

Prevalence and Correlates of HIV Testing and Counseling among Sexually Active Adolescents and Young Adults in Harare City, Zimbabwe

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Abstract

The HIV prevalence in the Zimbabwean population aged 15-49 years remains high at 15.2%. Most adolescents do not know their HIV status. This is despite knowing a place to get tested. We determined the prevalence and correlates of HIV testing and counseling (HCT) among sexually active adolescents and young adults in Harare City.

We conducted a cross-sectional study among sexually active adolescents and young adults. Data were collected using a pretested self-administered questionnaire. Epi-Info 7 was used to capture and analyze data for frequencies, odds ratios and their corresponding 95% confidence intervals. Chi-square tests and logistic regression models were used to assess independent correlates of HIV testing. Statistical significance was set at p < 0.01.

A total of 427 adolescents and young adults were recruited. The majority (56.9%) were female. The overall prevalence of HIV testing among participants was 56.4%. On multivariate analysis, knowing a facility that offers HIV testing [aOR=5.05; 95%CI (2.55-10.00)], reporting being involved in a sexual relationship with one's partner [aOR=3.24; 95%CI (1.67-6.30)], being afraid of a positive result [aOR=0.07;95%CI(0.01-0.30)] and being male [aOR=0.43;95%CI(0.23-0.80)] were independent correlates of HCT among adolescents and young adults in Harare City.

Although comparable to other settings in Sub-Saharan Africa, HIV testing among adolescents and young adults in Harare City is still considered very low. Interventions should therefore aim at raising awareness on the importance of HIV testing. In addition city authorities should consider addressing barriers for HCT observed in this study including fear of living with a positive result.

Keywords: Adolescents, HIV Testing, Correlates, Prevalence, Harare City.

Introduction

Globally, there is an estimated 1.2 billion adolescents (10–19 year-olds), constituting 18% of the world's population (United Nations Children's Fund, 2013). About 2.2 million of these are living with HIV (UNICEF, 2013), and many are unaware of their infection (World Health Organization, 2016). HIV is the second highest cause of mortality after road injury among adolescents and young adults (WHO, 2014). In contrast to reductions in other population groups, estimates suggest that the number of HIV related deaths are on the increase in adolescents (50% increase) (WHO, 2014). This increase had predominantly occurred in the African region, resulting in AIDS being the leading cause of mortality among adolescents in Africa and second leading cause of death worldwide.

Routine HIV testing for adolescents and adults aged 13–64 years is one of the most important strategies Centers for Disease Control and Prevention (CDC) recommends for reducing the spread of HIV (CDC, 2006). HCT provides an entry point to prevention, care, treatment and support. It contributes to reduction of the stigma and discrimination that surrounds HIV and AIDS. In Zimbabwe, access to knowledge of one's HIV status has mainly been through the client-initiated and provider initiated approaches (Ministry of Health and Child Care, 2014). The government first emphasized on Voluntary



Counselling and Testing (VCT) for HIV in the National AIDS Policy of 1999. Since then there has been a remarkable increase in the number of health facilities offering HIV testing and counseling from 395 in 2005 to 1,456 in 2014(United Nations General Assembly, 2014).

In Zimbabwe adolescents continue to be vulnerable to HIV infection. In 2013, it was estimated that a total of 8,366 new HIV infections occurred among children below the age of 15 years, with mother-to-child transmission accounting for up to 90% of these childhood infections (MOHCC, 2014). In response to the surge in new HIV infections amongst this key population the government of Zimbabwe launched the guidelines for HCT in children and adolescents (MOHCC, 2014). Under these guidelines, a child aged 16 years is considered able to give full consent for HIV testing and counseling. This study sought to determine the prevalence and correlates of HIV testing and counseling among sexually active adolescents and young adults in Harare City, Zimbabwe.

