Sex Education and Men's Sexual and Reproductive Health Practices in a high HIV prevalence setting:

Does Exposure to Sex Education Improve Sexual and Reproductive Health Outcomes in Botswana?

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Introduction

Formal sex education has been hailed as a key strategy for promoting safer sexual behaviors for men of all ages (Department of Health and Human Services, 2000).Several studies have indicated that sex education programs increase participants' knowledge on human reproduction and methods of contraception and alter some of their attitudes (Kirby 1984). It has been observed that young men who have taken sex education courses report more tolerant attitudes towards the sexual behaviors of others but little change in the values that govern their personal behaviors (Esere 2008). Recently, sex education has received renewed interest, especially in sub Saharan Africa (Esere 2008). Comprehensive sex education has been observed to be effective at assisting young people to make healthy decisions about sex and to adopt healthy sexual behaviors [Alford, 2003, 2008 & Kirby, 2001, 2005).

In Botswana school-based programs that provide young people with sexual health information, life skills, and services to meet their sexual and reproductive health needs have been a subject of debate for some time and there seem to be no remedy in the immediate future. According to Milles (2009) there is no formal sex education in schools in Botswana, and studies show that many parents are uncomfortable talking about sexuality with their children. However, young people receive some information about sexuality and HIV prevention both informally from friends and acquaintances, and through Botswana's HIV prevention social marketing programs (Mills 2009).

Meanwhile a collaborative regional curriculum scan was conducted in 2011, to assess the content, quality, and delivery methods of sexuality education (SE) curricula in ten Eastern and Southern Africa countries, showed that Botswana and Swaziland sex education curricula stood out as the strongest. In fact, in Botswana, both the curriculum and frameworks were opined to be strong and thoughtfully address what it means to grow up in a high HIV prevalence setting (UNESCO &UNFPA, 2012). This inconsistency on sex education literature for Botswana is noteworthy. According to a newspaper report (Mmegi 2011) sex education was the subject of debate at the two-day moral education "Pitso" or Conference, organized by the Ministry of Education and Skills Development (MoE&SD) to solicit ideas from tribal leaders, legislators, churches, teachers and students on the extent and breadth of sex education and issues of sexuality coverage in the Junior Certificate (JC) curriculum.

According to Botswana Council of Non-Governmental Organizations (BOCONGO) sex education should not be opposed as long as it sticks to the basics, such as male and female anatomy, matters of contraceptives and reproduction. Their view is that sex education curricula should consider morality of the society. The main argument was from a moralistic approach that obscures the power dynamics that are the real threat to young people's sexual health and rights. According to the Xinhua News Agency (2011 cited by UNESCO & UNFPA, 2012), '. the government is facing challenges with the textbook evaluation procedures concerning sex education and issues of sexuality coverage in the Junior Certificate (JC) curriculum and currently looking into ways of revising the system' and that the use of the textbook has since been

suspended while consultation goes on to get ideas on the depth and context of sex education in moral education.

In Botswana, the 2005 curriculum emphasized promoting tolerance and respect, healthy relationships and communication and decision-making skills while the 2010 framework adds outcomes and indicators on gender equality, human rights, vulnerability reduction and HIV treatment, all of which were missing from the 2005 curriculum. Relatively there are few studies which have attempted to measure behavior effects of sex education programs among young men. To our knowledge there is little evidence on the effects of sex education on men's sexual and reproductive health practices in Botswana. Documentation of whether exposure to sex education affects sexual and reproductive health outcomes is essential for development of proper interventions to maintain and bolster sex education programs. Young people in Botswana need sexuality education that prepares them for accessing sexual and reproductive health services when they need such services. The 2011-2015 UNAIDS strategy recommends comprehensive sexuality education and suggests its incorporation into education and health programmes as a much needed intervention to revolutionize HIV prevention.

In this article we examine the effects of sex education on the sexual reproductive health outcomes of young men in Botswana-specifically focusing on sexual relations, use of contraceptive methods, childbearing, number of partners with biological children and partner antenatal attendance.

Research questions

- What are the characteristics of the survey population?
- What proportion of men has been exposed to sex education?
- Does exposure to sex education influence men's sexual and HIV risk practices / behaviors?
- In particular, does exposure to sex education influence:
    - Engagement in sexual relations?
    - Contraceptive use at first sex?
    - Having children?
    - Number of women with whom men father children?
    - Partner's attendance of ANC?

