HIV/AIDS-Related Beliefs, Perception and Sexual Behaviours in Metropolitan Cape Town, South Africa

Oyedokun Amos[1] (Doctoral Candidate, Programme in Demography and Population Studies, Schools of Public Health and Social Sciences, University of the Witwatersrand, South Africa; Obafemi Awolowo University, Nigeria) and Clifford Odimegwu (Programme in Demography and Population Studies, Schools of Public Health and Social Sciences, University of the Witwatersrand, South Africa) (E-mail: aooyedokun@yahoo.com; Mobile: +27766820833; Fax: +27-11-717-4336)[1]

Suggested Running Head: HIV/AIDS-Related Beliefs, Perception and Sexual Behaviours in Cape Town

HIV/AIDS-Related Beliefs, Perception and Sexual Behaviours in Metropolitan Cape Town, South Africa

Abstract

This paper uses Wave 1 data of Cape Area Panel Study (CAPS) which is a longitudinal study of the lives of 4,800 young adults to investigate the impact of HIV/AIDS-related beliefs and risk perception on sexual behaviours of young people in Cape Town, South Africa based on the Health Belief Model. Results showed that a larger proportion of the young people under the study fall within ages of 17 and 19 with mean age of 17.88 years. Forty-six percent (N=4,744) had been sexually active (45% for males and 46% for females), and majority had their first sexual debut between ages 14 and 18 with the mean age at first sexual intercourse of 17.41 years. Further analysis showed that sex of the respondents, and whether currently in school significantly influence the outcome variables consistently. Recommendations were made on the appropriate ways to design effective intervention programmes.

Introduction

Adolescents and young adults' sexual and reproductive health has become a matter of serious health concern worldwide particularly because of Human Immuno-deficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) pandemic as well as high levels of teenage pregnancy due to early sexual debut and lower rate of modern contraceptive use, illegal abortion and early childbearing (UNESCO 2003; UNFPA 2003; UNAIDS 2004; Treffer 2002; Department of Economic and Social Affairs 2004; PRB 2000, 2006; Garenne et al. 2000; Sellix 1996). Around the world, about 6000 young people aged 15-24 years are infected with HIV each day; it was estimated that 7.3 million young women and 4.5 million young men are now living with HIV/AIDS (UNFPA 2003; UNAIDS 2004; Department of Economic and Social Affairs 2004). Fewer than 5%

of the poorest young people use modern contraceptive methods (UNFPA 2003). More than half of all new human immunodeficiency virus (HIV) infections occur in people between the ages of 15 and 24 years. Adolescents appear to have a high level of awareness about HIV/ AIDS but this has not translated into substantial behaviour change. They have more than one sexual partner; between 40% and 60% of adolescents have more than one partner within a 6-month period. Few perceive themselves to be at risk; few take the need for safer sex seriously, and do not see AIDS as a personal threat, although most adolescents acknowledge the disease's severity (Hartell 2005; Sellix 1996).

Boer and Emons (2004) in their study in northern Thailand found that persons who held inaccurate beliefs about HIV transmission also reported more stigmatising attitudes, perceived AIDS as less severe, perceived a lower vulnerability and were less motivated to use condoms. Volk and Koopman (2001) in their study at Kisumu in Kenya found that although three-quarter of the participants interviewed engaged in sexual intercourse during the preceding month, fewer than one-fifth used a condom and that for both sexes, perceived barriers was the only component of the Health Belief Model significantly associated with condom use, with greater perceived barriers being associated with lower frequency of condom use. Odumosu (2001) found a high awareness of HIV/AIDS among the youths studied in Nigeria, and that although majority seems to be knowledgeable about HIV/AIDS especially in the area of both sexual and casual transmission routes, some of the respondents could not differentiate between HIV and AIDS. The author further found that the majority of the respondents emphasise abstinence and monogamy as the sure way to prevent contraction of HIV while condoms are seen as a last resort.

In Ethiopia, Sahlu et al. (1999) found high risk sexual behaviours and low perception of

individual risk among their study participants. Ellen et al. (1996) found among urban U.S high school students studied in 1991 that about a third were sexually active and about a quarter never used a condom compared to forty-three per cent who always use. The author noted that the participants showed no optimistic bias in their perceptions of the relative risk of STIs including HIV and that White participants believed they are at less relative risk when compared to the Black, Hispanic, Asian and other participants. Bishop (1996) found high level of awareness, wrong knowledge and misconceptions about HIV/AIDS in Singapore. Yep (1993) through a study that seeks to test the capacity of four health beliefs as postulated by the Health Belief Model to predict sexual monogamy, condom use, and overall changes in health behaviour in the context of HIV prevention, found among U.S young adults that research hypotheses predicted a positive relationship between health beliefs associated with susceptibility, severity, benefits and HIV-prevention behaviour. A further hypothesis postulated a negative relationship between health beliefs associated with barriers and HIV-preventive behaviour. Also, the respondents found HIV to be a very serious health threat, but they did not perceive themselves as vulnerable to infection. The author found that even though they believe in the efficacy of condom use to prevent HIV transmission, they do not use them consistently and perceived susceptibility and barriers were thus indeed significant predictors of the adoption of certain HIV preventive behaviours among sexually-active young adults.

South African youths are vulnerable to HIV infection, as a population-based survey data in 2002 and 2005 indicate that about 9.0% and 10.3% of 15-24 year olds nationally (12% and 13.3% of females; 6.1% and 8.2% of males) are infected respectively (Mandela Foundation/HSRC 2002, 2005) with 11.2% HIV-prevalence rate reported among people between the ages of 15 and 24 living in Western Cape (Shisana and Simbayi 2002 cited

in Simbayi et al. 2005). The data shows an increase in the HIV-prevalence rate among South African youths and this might not be unconnected with their sexual and reproductive behaviours. These rates are high, and the behaviour of this group over the next few years will help determine the trajectory of the pandemic in the coming decades (Macintyre et al., 2004). Studies have shown that South African youths often report high risk sexual and contraceptive behaviours (Simbayi et al. 2005; Hartell 2005). The 2005 National Household HIV Survey found high levels of HIV infection among young people aged 15-24 years, which were about the same as those found in National Young People Survey in 2003, a sign that the epidemic has not lost momentum (Shisana et al. 2005; Reproductive Health Research Unit and Medical Research Council 2004). It had been noted that while South Africa's treatment efforts have made significant progress, her HIV prevention efforts have not made notable inroads against the epidemic (WHO/UNAIDS 2006).

