Association between risky sexual behaviour and HIV risk perception among in-school adolescents in a municipality in Ghana

James Afriyie and Maame E. Essilfie

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Department of Biomedical Sciences, School of Allied Health Sciences, College of Health, University of Cape Coast (UCC), P.M.B. Cape Coast, Ghana

Corresponding author: James Afriyie **E-mail:** jafriyie@ucc.edu.gh

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SUMMARY

Background: Studies considering the association between adolescents' risky sexual behaviour and how they perceive themselves to be at risk of HIV infection are scares in Ghana. The study assessed the association between HIV risk perception and risky sexual behaviour among in-school adolescents in a municipality in Ghana.

Method: A cross sectional study was conducted among 706 students, using a questionnaire. Logistic regression analyses were used to assess the association between HIV risk perception and risky sexual behaviour.

Results: Of all the adolescents, 27.7% were sexually active. Among the sexually active, 51.8 % had sexual intercourse below 14 years, 65.4% did not used condom at their last sexual intercourse, and 37.2% had multiple sexual partners. Only 20.5% of the adolescents perceived themselves to be at risk of HIV infection. Being sexually active was independently associated with having HIV risk perception (OR 1.54; 95% CI: 1.03–2.27). Adolescents who had multiple sexual partners were more likely than their counterparts with single sexual partners to perceive themselves to be at risk of HIV infection (AOR 2.39; 95% CI: 1.10 – 5.20). Non-use of condom at least sexual intercourse and early sexual debut were not associated with HIV risk perception.

Conclusion: Except for those with multiple sexual partners, the adolescents generally did not perceive themselves to be at risk of HIV infection despite their involvement in risky sexual behaviour. Interventions that help adolescents to correctly assess their HIV risk perception and build on their susceptibility to HIV infection are needed.

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Keywords: Risky sexual behaviour; HIV risk perception; Adolescents; Association; Ghana

INTRODUCTION

Acquired immune deficiency syndrome (AIDS), a disease caused by the human immunodeficiency virus (HIV), is a serious global health issue. In Africa, AIDS-related diseases and disorders remain the second leading cause of death for women of ages 15 to 49 years.[1] There have been some increases in HIV prevalence in Ghana among pregnant women. The HIV prevalence among pregnant women attending antenatal care was 2.4 in 2016, [2] 1.8 in 2015 and 1.6 in 2014.

Among young people in Ghana between 15 and 24 years, the prevalence of HIV in 2016 neither decreased nor increased over the previous year's figure and remained at 1.1%. For a low HIV prevalence nation like Ghana, stakeholders fighting to eliminate the infection consider the situation as a call for renewed efforts to handle HIV infection in the country. Adolescents or young people between the ages of 10 and 19 years [3] have high natural tendency for risk-taking behaviour that make them vulnerable to sexually transmitted diseases including AIDS. The vulnerability of young people to HIV infection and the impact of the disease on the nation require more understanding of the issues that are associated with HIV infection among young people. These issues including how adolescents perceive themselves to be at risk of HIV infection and how this perception influences their sexual risk behaviour are necessary for the development of appropriate interventions to fight the disease.

Several sexual risk behaviour have been studied among adolescents in Ghana, including early sexual debut and condom use.[4,5] Some of the identified factors influencing risky sexual behaviour among young people include pressure from peers, gender, HIV information, age, area of residency, smoking, drunkenness, substance use, and family connectedness.[6,7,8] Other HIV risk factors include residing with a single parent, large age disparities

between partners, and low level of formal education.[4,5] Factors found to influence HIV risk perception among adolescents include gender, knowledge about STIs and HIV, age, ethnicity, membership of social groups, exposure to the print media, knowing someone who died from HIV, being sexually active, and early sexual debut.[9,10,11] These findings and others might have helped in the development of interventions which have resulted in the general decline in HIV infection. More understanding is however needed about the relationship between risky sexual behaviour and HIV risk perception among adolescents in Ghana.