- Among men who were exposed to sex education – Does the level at which men were exposed (primary; secondary or tertiary) have a significant influence on men's sexual and HIV risk practices / behaviors?

Methodology (Including target population, sampling data to be used/or used)

The paper uses data from the Botswana Family Health Survey IV of 2007 (BFHS-IV) to assess the role of exposure to sex education on the sexual and HIV risk behaviors and practices of men in Botswana. The Botswana Family Health Survey IV (BFHS-III) is the fourth in a series of nationally representative demographic surveys whose main objectives were to collect information on fertility, contraception, health and antenatal attendance about men aged 12 to 49 years. The three preceding surveys are the Botswana Family Health Survey 1984 (BFHS-I) and the Botswana Family Health Survey 1988 (BFHS-II) and the Botswana Family Health Survey 1996 (BFHS-III).

The BFHS IV uses a weighted, nationally representative sample of women in the 15-49 age group and men in the age group 12-49 years. The BFHS IV utilized a two-stage sampling design, with the primary sampling unit being the census enumeration areas (EAs) and the second stage being the household. The sample design was self-weighting at household level (within the urban and rural sectors) but not at the national level. In the first stage, EAs were systematically selected, with probability proportional to size in each of the (five) strata, (two urban, three rural) using the following equation:

$$P_i = (a_b * M_{bi}) / M_b$$

Where P_i *= first stage selection probability*

a_b *= number of EAs selected in a particular strata*

M_{bi} *= measure of size of the i-th selected EA*

M_b *= measure of size of the strata under consideration*

At the second stage, individual households were selected with probability of selection inversely proportional to size, using the following formula:

$$P_i = f / (a_b * M_{bi} / M_b)$$

Where $f = P_1 * P_2$ *= self-weight*

Pi = first stage selection probability

a_b *= number of EAs selected in a particular strata*

M_{bi} = measure of size of the *i*-th selected EA

M_b *= measure of size of the strata under consideration*

To achieve the required sample size, 7860 households were needed, giving an overall sampling fraction (f) of one in twenty-five (1/25) in urban areas and one in sixty-four (1/64) in rural areas. A total of 393 EAs were selected with probability proportional to size, producing a total of 7,031 that were successfully interviewed with a response rate of 90 percent. The cities/towns and urban villages had almost the same response rate of 90.5 percent and 90.4 percent respectively. In rural areas the response rate was lower at 88.0 percent. In the households interviewed 7,319 women aged 12 -49 years were identified as eligible for the individual questionnaire of which 6,916 were successfully interviewed, giving a response rate of 94.5 percent. A total of 6,712 eligible men (aged 12-49 years) were identified in the households, out of these, 6,101 were successfully interviewed giving a response rate of 90.9 percent slightly lower than the female response rate. Finally 2,837 children aged 0-4 years were listed in the household questionnaire and only 2,726 questionnaires were completed for the children, yielding a response rate of 96.1 percent.

For purposes of this paper, the BFHS IV sample was restricted to include only males between the ages of 12 to 29 years. This resulted in a sample size of 4,030, on which this analysis is based.

Model

The logistic regression analysis is used to evaluate the effect of exposure to sex education; as well as the effect of level of education at which men were exposed to sex education, on selected indicators of men's sexual and reproductive health practices.

Logistic regression model is suitable for this analysis because it provides an interpretable linear model for a categorical dependent variable. This method also allows us to test the significance of a given predictor whilst controlling for all other predictors in the model (DeMaris, 1992). Even though the model allows for the inclusion of continuous variables, all predictor variables in the model are categorical variables.