Adolescents do not practice safe sex in general and use of preventative measures is poor. More than 50% of the sexually active adolescents never used a condom. Less than 10% use a condom regularly during sexual intercourse. Failure to practice safe sex is related to pressure to engage in early and unprotected intercourse, pressure to have a child, lack of access to user-friendly reproductive health services, negative perceptions about condoms, low perceptions of personal risk, and low perceived self-efficacy in preventative behaviour. General knowledge of adolescents about transmission of disease was found on the whole to be inadequate to provide a foundation for developing positive attitudes and safer sexual behavior. It was found that many young people receive conflicting messages about sex and sexuality: non-penetrative sex is not considered to be proper sex; widely believed myths reinforce negative attitudes about safer sex and contraceptive use; most adolescents make decisions about engaging in

sex without having accurate information and access to support and services; they lack knowledge and negotiation skills in sexual relationships; and many do not acknowledge the disease to be a problem in their area or in their race group (Hartell 2005; Sellix 1996).

Unsafe sex or sexually transmitted infections (STIs) including the connection between unsafe sex and HIV transmission has been ranked first as one of the most important risk factors of disease in South Africa (South African MRC 2005/06). UNICEF (1995) cited in Hartell's 2005 review investigated adolescents' knowledge and experience of sexuality through focus groups in five provinces. The study found that adolescents receive conflicting messages about sex and sexuality and that they lack the knowledge, confidence, and skills to discuss sexual issues, including contraception and prevention of infection. Furthermore, this study found that widely believed myths reinforce negative attitudes about safer sex and contraceptive use, and that most adolescents make decisions about sex in the absence of accurate information and access to support services. Also, Kuhn et al. (1994) and Harvey (1997) cited in Hartell (2005), in their research on knowledge, attitudes, and sexual behavior related to AIDS, found that, while knowledge of HIV/AIDS among adolescents is generally good, many engage in high-risk sexual behavior. Harvey (1997) cited in Hartell (2005) showed that, among Zulu-speaking Standard 8 (Grade 10) students, more than a third (34.9%) reported being sexually active, with some having more than one sexual partner. Less than half of all students (42%) acknowledged that having one uninfected sexual partner was an effective preventive measure. Almost a quarter of the students (23.8%) reported having been treated for a sexually transmitted disease in the past. The study further revealed that more than 50% of the sexually active students never used a condom. No more than

10% have used a condom regularly during sexual intercourse; a variety of misconceptions about condoms resulted in rejection of their use.

An earlier study by Kuhn and colleague (1994) cited in Hartell (2005) among Xhosa-speaking secondary school students in the Western Cape, indicated that 42.4% of sexually active students believed that having one uninfected sexual partner helps to prevent getting HIV/AIDS. However, relatively few students believed that AIDS could affect them, and their attitudes toward condoms were largely negative. In an extensive survey and follow-up among urban black youths aged 16 to 20 years in Soweto, Khayelitsha, and Umlazi, Richter (1996) found that 40% of young women and 60% of young men had had more than one sexual partner in the previous six months, and that condom use was relatively low (Hartell 2005). Studies on adolescent sexual behaviour in South Africa shows that early sexual initiation is common and that many young people indulge in risky sexual behaviour in spite of high knowledge about HIV/AIDS (Naidoo 1994; Kelly 2001; Harvey 1996; Goliath 1995; Matthews and colleagues 1990; CASE 1995 cited in Hartell 2005).

However, many of the South African studies found for review lack theoretical basis for analysis. This paper therefore seeks to investigate the impact of HIV/AIDS-related beliefs and risk perception on sexual behaviours of young people in Cape Town, South Africa based on the Health Belief Model.

Data and Methods

This paper uses Wave 1 data of Cape Area Panel Study (CAPS) which is a longitudinal study of the lives of 4,800 young adults, their families and households. Wave 1 sample was a representative sample of young people who were aged 14 to 22 in 2002. STATA

statistical package is used and simple descriptive statistics, chi-square, binary and multinomial logistic regression models were employed for the analyses in this paper. The key independent variables included in the analyses are age and age at first sexual intercourse measured in single years, gender, type of place where they spent most of their lives, population group/race, religion, marital status, currently enrolled in school, expectation to succeed, self assessment of school, how often they do home work, lateness to school, truancy, work status, whether they have any health problem/disability, self health rating, whether they had any serious illness or injury that kept them from doing normal activities, description of first sexual intercourse, experience of forced sex, number of sexual partners in the last one year, experience of abnormal discharge and ulcer or sore in the private part, whether HIV/AIDS is preventable, whether they personally know anyone who has HIV/AIDS and their relationship with the person, whether they personally know anyone who has died or think has died of HIV/AIDS and their relationship with the person, and lastly their risk perception about contracting HIV/AIDS. Because of the nature of the outcome variables in this paper, that is use of contraception at first and last sexual intercourse, and consistency of condom use with the last sexual partner, binary logistic regression models will be used for dichotomous variables i.e. use of contraception at first and last sexual intercourse and multinomial logistic regression models will be used for the dependent variable having more than two outcomes i.e. consistency of condom use with last sexual partner.

The general model of the binary logistic regression is of the form shown below:

$$\textbf{Log } [P/1-P] = b_0+b_1X_1+b_2X_2+\ldots+b_kX_k$$

where X_1, X_2,…, X_k are set of independent variables, b_0 is a constant/intercept while b's are regression coefficients. P is the probability of using contraception at first and last sexual intercourse.

The general model of the multinomial logistic regression is of the form shown below:

$$P_w(y|x) = expw.f(x,y)/ Z_w(x); \text{ where } Z_w(x) = \sum_y expw.f(x,y)$$

The outcome variable for this model is consistency of condom use with the last sexual partner, and the response has four categories. In a nutshell, outcome variables in this paper are contraceptive use at first and last sexual intercourse and consistency of condom use with last sexual partner.

Theoretical Background

This paper uses the Health Belief Model (HBM) as the basis of analysis. HBM is a psychological model that attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of individuals. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services. The model was developed in response to the failure of free tuberculosis (TB) health screening programme. Since then, it has been adapted to explore a variety of long- and short-term health behaviours, including sexual risk behaviours and the transmission of HIV/AIDS. The core assumptions and statements in HBM is based on the understanding that a person will take a health-related action, for example, use condoms if that person feels that a negative health condition (i.e., HIV) can be avoided, has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (i.e. using condoms will be effective at preventing HIV) and believes that he/she can successfully take a recommended health action (i.e. he/she can use condoms comfortably and with confidence). According to this model, the likelihood that an individual engages in a given health (enhancing) behaviour is a function of the following factors:

- Perceived susceptibility: One's subjective perception of the risk of contracting a particular disease, for instance the perceived risk of being infected with HIV.
- Perceived severity: Feelings concerning the seriousness of the consequences of getting the disease which could be medical, clinical or social. Most people probably believe that being infected with HIV would mean substantial reduction in life expectancy. Some people may believe that being HIV infected leads to social rejection and discrimination.
- Perceived benefits: The extent to which the individual believes that the various available actions are effective in reducing the threat. If use of condoms is regarded to be effective in reducing the risk of contracting HIV, the likelihood of taking such action is higher than if they do not believe this to be the case.
- Perceived barriers: The potential negative aspects of a particular health action may function as impediments to undertaking the recommended behaviour.
- Cues to action: This may sometimes trigger appropriate health behaviour. This could be internal cues like bodily symptoms, or external cues such as the death of a friend or a family member or a mass media campaign. Although proposed in the original model, cues to action have been far less researched than the other factors mentioned.

