Factors Determining the Use of Condoms at the Onset of Pre-marital Sexual Relationships among Never Married Youths in Zambia

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Authors' contributions

This work was carried out in collaboration between all authors. Author KT designed the study, wrote the protocol, managed the statistical analyses of the study and wrote the first draft of the manuscript. Authors SOCM and AJM managed the literature searches, wrote the discussion and edited the manuscript. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

An emerging public health concern is the high risk of sexual behaviour among youths with increasing number of sexually active youths in developing countries engaging in premarital sex, more especially in sub-Saharan Africa. Consistent condom use is central to the prevention of unwanted pregnancies, HIV and other STIs, yet young men and women alike are hesitant to use condoms because of the threats they encounter in their relationships, cultural roles and at times economic survival. The present study used data from the 2013 Zambia Demographic Health Survey (ZDHS), and data analysis was restricted to never married youths to explore factors that determine condom use at the onset of pre-marital sexual relationships among youth in Zambia. More than half of the respondents were in the age range 15-19, while the rest were aged between 20-24, 70% of females and 64.2% of males had reached secondary education and higher. Results showed that 20% of females and 32% of males reported having been sexually active by the age of 15, female respondents from poor backgrounds reported more likelihood of being sexually active

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by the age 15. Women who are working and men and those with lower education were more likely to have been sexually active by the age of 15.More females (45.9%) reported to have used a condom at first sex than their male counterparts (31%). Respondents from rural areas and those from a rich background were also more likely to report using a condom at first sex than their counterparts from urban areas and or from a poor background. Furthermore, education significantly increased the likelihood of young women reporting to have used a condom at first sex for both genders. Logistic regression confirmed that age, wealth, education, reading a newspaper at least once a week and watching television had significant influence on using a condom at first sex among the participants. We recommend that the never married youths need to be empowered with educational opportunities together with increased information dissemination on the advantages of abstinence from premarital sex and also the benefits of condom use if the youths must engage in premarital sex.

1. INTRODUCTION

HIV and AIDS are major public health problems in Zambia and continue to contribute to morbidity and mortality among people [1]. Zambia has been ranked amongst the top 10 countries that are burdened with the highest HIV prevalence in the world [2]. The estimated HIV prevalence rate in 2013 for the entire country was 13% among the 15-49 year olds and the prevalence rate was higher among women (15.1%) than among men (11.3%). The prevalence rate was higher in urban areas (21% for women and 15% for men) than in the rural areas (9.9% for women and 8.1% for men) [3]. By 2016, approximately 1.2 million people in Zambia had been infected with HIV. Other than that, 16,000 to 24,000 people are estimated to have died of AIDS-related causes in Zambia [4].

One of the fast emerging public health concerns in the world is the high risk of sexual behaviour among the youth [5]. There has been an apprehension on the increasing number of sexually active youths in developing countries engaging in premarital sex, more especially in sub-Saharan Africa [6]. The use of condoms during all sexual encounters by the unmarried youth has been identified as one of the major steps aimed at reducing these reproductive health problems [7].

The majority of people living in Zambia engage in high-risk sexual behaviour. The 2013 ZDHS reported that by the age of 18, 58.3% of women and 45% of men have had sexual intercourse, and by the age of 20, 75% of women and 67% of men have had sexual intercourse, with the median age of first sexual intercourse being 17 years for women and 18 years for men. The use of condoms has itself been consistently in the forefront of HIV prevention strategies, and their efficacy in reducing the transmission of HIV

infection has been well established [8]. Research suggests that the levels of condom use among young people are low across most of the sub-Saharan Africa. While male condoms are widely available and 95% of adults have heard of them, only 45% reported having used condoms in the last 12 months [3].

Various factors determine condom use among young people. In a South African study [9] it was found that six factors affected condom use namely: lack of perceived risk; peer norms; condom availability; adult attitudes to condoms and sex; gendered power relations and the economic context of adolescent sexuality. Another study conducted in Botswana found that ability to persuade a sex partner to use a condom (perceived self efficacy) was associated with adolescent current use of condom. These included- being personally concerned about getting HIV since ARV introduction, believing that a woman can use condoms to protect herself from getting STIs if a partner has it, and being able to persuade a sex partner to use a condom was associated with consistency of condom use [10]. This therefore suggests that adolescents' perception of personal risk and self efficacy need to be boosted to ensure consistent use of condoms with their partners.

