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HIV/AIDS knowledge and perceived risk on condom use among youth in South Africa.

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Abstract

HIV/AIDS continues to be a major health concern in Sub-Saharan Africa. South Africa with an HIV prevalence of 10% is one of the worst affected countries. The majority of new infections are among young people aged 15-24 years. Lack of condom use is the main reason for new infections. In efforts to curtail the problem school based HIV knowledge and awareness campaigns have been launched. However the increase in HIV knowledge has not had led to a significant increase in condom use. Research based on the health belief model has also found that people are more likely to adopt healthy behaviours if they think they are at risk of illness. The study aims to investigate the relationships between HIV knowledge, perceived risk of infection and condom use.

The study will be conducted using the National Communication Survey of 2012 using a sample of 1795 sexually active males and females aged 16-24 years. The data will be analysed using cross tabulations for the descriptive statistics. To investigate the association, a binary logistic regression will be run at bivariate level and two regressions at multivariate level. The multivariate regressions will have one model including the main independent variables and the other excluding them to see the difference in condom use which is brought about by HIV knowledge and perceived risk.

The study expects to find an association between perceived risk and condom, but not between HIV knowledge and condom use as the increase in HIV knowledge has not resulted in an increase in condom use. This would mean that prevention measures should have other behaviour changing mechanisms in place in addition to the HIV knowledge, particularly those which change perception of infection.

Chapter 1: Introduction

Background

HIV continues to be a major health concern in sub-Saharan Africa and has a particularly high prevalence in the Southern African region. Swaziland, Botswana, Lesotho and Zimbabwe have the highest HIV/AIDS prevalence in the world ranging from 15%- 27.4% among adults aged 15-49 (UNAIDS, 2013). South Africa much like the other Southern African counties has one of the highest prevalence of HIV /AIDS among adults aged 15-49 in the world at 16.8% (Statistics South Africa, 2014).

The epidemic is seen as being fuelled by young people as majority of new infections occur between ages 15-24 (Department of Health, 2012). The HIV incidence for this age group is 1.5% with 139,000 new infections occurring each year and a prevalence of 8.7% in 2014 (Shisana et al., 2012; Statistics South Africa, 2014). The main mode of HIV transmission is heterosexual sex. This is evidence that young people are engaging in risky sexual behaviours, particularly the inconsistent use of condoms. In response to the high HIV incidence and prevalence among youth the South African government implemented education and awareness campaigns to promote public awareness, HIV/AIDS education, and promote safer sexual behaviour (Peltzer and Promtussananon, 2003).

With 65% of adolescents reporting to receiving HIV knowledge at schools, it had been expected that they would become more aware of the sexual risk behaviours that put them at risk of infection and change their behaviour accordingly (Peltzer and Promtussananon, 2003; Gallent el al, 2004; Reddy et al., 2010). However risky sexual behaviours have remained high. It is reported that 35% of adolescents report to using condoms sometimes and 32% report to never using condoms (Department of Health, 2012). This suggests that the HIV knowledge is either, poor and unable to affect behaviour, or having HIV knowledge does not result in behaviour change (Peltzer and Promtussananon, 2005).

Risky sexual behaviours remain high, yet only 11.7% of the adolescents think they could become infected with HIV in their lifetime (Reddy et al., 2010) .This suggests that youth have an optimistic bias, meaning that despite having HIV knowledge they do not perceive themselves to be at risk of HIV infection and as a result engage in unsafe sex.

1.1 Problem Statement

Lack of condom use increases the likelihood of contracting HIV which is particularly problematic as South Africa has one of the highest, HIV/AIDS prevalence in the world. The national prevalence is 10.2%, 16.8 % among adults aged 15-49 and 8.7% among youth aged 15-24 (Statistics South Africa, 2014). The impact of the disease has been widespread in the country with 31.1% of deaths in 2014 related to AIDS (Statistics South Africa, 2014).

The prevalence of sexually transmitted infections among adolescents in South Africa is 4.4% and an additional issue is that most of them go undetected and untreated (Reddy et al, 2010). Untreated STI's have long term adverse health implications such as infertility and cervical cancer (Department of Health, 2012).