Susceptibility and severity jointly determine the perceived threat of the disease, sometimes referred to as vulnerability. In 1988, Rosenstock and colleagues proposed that self-efficacy (conviction about one's ability to carry out the recommended action) was added to the Health Belief Model because it was argued that this would add to its explanatory power. However, the HBM seems to a large extent to assume that health concerns are the most important kind of predictors of health behaviours although this is not necessarily the case. Furthermore, the HBM neglects the social and contextual

factors which may influence behaviours (Adolescent Reproductive Health Network 1998; Health Belief Model (n.d.)).

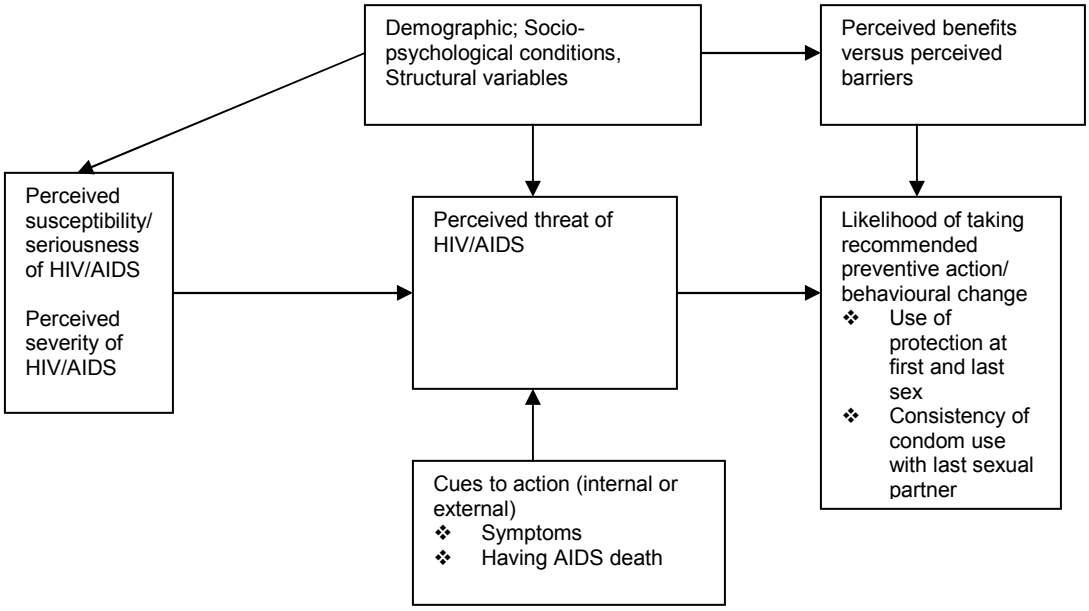
Studies have used the Health Belief Model and there is a general claim that it has received considerable empirical support (Rosenstock 1990 cited in Adolescent Reproductive Health Network (ARHNe) 1998). Also, there was a conclusion based on review of studies that “perceived barriers”, one of the construct of the HBM, was the single most powerful predictor of health behaviours (Janz and Becker, 1984 cited in Adolescent Reproductive Health Network (ARHNe) 1998).

The HBM is deemed appropriate for this paper because it is based on motivating people to take action, (like using condoms) and it is also applicable for sexuality education programmes that focus on:

- Primary prevention — for example, programmes that aim to prevent pregnancy, sexually transmitted infections (STIs) and HIV by increasing condom use, and
- Secondary prevention — for example, programmes that aim to increase early detection of STIs or HIV to reduce their spread via unprotected intercourse and to ensure the early treatment of the conditions.

Conceptual Framework

Figure I: Health Belief Model (Conceptual Framework)



Adapted from Rosenstock, I. (1974). The Health Belief Model and Preventive health behaviour. Health Education Monographs. Vol. 2, No. 4. Pp. 354-386 cited in The Adolescent Reproductive Health Network (ARHNe) 1998. p. 34 and Glantz et al., 2002, p. 52 and modified

The conceptual framework in figure I shows how individual perceptions operationalised as perceived susceptibility or seriousness of a disease can work through modifying factors operationalised as perceived threat of that disease to affect the likelihood of taking recommended preventive action/behavioural change. Also, demographic factors can influence the likelihood of taking recommended preventive action/behavioural change through individual perception and perceived threat or through perceived benefits versus perceived barrier. Lastly, cues to action, which are either internal or external, can work through perceived threat of a disease to affect likelihood of taking recommended preventive action/behavioural change.

Results

Profile of the respondents

Table 1: A table showing the background characteristics of the adolescents and young adults in Cape Area Panel Study (CAPS) Wave I (2002)

Characteristics/Variables	Frequency	Percent
Age at last birthday		
14	490	10.31
15	546	11.49
16	555	11.67
17	604	12.71
18	577	12.14
19	578	12.16
20	500	10.52
21	471	9.91
22	433	9.11
Total	4,754	100.00
Gender		
Male	2,483	46.99
Female	2,801	53.01
Total	5,284	100.00
Place of birth		
Cape Town (C.T)	3,098	65.19
Western Cape, outside C.T	150	3.16
Eastern Cape	1,133	23.84
Northern Cape	49	1.03
Free State	27	0.57
KwaZulu-Natal	57	1.20
North West	9	0.19
Gauteng	165	3.47
Mpumalanga	4	0.08
Northern Province	4	0.08
Outside South Africa	56	1.18
Total	4,752	100.00
Type of place spent most of life		
Formal urban	3,339	70.86
Informal urban	380	8.06
Commercial farm	34	0.72
Rural (under chief)	846	17.95
Other rural	102	2.16
Others	11	0.23
Total	4,712	100.00
Race/Population Group		
Black/African	2,152	45.27
Others	2,602	54.73
Total	4,754	100.00
% Ever married	85	1.79
% Currently enrolled in school	3,043	64.12
% Expect to pass at the end of 2002	2,926	96.54

What type of student in secondary school		
Toward the bottom of the class	46	0.97
Below average	229	4.83
Average	2,762	58.28
Above average	808	17.05
Top of the class	441	9.31
Have not attended secondary school	437	9.22
Don't Know	16	0.34
Total	4,739	100.00
% Worked in last 12 months	1,346	28.36
% Currently have job	872	51.90
% Ever worked for pay or family gain	742	19.13

Note: Some of the variables do not add up to the overall total because of missing values.