A similar study was conducted by Chimbindi in Limpopo, South Africa [11]. The objective of the study was to identify socio-cultural and behavioral factors that affect condom use among youths in Limpopo province. The researcher used secondary analysis of data collected from a sample of 2236 sexually active young people aged between 14-35 years. It was found that overall condom use in this population was low: less than a quarter of respondents used condoms consistently and less than one third of men and women used condoms at last sex.

Significant predictors of consistent condom use for both sexes included good communication, older age at sexual debut, low risk perception of HIV infection, progressive attitudes towards gender violence and high HIV-related stigma.

Another study was carried out in Nigeria with students from Calabar University [12]. According to the findings of the study, all respondents who had heard of HIV and AIDS had also seen a condom. More than half of the respondents reported not using a condom in their last sexual encounter. Condom use was more likely when people could access them at no cost or at greatly subsidized prices. Consistent condom use was positively associated with higher levels of education, with a belief that condoms did not diminish sexual pleasure and that condoms were safe. Type of sexual partner, whether casual or regular, and socio-economic status of the family to which the young adult belonged, were also found to influence condom use.

Research therefore suggests that there are various determinants of condom use in young people. A study by Neukom and Ashford highlighted the need to continue and expand adolescent reproductive health interventions [13-16]. Because the determinants of condom use vary by gender and partner type, reproductive health programs for youth need to develop campaign activities and messages that are sensitive to these differences. Consistent condom use is central to the prevention of unwanted pregnancies, HIV and other STIs, yet young men and women alike are hesitant to use condoms because of threats to their relationships, cultural roles and at times economic survival [11].

Research has also consistently shown that correct and consistent condom use is associated to the reduction and prevention of sexually transmitted diseases. However, studies found that condom use was relatively low despite its known advantages [10]. It was found that amongst the 1,915 respondents, 42% of males and 21% of females had reported having used a condom in their life time. Out of the 63% of those that had used a condom in their life time, the study found that only 17% of both sexes used condoms consistently. Such findings are similar to the cross sectional study conducted in Kajola, Nigeria, on 350 out of school unmarried youths aged 15-24. The study found that of the 350 respondents, 262 (74.9%) reported having had sex before but only 29% of both sexes used condoms [17].

Another study by Thato found that youth who were not married did not use condoms consistently. The study, which consisted of 391 students aged 18-22, reported that out of the 195 students who had had sex before, only 6.3% were occasional condom users and 10.2% consistent condom users [18]. Like other studies, this study also established that the capacity to take definite decisions that can enable young people to protect themselves from harmful consequences of unprotected sex is still generally lacking.

In seeking to explain the level of condom use at the onset of premarital sex, other studies found that the proportions of the young people who reported condom use the first time they had sexual intercourse increased with age. It was further indicated that economic status index was a predictor of strong likelihood of condom use among youths that have never been married. The study further showed that mass-media exposure was positively associated with the use of condoms by the respondents during their first sexual encounter [19]. Similarly, exposure to media emerged as a significant determinant of condom use at the first sexual encounter among Nigerian youths. Moreover, education was found to be a key determinant of condom use. This suggests that educational level increases response to condom promotion and highlights the need for special efforts to reach men and women with low educational attainment [20]. Thus it is important for youth reproductive health programs to emphasize that condoms are effective for both pregnancy prevention and STIs/HIV prevention. Future intervention efforts must now focus on addressing stigmatizing beliefs and providing education to overcome barriers to condom use. The present paper looked at various factors that determine the use of condoms at the onset of pre-marital sexual relationships among youth in Zambia.

2. METHODOLOGY

The present study used data from the 2013 Zambia Demographic Health Survey (ZDHS). The sample for the survey was designed to provide the estimates of population and health indicators at national and provincial levels. The survey was based on nationally representative sample carried out by Central Statistical Office with technical assistance from the Demographic Healthy Surveys Programme at ICF International which was funded by the United States Agency for International Development (USAID). The

survey used a two-stage stratified cluster sampling design. At the first age, 722 Enumeration Areas (EA) were selected using systematic random sampling with probability proportional to size. At the second stage, 25 households per EA were selected again using systematic random sampling. Methods and data collection procedures have been published elsewhere [3].