Model specification needed: Let P_i be the probability that the i^{th} respondent with sex education) and $(1 - P_i)$ be the probability that the respondent has not received sex education. Therefore $P_i / (1 - P_i)$ is equal to the odds that the i^{th} respondents with sex education. Also, the log $P_i / (1 - P_i)$ is the log odds of the i^{th} respondents with sex education. Let x_{i1}, x_{i2}, x_{i3}, ..., x_{ik} be a set of k predictor variables. We model the logit instead of P_i itself because linear models produce predicted values in the (-□,+□) range rather than the restricted (0,1) range (Agresti and Finlay, 1986). Then the logit model for the log odds of supporting or contacting children given a particular vector of scores on the k predictor variables is:

$$\log P_i / (1 - P_i) = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + ... + \beta_k x_{ik}$$

and the corresponding multiplicative model for the odds is:

$$P_i / (1 - P_i) = e^{\beta 0} + e^{\beta 1 x i 1} + e^{\beta 2 x i 2} + \ldots + e^{\beta k x i k}$$

The estimates for the regression coefficients are obtained by the method of maximum likelihood. The betas represent the change in the log odds due to the unit increments in the values of the predictors (DeMaris, 1992). Interpreting logistic regression results in terms of odds, e^{β}, is a summary statistic for the partial effect of a given predictor on the odds, controlling for other predictors in the model.

Data Analysis

The 2007 Botswana Family Health Survey solicited responses from 4030 males aged between 12-29 years. In this survey population, 40.2 percent were rural residents and 33.6 percent resided in urban villages. The age distribution mirrors that of the national population, with fewer respondents in the age groups 12-14 years (17.7 percent) and 25-29 years (25.8 percent). It can also be deciphered from the data that the survey population has some form of literacy, with over 95 percent having attained primary education or more. The data also show a predominantly Christian population (71.1 percent), many of the respondents have never been married (86.8 percent) and 32.9 percent were not in employment.

Exposure to Sex education

This study targeted 4030 males aged 12-29 years. Out of the 4027 men aged 12-29 years responding to the question on attendance of sex education classes, 81.9 percent have ever attended classes on sex education. Of the 3266 who attended sex education classes, 52.5 percent attended classes on sex education for the first time while in primary school and the remaining 47.5 were in secondary schools or higher.

Sex education classes covered topics such as HIV/AIDS, Sex, STI's, Physical changes and others as represented in table 2. The data from table 2 shows that most respondents (97.1 per cent) attended classes on HIV/AIDS, this was followed by Sex (96.4 percent), STI's (96.2 percent),, and Physical changes (95.3 percent). Topics on Delivery, Prostitution, Homosexuality and Lactation did not receive as much attendance (see table 2). The mean score was calculated based on the number topics on sex education classes attended. The data produced a mean score of 11.7.

Bivariate relationship between sex education and sexual practices & outcomes

The data in table 3 shows 51.8 per cent of respondents who have attended classes on sex education have had sexual relations compared with 46.7 percent among those who have not attended classes on sex education. The confidence intervals overlap by a small which may suggest that there are significant differences in sex education and engagement in sexual relations.

A further examination of table 3 shows that use of contraception during the first sexual relation is higher among respondents who attended sex education (88.0 percent) compared with 77.3 percent among those who did not attend sex education classes. There appear to be a statistically significant difference in the proportions since the confidence intervals do not overlap. It can also be found that 38.0 percent of respondents who did not attend sex education classes had a biological child compared with 28.0 percent among those who attended sex education classes. Again these appear to be statistical different since their confidence intervals do not overlap. However, there were no statistically significant differences between respondents who attended sex education classes and those who did not for the following variables: whether the respondent had children with the same woman, whether their partners attended antenatal check-ups and whether they accompanied their partners for antenatal check-ups.

Association between sex education and sexual and reproductive practices

The data from table 4 shows that male respondents aged 12-29 years who did not attend sex education classes were 1.227 (p = 0.020) more likely not to have ever engaged in sexual relations than respondents who attended sex education classes. It is also evident from this data that respondents who did not receive sex education were 2.149 (p=0.000) times more likely not to have used some form of contraception during their first sexual relation compared to respondents who attended sex education classes. They however were less likely (0.639) (p=0.001) to have never had a child with any woman compared to their counterparts. Meanwhile, respondents who have not attended sex education classes were more likely not to have had children with the same woman (1.095), to have not accompanied their partner on antenatal visit (1.095) and were likely not have had their partner attend antenatal check-ups (1.076), these results were not statistically significant.

Association between level at which respondents were exposed to sex education and sexual and reproductive practices

Table 5 shows that though respondents who attended sex education classes for the first time at primary level were more likely not to use contraceptives, to have never sired a child with any woman, to have never attended antenatal check-ups with partner, these are not statistically significant. However, respondents who attended sex education classes for the first time at primary level were 1.631 (p=0.000) times more likely to have never engaged in sexual relations compared with the respondents who attended classes on sex education at secondary level or higher..