In addition to the negative health outcomes, lack of condom use puts youth at risk of having unwanted pregnancies (Bryan, 2006). Unwanted pregnancies can disrupt learning and affect future employment and economic prospects negatively. Unwanted pregnancies can also result in illegal abortions which are a health risk.

The country has also experienced negative socioeconomic outcomes. HIV related morbidity and mortality threatens the development of South Africa because it mainly affects those of working age (Gould, 2009). When people fall ill due to HIV infection work is disrupted and this has an impact on the finances of the house hold and the economy of the country in general (Gould, 2009). This also means that more people become dependent on the public health system which is already under pressure.

Justification

It is the goal of all African governments to reduce HIV infections and support the development of their youth populations. The National Youth Policy seeks to address the issues of youth at risk focusing on youth living with HIV or AIDS and youth headed household (NYP 2014-2019, 2015). These are important issues which need to be addressed and are related to the development of youth. HIV is a challenge to development in South Africa as it can lead to illness related disruption. Youth headed house hold also pose a challenge to development as the education of

these youths is often disrupted as they need to support households. These youths are also vulnerable to abuse and exploitation and have been found to be at high risk of HIV infection (NYP 2014-2019, 2015).

Finally, this research will contribute to policy and programme re-evaluation in the country. In April 2007 former deputy president Phumzile Mlambo-Ngcuka introduced a strategic plan which was aimed at reducing all new HIV infections by 50% by the year 2011 (NSP, 2011). The incidence on HIV however decreased from 1.59% in 2007 to 1.25% in 2011 (Statistics South Africa, 2014). The strategic plan failed to meet its objective of decreasing HIV infection by 50%. This research will be hopefully be able to inform policies and strategies such as this one so that they are better able to achieve their goals.

1.3 Research Question

Is there an association between HIV/AIDS knowledge, perceived risk of infection and lack of condom use among youth in South Africa?

1.4 Research Objectives:

To investigate the relationship between HIV/AIDS knowledge, perceived risk of infection and lack of condom use among youth in South Africa.

Specific Objectives:

To describe the levels of HIV/AIDS knowledge, perceived risk of infection and lack of condom use among youth in South Africa.

To identify the demographic and socioeconomic determinants of lack of condom use among youth in South Africa.

To test the association between HIV/AIDS knowledge, perceived risk of infection and lack of condom use among youth in South Africa.

1.5 Definition of terms:

HIV knowledge – Ability to identify the three major ways of preventing the sexual transmission of HIV correctly (abstinence, condom use and limiting sex to one faithful, uninfected partner) (UNICEF, 2002).

Perceived risk – An individual's perceived susceptibility to a disease (Hochbaum, 1958).

Condom use – The use of condoms as a protective mechanism against infections. For the purpose of this study it will be measured using the variable 'condom use at last sex'.

Chapter 2: Literature Review

2.1 Literature Review

Condom use

Condoms are the most effect method of protection against HIV and other sexually transmitted infections (Hendriksen et al, 2007). Research shows that it is a generally known fact among youth that condoms prevent HIV, STIs, and unwanted pregnancies and that it is important to use a condom every time they have sexual intercourse (Hendriksen et al, 2007).

Condoms are widely and freely available in South Africa as they are provided by government in public places including public clinics and youth centers and 87% of youths reported that they would be able to access condoms very easily if they needed to (Hendriksen et al, 2007). It is however argued that this is not the case in rural areas where the cost and distance travelled to acquire condoms are inhibiting factors (Bryan et al., 2006).

The notion that condoms reduce sexual pleasure, and that condom use goes against masculinity reduces condom use (MacPhail, and Campbell, 2001; Meekers and Klein, 2002). There are also negative attitudes and shame surrounding condoms and particularly around young people having condoms (Bryan et al., 2006). Prior research has associated youths who consider themselves to be in committed and trusting relationships with a lower likelihood of condom use. Youths also report that wanting to use condoms suggests unfaithfulness and lack of trust. (Matson et al., 2011). Having sex under the influence of drugs and alcohol has also been found to be associated with low condom use (Bryan et al., 2006).