According to the Heath Belief Model, the likelihood for an individual to take a preventive health action is influenced by the individual's perceived susceptibility to the disease.[12] By this, the adolescents who perceive themselves to be at risk of HIV infection are not expected to be taking sexual risk behaviour. However, how HIV risk perception is related to the various sexual risk behaviour appears to be a complex one, with some studies finding different results. An earlier study in Ghana found that perceived susceptibility to HIV infection was a predictor of condom use (condom ever used), but this perceived susceptibility to HIV infection did not directly influence condom use at last sexual intercourse.[13]

A recent study among adolescents and young adults in South Africa found that perceived risk for HIV infection had no significant impact on consistency in using condoms.[14] In a study among out-of-school youths in Cameroun, low HIV/AIDS risk perception was significantly associated with having multiple partners.[15] However, in a study among students in Ethiopia, it was moderate or good (high) HIV risk perception that was found to be significantly associated with having multiple partnerships.[16] The relation between risky sexual behaviour and HIV risk perception among adolescents is poorly understood. Understanding the relationship between adolescents' HIV risk perception and sexual risk behaviour could contribute to the efforts in reducing sexual risk behaviour and HIV prevalence.

Despite its significance in the development of interventions to fight HIV among adolescents, studies that consider the association between adolescents' risky sexual behaviour and how they perceive themselves to be at risk of HIV infection are scares in Ghana. More research among young people in Ghana in the area of HIV risk perception are needed. The aim of this study was to assess the association between HIV risk perception and risky sexual behaviour among in-school adolescents in a municipality in Ghana. The sexual behaviour considered were being sexually active (defined as "ever had sex within 1 year to the survey"), age at first sexual intercourse, condom use, and number of sexual partners.

METHODS

Study setting

The study was conducted in 9 selected Junior High Schools in the Komenda-Edina-Egyafo-Abirem (KEEA) Municipal of Central Region of Ghana from March to May, 2017. According to the 2010 Population and Housing Census of Ghana, KEEA Municipal had a total population of 44,705 with 75,040 being females and 69,665 being males. Covering an area of 452.5 square kilometers, KEEA Municipality lies between longitude 1^0 20' West and 1^0 40' West and latitude 5^0 05' North and 15^0 North.[17] The Municipal was selected as it is in Central Region which was one of the three regions in the country which recorded low HIV prevalence in Ghana in 2016.[2] Understanding the relationship between HIV risk perception and risky behaviors among adolescents in low prevalence regions could be useful for the control of HIV in the country as a whole.

Study Population and Sampling

Adolescents in Junior High Schools in the KEEA Municipal were the study population. Information provided by the Planning and Statistics Department of the KEEA Municipal Education Office showed that there were 7,813 Junior High School (JHS) students in the 8 Educational Circuits in the Municipality as at January, 2017. The number of public schools in each of the educational circuits was as follows: Komenda- 9, Kissi- 9, Dominase- 10, Ayensodo- 9, Agona-11, Essaman-8. Ntranoa- 7, and Elmina- 6.

The 9 schools used for the study were selected by first stratifying the schools in the Municipality into the 8 education circuits. Then, using a simple random sampling method, 2 schools were selected from the Elmina Circuit while one school was selected from each of the other 7 educational circuits. Two schools were selected from the Elmina circuit as it was the District capital and the circuit with highest number of JHS students in the municipal when private and public schools are combined. In each of the selected schools, one class of JHS1, JHS 2, and JHS 3 were selected.

All students in the selected classes were invited to voluntarily participate in the survey study using the consent (ascent forms). In all, 718 students participated in the study, however data from respondents whose years fell outside the years of adolescents (10-19 years) as defined by the World Health Organization defines [3] were excluded from the analyses, leaving 706 for the analyses. The exclusion was done since the study population was in-school adolescents. The sample size of 706 used for

the study was greater than the required minimum sample size for the study which was calculated to be 207 using a sample size formula.