The ZDHS included a special module designed to collect information on various demographic and health indicators including individual characteristics, sexual activity, marriage, family planning knowledge and use, HIV/AIDS related knowledge, attitudes and behaviour. The household questionnaires also collected information on the demographic and economic characteristics of all household members. In this study, the analysis was restricted to unmarried young people aged 15-24 in order to specifically look at condom use at the onset of pre-marital sexual relationships among youths in Zambia. The Statistical Package for Social Sciences was used to analyse the association between the socio-economic factors and the onset of condom use.

2.1 Measurement of Variables

2.1.1 Dependent variable

Premarital sexual behaviour is indicated if a male or female youth had sexual intercourse before their marriage and the use of condoms is measured if they they had used condoms the first time they had sexual intercourse. The measurement and description of independent variables is shown in Table 1.

2.2 Data Analysis

The data analysis was restricted to never married youths and the analysis was carried out in two stages. Firstly, cross tabulations were used to examine the relationship between the independent (socio-economic and demographic) and dependent (condom use at first sex) variables. For statistical analysis, chi-square tests were conducted at the bivariate level for independent variables at $p < 0.01$ and $p < 0.05$ significant level. Secondly, linear logistic regression was used to identify factors influencing condom use by considering socio-economic and demographic variables separately

Table 1. Description and measurement of independent variables

Variables	Description
Age	Age of the respondent is categorized as 15-19 and 20-24.
Religion	Religion is classified as Catholics and Protestants.
Residence	Place of residence is coded as urban or rural.
Wealth index	To measure socioeconomic status, we used DHS a wealth index, which divides households into three groups: poor, middle and rich according to the number of goods owned by the household.
Work status	Work status of the respondent is classified into two categories; those working and not working.
Educational level	Educational level of the respondent is categorized into primary and secondary or higher education.
Reading newspaper at least once a week	Exposure to media was measured by frequency of reading newspaper at least once a week. It is classified as those who are reading newspapers at least once a week and less than once a week.
Listening to radio at least once a week	It is classified as those who are listening to radio at least once a week and less than once a week.
Watching television at least once a week	It is classified as those who are watching to radio at least once a week and less than once a week.
Exposure to media	Exposure to media was measured by frequency of watching television, listening to radio and reading newspapers. It is classified as those who are exposed to at least once a week and less than once a week.
Drinks alcohol	It is grouped into two those drinking and not drinking alcohol

for condom use at first sex. The results of the logistic regression models were converted into odds ratios, which represented the effect of a one-unit change in the explanatory variable on the indicator of using a condom. Odds ratios larger than one indicated a greater likelihood of using condom than for the reference category; odds ratios smaller than one indicated a smaller likelihood compared to the reference category.

3. RESULTS

3.1 Background Characteristics of the Sample

The background characteristics of the sample are shown in Table 2. More than half of the respondents were in the age range 15-19 (72.5% of females and 65.4% of males) while the rest were aged between 20-24 (27.5% females and 34.6% males). With regard to religion, the majority of the respondents were Protestants (78.3% of males and 80.3% of females) while the minority were Catholic (21.7% of males and 19.7% of females). The results also showed that more than half of the respondents were from rural areas (57.5% of males and 51.2% of females).The distribution of respondents by wealth quintile showed that 24% of females and 27.9% of males were ranked poor, 19.7% of females and 21.3% of males were categorized as belonging to the middle class and 56.3% of the females and 50.8% of the males where ranked rich. The data further shows that there were more respondents who were not working for both genders (77.9% of females and 54.9% of males).

Table 2. Background characteristics of never married males and females in Zambia (aged 15-24)

Characteristics	Females Total - 4219		Males Total - 5054	
	%	n	%	n
Age				
15-19	72.5	3058	65.4	3304
20-24	27.5	1161	34.6	1750
Religion				
Catholic	19.7	839	21.7	1093
Protestant	80.3	3380	78.3	3961
Place of residence				
Rural	57.5	2428	51.2	51.2
Urban	42.5	1791	48.8	48.8
Wealth index				
Poor	24.0	1013	27.9	1410
Middle	19.7	831	21.3	1077
Rich	56.3	2375	50.8	2567
Work status				
Not-working	77.9	3272	54.9	2767
Working	22.1	947	45.1	2287
Educational level				
Primary	30.0	1266	35.8	1808
Secondary+	70.0	2953	64.2	3246
Reading newspaper at least once a week				
Less than once a week	68.1	2878	67.8	3425
At least once a week	31.9	1341	32.2	1629
Listening to radio at least once a week				
Less than once a week	45.8	1927	37.0	1868
At least once a week	54.2	2292	63.0	3186
Watching television at least once a week				
Less than once a week	51.7	2183	52.4	2643
At least once a week	48.3	2036	47.6	2411
Drinks alcohol				
No	94.6	3991	84.9	4292
Yes	5.4	226	15.1	762