There are gender power dynamics involved in the negotiation of condom use. In patriarchal societies women find that they are not empowered enough to negotiate condom use with their partners. High levels of intimate partner violence and coerced sex are associated with low levels of condom use. Transactional sex is associated with the lack of ability to negotiate condom use and as such results in low use of condoms (Hendriksen et al., 2007).

Young women who use hormonal contraceptives were found to be less likely to use condoms as protection against pregnancy is one of the main motives for condom use and the use of contraceptives takes away this motive (Roye & Seals, 2001).

Perceived risk

HIV is highly stigmatised and because of this youth may avoid perceiving themselves as being at risk of the disease because in doing that they would be associating themselves with stigmatised groups (Anderson et al, 2007). This in turn leads young people to underplay their personal risk thus making the perceived risk low. The stereotypical association of HIV with certain groups of people also leads to the rest of the population underestimating their risk of contracting the disease. Example, when HIV was associated with gay men and illegal drug users it made heterosexuals and non-drug users perceive themselves to not be at risk of contracting HIV (Prohaska et al, 1990). HIV tends to be associated with promiscuity and as a result those who see themselves as not promiscuous see themselves as having a low risk of infection.

Literature explains that young people display an optimistic bias which is a tendency to systematically underestimate one's personal risk (Ellen et al, 1996). This is because the period of adolescence is characterized by a heighted sense of invulnerability and impulsiveness, and exaggerated denial. Adolescents are also characterized as being concerned with immediate risk rather than long term risk (Ellen et al, 1996).

HIV knowledge

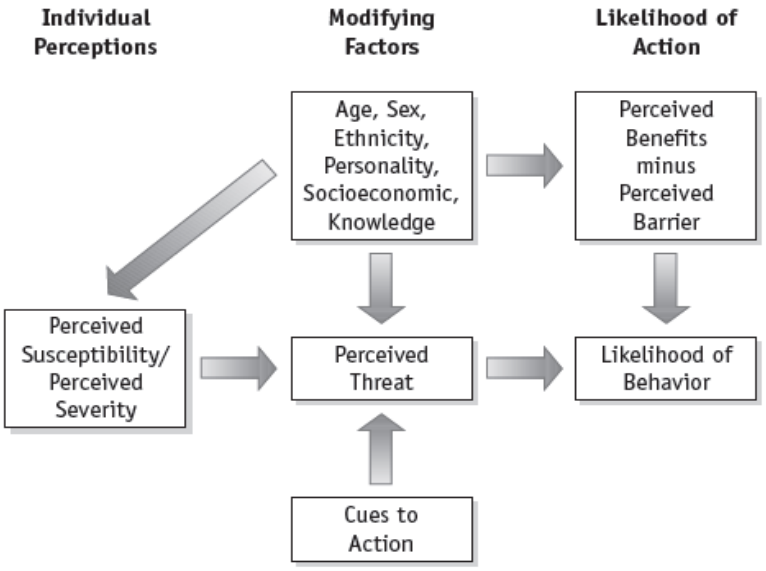
Throughout the world people view sex and HIV education programs as a partial solution to the problem of adolescents risky sexual behaviors. South Africa was one of the countries which saw school based HIV education as a key component to fighting HIV and responded to the problem of risky sexual behaviors of adolescents with the implementation of school based HIV education programs (Peltzer and Promtussananon, 2003).

The implementation of the program was impeded by the teacher's lack of knowledge and discomfort in discussing sexually related topics with students. While school based HIV education was seen as a being able to reach many youths it has been critiqued for not being able to reach students who drop out of school and are considered to be at a higher risk of infection (Kirby et al, 2006). Research has also found that school based HIV knowledge has had marginal success in changing the sexual behaviors of adolescents and is considered to be failing adolescents in Africa (Magnani et al, 2005).

