, high HIV prevalence, observed among well-educated and wealthier women, is directly or indirectly more related to economic status of women rather than their educational level. Similar findings also emerged from Berhan and Berhan's study.⁷ Besides women's physiologic vulnerability via heterosexual sex, several investigators recognized unemployment and lack of education as revealing factors for women's susceptibility to HIV infection as compared to men.⁸⁻¹¹ The findings of the present study also replicate the same piece of evidence that uneducated and less educated women are much more vulnerable to HIV transmission than the higher educated women. Surprisingly, women are becoming more HIV

positive than men are, with the increase in their education level. It is also found that, women irrespective of their marital status, are much more vulnerable to HIV than men.

The spread of HIV is mainly due to higher risk sex.¹² In a study, it was reported that HIV transmission among three-fourths of HIV positive women was through higher-risk sex.¹³ Similarly, the present study shows that, HIV prevalence associated with high risk sex, is much greater among women than among men. For women, other contributors to this trend comprise early age at first sexual experience, early age at marriage, low level of condom use, and a long-standing pattern of older men engaging in sex with adolescents, particularly girls in an attempt to avoid contact with HIV.1 In this respect, it is mention worthy that women's economic empowerment has been proven to fail at improving women's bargaining positions when it comes to condom use. The young women tend to focus on immediate problems such as poverty and homelessness but not HIV prevention.¹⁴

However, almost 98% Ugandan youth are aware of HIV, still there is a gap between young men and women in terms of level of knowledge of HIV transmission and its prevention. Our research has shown that, young women in Uganda are much more vulnerable to HIV prevalence by their unsafe sexual behaviour than young men are. We have found that women are much more exposed to higher risk sex than men. Several literatures have shown that real knowledge about consequences of unsafe sexual practice does not necessarily result in behaviour change and reduction in HIV and STI prevalence.¹⁵⁻¹⁷ Furthermore, young women consumed alcohol during sex, are found to be more HIV positive than young men. Hence, our findings are consistent with those recent studies which showed that men and women who reported alcohol use during their sexual intercourse were likely to engage in unprotected sex.¹⁸⁻¹⁹ Our study also shows that, women had more than 2 sex partners, are more vulnerable to HIV than men. The reason behind the practice of having multiple sexual partners could be to find social security by adolescents women.¹³ Inconsistent condom use among Ugandan youth in combination with multiple sexual partnerships often increases the risk of HIV transmission.²⁰ Here, it is mention worthy that because of poverty, many youths in Uganda lack basic needs, and poverty leads some youth, especially girls, to engage in survival sex, commercial sex work, and early, sometimes forced marriages.²¹

Therefore, it is high time to instigate and implement the program focussing the youth especially vulnerable women who are engaged in higher risk sex, which extends but not limited to, unprotected sex (*i.e.* without use of condom), early sexual activity, especially before age 18, having multiple sex partners, unprotected mouth to genital contact except in a long term monogamous relationship, and exchange of sex for drugs or money.²²⁻²³

Conclusions

The crucial factors contributing to high HIV prevalence among Ugandan youths are the risky sexual behaviours which are substantially different from men to women, and lack of proper awareness and

existing knowledge gap between men and women with respect to spread of HIV/AIDS. The fact needs to be addressed that despite having proper knowledge to get protection from HIV infection, sometimes, women are getting infected by HIV due to negligence and forced sex by their partner and due to male domination over women's sexual health and their reproductive rights. Therefore, persistent challenges to effective HIV prevention efforts for adolescents and young people should include adequate access to high-quality, youth-friendly HIV and sexual and reproductive education and health services, and diminish sexual violence against young women and girls.

Recommendations

Change in behaviour and spread of appropriate knowledge and awareness of HIV/AIDS prevention are the fundamentals to control the AIDS epidemic in Uganda. Youth should be involved in the intervention design in order to ensure application of program to them. Similarly, the local governments, development partners, civil society organizations in the region should involve youths. Promoting peer education i.e. training peers to be positive role models that can certainly influence young peoples' behaviours, assisting access to and creating a belief among young people.

Moreover, the oversight of woman's sexuality in Ugandan society that has increased the gender discrimination needs to be abridged. Vulnerable women who are on the verge of the risk of getting HIV require protection to reverse the feminization of HIV/AIDS. Some of the programmes can be very effective in this regard, such as growing gender equity in HIV/AIDS activities and services, dropping violence and coercion, addressing male norms and behaviours, improving women's legal protection, and rising women's access to income and productive resources.

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