Study design and instruments

The study used a cross-sectional study design and a self-administered questionnaire for data collection. The questionnaire used had some questions adapted from the Healthy Oakland Teens Survey, 2003 (Centers for AIDS Prevention Studies [CAPS], 2016).[18] Some changes were made to the adapted questions to suit the Ghanaian cultural context and the content validity of the instrument was ascertained by experts in adolescent reproductive health.

After pretesting the questionnaire on 25 JHS students in Cape Coast, further changes and corrections were made to improve on the questionnaire. The questionnaire collected responses from participants on demographic information, knowledge about HIV, major sources of HIV/AIDS information, HIV risk perception, and risky sexual behaviour. However, in this manuscript, we presented only the data that relate to HIV risk perception and risky sexual behaviour.

Measures

The socio-demographic information requested in the questionnaire were age, school class (JHS1, II or III), residential location (urban or rural), ethnicity, and religion. For the purpose of analysis, ethnicity was categorized into Fanti (the predominant tribe) or other tribe. Religion was also categorized as Christian or other religion. We assessed whether a respondent has some HIV risk perception or not by the question "How will you rate your risk or chances of getting the AIDS virus someday?"

The responses that followed the question were "no risk at all", "low risk", "medium risk", and "high risk". For analysis, "no risk at all" was scored as "0" considering such respondents as having no HIV risk perception. Selection of "low risk", "medium risk", or "high risk" was scored "1", considering all such respondents as having HIV risk perception. The risky sexual behaviour, being sexually active, was measured as "ever had sex or not within 1 year to the survey". The other risky sexual behaviour were age at first sexual intercourse (before 14 years or at 14 years and after), number of sexual partners (1 or 2 or more), and use of condom at least sexual intercourse (no or yes).

Data Collection

The questionnaires were administered by trained research assistants who spoke English, Twi and Fanti. The research assistants distributed the questionnaires to participating students as they sat at their desks in their classrooms. The students completed the questionnaires independently. The research assistants were available to explain some questions in Fanti or Twi to those who made the request.

Data Analyses

The data were entered into Statistical Package for Social Sciences (SPSS version 22.0) for analyses. Descriptive statistics were performed to obtain frequencies and percentages for categorical variables and means (±Standard Deviation) for the continuous variable, age. Differences in variables were examined using chi-squared test or student t-test. Bivariate and multivariate analyses were performed to determine factors associated with HIV risk perception.

In multivariate analyses multiple logistic regression analyses were performed to evaluate the association between having HIV risk perception and risky behaviour whiles adjusting for other variables. We entered all socio-demographic variables that showed statistical significant association at $p < 0.05$ with HIV risk perception in bivariate analyses into the multivariate analyses. Crude and adjusted odds ratios with 95% confidence interval (CI) were generated. Association and differences between variables were considered significant if $p < 0.05$.

Ethical Consideration

The study was approved by the Institutional Review Board (IRB) of University of Cape Coast [OMB No: 0990-0279; IORG#: IORG0009096], and was done in conformity with the approved ethical guidelines. Written permission was given by the Municipal Educational Office of KEEA, and parents or wards gave consent for their children to participate in the study. Participants were assured of anonymity and confidentiality of the information provided.