Brief conclusion

The study concludes that sex education plays a part in improving life skills in sexual relations, use of contraceptive and childbearing. This is to say that before males have children they use knowledge acquired from attending sex education classes to avert pregnancy and ultimately births. However, there are no differences in behavior with regard antenatal support and siring children with other women.

Appendix of tables

Table 1: Percentage Distribution of the Survey Population by Socio-demographic Characteristics, BFHS 2007

Place of residence	Number	Percent
City/Town	1,054	26.2
Urban Village	1,356	33.6
Rural	1,620	40.2
Total	4,030	100.0
Age		
<20	1892	46.9
20-24	1,098	27.2
25-29	1,040	25.8
Total	4,030	100.0
Level of education		
Primary or below	1177	29.2
Secondary or higher	2852	70.8
Total	4,029	100.0
Marital Union Status		
Ever in Union	531	13.2
Never in Union	3,496	86.8
Total	4,027	100.0
Labor participation[1]		
Employed	1,300	67.1
Unemployed	638	32.9
Total	1,938	100.0
Religious affiliation		
Christianity	2,855	71.1
Other Religion	194	4.8
Atheist	966	24.1
Total	4,015	100.0

[1] The participation rate refers to the number of people who are either employed or are actively looking for work. The respondents who were no longer actively seeking employment were not included in the participation rate.

Table 2: Exposure and timing of exposure to sex education among men in Botswana, and selected sexual & reproductive practices & outcomes, BFHS 2007

	Number	Percent
Have you ever attended classes on sexual education		
Yes	3306	81.9
No	721	18.1
Total	4027	100.0
In which level of education were you when you received the first lesson		
Primary or below	1756	53.1
Secondary or higher	1550	46.9
Total	3306	100.0
Have you ever had sexual relations		
Yes	2054	50.9
No	1972	49.1
Total	4026	100.0
How old were you when you had sex for the first time		
Less than 20 years	1597	77.8
20-24 years	400	20.0
25-29 years	44	2.2
Total	2041	100.0
Exposure to radio or television		
Both radio and television	2618	65.1
Radio only	524	13.3
Television only	379	9.2
None	506	12.4
Total	4027	100.0
Did you or your partner use any contraceptive method during this first sexual relation		
Yes	1772	86.2
No	282	13.8
Total	2054	100.0
Have you ever had biological children		
Yes	627	29.8

No	1427	70.2
Total	2054	100.0
How many biological children do you have		
0	1427	70.2
1	400	19.0
2	160	7.6
3+	67	3.2
Total	2054	100.0
How old were you when your (first) child was born		
Less than 20 years	108	17.4
20-24 years	359	57.8
25-29 years	158	24.8
Total	625	100.0
Do all of your biological children have the same biological mother		
Yes	134	61.5
No	91	38.5
Total	225	100.0
When mother was pregnant with child did she have any antenatal check-ups		
Yes	444	85.7
No	79	14.3
Total	523	100.0
Were you present during any of those antenatal check-ups		
Yes	130	28.1
No	314	71.9
Total	444	100.0

Table 3: Association between exposures to sex education and selected sexual and reproductive health practices and outcomes, BFHS 2007