Methods

A cross-sectional study was conducted in Harare City and the study participants comprised of adolescents and young adults aged 13-24 years. For purposes of this study a resident of Harare City was classified as someone who has lived in Harare for at least three months. All those who fell within the required age range (13-24 years), able to speak and read English and Shona were eligible to participate. Mmen and women who fell outside the 13-24 years age range and visitors to Harare metropolitan province were excluded from participating in the study. Adolescents under age 16 who met the inclusion criteria but whose parents did not provide consent were excluded. Assuming an error risk of 1.96 and a proportion (P), of those tested for HIV (52.2%) from a previous study conducted by Pelzer et al (2013) in South Africa and a margin of error of 5%, a minimum sample size of 422 was obtained after factoring in 10% attrition rate.

Data were collected using a pretested self-administered questionnaire designed using the guidance from previous acceptability studies and translated into the local language, Shona. Check codes, and legal values were used to reduce errors of data collection and entry. Data were cleaned for errors and inconsistencies before analysis. Data were analyzed using Epi Info 7 statistical package to generate means, frequencies, proportions, prevalence odds ratios (POR), and their corresponding 95% confidence intervals (CI). PORs excluding the null value (1) in the 95% confidence interval were considered statistically significant. Stratified analysis was performed to check for effect modification and to control for confounding. Factors associated with ever being HIV-tested were determined using multivariate logistic regression.

To ensure protection of study participants, permission was sought from Harare City Council institutional review board and the Medical Research Council of Zimbabwe (Approval Number: MRCZ/A/2216). Further, informed written consent was obtained from adolescents aged 16 and older and adolescent assent and parental/guardian consent was obtained from those aged 13 - 15 years. Consent was obtained after explaining the purpose of the study, and assuring confidentiality. Confidentiality was maintained throughout the study by not including the participants name on the questionnaires. In addition the questionnaire was self-administered owing to the sensitive nature of the questions.

Results

Sample characteristics

Socio demographic characteristics of study participants are reported in **Table 1**. A total of 427 participants were enrolled into this study and females comprised the majority (56.91%). The majority (82.67) of participants had attained secondary education and the least (4.45%) were those who had never been to school. Students comprised more than half of the population (51.76%) followed by those not employed at 39.58%. High density dwellers formed the majority (66.04%) of participants compared to 33.96% from the low density suburbs. Majority (75.18%) of participants were single.

Prevalence of HIV testing

In this study the overall prevalence of HIV testing among participants was 56.44% (241/427). On stratification by sex, prevalence of HIV testing among females was 60% compared to 51% for males. Of those that had been tested, 44% had their most recent test less than 3 months ago. The majority (55.8%) were tested at council clinics followed by new start centre (17.4%).

Bivariate correlates of HCT

Bivariate analysis results show that participants who reported fearing a positive result [OR=0.07; 95%CI (0.02-0.25)], requiring permission from parents/guardians to test [OR=0.06; 95%CI (0.01-0.43)], having attained only primary education [OR=0.53; 95%CI (0.30-0.94)], being aged less than 18 years[OR=0.32;95CI(0.21-0.49)], being worried about confidentiality [OR=0.07;95%CI(0.01-0.58)] and perceiving oneself not to be at risk of contracting HIV [OR=0.01; 95%CI(0.00-0.08)]were less likely to be tested for HIV. On the other hand those who reported being involved in a sexual relationship [OR=3.14; 95% CI (1.77-5.57)], ever being pregnant [OR=5.63; 95% CI (1.64-19.31)], perceiving oneself to be at risk of contracting HIV [OR=2.36; 95% CI (1.45-3.84)], having had sexual intercourse in the past year [OR=4.44; 95%CI (2.60-7.58)] among other variables were more likely to be tested for HIV. Participants who knew the location of testing facilities [OR=8.89; 95% CI (5.30-14.90)] were more likely to be tested for HIV than those who did not know. This was the major determinant for ever being tested in this study population (**Table 2**).

