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Abstract

HIV prevalence among adolescents aged 15 – 19 in Botswana stands at 5% (Statistics Botswana, 2013), and majority were infected through vertical transmission. This paper assesses correlates of abstinence among HIV positive adolescents to identify salient behavioural, normative and control beliefs relevant to sexual risk behaviour.

A cross sectional quantitative survey of 98 respondents was conducted. The theory of reasoned action and planned behaviour was used to explore intention to abstain from sex. A univariate Generalised Estimation Equations model was employed for analysis.

About 56% of females and 44% of males aged 15-19 years constituted the study. Approximately 17% had ever experienced sexual intercourse. More females than males reported unprotected sex. Behavioural, perceived control, prevention and normative beliefs significantly affect one's intention to abstain from sex.

Programmes that build HIV positive adolescents' self-efficacy and promote positive behaviours will reduce risk of re-infection by increasing intention to abstain from sex.

Key words: Abstinence, Correlates, Adolescent, HIV, AIDS, HIV+ youth living with AIDS, Botswana

Introduction

Sub-Saharan African bears the biggest global burden of HIV and AIDS, and it is mostly heterosexually transmitted. According to the Botswana AIDS Impact Survey IV(BAIS IV)

HIV prevalence among those aged 15 – 19 is estimated at 5%(3.6% males and 6.2% females) (Statistics Botswana, 2013). The majority of the children in this age group got infected through vertical transmission. In 2011, 2000 adolescents were enrolled in the government antiretroviral (ARV) programme, and in 2013, the figure rose to 4 833, 56% were female while 44% were males. As more children survive and live longer due to ARVs, the adolescence age stage needs to be catered for as these teenagers are in transition, emotionally, psychologically and physically. Thus theory based abstinence only interventions have an important role in preventing adolescent sexual involvement, which is important for HIV positive adolescent as it will avert re-infections.

Literature

Abstinence only interventions may be desirable in curbing early infections with HIV; however they may not be an effective approach on their own. Literature emphasises on a mix of approaches including limiting sexual partners, reducing multiple sexual partners and use of condoms. The limitation of abstinence only interventions is that they have an unintended effect of reducing condom use, which predisposes adolescents to unprotected sexual activity (Jemmott, Jemmott & Fong, 2010). Inadequate knowledge about condoms and contraception is associated with sexual abstinence among both males and females. Thus empowering adolescents with adequate information and skill pertaining to condom use will help- to prevent STIs, unintended pregnancy and HIV and AIDS. Furthermore it is revealed that peer education is effective in promoting social norms, puts emphasis on decision making skills and puts value on education. Community collaboration can also harness these combinations of approaches (Lacson et al, 1997). Kirby et al (2011) also emphasise on the need for intentions to be augmented by the skills to implement those intentions and a conducive environment to encourage such efforts.

Leerlooifer et al (2014) advocate for guidance for evidenced planned sexuality education to help the youth understand abstinence intention. Perceived behavioural control is found to correlate with abstinence intention, according to the study. Furthermore sexuality education programmes were aimed to build adolescent sexual beliefs in order to abstain from sex. Past sexual experiences determine adolescents' motivation to abstain and are also an influential factor on abstinence intention of adolescents. The authors further recommend that sexuality education programmes should be cognisant of adolescent's past behaviours, in order to meet the needs to both sexually experiences and inexperienced adolescents. The study further reveals that females are more motivated to abstain than males, with abstinence motivation more pronounced among younger females than older females.

Being susceptible to HIV risk behaviour has been found to be influenced by a range of factors including individual, community, regional HIV prevalence and adolescents' social networks. (Georges, Simona & Thomas, 2013). Abstinence thus remains the best strategy to avoid this HIV risk behaviours, especially for HIV positive adolescents. There is need for adolescents to learn, synthesise and apply the abstinence strategy in their life experiences. This will in turn have an aggregated effect of averting infections and re-infections, pregnancy among others.

Sexual abstinence is practised among perinatally infected adolescents to whom access to sexuality is somehow delayed (Mergui & Giami, 2011). Thus HIV negatively affects the sexual life of HIV – positive adolescents.

This paper therefore assesses the correlates of abstinence among HIV positive adolescents. The survey was meant to identify HIV-positive adolescent's salient behavioural beliefs, normative beliefs and control beliefs relevant to sexual risk behaviour.