From table 1 above, it is clear that the least age of the respondents in 2002 was 14 years (10.31%) and the highest age was 22 years (9.11%). Those who were aged 17 years had the highest percentage of 12.71%. The mean and median age of the respondents is 18 years. A little more than half are females (53.01%) while others are males (46.99%). About a third of the respondents were born in Cape Town (65.19%) while majority reported spending most of their lives in formal urban areas (70.86%). Forty-five percent of the respondents were Blacks/Africans while others combined (Coloureds, Whites and Indians) were about fifty-five per cent. About two per cent reported being ever married in 2002 and 64.12 per cent were currently enrolled in school at the time of the survey. Majority of those in currently enrolled in schools expected to pass at the end of that year (96.54%) and more than half rated themselves to be average students (58.28%). A little above a quarter worked in the last 12 months to the time of the survey (28.36%) and about half currently had a job in 2002 (51.90%). Less than a quarter reported having ever worked for pay or family gain (19.13%).

Table 2: A table showing the distribution of health, sexual and contraceptive characteristics of the adolescents and young adults in Cape Area Panel Study (CAPS) Wave 1 (2002)

Characteristics/Variables	Frequency	Percent
% had any health problem/disability	466	9.85
Self-health rating		
Poor	46	0.97
Fair	293	6.17
Good	1,487	31.33
Very good	994	20.94
Excellent	1,920	40.46
Don't Know	6	0.13
Total	4,746	100.00
% had serious illness/injury that prevented normal activities within the last 24 months	384	8.15
% Ever had sex	2,162	45.57
Mean/Median age at first sexual intercourse = 16 years		
Describe relationship with first sexual partner		
Casual/Acquaintance	99	4.63
Friend	128	5.99
Girlfriend/Boyfriend	1,875	87.74
Engaged	2	0.09
Living together but not engaged	10	0.47
Married	14	0.66
Relative	3	0.14
Others	6	0.28
Total	2,137	100.00
% Used protection at first sex	1,126	52.40
Main reason used protection at first sex		
To prevent pregnancy	380	33.78
To prevent disease	125	11.11
To prevent both pregnancy and disease	620	55.11
Total	1,125	100.00
Description of first sexual intercourse		
Willing	1,936	89.84
Persuaded	125	5.80
Tricked	76	3.53
Forced/Raped	18	0.84
Total	2,155	100.00
% had sex where forced, threatened or hurt	82	3.89
How many sex partners in the last 12 months		
0	271	12.56
1	1,234	57.21

2+	599	27.77
Refused	31	1.44
Don't Know	22	1.02
Total	2,157	100.00
% had sex more than once	2,027	94.15
Description of relationship with last sexual partner		
Casual/Acquaintance	59	2.89
Friend	81	3.96
Girlfriend/Boyfriend	1,790	87.62
Engaged	7	0.34
Living together but not engaged	28	1.37
Married	71	3.48
Relative	3	0.15
Others	4	0.20
Total	2,043	100.00
Main reason used contraception at last sex		
To prevent pregnancy	437	29.93
To prevent disease	143	9.79
To prevent both pregnancy and disease	880	60.27
Total	1,460	100.00
% Used protection at last sex	1,458	71.90
How often use condom at last sex		
Always	874	68.98
Usually	134	10.58
Sometimes	179	14.13
Rarely	80	6.31
Total	1,267	100.00
% had abnormal discharge in past 12 months	173	8.04
% had ulcer or sore in past 12 months	82	3.81

Note: Some of the variables do not add up to the overall total because of missing values.

From table 2 above, a tenth of the young respondents had any health problem or disability (9.85%) and majority rated themselves to be of good, very good or of excellent health (92.73%). Less than a tenth had serious illness/injury that prevented them from doing normal activities within the last 24 months to the time of the survey (8.15%). Less than half (45.57%) had been sexually active and the age at first sexual debut are concentrated between ages 14 and 18 years, with the mean age of 17.88 years. Majority

had their first and last sexual encounters with either their boyfriend or girlfriend (87.74% and 87.62% respectively) and more than half reportedly use contraception at first sexual encounter (52.40%), while another 72% reportedly use contraception at the last sexual encounter. Fifty-five and sixty per cent used contraception to prevent both pregnancy and disease at first and at last sexual encounters respectively. Majority of the respondents described their first sexual intercourse as willing (89.84%) while 57% reportedly had one sexual partner in the last 12 months. However, about a quarter (28%) had more than one sexual partner and majority had had sex more than once (94.15%). About two third reportedly always use condom with the last sexual partner (68.98%), while only 6.31% reported rare use of condom with the last sexual partner. Less than a tenth reported abnormal discharge in the past 12 months (8.04%) and another 3.81% reported ulcer or sore in their private part in the past 12 months.

Table 3: Percentage distribution of the adolescents and young adults by their first sex and last sex contraceptive method in Cape Area Panel Study (CAPS) Wave 1 (2002)

Characteristics/Variables	**Frequency (Percent)**
First sex contraception	
Pill	108 (9.69)
Injection/Depo-provera	220 (19.73)
Male Condom	911 (81.19)
Others	7 (0.63)
Last sex contraception	
Pill	148 (7.31)
Injection/Depo-provera	364 (17.94)
Male Condom	1,160 (56.83)
Others	12 (0.60)

Table 3 shows that male condom is the most commonly used method of contraception during first and last sexual encounter among adolescents and young adults in Cape Area of South Africa (81.19% and 56.83% respectively). Male condom was followed by injection/depo-provera (19.73% and 17.94% respectively) and the least used methods at first sexual encounter were IUD/Loop, traditional and natural methods such as safe

days/rhythm method and withdrawal method categorised as others (0.63%); and at the last sexual encounter, female condom, traditional and natural methods also categorised as others (0.60%).

Table 4: Percentage distribution of the adolescents and young adults by their responses to HIV/AIDS questions in Cape Area Panel Study (CAPS) Wave 1 (2002)

HIV/AIDS Variables	**Frequency (Percent)**
% who believed that one can protect against HIV/AIDS?	4,503 (95.00)
Known ways to protect against HIV/AIDS	
Abstinence	1,973 (43.73)
Non-penetrative sex	40 (0.93)
Condom	4,062 (89.79)
Limiting sexual partners	281 (6.24)
Having only one sexual partner	804 (17.83)
Avoiding commercial sex workers	126 (2.80)
Having sex with virgin	23 (0.51)
Using sterilised needles	376 (8.35)
Partner taking blood test	294 (6.53)
Others	266 (5.91)
Don't Know	9 (0.20)
% who personally know someone with HIV/AIDS	710 (14.95)
Relationship to HIV/AIDS person (N=710)	
Friend	196 (27.76)
Acquaintance	98 (13.84)
Neighbour	131 (18.56)
Self	5 (0.71)
Spouse	1 (0.14)
Boyfriend/Girlfriend	2 (0.28)
Mother	1 (0.14)
Father	2 (0.28)
Sibling	9 (1.27)
Other relative	99 (14.00)
Others	177 (25.07)
% know someone personally who died or think died of HIV/AIDS	1,023 (21.54)
Relationship to HIV/AIDS deceased (N=1,023)	
Distant family	186 (18.25)
Friend	186 (18.29)
Acquaintance	151 (14.83)
Neighbour	232 (22.79)
Don't Know/Refused	1 (0.10)