	Have you ever attended classes on sexual education		
Have you ever had sexual relations	**Yes**	**No**	**Total**
Yes	1711 (51.8)	343 (46.7)	2054 (50.9)
No	1594 (48.2)	378 (53.3)	1972 (49.1)
Total	**3305**	**721**	**4026**
	$\chi^2 = 5.391$	*Df = 1*	*P = 0.000*
How old were you when you had sex for the first time			
Less than 20 years	1360 (79.4)	237 (69.9)	1597 (77.8)
20-24 years	315 (19.0)	85 (25.3)	400 (20.0)
25-29 years	28 (1.7)	16 (4.7)	44 (2.2)
Total	**1703**	**338**	**2041**
	$\chi^2 = 9.317$	*Df = 2*	*P = 0.000*
Exposure to radio or television			
Both radio and television	2313 (69.7)	*305 (44.0)*	2618 (65.1)
Radio only	393 (12.4)	*131 (17.5)*	524 (13.3)
Television only	296 (8.7)	*83 (11.4)*	379 (9.2)
None	304 (9.2)	*202 (27.1)*	506 (12.4)
Total	**3306**	**721**	**4027**
	$\chi^2 = 67.745$	*Df = 3*	*P = 0.000*
Did you or your partner use any contraceptive method during this first sexual relation			
Yes	1510 (88.0)	262 (77.3)	1772 (86.2)
No	201 (12.0)	81 (22.7)	282 (13.8)
Total	**1711**	**343**	**2054**
	$\chi^2 = 24.205$	*Df = 1*	*P = 0.000*
Have you ever had biological children			
Yes	493 (28.2)	134 (38.0)	627 (29.8)
No	1218 (71.8)	209 (62.0)	1427 (70.2)
Total	**1711**	**343**	**2054**
	$\chi^2 = 11.838$	*Df = 1*	*P = 0.001*
How many biological children do you have			
0	1218 (71.8)	209 (62.0)	1427 (70.2)
1	318 (18.1)	82 (23.4)	400 (19.0)
2	134 (7.6)	26 (7.5)	160 (7.6)
3+	41 (2.4)	26 (7.1)	67 (3.2)
Total	**1711**	**343**	**2054**
	$\chi^2 = 8.457$	*Df = 3*	*P = 0.000*
How old were you when your (first) child was born			
Less than 20 years	80 (16.7)	28 (19.9)	108 (17.4)
20-24 years	281 (57.3)	78 (59.5)	359 (57.8)
25-29 years	130 (25.9)	28 (20.6)	158 (24.8)
Total	**491**	**134**	**625**
	$\chi^2 = 0.870$	*Df = 2*	*P = 0.419*
Do all of your biological children have the same biological			

mother			
Yes	102 (62.0)	32 (59.9)	134 (61.5)
No	71 (38.0)	20 (40.1)	91 (38.5)
Total	**173**	**52**	**225**
	$\chi^2 = 0.070$	*Df = 1*	*P = 0.791*
When mother was pregnant with child did she have any antenatal check-ups			
Yes	357 (88.6)	87 (75.2)	444 (85.7)
No	52 (11.4)	27 (24.8)	79 (14.3)
Total	**409**	**114**	**523**
	$\chi^2 = 12.128$	*Df = 1*	*P = 0.001*
Were you present during any of those antenatal check-ups			
Yes	105 (28.4)	25 (26.9)	130 (28.1)
No	252 (71.6)	62 (73.1)	314 (71.9)
Total	**357**	**87**	**444**
	$\chi^2 = 0.070$	*Df = 1*	*P = 0.791*

Table 4: Association between level at which respondents were exposed to sex education and selected sexual and reproductive health practices and outcomes, BFHS 2007

	In which level of education were you when you received the first lesson		
Have you ever had sexual relations	**Primary or below**	**Secondary or higher**	**Total**
Yes	800 (46.3)	911 (58.1)	1711 (51.8)
No	955 (53.7)	639 (41.9)	1594 (48.2)
Total	**1755**	**1550**	**3305**
	$\chi^2 = 39.334$	*Df = 1*	*P = 0.000*
How old were you when you had sex for the first time			
Less than 20 years	653 (81.8)	*707 (77.1)*	1360 (79.4)
20-24 years	135 (16.9)	*180 (20.9)*	315 (19.0)
25-29 years	10 (1.3)	*18 (2.0)*	28 (1.7)
Total	798	*905*	**1703**
	$\chi^2 = 2.572$	*Df = 2*	*P = 0.076*
Exposure to radio or television			
Both radio and television	1184 (68.1)	*1119 (71.6)*	2313 (69.7)
Radio only	218 (12.5)	*175 (12.1)*	393 (12.4)
Television only	188 (10.5)	*108 (6.7)*	296 (8.7)
None	156 (8.8)	*148 (9.5)*	304 (9.2)
Total	**1756**	***1550***	***3306***
	$\chi^2 = 4.338$	*Df = 3*	*P = 0.005*
Did you or your partner use any contraceptive method during this first sexual relation			
Yes	702 (87.5)	808 (88.4)	1510 (88.0)
No	98 (12.5)	103 (11.6)	201 (12.0)
Total	**800**	**911**	**1711**
	$\chi^2 = 0.316$	*Df = 1*	*P = 0.574*
Have you ever had biological children			
Yes	232 (27.2)	261 (29.1)	493 (28.2)
No	568 (72.8)	650 (70.9)	1218 (71.8)
Total	**800**	**911**	**1711**
	$\chi^2 = 0.666$	*Df = 1*	*P = 0.414*
How many biological children do you have			
0	568 (72.8)	650 (70.9)	1218 (71.8)
1	153 (17.9)	165 (18.4)	318 (18.1)
2	54 (6.5)	80 (8.7)	134 (7.6)
3+	25 (2.8)	16 (2.0)	41 (2.4)
Total	**800**	**911**	**1711**
	$\chi^2 = 1.183$	*Df = 3*	*P = 0.314*