The education characteristics of the respondents showed that 70% of females and 64.2% of males had completed secondary or higher education whereas 30% of the females and 35.8% of the males had only acquired primary education. Furthermore, 68.1% of the females and 67.8% of the males reported reading newspapers less than once a week. On the contrary, 31.9% of the females and 32.2% of the males read newspapers at least once a week. Moreover, more than half of the respondents listened to the radio at least once a week (54.2% of females and 63% of males). On the other hand, 45.8% of the males and 37% of the females listened to the radio less than once a week. With regard to exposure to television, the majority of respondents (51.7% of females and 52.4 % of males) watched television less than once a week. Meanwhile, 48.3% of the females and 47.6% of the males watched television less than once a week. The data further indicated that 5.4% females and 15.1% of females reported drinking alcohol.

3.2 Early Sexual Debut

The percentage of males and females who reported having had sex by the age of 15 is shown in Table 3. Overall, 20% of females and 32% of males reported having been sexually active by the age of 15. Female respondents from rural areas (16.3%) were less likely to be sexually active by the age of 15 as compared to those from urban areas (24.7%). Meanwhile, males from urban areas (37.3%) were more likely to report having been sexually active by the age of 15 than those from rural areas (27.3%). The wealth index shows that female respondents from poor backgrounds were more likelihood to be sexually active by the age 15, followed by the middle class and then the rich (poor 29.6%, middle, 26.1% and the rich 13.6%). For the males, those with middle class backgrounds were more likely to be sexually active by age 15, followed by the poor and then the rich (poor, 29.6%, middle, 26.1% and the rich13.6%).

On work status, women who were working (27.0%) were more likely to have been sexually active by the age of 15 compared to those who were not working (17.9%). Similarly, working men reported to be more likely to have been sexually active by the age of 15 than those who were not working. Furthermore, 27.2% of females and 38% of the males with primary education were more likely to be sexually active by the age of 15 than (16.8%) the females and

(28.9%) the males with secondary education. Similarly, females and males who read newspapers less than once a week were more likely to have been sexually active by the age of 15 (female 22.6% and males 34.6%)than those who read newspapers at least once a week (females, 14.0% and males, 27.1%). With regards to listening to the radio, those who listened to the radio less than once a week for both gender were more likely to be sexually active by the age of 15(22.8% of females and 35% of males) as compared to those that listened to the radio at least once a week (17.4 % of females and 30.5% of males). Respondents who watched television less than once a week were more likely to have been sexually active by the age of 15. (25.9% of females and 37.7% of males) as compared to those that watched television at least once a week (13.5% of females and 26.1% of males). Males who drank alcohol were more likely to have been sexually active by the age of 15 (males who drunk 36.2% and males who did not drink 31.5%) (Table 3).

3.3 Condom Use

The percentage of never married sexually experienced youths who reported having used a condom at first sex is shown in Table 4. Overall, more females (45.9%) reported to have used a condom at first sex than their male counterparts (31%). With regard to place of residence, respondents from rural areas were more likely to report using a condom at first sex (51.8% of females and 38.7% of males) than their counterparts from urban areas (38.7% of females and 25.5% of males). The wealth index shows that female respondents from rich backgrounds were more likely to use a condom at first sex, followed by the middle class and then the poor (poor 33.5%, middle 43.2% and the rich 53.6%). For the males, the trend was similar to the females (poor 21.4%, middle 26.0% and rich 40.5%). On work status, non- working females (46.9%) were more likely to have used a condom at first sex as compared to working women (43.3%).

Furthermore, education significantly increased the likelihood of young women reporting to have used a condom at first sex. For those who had primary education, (males 22.1% and females 34.4%) while for secondary education (males 36% and 50.6% females). On reading newspapers, females and males who read newspapers at least once a week were more

likely to have used a condom at first sex (females 54.8% and males 38.8%) in comparison with those who read newspapers less than once a week (females 42.5% and males 28.2%). With regards to listening to the radio, those who listened to the radio at least once a week reported more likelihood of using condoms at first sex (49.9% of females and 34.3% of males) as compared to those that listened to the radio less than once a week (41.6% of females and 27% of males). Respondents who watched television at least once a week reported more likelihood of using a condom at first sex (52.4% of females and 39.5% of males) as compared to those that

watched television less than once a week (41.3% of females and 25.0% males). The results also showed that males who drank alcohol (36.1%) were more likely to have used a condom at first sex as compared to those who did not drink (31.5%) (Table 3).