Boyfriend/Girlfriend	2 (0.20)
Mother	7 (0.69)
Sibling	16 (1.57)
Child	2 (0.20)
Other relative	186 (18.25)
Others	255 (25.02)
Assessment of risk for HIV infection	
Low risk	3,856 (86.23)
Moderate risk	349 (7.80)
High risk	267 (5.97)
Total	4,472 (100.00)

Note: Some of the variables do not add up to the overall total because of missing values. Figures in parentheses are percentages

From table 4, majority of the respondents believed that one can be protected against HIV/AIDS (95%). The respondents mentioned the various ways by which HIV/AIDS can be prevented and it ranges from abstinence (43.73%), having non-penetrative sex (0.93%), using condom (89.79%), limiting sexual partners (6.24%), having only one sexual partner (17.83%), avoiding commercial sex workers (2.80%), having sex with virgin (0.5%), using sterilised needles (8.35%), partner taking blood test (6.53%) and other ways (5.91%). This shows that a larger proportion of the respondents are familiar with condom. About 15% of the respondents personally know someone living with HIV/AIDS. When asked about their relationship to such people, 27.76% indicated that they were friends; 13.84% acquaintance; 18.56% neighbours; 14% other relatives and 25% others. Also, about twenty-two per cent of the respondents know someone personally who died or think died of HIV/AIDS and these deceased persons were either distant family members (18.25%), friends (18.29%), acquaintance (14.83%), neighbours (22.79%), other relatives (18.25%) or others (25.02%). Moreover, eighty-six per cent of the respondents assessed themselves to be at low risk of contracting HIV.

Bivariate Results

Table 5: A table showing the chi-square test results of association between gender, race/population group and the outcome variables (CAPS Wave 1, 2002)

Outcome variables	**Gender**		
Use of contraception against pregnancy or disease at first sexual encounter	Male	Female	Total
Yes	485 (43.23)	637 (56.77)	1,122 (100.00)
No	468 (46.02)	549 (53.98)	1,017 (100.00)
Total	953 (44.55)	1,186 (55.45)	2,139 (100.00)
Pearson chi-square test value=1.6825; P-value= 0.195			
Use of contraception against pregnancy or disease at last sexual encounter**			
Yes	688 (47.35)	765 (52.65)	1,453 (100.00)
No	205 (36.09)	363 (63.91)	568 (100.00)
Total	893 (44.19)	1,128 (55.81)	2,021 (100.00)
Pearson chi-square test value=20.9894; P-value= 0.000			
Consistency of condom use with last sexual partner**			
Always	467 (53.62)	404 (46.38)	871 (100.00)
Usually	70 (52.24)	64 (47.76)	134 (100.00)
Sometimes	89 (50.00)	89 (50.00)	178 (100.00)
Rarely	25 (31.65)	54 (68.35)	79 (100.00)
Total	651 (51.58)	611 (48.42)	1,262 (100.00)
Pearson chi-square test value=14.2175; P-value= 0.003			
Outcome variables	**Race/Population group**		
Use of contraception against pregnancy or disease at first sexual encounter**	African	Others	Total
Yes	586 (52.23)	536 (47.77)	1,122 (100.00)
No	719 (70.70)	298 (29.30)	1,017 (100.00)
Total	1,305 (61.01)	834 (39.99)	2,139 (100.00)
Pearson chi-square test value=76.5033; P-value= 0.000			
Use of contraception against pregnancy or disease at last sexual encounter			
Yes	901 (62.01)	552 (37.99)	1,453 (100.00)
No	330 (58.10)	238 (41.90)	568 (100.00)
Total	1,231 (60.91)	790 (39.09)	2,021 (100.00)
Pearson chi-square test value=2.6235; P-value= 0.105			
Consistency of condom use with last sexual partner**			
Always	545 (62.57)	326 (37.43)	871 (100.00)
Usually	72 (53.73)	62 (46.27)	134 (100.00)
Sometimes	141 (79.21)	37 (20.79)	178 (100.00)

Rarely	47 (59.49)	32 (40.51)	79 (100.00)
Total	805 (63.79)	457 (36.21)	1,262 (100.00)
Pearson chi-square test value=25.3915; P-value= 0.000			

Figures in parentheses are percentages
**p<0.01

Table 5 reveals that more females than males reported practicing contraception against pregnancy or disease at first sexual encounter (56.77% versus 43.23%) although it is not statistically significant and also at the last sexual encounter (52.65% versus 47.35%; p<0.01). On consistency of condom use, more males than females reported that they always and usually use of condom with last sexual partner (53.62% and 52.24% versus 46.38% and 47.76% respectively; p<0.01). Also, Blacks/Africans consistently did better than the other racial or population groups combined as far as the data analysed and outcome variables are concerned. Race is highly associated with the use of contraception at first sexual encounter and with the consistency of condom use with last sexual partner (p<0.01) but not with the use of contraception at the last sexual encounter. This is of course contrary to expectation and the likely reason may not be far from the fact that Blacks/Africans over-reported the use of contraception at the two events and on the consistency of condom use with last sexual partner. Another reason however, is the possibility of a positive attitude towards contraceptive usage and condom use consistency by the young Black/African respondents.

Multivariate Results

Table 6: Binary logistic regression model predicting the odds of using contraception at first and last sexual intercourse disaggregated by some selected background and HIV/AIDS variables, CAPS Wave 1, 2002

Background variables	**Contraceptive use at first sexual encounter**			**Contraceptive use at the last sexual encounter**		
	Model 1	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
	Odd Ratio/Exp (B)	**Odd Ratio/Exp (B)**	**Odd Ratio/Exp (B)**	**Odd Ratio/Exp (B)**	**Odd Ratio/Exp (B)**	**Odd Ratio/Exp (B)**
Age	1.04 (0.03)		1.03 (0.08)	0.93* (0.03)		0.83 (0.08)
Gender						
Female	RC		RC	RC		RC
Male	0.77** (0.07)		0.86 (0.27)	1.43** (0.16)		1.22 (0.44)
Type of place spent most of life						
Formal urban	RC		RC	RC		RC
Informal urban	1.18 (0.20)		1.18 (0.53)	1.26 (0.25)		0.93 (0.52)
Commercial farm	1.29 (0.68)		1.29 (1.95)	1.08 (0.62)		-
Rural under chief	1.62** (0.20)		1.37 (0.52)	1.13 (0.16)		1.39 (0.60)
Other rural areas	1.12 (0.32)		1.46 (1.18)	0.90 (0.30)		0.71 (0.71)
Others	0.44 (0.49)		-	1.99 (1.76)		-
Race/Population group						
Blacks/Africans	RC		RC	RC		RC
Others	0.47** (0.06)		0.81 (0.35)	1.09 (0.15)		1.12 (0.56)
Whether ever married						
Yes	RC		-	RC		-
No	2.18** (0.56)		-	3.57** (0.89)		-
Whether currently in school						
Yes	RC		RC	RC		RC
No	1.78** (0.19)		2.53** (0.85)	2.45** (0.30)		4.51** (1.93)
Description of first sexual intercourse						
Willing	RC		RC	RC		RC
Persuaded	1.46 (0.29)		0.71 (0.42)	1.13 (0.25)		1.53 (1.03)
Tricked	1.49 (0.37)		0.89 (0.74)	1.33 (0.36)		2.74 (2.58)