How old were you when your (first) child was born			
Less than 20 years	39 (16.8)	41 (16.6)	80 (16.7)
20-24 years	128 (54.5)	153 (59.8)	281 (57.3)
25-29 years	65 (28.7)	65 (23.6)	130 (25.9)
Total	**232**	**259**	**491**
	χ^2 =0.792	*Df = 2*	*P = 0.453*
Do all of your biological children have the same biological mother			
Yes	47 (64.6)	55 (60.0)	102 (62.0)
No	31 (35.4)	40 (40.0)	71 (38.0)
Total	**78**	**95**	**173**
	χ^2 = 0.353	*Df = 1*	*P = 0.552*
When mother was pregnant with child did she have any antenatal check-ups			
Yes	169 (85.9)	188 (91.1)	357 (88.6)
No	30 (14.1)	22 (8.9)	52 (11.4)
Total	**199**	**210**	**409**
	χ^2 = 2.704	*Df = 1*	*P = 0.100*
Were you present during any of those antenatal check-ups			
Yes	43 (24.0)	62 (32.1)	105 (28.4)
No	126 (76.0)	126 (67.9)	252 (71.6)
Total	**169**	**188**	**357**
	χ^2 = 2.538	*Df = 1*	*P = 0.111*

Table 5: Logistic regression coefficients showing the effect of exposure to sex education on likelihood of having had sexual intercourse

	MODEL 1		MODEL 2		MODEL 3	
Exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Exposed	.020	1.227	.015	1.615	.048	1.494
No Exposed		1.000		1.000		1.000
Place of residence						
City/Town	.000	1.997	.106	1.396	.451	1.168
Urban Village	.062	1.158	.753	1.060	.610	.911
Rural		1.000		1.000		1.000
Age group						
Less than 20 years	.000	.013	.000	.094	.000	.096
20-24 years	.000	.368	.000	.509	.000	.522
25-29 years		1.000		1.000		1.000
Level of education						
Primary or below	.000	.270	.045	.673	.226	.779
Secondary or higher		1.000		1.000		1.000
Marital Union Status						
Ever in Union	.000	104.609	.000	16.818	.000	17.216
Never in Union		1.000		1.000		1.000
Labour participation						
Employed	.000	1.952	.040	1.378	.019	1.444
Unemployed		1.000		1.000		1.000
Religious affiliation						
Christianity	.000	.672	.056	.728	.033	.697
Other Religion	.061	1.393	.206	.660	.259	.694
No religion		1.000		1.000		1.000
Exposure to radio or television						
Both radio and television	.000	1.909			.000	2.561
Radio only	.000	2.114			.023	1.777
Television only	.632	.930			.030	1.937
None		1.000				1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)

MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

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Table 6: Logistic regression coefficients showing the effect of exposure to sex education on likelihood of using a contraceptive method during first sexual encounter