RESULTS

Table 1. Socio-demographic Characteristic of respondents, by sex (N =706)

Factors	Total	Female	Male
	n (%)	n (%)	n (%)
School Class			
JHS 1	275 (39.0)	150 (37.5)	125 (40.8)
JHS 2	283 (40.0)	177 (44.3)	106 (34.6)
JHS 3	148 (21.0)	73 (18.3)	75 (24.5)
Age (years)			
11 – 15	450 (65.9)	270 (69.4)	184 (61.3)
16 – 19	235 (34.1)	119 (30.6)	116 (38.7)
Mean Age (SD)	14.8 (1.44)	14.7 (1.40)	15.0 (1.51)
Residential Location			
Rural	391 (56.5)	177 (44.4)	214 (70.2)
Urban	313 (44.5)	222 (55.6)	91 (29.8)
Ethnicity			
Fanti	638 (91.8)	362 (9.9)	276 (91.7)
Other Tribe	57 (8.2)	32 (8.1)	25 (8.3)

Religion			
Christianity	641 (91.6)	369 (93.2)	272 (89.5)
Other Religion[π]	59 (8.4)	27 (6.8)	32 (10.5)

[π] Other Religion comprised 8.3% Islam and 0.1% Traditionalist. Abbreviation: SD, Standard Deviation

Socio-demographic Characteristics

Of the 706 adolescents in the study, 43.3% were males and 56.7% were females. Table 1 shows the other socio-demographic features of the study participants. The mean age of the respondents was 14.8 ± 1.44 years. Most of the respondents were of the Fanti tribe (91.5%) and most were Christians (91.6%).

Risky Sexual Behaviour

Table 2 shows the distribution of risky sexual behaviors among the adolescents. The percentage of the adolescent respondents who had had sex in the past 1 year to the day of the survey was 27.7 %. Among the 189 sexually active respondents, the mean age at first sexual intercourse was 13.19 ± 2.520 years. The median age at sexual debut of the study population was 14 years with 51.8% having their first sexual intercourse before 14 years of age and 65.4% of them not using condom at last their sexual intercourse. Also, 37.7% of the sexually active adolescents had two or more sexual partners (Table 2). In bivariate analyses (Table 3), being older adolescent, having some HIV risk perception, and reporting to be a Christian were associated with being sexually active (having had sex within a year to the study). The

Table 2 Risky Sexual Behaviors among adolescent respondents

Factors	Total	Female	Male
	n (%)	n (%)	n (%)
Being Sexually Active (Had Sex within 1 year) (N=683)			
No	494 (72.3)	172 (58.7)	322 (82.6)
Yes	189 (27.7)	121 (41.3)	68 (17.4)
Age at first sexual intercourse (N = 139)			
Below 14 years	72 (51.8)	20 (41.7)	52 (51.1)
At 14 years or after	67 (48.2)	28 (58.3)	39 (42.9)
Media age at first sex	14	14	14
Mean age at first sex (SD)	13.19 (2.5)	13.56 (2.7)	12.96 (2.4)
Used Condom at last Sexual Intercourse (N = 179)			
No	117 (65.4)	32 (27.4)	85 (72.6)
Yes	62 (34.6)	30 (48.4)	32 (51.6)
Number of Sexual Partners (N= 145)			
2 or more	54 (37.2)	10 (20.0)	44 (46.3)
1	91 (62.8)	40 (80.0)	51 (53.7)

SD, Standard Deviation

Of the 189 sexually active respondents, 10 did not answer the question on condom use, 44 did not answer on the number of sexual partners and 50 did not answer the question on age at first sexual intercourse.

Proportion of sexually active adolescents was greater for those who reported that they were Christians than those who reported that they belonged to other religions (45.6 versus 26.0, p = 0.002). More of the older adolescents than younger adolescents (37.2% versus 22.9%, p < 0.001) were sexually active.

HIV Risk Perception

Among all the adolescent respondents, 20.5% considered themselves to have some risk of getting HIV (Table 4). Among adolescents who were not sexually active, 18.6% considered themselves to be at risk of getting HIV infection whereas 25.9% of the sexually active adolescent felt that they were at risk of contracting HIV.

In bivariate analyses assessing factors associated with HIV risk perception in all respondents, residential location, ethnicity, religion, age, and sexual activity were found to be associated with having HIV risk perception (Table 5).

Table 3 Bivariate Analyses assessing factors associated with being sexually active among respondents.