2.2.1Theoretical Frameworks

The study will be based on the Health Belief Model which was conceptualized by Rosenstock et al in the 1950s. The main idea of the Model is that health behavior is determined by an individual's perception of a disease and the available strategies the decrease its occurrence (Hochbaum, 1958). Perception of a disease is based on how an individual perceives the seriousness of the disease and their susceptibility to it, the benefits of taking measures against it and the barriers preventing them from doing so. There are also 'modifying factors' being an individual's characteristics influence perception of a disease. (Champion and Skinner, 2008). This model will be used as it shows the pathways used by perception of risk and knowledge of a disease to influence one's health behavior which is what the study seeks to investigate. As such the model will enable us to investigate how perception of risk of infection and HIV knowledge influence the use of condoms among youth.

Figure 1. Health Belief Model (Champion and Skinner, 2008)

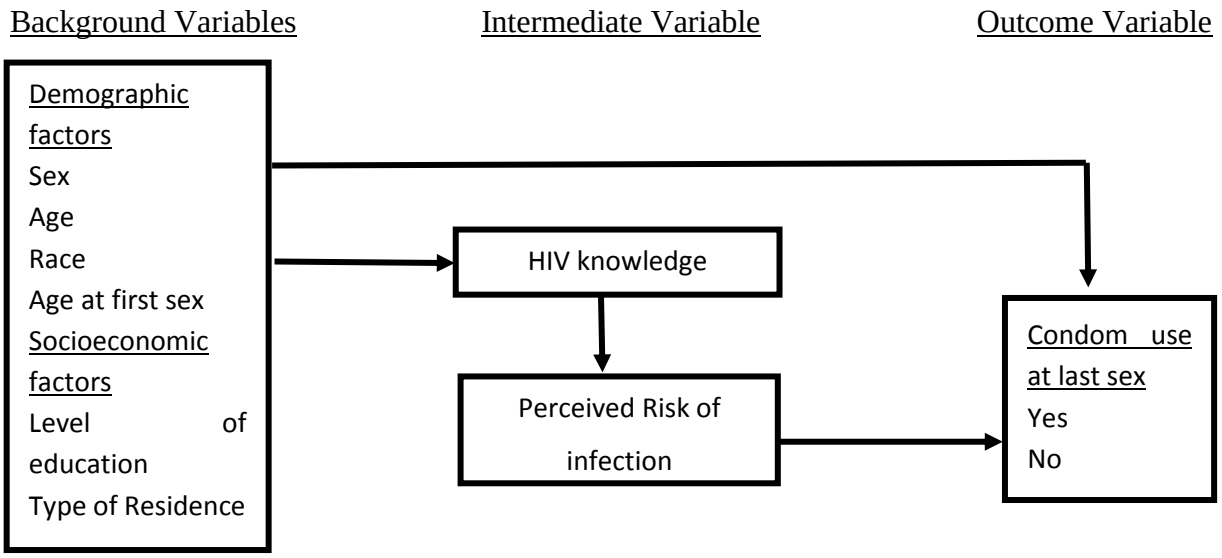


2.2.2Conceptual frameworks

While the research will adapt the model it will not be using all element of the model. The paper will use the perceived susceptibility of disease being the perceived risk of contracting HIV. It will look at the modifying factors mainly being HIV knowledge and other socio-demographic

factors which influence perceived risk of infection. These will be used to analyse their influence on health behavior, being condom use in the context of this particular research. According to the health belief model, individuals would use condoms consistently, if they perceive that the risk of becoming infected with HIV outweighs the costs of not using condoms.

Figure 2. Framework for the study of HIV knowledge, perceived risk and condom use: adapted from health belief mode (Champion and Skinner, 2008).



Chapter 3: Methodology

Study Design

The study will use a cross sectional study design as it will make use of survey data from the Third National HIV Communication Survey of 2012. The data was collected from a sample of people at a point in time.