Multivariate correlates of HCT

The logistic regression model accounted for 263 cases (**Table 3**). After controlling for confounding, knowing a facility that offers HIV testing (aOR=5.05, p<0.01), reporting being involved in a sexual relationship with one's partner (aOR=3.24, p<0.01) being afraid of a positive result (aOR=0.07, p<0.01) and being male (aOR=0.43, p=0.008) were independent correlates of HIV testing and counseling among adolescents and young adults in Harare City.

Discussion

The current study sought to determine the prevalence and correlates of HIV testing and counseling among adolescents and young adults in Harare City, Zimbabwe. This information is critical, as promotion of HCT is the first step to getting medical care and treatment that can improve health, save lives, and prevent the spread of HIV (Bekker & Hosek, 2015). HCT provides an entry point to prevention, care, treatment and support. It contributes to reduction of the stigma and discrimination that surrounds HIV and AIDS.

The results indicate that 56% of the study population had ever received an HIV test. Although slightly higher than the proportions reported in similar studies conducted in South Africa (Peltzer & Matseke, 2013) and Ethiopia (Dirar, Mengiste, Kedir, & Godana, 2014) such low utilization of VCT in this young key population might pose a challenge to the scale-up of HIV prevention efforts. The results from the South African study indicated that over half (52.2%) of the youth reported testing for HIV, with more young females testing for HIV compared to their male counterparts (Peltzer & Matseke, 2013). In Ethiopia the prevalence of HIV testing was slightly higher at 52.8% (Dirar, Mengiste, Kedir, & Godana, 2014).

Considering the high HIV prevalence in Zimbabwe, such a low proportion of adolescents and young adults reporting ever having been tested for HIV in this population remains a barrier to early HIV treatment and care among those HIV-infected and this could impact negatively on their survival and result in poor ART response upon initiation.

Females were 1.5 times more likely to be tested compared to their male counterparts. This is supported by other studies. Takarinda *et al* (2016) in a study on factors associated with ever being HIV tested in Zimbabwe noted that fewer men than women had ever been tested for HIV. Similar trends were noted in a

review of 23 out of 29 demographic and health surveys conducted in other sub-Saharan African countries by Staveteig *et al (2013)*. In five countries thus Lesotho, Madagascar, Mozambique, Senegal, and Zimbabwe women are at least 50 percent more likely than men to have ever been tested.

The difference in testing rates between males and females can be attributed to the fact that women have many opportunities for HIV testing for instance during antenatal care and hence this may explain their higher level of HIV testing and generally females compared to males are more responsive to health programs including HIV testing and counseling. In addition it can also be argued that perhaps more females were more likely to be tested since they engage in more sexual relationships at a younger age with 'sugar daddies' than males, hence they could as a precautionary measure get tested to check if their behavior had not resulted in them contracting HIV. In a study done in Kenya and Zambia, for example, prevalence in the 15-19 age group was found to be at least five times higher among the girls (Glynn et al., 2001). This may be due, in part, to the high incidence of consensual, unsafe cross-generational sexual relationships that is, unprotected sex between teenage girls and adult men five or more years their senior (Baltazar, G. M et al. 2001). Men involved in these relationships, are more likely to be infected with HIV than teenage boys since they have been sexually active for longer.

In HIV endemic countries, Zimbabwe included, the World Health Organization (WHO) recommends universal HIV testing for all pregnant women and prompt treatment among HIV-positive women in order to prevent vertical transmission of the virus. Thus, adoption operationalization of longstanding WHO guidelines coupled with national policies may add to the higher prevalence of HIV testing among females than males. In addition traditional masculine roles cast men as risk takers who do not need or seek help or health services (Inungu et al., 2011). Such perceptions delay access to health care including HIV prevention services among men (Varga, 2001).