3.4 Relationship between Condom Use and Socio-economic and Demographic Characteristics

The Logistic regression analysis data of social economic and demographic variables on never married males who reported having using

Table 3. Percentage of never married females and males who reported having had sex by age 15

Characteristics	% of never married females who were sexually active by age 15		% of never married males who were sexually active by age 15	
	%	n	%	n
Age				
15-19	21.7**	3054	33.6**	3302
20-24	15.0	1160	29.4	1749
Religion				
Catholic	18.3	830	32.6	1093
Protestant	20.3	3375	32.1	3938
Place of residence				
Rural	16.3**	2425	27.3**	2587
Urban	24.7	1789	37.3	2464
Wealth index				
Poor	29.6**	1011	38.0**	1410
Middle	26.1	831	39.8	1077
Rich	13.6	2372	25.7	2564
Work status				
Not-working	17.9**	3270	27.9**	2767
Working	27.0	923	37.5	2273
Educational level				
Primary	27.2**	1262	38.0**	1807
Secondary or higher	16.8	2950	28.9	3239
Reading newspaper at least once a week				
Less than once a week	22.6**	2859	34.6**	3423
At least once a week	14.0	1339	27.1	1625
Listening to radio at least once a week				
Less than once a week	22.8**	1927	35.0**	1867
At least once a week	17.4	2279	30.5	3179
Watching television at least once a week				
Less than once a week	25.9**	2177	37.7**	2642
At least once a week	13.5	2033	26.1	2401
Drinks alcohol				
No	19.8	3986	31.5**	4290
Yes	20.8	226	36.2	761
N	19.9	4120	32.2	5051

*** Significant at P < 0.01; ** Significant at P < 0.05*

Table 4. Percentage of never married sexually experienced youths who reported having used a condom at first sex

Characteristics	% of females who had used a condom during first sex		% of males who had used a condom during first sex	
	%	n	%	n
Age				
15-19	43.7**	1247	25.9**	1617
20-24	49.4	846	38.3	1406
Religion				
Catholic	43.7	405	32.2	671
Protestant	46.6	1684	31.5	2341
Place of residence				
Rural	51.8**	1171	37.8**	1520
Urban	38.7	922	25.4	1503
Wealth index				
Poor	33.5**	541	21.4**	871
Middle	43.2	482	26.0	692
Rich	53.6	1070	40.5	1460
Work status				
Not-working	46.9*	1474	32.7	1406
Working	43.3	607	30.8	1612
Educational level				
Primary	34.4**	590	22.1**	1017
Secondary or higher	50.6	1502	36.5	2002
Reading newspaper at least once a week				
Less than once a week	42.5**	1489	28.2**	2041
At least once a week	54.8	598	38.8	980
Listening to radio at least once a week				
Less than once a week	41.6**	999	27.0**	1082
At least once a week	49.9	1091	34.3	1938
Watching television at least once a week				
Less than once a week	41.3**	1197	25.0**	1635
At least once a week	52.4	895	39.5	1385
Drinks alcohol				
No	45.4**	1918	30.5	2385
Yes	53.3	169	36.1	638
N	45.9	2090	31.7	3023

*** Significant at P < 0.01; ** Significant at P < 0.05*

condom during first sex is shown in Table 5. The results of the logistic regression shows that age, wealth, education, reading a newspaper at least once a week and watching television had significant influence on using a condom at first sex among the participants.

The data showed that age range 20-24 was a strong predictor of condom use at first sex as compared to age range 15-19 among males. Age ranges 20-24 were 1.5 times more likely to use a condom at first sex than those aged 15-19. The wealth index classification by socio-economic status also showed a significantly strong likelihood of youths using a condom at first sex. Those youths from rich background were 1.7

times more likely to use a condom at first sex compared to those ranked middle and those ranked poor. Educational level also emerged as a strong predictor of condom use and in particular secondary or higher. Youths who had attained secondary school or higher were 1.3 times more likely to use a condom at first sex as compared to those with primary education. Furthermore, those who read newspapers at least once a week were 1.1 times more likely to use a condom at first sex than those who read newspapers less than once a week. The results of logistic regression analysis also showed that watching television at least once a week was strongly associated with condom use at first sex. Those who watched television at least once a

week were 1.3 times more likely to use a condom at first sex than those who watched television less than once a week. However, religion, place of residence, listening to radio at least once a week, working status and alcohol consumption were not significantly associated with condom use among the male respondents.