Survey and Questionnaire

The study will use The Third National HIV Communication Survey of 2012 which was funded by the Department of Health and United States Agency for International Development (USAID) (Johnson et al, 2013). The study was done in collaboration with Johns Hopkins Health and Education in South Africa (JHHESA), loveLife and Soul City. The survey received oversight

from HDA and technical assistance from JHU-CCP (Johnson et al, 2013). The questionnaire was structured, including a series of 24 questions about the socio-demographic characteristics, nature of their sexual relationships, HIV perception and prevention, as well as their exposure to HIV communication programs (Johnson et al, 2013).

3.2.2 Study population and sample size

The study population of the study are youth being males and females aged 16-24 who are sexually active and answered the questions about HIV knowledge, perceived risk of infection and condom use. A total of 3396 youth aged 16-24 participated in the study, this includes both male and female. From these participants only 1795 answered the question on condom use at last sex and 696 reported no condom use at last sex.

Variables

Dependent Variable -	Categories	Coding
condom use at last sex	Yes	0
	No	1
Independent Variables	Categories	
HIV knowledge 'Can you tell me all the ways that you know that HIV infection can be prevented?'	High knowledge 'Identified three methods'	1
	Medium knowledge 'Identified 1-2 methods'	2
	No knowledge 'Identified 0 methods'	3
Perceived Risk 'What do you think your chances are of getting infected with HIV?'	Definitely going to get infected	1
	Probably going to get infected	2
	Probably won't get infected	3
	Definitely not get infected	4
Control variables		
Age	16-24	
Age at first sex	0-24	
Sex	Male	1
	Female	2
Race	Black	1
	Colouerd	2
	White	3
	Indian	4

Level of education	No Education	1
	Primary education	2
	Secondary education	3
	Tertiary Education	4
Type of residence	Rural	1
	Urban	2

The table shows the dependent, independent and control variables, showing their categories and coding of the categories.

3.4 Hypothesis

Ho. There is no significant relationship between HIV knowledge, perceived risk and lack of condom use among youth is South Africa.

Ha. There is a significant relationship between HIV knowledge, perceived risk and lack of condom use among youth in South Africa.

Ethical Issues

The study will be conducted using secondary data and thus was not directly involved with the respondents and because no names are given in the data set so the respondents cannot be connected to the information they gave. As such anonymity is guaranteed.

Data Management

The data was requested from Johns Hopkins Health and Education in South Africa. The variables relevant to the study will be managed using the STATA version 12.

Data analysis

To achieve objective one which is to describe the main variables cross tabulations will be conducted to show the levels and distribution of condom use, HIV knowledge, and perceived risk of infection among youth. To achieve objective two a binary logistic regression will be conducted at bivariate level as this will establish the socio-demographic variables which are

significantly associated with condom use. To achieve objective three two binary logistic regressions will be performed at multivariate level. One regression including the main independent variables -HIV knowledge and perceived risk- and one without them. This is to establish whether there HIV knowledge and perceived risk of infection have an effect on condom use.

Below is the formula used for logistic regression.

$Li = \alpha + \beta 1X1i + \beta 2X2i + \ldots + \beta kXki + E$

Where: Li = dependent variables

α = constant

βk = regression coefficients

X = independent variables

E= Error

Data Limitations

The study will be using a cross-sectional survey and will be unable to establish causality. Due to the time lapse between the time the survey was conducted and the time of last sex the respondents may be unable to recall their condom use at last sex. The study is also looking into a sensitive topic particularly for youth meaning that the respondents may choose not to respond or give false information, making the data unrepresentative of the population.

Results

Table 1 shows the descriptive characteristics of youth in sample population

Variable	Frequency	Percentage
Dependent Variable		
condom use at last sex		
Yes	1,033	61.82
No	638	38.18
Total	1,671	100
Independent Variables		
Perceived chance of infection		