Theoretical Framework

The study utilises the Theory of Reasoned Action Approach (RAA)- (Fishbein & Ajzen, 2010; J. B. Jemmott, 3rd, 2012, which is a combination Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen, 1991). It was developed in a process that involved integrated qualitative information from formative research with behaviour-change theory that was both culturally congruent and theory based. According to the RAA, intention is the main determinant of behaviour, and attitude, subjective norm, and perceived behavioural control or self-efficacy regarding the behaviour that determines intention. The RAA also directs attention to the specific beliefs that underlie attitude, subjective norm, perceived behavioural control, and holds that these beliefs can be targeted by behaviour-change interventions (J. B. Jemmott, 3rd, 2012). For instance, attitudes toward behaviour are seen as reflecting behavioural beliefs about the consequences of performing the behaviour. The RAA provides a useful framework for an HIV/STI risk reduction intervention intended to build self-efficacy and foster positive attitudes toward safer sex, and delay sexual activity among ALWHA.

Methods

A cross sectional quantitative survey of 98 adolescents living with HIV and AIDS(ALWHA) recruited from a specialised child care clinic and infectious disease control clinics managing HIV clientele. The Reasoned Action Approach was used to determine the outcome and the predictor variables during development of the survey. The theory of reasoned action and planned behaviour was used to explore ALHWA's intention to abstain from sex. Based on the theory, intentions are predicted by attitudes and beliefs that influence one's intention to abstain.

The survey was informed by qualitative research that uncovered adolescents' beliefs, attitudes, values and motivations that underlie individual intentions to engage in and/not engage in sexual risky behaviours. A univariate Generalised Estimation Equations (GEE) model in which clinic has been used as a cluster, with an exchangeable correlation matrix was employed in analysing the correlates between abstinence intention and explanatory variables. The Gaussian family has been used since the dependent variable is continuous.

Results

Table 1: Selected background characteristics of respondents

Characteristic	**N**	**Percentage**
Ever had sex	90	16.7
Unprotected Sex	89	9.0
Males	50	10.0
Females	39	7.7
Forced Sex		
Males	47	17.0
Females	40	15.0
Ever Smoked	91	16.5
Ever used alcohol	93	25.8

The quantitative survey enrolled 98 HIV positive teenagers aged 15 – 19 years, about 56 %(n=55) females and 44% (n= 43) males. The mean age was 15.80(SD = 0.21) for females and 15.73(SD = 0.14) for males. Self-reported sexual behaviour indicates that 17% had ever had sexual intercourse, and 9% had experienced unprotected sex. More females than males reported unprotected sex. Additionally, more males than females reported ever experiencing

force sex. Higher proportions of alcohol use were reported when compared to smoking. (Table 1).Membership to a particular church was reported among 77.6 %(n=98) of the participants

Construction of Variables Scores

Construction of variables involved taking the means of questions measured on a 5 point Likert scale. Cronbach's alpha for each theoretical construct were calculated to estimate the reliability of each scale, these statistics are presented in Appendix 1. The higher the alpha the better the reliability. All the Cronbach's alphas are more than 0.60 except for perceived control beliefs __hence it is sensible to aggregate the corresponding variables under one construct except for perceived control beliefs. These constructs included abstinence intention, normative beliefs, socio-cultural beliefs, perceived control believes, among others

Table 2.0: Means Scores of Variables of Interest by Gender

Variables	Males	Females	Total
Abstinence_ Behavioral_ Beliefs	3.95(0.162)	4.10(0.166)	4.03(0.117)
Abstinence_ Intention	3.64(0.175)	3.73(0.174)	3.69(0.123)
Abstinence_ Normative_ Beliefs	2.62(0.188)	2.37(0.188)	2.48(0.133)
Abstinence_ Partner _Reaction	3.60(0.134)	2.99(0.148)	3.26(0.106)
Abstinence_ Perceived_ Control_ Beliefs	3.92(0.191)	3.95(0.167)	3.94(0.125)
Abstinence_ Prevention _	3.64(0.187)	3.44(0.174)	3.53(0.128)

Beliefs			
Abstinence_ socio _cultural_ Beliefs	1.99(0.152)	1.83(0.115)	1.90(0.093)

Overall adolescents exhibited higher intentions to abstain from sex (mean = 3.69), with females showing greater intentions when compared to their male counterparts (Table 2). Behavioural beliefs, perceived control beliefs, abstinence intention, partner reaction and prevention beliefs had higher mean scores (above 3), when compared to normative and socio cultural beliefs(less than 2.5). This means that behavioural beliefs and perceived control beliefs had higher scores in explaining abstinence intention among ALWHA. For example, a lower score for socio-cultural beliefs means good behaviour.