Forced/raped	2.77* (1.41)		0.46 (0.56)	1.50 (0.88)		1.08 (1.49)
HIV/AIDS variables						
Belief in abstinence as a way of protecting against HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.96 (0.27)	1.06 (0.32)		0.84 (0.27)	0.95 (0.34)
Belief in limiting sexual partners as a way of protecting against HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.73 (0.35)	0.67 (0.36)		1.33 (0.73)	1.28 (0.82)
Belief in other ways of protecting against HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.78 (0.61)	0.85 (0.71)		2.71 (2.68)	5.84 (6.31)
Belief in using sterilised needles as a way of protecting against HIV/AIDS						
No		RC	RC		RC	RC
Yes		8.28 (8.93)	8.95 (10.00)		1.79 (1.33)	1.74 (1.46)
Belief in partner taking blood test as a way of protecting against HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.87 (0.59)	0.70 (0.51)		0.21 (0.23)	0.21 (0.24)
Having HIV/AIDS already						
No		-	-		RC	RC
Yes		-	-		0.64 (0.97)	0.62 (0.99)
Having others who have died of HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.90 (0.29)	0.88 (0.31)		0.55 (0.23)	0.55 (0.24)
Having a friend who has died of						

HIV/AIDS						
No		RC	RC		RC	RC
Yes		0.80 (0.26)	0.65 (0.25)		1.28 (0.47)	0.90 (0.39)
Having a mother who has died of HIV/AIDS						
No		-	-		-	-
Yes		-	-		-	-
HIV infection risk assessment						
Low risk		RC	RC		RC	RC
Moderate risk		1.33 (0.53)	1.37 (0.57)		0.89 (0.43)	1.05 (0.53)
High risk		1.39 (0.69)	1.32 (0.71)		5.65** (3.00)	7.45** (4.35)
Log likelihood	-1373.482	-160.1983	-148.04753	-1122.5682	-127.52306	-113.74288

The figures in parentheses are standard error
**p<0.01; *p<0.05; RC means Reference Category

From table 6, the results show that the adolescents and young adults who have spent most of their lives in an informal urban area, commercial farm, rural under chief and other rural areas were more likely to use contraception at first sexual intercourse when compared with those who have spent most of their lives in formal urban areas. The same picture is observed with those who have never been married, those who are not currently enrolled in school, those who were persuaded, tricked and forced/raped at the first sexual intercourse. Male adolescents and those of other racial group (other than the Blacks/Africans), were less likely to use contraception at the first sexual intercourse, when compared to their female and Black/African counterparts. From model 2, those respondents who believe in abstinence, limiting of sexual partners, partner taking blood test and other ways of protecting against HIV/AIDS; those having friends and others who have died of HIV/AIDS were less likely to use contraception at first sexual intercourse when compared to their counterparts in the study area. However, those respondents with moderate and high HIV risk assessment were more likely to use contraceptives at

first sexual intercourse when compared to their counterparts with low HIV risk assessment.

Moreover, it is clear from the table that being a male, having spent most of life in rural areas under chief, belonging to other racial group apart from the Blacks/Africans, being single, not being currently in school ($p<0.01$), being forced/raped at the first sexual encounter ($p<0.05$) were significant factors influencing the use of contraceptives at the first sexual encounter in the study area. From model 3, where all the variables were combined, males, other population group, those persuaded, tricked, and forced/raped were less likely to use contraception at first sexual intercourse when compared to their counterparts. In addition, those who believe in limiting number of sexual partners, partners taking blood test and other ways of protecting against HIV/AIDS; those having friends and others who had died of HIV/AIDS were less likely to use contraception at first sexual intercourse. However, current enrollment status in schools was the only significant variable found to be influential on the use of contraceptives at the first sexual intercourse in the study area ($p<0.01$).

With respect to contraceptive use at the last sexual encounter, it is evident that all the variables except age (O.R: 0.93; $p<0.05$) as evident in models 1 and 2, showed more likelihood of contraceptive use at the last sexual encounter when compared to the reference categories. Also, those who believed in abstinence, partner taking blood test as a way of protecting against HIV/AIDS, those who were HIV positive already, those having others who had died of HIV/AIDS and having moderate HIV risk assessment were all less likely to use contraception at the last sexual encounter compared to their referenced counterparts. Moreover, from model 3, those who spent most of their lives in informal urban or other rural areas were all less likely to use contraception at last sexual

intercourse when compared to their referenced counterparts. In addition, those who believed in abstinence, in partners taking blood test as a way of protecting against HIV/AIDS; those who are having HIV/AIDS already, those having friends or others who had died of HIV/AIDS were all less likely to use contraception at the last sexual encounter when compared to the referenced group. As far as the use of contraception with last sexual partner is concerned, age ($p<0.05$), sex of the respondents, whether ever married, whether currently in school ($p<0.01$) were significant background factors, while having high HIV risk assessment increase the odds of using contraception with the last sexual partner (O.R: 5.65; $p<0.01$). In concluding this section, whether currently in school and having high HIV risk assessment consistently impact significantly on the use of contraception at the last sexual intercourse ($p<0.01$).

Table 7: Multinomial Logistic regression model showing how often respondents use condom with last sexual partner by some selected background and HIV/AIDS variables (CAPS Wave 1, 2002)

Variables	**How often use condom with last sexual partner**			**How often use condom with last sexual partner**		
	Usually	**Sometimes**	**Rarely**	**Usually**	**Sometimes**	**Rarely**
	Model 1			**Model 3**		
Age	1.06 (0.06)	1.00 (0.05)	1.09 (0.08)	1.09 (0.11)	1.05 (0.10)	1.30 (0.27)
Gender						
Female	RC	RC	RC	RC	RC	RC
Male	1.15 (0.22)	1.03 (0.18)	2.17*** (0.57)	1.07 (0.43)	0.84 (0.29)	7.16** (6.57)
Type of place spent most of life						
Formal urban	RC	RC	RC	RC	RC	RC
Informal urban	1.48 (0.52)	0.76 (0.26)	1.77 (0.86)	3.27** (1.87)	1.10 (0.60)	3.64 (4.33)
Commercial farm	5.14e-15 (1.77e-07)	15.09** (19.97)	5.78e-15 (2.62e-07)	1.82 (4.72e+08)	2.93e+17 (-)	0.58 (3.83e+08)
Rural under chief	1.36 (0.37)	1.47* (0.30)	2.52*** (0.89)	2.21* (1.05)	1.35 (0.52)	4.30 (3.88)
Other rural areas	3.08e-14 (9.88e-08)	0.50 (0.32)	3.56** (2.00)	7.16e-16 (2.92e-08)	0.32 (0.36)	11.35* (16.39)
Others	1.87 (2.20)	4.18e-14 (3.42e-07)	2.49e-14 (3.08e-	-	-	-