The logistic regression analysis data of social economic and demographic variables on never married females who reported having used a condom during first sex is shown in Table 6. The results of the logistic regression shows that age, residence, wealth, work status, education, and drinking alcohol had significant influence on using a condom at first sex among the female youth in the sample. Age range 20-24 were 1.3 times more likely to use a condom at first sex than those aged 15-19. The results also showed

that social economic backgrounds (rich and middle) in particular was significantly associated with a strong likelihood of condom use at first sex among females. The rich were 1.3 times more likely to use a condom at first sex in comparison with those ranked poor. Educational level also emerged as a strong predictor of condom use and in particular secondary or higher education among the females. Females who had attained secondary school or higher were 1.2 times more likely to use a condom at first sex as compared to those who had only attained primary education.

Female youths who had drunk alcohol were 1.5 times more likely to use a condom at first sex compared to those who had never drank alcohol. Nonetheless, religion, place of residence, working status, listening to radio at least once a

Table 5. Socio-economic and demographic variables on never married males who reported having used a condom during first sex

Variables	Beta (β)	Standard error (SE)	Exp (β)	Significant level (P)
Age				
15-19				
20-24	0.4167	0.0864	1.5170	0.0000
Religion				
Catholic				
Protestant	-0.0181	0.0972	0.9820	0.8520
Place of residence				
Rural				
Urban	-0.0317	0.1058	0.9688	0.7642
Wealth index				
Poor				
Middle	0.1804	0.1259	1.1977	0.1519
Rich	0.5453	0.1375	1.7252	0.0001
Work status				
Not-working				
Working	-0.0252	0.0844	0.9751	0.7654
Educational level				
Primary				
Secondary or higher	0.2978	0.1014	1.3468	0.0033
Reading newspaper at least once a week				
Less than once a week				
At least once a week	0.1396	0.0916	1.1498	0.0074
Listening to radio at least once a week				
Less than once a week				
At least once a week	0.0252	0.0928	1.0255	0.7859
Watching television at least once a week				
Less than once a week				
At least once a week	0.2233	0.1026	1.2501	0.0296
Drinks alcohol				
No				
Yes	-0.0355	0.1012	0.9651	0.7257

Table 6. Logistic Regression Analysis data of socio-economic and demographic variables on never married females who reported having used a condom during first sex

Variables	Beta (β)	Standard error (SE)	Exp (β)	Significant level (P)
Age				
15-19				
20-24	0.2474	0.0815	1.3161	0.0007
Religion				
Catholic				
Protestant	-0.0566	0.0915	0.9450	0.5359
Place of residence				
Rural				
Urban	0.1780	0.1003	1.1949	0.0558
Wealth Index				
Poor				
Middle	0.0806	0.1128	1.0840	0.4748
Rich	0.2402	0.1278	1.2716	0.0401
Work status				
Not-working				
Working	0.1629	0.0799	1.1770	0.0413
Educational level				
Primary				
Secondary or higher	0.2850	0.0933	1.2298	.0023
Reading newspaper at least once a week				
Less than once a week				
At least once a week	0.1371	0.0882	1.1469	0.1201
Listening to radio at least once a week				
Less than once a week				
At least once a week	.0092	0.0865	1.0092	0.9156
Watching television at least once a week				
Less than once a week				
At least once a week	0.0306	0.0965	1.0311	0.7560
Drinks alcohol				
No				
Yes	0.4605	0.0948	1.5849	0.000

week, watching television at least once a week and alcohol consumption did not strongly predict the likelihood of using a condom at first sex among female youths.

4. DISCUSSION

The study examined the factors that determined condom use at the onset of premarital sex among youths that had not been married in Zambia across social economic and demographic factors. It is worrying to note that 21.7% of the not yet married female youths were sexually active between the age of 15-19 and only 15% of the female never married youths were active between the ages 20-24. In terms of the never married male youths the corresponding figures are 33.6% sexually active at 15-19 years and 29.4% sexually active at 20-24 years. These figures are alarming in the sense that both males

and females become sexually active too early at 15 or 19 the age at which they are not yet well informed about Sexual and Health Reproductive issues. There are fewer never married youths who are waiting for their sexual debut when they are both physically and mentally mature at age 20- 24. This phenomenon of early premarital sex is a worldwide concern as noted by other studies [5].