Table 3.0: Unadjusted and adjusted coefficients, 95% confidence intervals, and p-values for beliefs on Abstinence

	Unadjusted for Age and Gender		**Adjusted for Age and Gender**	
Covariate of Abstinence Intention	**COEFFICIENT/OR (95% CI)**	**P-value**	**COEFFICIENT/OR (95% CI)**	**P-value**
Abstinence Behavioural Beliefs	0.5920 (0.388, 0.795)	<0.0001	0.5772 (0.3694, 0.785)	<0.0001
Abstinence Perceived Control Beliefs	0.6402 (0.524, 0.757)	<0.0001	0.6305 (0.507, 0.754)	<0.0001
Abstinence Partner Reaction	0.2210 (-0.038, 0.4780)	0.0940	0.2246 (-0.047,0.496)	0.1000
Abstinence Prevention Beliefs	0.4340 (0.2400, 0.628)	<0.0001	0.4164 (0.213, 0.620)	<0.0001
Abstinence Socio Cultural Beliefs	-0.3060 (-0.580, -0.032)	0.0290	-0.2663 (-0.553, 0.020)	0.0680
Abstinence Normative Beliefs	-0.2550 (-0.457, -0.053)	0.0130	-0.2348 (-0.440, -0.03)	0.0250

The results on Table 3 show that all the correlates except abstinence partner reaction and socio cultural beliefs significantly affected one's intention to abstain from sex for both the adjusted and the unadjusted models. The models were adjusted for age and gender only. All the correlates except socio cultural and normative beliefs obtained positive coefficients: This indicates that for example, the higher the score for abstinence behavioural beliefs, the higher the intention to abstain. On the other hand, the intention to abstain increases as the socio cultural beliefs decrease and the same applies to the normative beliefs.

Discussion

The reasoned action approach provides a useful framework for an HIV/STI risk reduction intervention. This approach helps to identify HIV-positive adolescent's salient behavioural beliefs, normative beliefs and control beliefs relevant to sexual risk behaviour. The study reveals that adolescents living with HIV and AIDS were inclined to abstain, with females exhibiting higher intentions than their male counterparts. These findings resonate with Leerlooifer et al (2014) who observe gender differences in abstinence among adolescents.

Furthermore adolescents living with HIV had good intentions to abstain since they felt proud to do so. They were also cognisant of how their partners would react if they vocalised their abstinence intention, a sign of peer pressure as is the case with any other adolescent. It is also noteworthy that these adolescents believe that abstinence will avert the risk of contracting STIs and HIV and AIDS. However the adolescents did not seem to rely on the role of the significant others in their lives to determine their desire to abstain, neither did socio cultural beliefs find support among these adolescents. Such kind of attitude will reduce the likelihood of engaging in sex out of peer pressure and also help them resist any negative cultural beliefs that can perpetrate engagement in risky sexual practices.

While abstinence only approaches have an important role in preventing adolescent sexual involvement(Jemmott, Jemmott& Fong, 2010) they may not be practical; they need to be augmented by other approaches like provision of appropriate skills and a conducive environment to harness abstinence (Kirby, 2011).

Conclusion: Behavioural beliefs, perceived control beliefs, prevention beliefs and normative beliefs successfully predicted intentions to abstain from sex. All these behaviours except normative beliefs will increase the ALHWA's intention to abstain. Partner reaction and socio cultural beliefs do not statistically affect the intention to abstain according to the information received from these subjects. The recommendation is that investing in programmes that build behavioural, prevention, and normative beliefs will go a long way in reducing risk of re-infection by increasing the intention to abstain from sex among ALHWA.

Appendix 1: Constructs and Cronbach's Alphas (Items were measured in a 5 point Likert scale)			
Construct	**Example Items**	**Number of items**	**Alpha**
Abstinence Intention	I plan to abstain in the next 3 months I will try my level best to abstain in the next 3 months	2	0.816
Abstinence Behavioural Beliefs	If I abstain from sex ... parenthood, I will be proud of myself. If I abstain from sex ... my parents will be proud of me If I abstain from sex... have the career that I am hoping for	3	0.722
Abstinence Perceived Control Beliefs	I can abstain from sex even if I have had sex in the past I am sure I will abstain in the next 3 months	2	0.346
Abstinence Partner Reaction	I have been worried that if I talked might Ignore my request I have been worried that if I talked might threaten to hit me I have been worried that if I talked might swear at me or call me ugly names I have been worried that if I talked might threaten to leave me I have been worried that if I talked might threaten to leave me hit or push or kick me I have been worried that if I talked might leave me I have been worried that if I talked might go out with other girls/ boys	7	0.867
Abstinence Prevention Beliefs	Abstinence prevents contracting STDs If I abstain from sex, I am less likely to get HIV.	2	0.645
Abstinence Socio Cultural Beliefs	If a guy abstains from sex, his penis will not erect anymore. If a guy abstains from sex for a long time, he will lose his mind If a girl abstains from sex too long, giving birth will be very difficult If a person abstains from sex for too long, he or she will die young If I abstain from sex, it shows I am not grown up	5	0.838
Abstinence Normative Beliefs	My boyfriend/girlfriend would think it is ok for me to abstain from sex in the next 3 months My mother/female guardian--------- My father / male guardian-------	5	0.763

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