			07)			
Race/Population group						
Blacks/Africans	RC	RC	RC	RC	RC	RC
Others	1.61* (0.39)	0.44*** (0.10)	1.71 (0.59)	2.96** (1.60)	1.10 (0.50)	8.80* (10.29)
Whether ever married						
Yes	RC	RC	RC	RC	RC	RC
No	1.55 (1.81)	2.36 (2.77)	22.16*** (16.23)	1.51e-16 (2.29e-08)	1.73e-16 (2.16e-08)	4.54e-15 (1.18e-06)
Whether currently in school						
Yes	RC	RC	RC	RC	RC	RC
No	1.14 (0.24)	1.47** (0.28)	1.01 (0.28)	1.03 (0.45)	2.75*** (1.04)	0.09** (0.11)
Description of first sexual intercourse						
Willing	RC	RC	RC	RC	RC	RC
Persuaded	0.79 (0.39)	2.24** (0.72)	1.77 (0.78)	3.03e-16 (1.15e-08)	3.40** (2.01)	2.33 (2.30)
Tricked	0.69 (0.43)	0.57 (0.32)	0.32 (0.33)	3.91e-16 (1.70e-08)	0.45 (0.50)	4.82e-16 (2.79e-08)
Forced/raped	1.89 (2.20)	1.61 (1.88)	5.81* (5.43)	1.69 (2.19)	1.40e-18 (1.42e-09)	7.91 (12.48)
N= 1,248						
Model 2						
HIV/AIDS variables						
Having others who have died of HIV/AIDS						
No	RC	RC	RC	RC	RC	RC
Yes	1.99* (0.74)	1.72 (0.57)	3.44** (2.07)	2.37** (0.98)	1.70 (0.62)	10.73*** (8.53)
Having a friend who has died of HIV/AIDS						
No	RC	RC	RC	RC	RC	RC
Yes	0.54 (0.31)	0.88 (0.37)	0.53 (0.58)	0.59 (0.35)	0.78 (0.35)	0.92 (1.11)
Having a mother who has died of HIV/AIDS						
No	RC	RC	RC	RC	RC	RC
Yes	8.84e-14 (8.46e-07)	5.03 (7.23)	21.74** (32.80)	1.00e-18 (-)	3.22 (4.72)	53.66** (103.87)
HIV infection risk assessment						
Low risk	RC	RC	RC	RC	RC	RC
Moderate risk	1.23 (0.65)	1.89 (0.78)	0.79 (0.85)	1.35 (0.75)	1.54 (0.67)	1.10 (1.37)

High risk	0.37 (0.39)	1.08 (0.64)	1.96 (1.69)	0.35 (0.38)	1.09 (0.69)	2.58 (2.69)
N= 346				**N= 336**		

Significant at ***P<0.01; **P<0.05; *P<0.10
Note: Reference category for the equation is always use condom with last sexual partner.

As evident in Table 7, three models were run. The first model was run to examine the effect of background variables on consistency of condom use, model 2 to examine the impact of some HIV/AIDS variables that are relevant to the HBM and model 3 include all the variables combined. The results of the multinomial logistic regression in table 7 show that male respondents were more likely to usually (O.R:1.15), sometimes (O.R:1.03), and rarely (O.R:2.17; p<0.01) use condom with the last sexual partner when controlling for all other background variables. Those who have never been married were more likely to usually (O.R:1.55), sometimes (O.R:2.36), and rarely (O.R:22.16; p<0.01) use condom with the last sexual partner when controlling for all other background variables and taking into account that those that reported always use of condom with last sexual partner is the reference category. In the first model, gender, type of place spent most of life, racial/population group; whether the respondents have ever married or currently enrolled in school and description of first sexual intercourse were the significant factors that would affect consistency of condom use among the adolescents and young adults studied. With respect to the selected HIV/AIDS variables in model 2, having a friend or a mother who had died of HIV/AIDS were the significant factors that merit attention among the youths within the study area. Those respondents with moderate HIV risk assessment were more likely to report usual (O.R: 1.23) or sometimes (O.R: 1.89) use of condom with the last sexual partners, but less likely to report rare use although it is not statistically significant. In the third model, gender, type of place spent most of life, racial or population group, whether currently in school, description of first sexual intercourse,

having others or a mother who had died of HIV/AIDS significantly influence consistency of condom use among adolescents and young adults in Cape Town.

Discussion

This paper had two primary goals. The first one was to investigate the impact of HIV/AIDS-related beliefs and risk perception on sexual behaviours of young people in Cape Town, South Africa based on the Health Belief Model. With the exception of condom as a way of protection against HIV/AIDS, larger proportion of young people did not believe in abstinence, non-penetrative sex, limiting sexual partners, having one sexual partner, avoiding commercial sex workers, using sterilised needles, partner taking blood test and so on. Only a tenth of the respondents did not believe in condom. This indicates that there is a noticeable success in the promotion of condom use especially male condom among young people in Cape Town.

Also, the results indicate that for many of them, a significantly high proportion of the adolescents and young adults are still prone to high risk sexual behaviours. It seems from the results that high percentage of the young people in the study area still doubt the severity of the HIV/AIDS pandemic because a larger proportion of the young people do not personally know someone living with HIV/AIDS. Also, only one-fifth of the respondents know someone personally who died or think died of HIV/AIDS. It is thought therefore that campaigns and effective intervention programmes that will produce the desired results must incorporate both the infected and the affected with the intention of giving face to the pandemic.

The second goal of this paper is to examine whether risk assessment about HIV infection and cues to action matter in the sexual behaviours of the young people in

metropolitan Cape Town. The results of the analyses in this paper indicate that the tendency is high for the young people in the study area to rate themselves at no risk or low risk of contracting HIV in spite of their risky sexual behaviours. Risk assessment about HIV infection seems to affect the sexual behaviours of the young people studied, and external cues of having someone or a mother who died as a result of HIV/AIDS seem to influence the sexual behaviour of young people within the study area.

Race and gender correlate significantly with the outcome variables in this paper. This reveals that in designing effective and efficient intervention programmes, the race and gender of the young people must be taken into consideration. Pragmatic approach should then be embarked upon in an attempt to achieve positive attitudinal and behavioural change among young people in Cape Town specifically and South Africa in general.

Some of the limitations noticed in this paper relate to the fact that the analysis in this paper is based on only Wave 1 data of the Cape Area Panel Study collected in 2002 and so it is difficult to infer causal relationships because it is basically a cross-sectional analysis of a longitudinal data. It would have been more robust if more than one wave is used. Also, although it is a representative sample of young people in metropolitan Cape Town, it is not generalisable over the entire South Africa youths. Moreover, the validity of self-reported responses used in the analysis which could have been biased by possible recall biases could not be ascertained including condom use error.