It is important for society to find mitigating measures against early sexual debut because this is the age(15-19) of late adolescence where the teenagers are at risk of contracting HIV or STIs as they may not be well informed about the use of condoms or their consistent use for effectiveness. The teenagers at this stage of their lives are supposed to be in school and by being sexually active at an early age of 15 means that their chances of getting pregnant or impregnating

someone are quite high whose consequences are often disruption of education thereby condemning themselves to a poverty stricken life because lack of education often dooms one to lack of economically viable activities. Society needs to address this state of affairs quickly by assisting the youth with SRH education in order to prevent such early sexual debut and just as importantly to assist those youths who fall prey to such activities to continue with their education and thereby increase their chances of being economically active in future.

On the index of residence, whether in urban or rural for both males and females the youth were sexually active earlier in the urban areas than the rural areas. This finding was also interesting in the sense that because of higher levels of literacy and perhaps even economic opportunities the urban youth should report a higher age of sexual debut than the rural areas. One of the reasons could be that of morality and traditional norms which are highly emphasized in a rural setting than in the urban setting where morality could be lower because modernity may not inculcate in the urban youth the discipline to respect parental teachings of abstinence. In any case the mitigating and intervention measures to rectify the situation should be applied to the never married youths both in rural and urban areas as it is existent in both environments.

Level of education and socio-economic status was as would be predicted in terms of being sexually active with highly educated participants as well as 'rich' participants recording lower percentages of those who were sexually active for both males and females at both ages of 15-19 as well as 20-24 years. This as alluded to earlier could be because education and socio-economic status are indices which normally denote prosperity and positive attributes with most variables. It therefore means that education should be promoted vigorously to social groups such as the never married youths in order to reduce on their premarital sex and so that their sexual debut and activity can start at later years rather than when they are teenagers or young adults.

There were more older participants (49.4% females and 38.3% males) who used a condom at first sex than younger participants(43.7% females and 25.9% males). As can be seen from the above figures more females significantly used a condom at first sex than their male counterparts both at 15-19 years and at 20-24 years. These are concerns which need to be addressed because we have seen figures showing that there were more younger participants for both males and females who were sexually active than the older participants. We now also see that less young participants for both males and females used a condom at first sex than older participants. What this means actually is that never married youths are sexually active quite early in their lives but also engage in sex with many of them not using a condom. This of course means that many of them will contract HIV and STIs which are quite rampant in Sub-Sahara Africa [6,7] and many girls would become pregnant and jeopardize their chances of having a good future. Also very worrying is the fact that more males across both age groups did not use a condom at first sex with more females using a condom at first sex. It is worrying because in Sub-Sahara Africa males are more likely to initiate sex than females entailing that the female counterparts would be coerced into engaging in sex without a condom which as has been mentioned earlier disadvantages the girl child in terms of future socio-economic prospects. The government as well as concerned Non-Governmental Organizations ought to work even harder in disseminating SRH information to especially the males in terms of condom use. The young females also need to be empowered with social life skills where they can competently and assertively negotiate condom use with their male partners.

It is also important to note that there were more educated participants using condoms at fist sex for both males and females than the less educated participants. This therefore means that education opportunities need to be availed to the never married youths aged between 19 and 24 years in order to accord them a decent future which is within their rights just as it is for all humanity.

As indicated earlier logistic regression analysis revealed that age, wealth index, education level, reading newspaper at least once a week and watching television had significant influence on using a condom at first sex among the male youth in the sample while religion, wealth index, education level, reading a newspaper at least once a week had significant influence on using a condom at first sex among the female youth in the sample. It can therefore be seen that the variables which were salient across the male and female participants were the wealth status, educational level and reading a newspaper at least once a week. In fact those classified as rich were 1.7 times more likely to use a condom at

first sex compared to those ranked middle and those ranked poor for both males and female participants. In terms of educational level men who had acquired secondary school or higher were 1.3 times more likely to use condom at first sex as compared to those who had primary education while the female participants who had acquired secondary education were 1.5 times more likely to use a condom at first sex than those who had only reached primary school.