Definitely will	155	5.5
Probably will	377	18.03
Probably wont	1,008	48.21
Definitely wont	591	28.26
Total	2,091	100
HIV knowledge		
No Knowledge	71	3.4
Knowledge	2,020	96.6
Total	2,091	100
Control Variables		
Race		
Black	1,791	85.65
Coloured	262	12.53
White	18	0.86
Indian	20	0.96
Total	2,091	100
Sex		
Female	1,189	56.86
Male	902	43.14
Total	2,091	100
Age		
16-19	505	24.15
20-24	1,586	75.85
Total	2,091	100
Province		
eastern cape	257	12.29
free state	136	6.5
Gauteng	417	19.94
KZN	463	22.14
Limpopo	233	11.14
Mpumalanga	160	7.65
north west	130	6.22
northern cape	38	1.82
Western cape	257	12.29
Total	2,091	100
Age at first sex		
0-15 years	426	20.37
16-17 years	882	42.18
18-19 years	587	28.07
20-24 years	196	9.37
Total	2,091	100
Education		

up to primary school	84	4.03
up to grade 11	882	42.3
Matric	910	43.65
Tertiary	204	9.78
no schooling	5	0.24
Total	2,085	100
Employment status		
Unemployed	1,131	54.09
Employed	363	17.36
Student	580	27.74
Other	17	0.81
Total	2,091	100
settlement type -		
urban formal	763	36.49
urban informal	722	34.53
peri-urban	236	11.29
tribal settlement	324	15.49
Farming	46	2.2
Total	2,091	100

Table 1 shows the frequency and percentages of the dependent variable, independent variables and control variables. The table reflects that there is a significant percentage of youth who don't use condoms and that majority of youth think that they probably wont get infected with HIV, the table also shows that HIV knowledge is high.

Table 2: Frequency of condom use by independent variables.

Main Independent Variables	Condom Use at last sex		
perceived risk of infection	Yes	no	Total
definitely will get infected	49	53	102
probably will get infected	162	167	329
probably wont get infected	519	256	775
definitely wont get infected	303	162	465
Total	1,033	638	1,671

HIV Knowledge			
No Knowledge	30	30	60
Has knowledge	1,003	608	1,611
Total	1,033	638	1,671
Control Variables			
Race			
Black	914	524	1,438
Coloured	99	101	200
White	9	6	15
Indian	11	7	18
Total	1,033	638	1,671
Sex			
Female	544	385	929
Male	480	250	730
Total	1,024	635	1,659
Age			
16-24	275	120	395
20-24	758	518	1,276
Total	1,033	638	1,671
Province			
eastern cape	108	87	195
free state	78	41	119
Gauteng	236	113	349
KZN	249	126	375
Limpopo	77	78	155
Mpumalanga	91	51	142
north west	73	34	107
northern cape	17	14	31
Western cape	104	94	198
Total	1,033	638	1,671
Age at first sex			
0-15	177	161	338
16-17	459	259	718
18-19	293	170	463
20-24	104	48	152
Total	1,033	638	1,671
Employment status			
Unemployed	521	389	910
Employed	167	127	294
Student	336	119	455
Total	1,024	638	1,659
settlement type -			

urban formal	410	205	615
urban informal	361	233	594
peri-urban	112	67	179
tribal settlement	128	108	236
Farming	13	22	35
Total	1,024	635	1,659
Education level			
primary school	27	39	66
up to grade 11	405	293	698
matric	491	243	734
tertiary	108	56	164
no schooling	0	4	4
Total	1031	635	1,666

The table shows that majority of people who think they probably won't get infected use condoms and majority of those who have HIV knowledge use condoms. However there is an equal distribution of condom use between those who have no HIV knowledge. The table also shows the distribution of condom use by the control variables. The table shows that people with a higher level of education used a condom at last sex. Youth living in urban areas also have a higher frequency of condom use at last sex than those who didn't.

Discussion and conclusion

The descriptive statistics have achieved objective one as they have shown the levels and distribution of HIV knowledge, perceived risk and condom use among youth in South Africa. The tables show that the level of HIV knowledge is high among youth which is in line with what has been established by previous literature (Peltzer and Promtussananon, 2003). The descriptive statistics however suggest that there is a significantly high perception of risk among youth which contradicts previous literature which has said that perception of risk among youth is low (Reddy et al., 2010). The research question has however not been answered by the descriptive statistics and a binary logistic regression is required to answer the research question.

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