	MODEL 1		MODEL 2		MODEL 3	
Exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Exposed	.000	2.149	.475	1.176	.407	1.217
No Exposed		1.000		1.000		1.000
Place of residence						
City/Town	.002	1.693	.033	1.519	.199	1.299
Urban Village	.000	1.964	.001	1.940	.006	1.808
Rural		1.000		1.000		1.000
Age group						
Less than 20 years	.001	2.619	.049	3.193	.020	3.855
20-24 years	.009	1.468	.718	.939	.911	1.020
25-29 years		1.000		1.000		1.000
Level of education						
Primary or below	.000	.379	.001	.462	.012	.545
Secondary or higher		1.000		1.000		1.000
Marital Union Status						
Ever in Union	.000	.400	.000	.442	.000	.456
Never in Union		1.000		1.000		1.000
Labour participation						
Employed	.379	.862	.513	1.126	.564	1.113
Unemployed		1.000		1.000		1.000
Religious affiliation						
Christianity	.941	.988	.414	.862	.337	.838
Other Religion	.015	.518	.062	.563	.060	.559
No religion		1.000		1.000		1.000
How old were you when you had sex for the first time						
Less than 20 years	.091	1.978			.830	.893
20-24 years	.022	2.690			.480	1.476
25-29 years		1.000				1.000
Exposure to radio or television						
Both radio and television	.000	2.308			.175	1.423
Radio only	.541	.868			.199	.708
Television only	.050	1.905			.373	1.402
None		1.000				1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)
MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

Table 7: Logistic regression coefficients showing the effect of exposure to sex education on likelihood of having had a biological child

	MODEL 1		MODEL 2		MODEL 3	
Exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Exposed	.001	.639	.220	.758	.146	.720
No Exposed		1.000		1.000		1.000
Place of residence						
City/Town	.106	.817	.121	.770	.234	.807
Urban Village	.029	.761	.731	.944	.812	.958
Rural		1.000		1.000		1.000
Age group						
Less than 20 years	.000	.043	.000	.081	.000	.063
20-24 years	.000	.215	.000	.336	.000	.287
25-29 years		1.000		1.000		1.000
Level of education						
Primary or below	.000	1.680	.201	1.314	.168	1.349
Secondary or higher		1.000		1.000		1.000
Marital Union Status						
Ever in Union	.000	9.327	.000	6.092	.000	6.623
Never in Union		1.000		1.000		1.000
Labour participation						
Employed	.000	2.045	.081	1.303	.074	1.322
Unemployed		1.000		1.000		1.000
Religious affiliation						
Christianity	.305	.888	.210	.833	.186	.822
Other Religion	.977	1.006	.083	.614	.226	.719
No religion		1.000		1.000		1.000
How old were you when you had sex for the first time						
Less than 20 years	.491	1.287			.000	6.762
20-24 years	.524	1.274			.007	3.805
25-29 years		1.000				1.000
Exposure to radio or television						
Both radio and television	.000	.539			.127	.689
Radio only	.129	.739			.404	.799
Television only	.018	.545			.046	.500
None		1.000				1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)
MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

Table 8: Logistic regression coefficients showing the effect of exposure to sex education on likelihood of fathering children with more than one woman

	MODEL 1		MODEL 2		MODEL 3	
Exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Exposed	.792	1.095	.211	1.802	.178	2.022
No Exposed		1.000		1.000		1.000
Place of residence						
City/Town	.326	.706	.492	.746	.488	.726
Urban Village	.453	.769	.565	.786	.517	.742
Rural		1.000		1.000		1.000
Age group						
Less than 20 years	-	-	-	-		
20-24 years	.175	.581	.283	.612	.403	.677
25-29 years		1.000		1.000		1.000
Level of education						
Primary or below	.438	1.292	.284	1.614	.261	1.695
Secondary or higher		1.000		1.000		1.000
Marital Union Status						
Ever in Union	.023	2.007	.029	2.129	.028	2.282
Never in Union		1.000		1.000		1.000
Labour participation						
Employed	.409	.737	.166	.571	.091	.471
Unemployed		1.000		1.000		1.000
Religious affiliation						
Christianity	.781	1.098	.636	1.197	.590	1.233
Other Religion	.406	1.754	.335	1.976	.193	2.502
No religion		1.000		1.000		1.000
How old were you when you had sex for the first time						
Less than 20 years	.795	8.0770				3.2640
20-24 years	.790	1.3759				5.3720
25-29 years		1.000				1.000
Exposure to radio or television						
Both radio and television	.052	.429			.294	.562
Radio only	.084	.406			.039	.317
Television only	.460	.555			.486	.511
None		1.000				1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)
MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

Table 9: Logistic regression coefficients showing the effect of exposure to sex education on likelihood of having their partners undergo antenatal check-up