The study also found out that younger (<18 years) participants were significantly less likely to test for HIV than those aged 18 years and older. Thus the odds of ever being tested increased with age \geq 18 years. Low risk perception reported in this study among younger participants may explain this difference between older and younger participants. It is also important to note that challenges do exist concerning access to HIV testing for persons <18 years old as they require parental consent which may explain the low testing uptake for both sexes (Takarinda *et al.*, 2016).

In this study 53.5% females compared to 36.4% males reported that they needed permission to go for HIV testing and counseling. In addition, some at-risk youth may not seek medical care due to perceived lack of confidentiality among healthcare providers whereas others may feel inhibited by fear of a positive result or embarrassment associated with seeking reproductive and sexual healthcare. (Swenson *et al.*, 2009; Lichtenstein, 2000; Lindberg, Lewis-Spruill, & Crownover, 2006).

In this study we conducted both bivariate and multivariate analysis. This allowed us to efficiently determine correlates of HCT and at the same time control for possible confounders that may result in the distortion of the relationships between various exposures and the outcome of interest.

On bivariate analysis several factors were associated with HCT among adolescents and young adults. Those who reported fearing a positive result, parents who would not allow them to test, having attained only primary education, being aged less than 18 years , being worried about confidentiality and perceiving oneself not to be at risk of contracting HIV were less likely to be tested for HIV (Kabiru, Beguy, Crichton, & Zulu, 2011; Njagi & Maharaj, 2006). On the other hand those who reported being involved in a sexual relationship, ever being pregnant, perceiving oneself to be at risk of contracting HIV , having had sexual intercourse in the past year were more likely to be tested. Participants who knew the location of testing facilities were more likely to be tested for HIV than those who did not know. This was the major determinant for ever being tested in this study population.

On multivariate analysis, knowing a facility that offers HIV testing, reporting being involved in a sexual relationship with one's partner, being afraid of a positive result and being male were independent correlates of HIV testing in this study.

Participants who knew of a facility that offers HIV testing were more likely (aOR= 5.05) to take up an HIV test than those who did not know. The majority (73.54%) of participants knew of a facility nearby which offers HIV testing and counseling. As expected females comprised the majority (76.95%) compared to males (69.02%). The majority (79.8%) of participants who knew of a facility were from the high density suburbs compared to 61.4% from the low density suburbs. This is consistent with what Leta *et al* (2012) found out in a cross-sectional study conducted among men in Ethiopia. In that study 53% of the study participants reported that they knew a place where they could get tested for HIV.

Being involved in a sexual relationship with one's partner was independently associated with HIV testing. Sexually active participants were three times more likely to be tested than those not sexually active. This may be due to self-perceived risk of HIV infection considering that the commonest route for transmitting HIV is through sexual intercourse. A cross sectional study done in Ethiopia, showed that youths who reported having sex with their partners were more likely to be tested (Dirar, Mengiste, Kedir, & Godana, 2014). This finding is also supported by Leta *et al*, (2012).

Another significant finding was that those who reported being afraid of a positive result were less likely to be tested for HIV. This was true for both sexes albeit with a marginal difference. This is evident in the 2004 Glasgow study, which assessed the intention of gay men in taking the HIV test. Here, for MSM who had recently engaged in unprotected anal sex, their intention to actually seek testing weakened in the presence of increased fear of a test result that is positive for HIV (Sohn, Cho, & Kennedy, 2015). This is supported by other studies in the African region (Addis et al., 20103; Strauss, Rhodes, & George, 2015; Musumari et al., 2016).

This study had some limitations. A key limitation of this study is recall bias and social desirability bias. Data on HIV testing were self-reported by participants without any attempts to validate the report through medical record review. However we tried to minimize the bias through triangulation. In addition there could be other important reasons for these participants not getting tested such as stock-outs of HIV test kits at city clinics which our study did not address. Despite these limitations we are confident that, the survey design and sampling enabled us to draw conclusions which are nationally representative and can be inferred to the general youth population in other urban settings in Zimbabwe and probably beyond.