Conclusion

The paper concludes that knowledge about HIV/AIDS is high among the young people studied and that they had diverse beliefs about ways of preventing it. Also, sex of the

respondents, type of place spent most of life, race or population group, whether ever married and currently in school and description of first sex significantly influence use of contraception at first sexual intercourse; age, sex of the respondents, whether ever married and currently in school and HIV risk assessment significantly influence use of contraception at last sexual intercourse; and sex of the respondents, type of place spent most of life, race or population group, whether currently in school, description of first sex, and external cues of having relations such as mothers and others who have died of HIV/AIDS, have significant impact on consistency of condom use with the last sexual partners.

Recommendation

Therefore, appropriate population information, education and communication (IEC) programmes should be practical and theory-based, and those having deceased relations from HIV/AIDS should be encouraged to speak out so that young people in South Africa can know that the epidemic is real. Any intervention programmes to be designed for the South African young people should be gender and race-sensitive to yield maximum result. Also, intervention programmes should be targeted at school and out-of school young people.

Acknowledgement

The authors thank the Cape Area Panel Study team for the public dataset used for the analyses in this paper.

References

Adolescent Reproductive Health Network (ARHNe) (1998). Health System and Health Promotion Research in Eastern and Southern Africa. *Report* from the second ARHNe Workshop, Harare, Zimbabwe, October 11-16, 1998. pp. 1-107.

Bishop, G.D. (1996). Singaporean beliefs about HIV and AIDS. *Singapore Medical Journal* 1996 Dec. 37(6): 617-21.

Boer, H. & Emons, P.A. (2004). Accurate and inaccurate HIV transmission beliefs, stigmatising and HIV protection motivation in northern Thailand. *AIDS Care* 2004 Feb., 16(2): 167-176.

Cape Area Panel Study, Wave 1 (2002). Public use dataset. Produced and distributed by the universities of Michigan and Cape Town with funding from the National Institutes of Health and the Andrew W. Mellon Foundation.

Department of Economic and Social Affairs (2004). The global situation of young people. *World Youth Report 2003*. New York: United Nations.

Ellen, J.M., Boyer, C.B., Tschann, J.M. & Shafer, M.A. (1996). Adolescents' perceived risk for STDs and HIV infection. *Journal of Adolescent Health* 1996 Mar. 18(3): 177-81.

Garenne, M., Tollman, S. and Kahn, K. (2000). Premarital Fertility in Rural South Africa: A Challenge to Existing Population Policy. *Studies in Family Planning*, Vol. 31, No. 1 (Mar., 2000), pp. 47-54.

Glantz, K., Rimer, B.K. & Lewis, F.M. (2002). *Health Behavior and Health Education*. Theory, Research and Practice. San Francisco: Wiley & Sons.

Hartell, C.G. (2005). HIV/AIDS in South Africa: a review of sexual behavior among adolescents. *Adolescence*. Spring 2005 accessed from http://www.findarticles.com/p/articles/mi_m2248/is_157_40/ai_n13774352 on 01 Mar. 2007.

Health Belief Model ( ). Retrieved July 12, 2007 at http://www.tcw.utwente.nl/theorieenoverzicht/Theory%20clusters/Health%20Communication/Health_Belief_Model.doc/

Macintyre, K., Rutenberg, N., Brown, L. and Karim, A. (2004). Understanding

Perceptions of HIV Risk among Adolescents in KwaZulu-Natal. *AIDS and Behaviour*, Vol. 8, No.3, September 2004.

Mandela Foundation/HSRC (2002). *South African National HIV prevalence, behavioural risks and mass media: Household Survey 2002*. Cape Town: Human Sciences Research Council, 2002.

Mandela Foundation/HSRC (2005). *South African National HIV prevalence, HIV incidence, Behaviour and Communications Survey 2005*. Cape Town: Human Sciences Research Council Press.

Odumosu, O. (2001). Knowledge, beliefs and attitudes to HIV/AIDS in southwest Nigeria. *NISER Monograph Series No. 11*. Nigerian Institute of Social and Economic Research [NISER], Ibadan, Nigeria. 2001. [7], 67p.

Population Reference Bureau (2000). *The World's Youth 2000*. Washington, DC: Population Reference Bureau 24p.

Population Reference Bureau (2006). *The World's Youth 2006 Data Sheet*. Washington, DC: Population Reference Bureau 20p accessed on 21/05/07 at http://www.prb.org/pdf06/WorldsYouth2006DataSheet.pdf

Reproductive Health Research Unit, Medical Research Council (2004). *National Survey of HIV and Sexual Behaviour among young South Africans.* Johannesburg, Reproductive Health Research Unit.

Sahlu, T., Kassa, E., Agonafer, T., Tsegaye, A. and de Wit, T.R. (1999). Sexual behaviours, perception of risk of HIV infection and factors associated with attending HIV post-test counseling in Ethiopia. *AIDS*, 1999; 13(10): 1263-72.

Sellix, T. (1996). Adolescents in peril: the HIV/AIDS pandemic. *The facts*. Washington, D.C., Advocates for Youth, 1996 Jan. [2] p.

Shisana, O., Rehle, T., Simbayi, L.C., Parker, W., Zuma, K., Bhana, A., Connolly, C., Jooste, S., Pillay, V., et al. (2005). *South African National HIV prevalence, HIV*

incidence, Behaviour and Communications Survey 2005. Cape Town: Human Sciences Research Council Press.

Simbayi, L.C., Kalichman, S.C., Jooste, S., Cherry, C., Mfecane, S. and Cain, D. (2005). Risk Factors for HIV/AIDS Among Youth in Cape Town, South Africa. *AIDS and Behaviour*, Vol. 9, No. 1, March 2005.

South African Medical Research Council (2005/06) Building a Healthy Nation Through Research. *Annual Report,* 2005/06. P. 1-14.

Treffers, P. (2002). *Issues in adolescent health and development; Adolescent pregnancy*. WHO/FCH/CAH/02.08 and WHO/RHR/02.14. Geneva: WHO.

UNAIDS (2004). *2004 Report on the global AIDS epidemic.* Geneva: UNAIDS.

UNESCO (2003). *Peer Approach in Adolescent Reproductive Health Education: Some Lessons Learned*. UNESCO Asia and Pacific Regional Bureau for Education. 74p.

UNFPA (2003). *State of world population 2003. Making 1 billion count: investing in adolescents' health and rights*. New York: UNFPA.

Volk, J.E. & Koopman, C. (2001). Factors associated with condom use in Kenya: a test of the Health Belief Model. *AIDS Education and Prevention,* 2001 Dec., 13(6): 495-508.

WHO/UNAIDS (2006). *Progress on Global Assess to HIV antiretroviral therapy: A Report on "3 by 5" and beyond*. Geneva.

Yep, G.A. (1993). Health beliefs and HIV prevention: do they predict monogamy and condom use?. *Journal of Social Behaviour and Personality,* 1993; 8(3): 507-20.