	MODEL 1		MODEL 2		MODEL 3	
Exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Exposed	.001	2.574	.145	1.660	.192	1.614
No Exposed		1.000		1.000		1.000
Place of residence						
City/Town	.630	.861	.193	.632	.136	.595
Urban Village	.864	.948	.426	.756	.626	.835
Rural		1.000		1.000		1.000
Age group						
Less than 20 years	.709	.667	.000	743637608.152	.000	856836312.148
20-24 years	.243	.720	.220	.686	.556	.828
25-29 years		1.000		1.000		1.000
Level of education						
Primary or below	.002	.424	.053	.519	.039	.465
Secondary or higher		1.000		1.000		1.000
Marital Union Status						
Ever in Union	.126	1.486	.379	1.302	.696	1.133
Never in Union		1.000		1.000		1.000
Labour participation						
Employed	.076	1.738	.199	1.531	.224	1.545
Unemployed		1.000		1.000		1.000
Religious affiliation						
Christianity	.898	.963	.629	.854	.647	.853
Other Religion	.019	.335	.029	.359	.020	.321
No religion		1.000		1.000		1.000
How old were you when you had sex for the first time						
Less than 20 years	.711	.673			.254	.354
20-24 years	.750	1.428			.887	.871
25-29 years		1.000				1.000
Exposure to radio or television						
Both radio and television	.414	1.354			.723	1.184
Radio only	.962	.978			.935	1.046
Television only	.963	1.030			.930	1.075
None		1.000				1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)
MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

Table 10: Logistic regression coefficients showing the effect of level at which respondents were exposed to sex education on likelihood of having had sexual intercourse

	MODEL 1		MODEL 2		MODEL 3	
Level of exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Primary or below	0.000	0.620	.167	1.275	.273	1.215
Secondary or higher		1.000		1.000		1.000
Place of residence						
City/Town			.380	1.223	1.000	1.000
Urban Village			.671	1.092	.729	.931
Rural				1.000		1.000
Age group						
Less than 20 years			.000	.102	.000	.104
20-24 years			.001	.500	.002	.501
25-29 years				1.000		1.000
Level of education						
Primary or below			.119	.671	.282	.754
Secondary or higher				1.000		1.000
Marital Union Status						
Ever in Union			.000	13.476	.000	13.895
Never in Union				1.000		1.000
Labour participation						
Employed			.015	1.538	.009	1.583
Unemployed				1.000		1.000
Religious affiliation						
Christianity			.441	.862	.330	.825
Other Religion			.429	.728	.497	.768
No religion				1.000		1.000
Exposure to radio or television						
Both radio and television					.000	2.644
Radio only					.105	1.705
Television only					.112	1.786
None						1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)

MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable

Table 11: Logistic regression coefficients showing the effect of level at which respondents were exposed to sex education on likelihood of not using a condom at first sex

	MODEL 1		MODEL 2		MODEL 3	
Level of exposure to sex education	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**	**Sig.**	**Exp (β)**
Primary or below	0.574	0.912	.997	.999	.954	.989
Secondary or higher		1.000		1.000		1.000
Place of residence						
City/Town			.020	1.678	.137	1.416
Urban Village			.007	1.867	.028	1.716
Rural				1.000		1.000
Age group						
Less than 20 years			.172	2.562	.083	3.229
20-24 years			.413	.845	.675	.917
25-29 years				1.000		1.000
Level of education						
Primary or below			.001	.402	.009	.466
Secondary or higher				1.000		1.000
Marital Union Status						
Ever in Union			.000	.400	.000	.414
Never in Union				1.000		1.000
Labour participation						
Employed			.863	1.037	.980	.995
Unemployed				1.000		1.000
Religious affiliation						
Christianity			.083	.666	.065	.647
Other Religion			.290	.649	.314	.662
No religion				1.000		1.000
How old were you when you had sex for the first time						
Less than 20 years					.925	1.068
20-24 years					.330	2.026
25-29 years						1.000
Exposure to radio or television						
Both radio and television					.136	1.613
Radio only					.514	.794
Television only					.286	1.647
None						1.000

MODEL 1: Gross effects (dependent and independent variable only)

MODEL 2: Net Effects (Independent variable plus background variables)
MODEL 3: Net Effects (Independent variable plus background variables + any other variables that we feel may have an influence on the dependent variable