The variable of newspaper reading indicated that male youths who read newspapers at least once a week were 1.1 times more likely to use condom at first sex than those who read newspapers less than once a week while the female youths who read newspapers at least once a week were 1.3 times more likely to use a condom at first sex compared to those who read newspapers less than once a week.

It can therefore be categorically stated that apart from the other mentioned factors that would explain condom use among the youths involved in premarital sex wealth or poverty levels as well as educational levels were salient for both males and females [21,22]. It's our position that newspaper reading which was also salient in explaining condom use amongst the participants is correlated to wealth levels and educational levels in the sense that those who have attained higher education or are wealthier are also more likely to read newspapers than those who have not gone higher in school or are 'poorer'.

While age did not emerge as a significant determinant of condom use among females, it did among males aged 20-24. Male youths aged 20-24 and were not married were more likely to use condom at the onset of sexual intercourse as compared to those who were younger. These results are congruent with the findings of a Nigerian study conducted by Oyediran, Feyisetan and Akpan [18] which found that the proportions of the respondents who reported condom-use at first sexual intercourse increased with age [19].

The results also showed that social economic backgrounds (rich and middle) in particular was significantly associated with a strong likelihood of condom use at first sex among females. In terms of males, only those from rich backgrounds showed strong likelihood of using condoms at first premarital sex. This findings are also in consistent with other studied that examined predictors of condom-use among young males that were never-married in Nigeria. The study

found that economic status index was a predictor of strong likelihood of condom use among youths that were not married [19].

Another predictor that emerged was the working status of man. Men who were working were more likely to use condoms than those who did not work. These findings are in line with Walusaga, Kyohangirweand Wagner in a Ugandan study which examined gender differences in determinants of condom use among youths [23]. On the contrary, this study shows that work status was not a significant predictor of condom use among females.

Educational level also emerged as a strong predictor of condom use (particularly those males and females who had attained secondary or higher education). Youths who had attained secondary school or higher were more likely to use a condom the first time they had sex as compared to those who had only attained primary education. These findings are also in harmony with other studies that examined the relationship between condom use and education attainment in sub Saharan countries [20]. The study found that education was a key determinant of condom use in all four cities. This suggests that educational level increases responses to condom promotion and highlights the need for special efforts to reach men and women with low educational attainment [20].

Female youths who read newspapers at least once a week were more likely to use a condom the first time they had sex compared to those who read newspapers less than once a week. For instance, mass-media exposure was positively associated with the use of a condom by the respondents during their first sexual encounter in Nigeria [19]. This implies that exposure to mass media has a huge influence on respondent's likelihood of using condoms as it is a source of sexual and reproductive health education.

In view of our findings we wish to recommend that the never married youths aged 19 to 24 years need to be empowered with educational opportunities which in turn will most likely improve their economic status. Such a structural intervention by the government as well as the Community Based Organizations (CBOs) and Non Governmental Organizations (NGOs) is likely to have a positive effect on the lives of the youths in terms of their Sexual Reproductive Health. This educational opportunities

intervention should be coupled with increased information dissemination on the advantages of abstinence from premarital sex and also the benefits of condom use if the youths must engage in premarital sex.

5. CONCLUSION

In conclusion this study justifies that to a larger extent, socio-economic and demographic factors were cardinal determinants of condom use among youths that were not married in Zambia. Most of these findings have shown consistency with other studies done within Sub-Saharan Africa relating to determinants of condom use among never married youths. This study in its findings recommends that interventions that seek to fight STI and unwanted pregnancies through encouragement of condom use should take into account, gender differentials, age, exposure to media, and socioeconomic status of the target population as integral aspects of these interventions to guarantee effectiveness. Seeing that the determinants of condom use vary by gender and partner type, reproductive health programs for youth need to develop campaign activities and messages that are sensitive to these differences. Thus it is important for youth reproductive health programs to emphasize that condoms are effective for both pregnancy prevention and STIs/HIV prevention. Future intervention efforts must now focus on addressing stigmatizing beliefs and providing education to overcome barriers to condom use.

CONSENT AND ETHICAL CONSIDERA-TIONS

The survey procedure and instruments for the 2013 Zambia Demographic Health Survey was ethically approved by the Zambia Biomedical Research Ethics Committee. A written consent was taken from all of the respondents prior to starting the interview and was assured that their information would be kept confidential. Since this study is based on analysis of secondary data, the ethical approval was not necessary for this study. But the permission for the use of the data was granted by Central Statistics Office and Macro Inc.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/20623