Conclusion

Although comparable to other settings in Sub-Saharan Africa, HIV testing among adolescents and young adults in Harare City is still considered very low. This is a significant public health problem as many high-risk individuals are not aware of their serostatus. Independent correlates of HCT among adolescents and young adults in Harare City were, knowing a facility that offers HIV testing, reporting being involved in a sexual relationship with one's partner, being afraid of a positive result and being male. In view of this evidence, Harare City health authorities should urgently come up with innovative strategies to increase the number of adolescents and youth who become aware of their HIV serostatus.

Tables

Variable	Frequency (n)	%
Sex		
Male	184	43.09
Female	243	56.91
Age-group		
13 - <18	212	49.65
18 - <23	177	41.45
23 - <24	21	4.92
24+	17	3.98
Level of education		

Table 1. Socio-demographic characteristics of adolescents and young adults, Harare, Zimbabwe, 2017

Never been to	19	4.45	
school			
Primary	35	8.20	
Secondary	353	82.67	
Tertiary	20	4.68	
Occupation			
Not employed	169		
Informally	19	39.58	
employed			
Formally	18	4.45	
employed			
Student	221	4.77	
Area of residence			
Low density	145	33.96	
High density	282	66.04	
Marital status			
Single	321	75.18	
Married	106	24.82	

Table 2 Correlates of HIV testing in adolescents and young adults, harare city, zimbabwe, 2017

Variable	Ever been tested		POR(95%CI)	p-value
	tor HIV			
	Yes	No		
Do you know of any				
facility?				
Yes	218	96	8.89(5.30-14.90)	< 0.001
No	23	90		
Have you ever been				
pregnant?				
Yes	23	3	5.63(1.64-19.31)	0.002
No	124	91		
In the last year have				
you had sex?				
Yes	84	20	4.44(2.60-7.58)	< 0.001
No	156	165	, , , , , , , , , , , , , , , , , , ,	
Residence status				
High density	188	94	3.47(2.28-5.28)	< 0.001
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Low density	53	92		
Are you involved in				
sexual relationship				
Yes	88	21		
No	88	66	3.14 (1.77-5.57)	< 0.001
Do you have a				
boyfriend/girlfriend?				
Yes	152	71	2.77(1.86-4.11)	< 0.001
No	89	115	, , ,	
Have you ever				
discussed about HIV				
testing with your				
partner?				

Yes	87	19	2.57(1.26-5.24)	0.009
No	41	23		
Do you feel that you				
are at risk of				
contracting HIV?		• •		
Yes	71	28	2.36(1.45-3.84)	< 0.001
No	170	158		
Sex				
Male	147	96	1.47(1.00-2.16)	0.059
Female	94	90		
I am not at risk				
Yes	1	53	0.01(0.00-0.08)	< 0.001
No	240	133		
My parents will not				
allow me to get tested				
Yes	1	13	0.06(0.01-0.43)	< 0.001
No	240	173		
Fear of a positive				
result				
Yes	3	27	0.07(0.02-0.25)	< 0.001
No	238	159		
I am worried about				
confidentiality				
Yes	1	10	0.07(0.01-0.58)	0.001
No	240	176		
Age				
<18	91	121	0.33(0.22-0.49)	< 0.001
>18	150	65		
Education level				
Primary and below	23	31	0.53(0.30-0.94)	0.028
Above primary	218	155		

Table 3. Multivariable model of predictors of HCT in adolescents and young adults, Harare City, Zimbabwe, 2017

Term	aOR^1	95% CI ²	p-value
Do you know any facitity that	5.05	2.55-10.00	< 0.001
offers HIV testing?			
Are you involved in a sexual	3.24	1.67-6.30	< 0.001
relationship?			
Being afraid of a positive	0.07	0.01-0.30	< 0.001
result			
Sex(Male/Female)	0.43	0.23-0.80	0.008

¹ aOR is adjusted odds ratio ² 95%Cl is 95% confidence interval

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