Factor	**Sexually Active (Had sex in the last 1 year)**		**Odds Ratio**	**p-value**
	No	Yes	OR	
	N (%)	N (%)	(95% CI)	
School Class				
JHS 1	184 (71.0)	75 (29.0)	-	0.404
JHS 2	209 (75.5)	68 (24.5)		
JHS 3	101 (68.7)	46 (31.3)		
Age (years)				
11 – 15	337 (77.1)	100 (22.9)	0.5000 (0.333 - 0.708)	< 0.001
16 – 19	145 (62.8)	86 (37.2)		
Residential Location				
Rural	268 (73.1)	114 (29.8)	1.293 (0.919 – 1.821)	0.140
Urban	225 (75.3)	74 (24.7)		
Ethnicity				
Fanti	451 (73.1)	166 (26.9)	0.695 (0.389 – 1.250)	0.224
Other Tribe	36 (65.5)	18 (34.5)		
Religion				
Christianity	458 (74.0)	16 (26.0)	0.404 (0.234 – 0.697)	0.001
Other Religion	31 (53.4)	27 (46.6)		
HIV Risk Perception				
No risk	402 (74.2)	140 (25.8)	0.654 (0.440 – 0.972)	0.035
Some Risk	92 (65.2)	49 (34.8)		

Abbreviation: CI, confidence interval; OR, odds ratio

Table 4. Self-Assessed HIV Risk perception among subgroups of respondents

HIV Risk perception	TOTAL n (%)	MALE n (%)	FEMALE n (%)
Among all respondents (N=706)			
No HIV risk perception	561 (79.5)	264 (80.4)	315 (78.8)
HIV risk perception	145 (20.5)	60 (19.6)	85 (21.2)
Among Sexually Active respondents (N=189)			
No HIV risk perception	140 (74.1)	90 (74.4)	50 (73.5)

HIV risk perception	49 (25.9)	31 (25.6)	18 (26.5)
Among Sexually Inactive respondents (N= 494 **)**			
No HIV risk perception	402 (81.4)	145 (84.3)	253 (79.8)
HIV risk perception	92 (18.6)	27 (15.7)	65 (20.2)

The proportion of adolescents who considered themselves to be at some risk of getting HIV was significantly lower among those from rural areas than those from urban areas (17.1% versus 24.6 %, p = 0.015).

Adolescent respondents who were Fantis were less likely to consider themselves to be at risk of getting HIV than their counterparts who were not Fantis (18.7 % versus 40.4 %, p < 0.001). Those who belonged to the Christian faith were, also, less likely to report of having HIV risk perception than those who belonged to other religions (18.4% versus 40.7%, p < 0.001). Fewer of the adolescents within the ages between 11 and 15 years considered themselves of having some risk of HIV infection than their counterparts between 16 and 19 years (17.8% versus 26.4%, p = 0.009). Sex of the respondents and school class were not associated with having HIV risk perception.

Table 5 Bivariate Analyses assessing factors associated with HIV Risk perception among of adolescent respondents.

Factor	HIV Risk Perception		Odds Ratio	p-value
	No risk	Some risk		
	n (%)	n (%)	OR (95% CI)	
School Class				
JHS 1	213 (77.5)	62 (22.5)	-	0.541
JHS 2	227 (80.2)	56 (19.8)		
JHS 3	121 (81.8)	27 (18.2)		
Age (years)				
11 – 15	373 (82.2)	81 (17.8)	1.650 (1.132 – 2.405)	0.009
16 – 19	173 (73.6)	62 (26.4)		
Residential Location				
Rural	324 (82.9)	67 (17.1)	1.578 (1.092 – 2.279)	0.015
Urban	236 (75.4)	77 (24.6)		
Ethnicity				
Fanti	519 (81.3)	119 (18.7)	2.950 (1.676 – 5.193)	<0.001
Other Tribe	34 (59.6)	23 (40.4)		
Religion				
Christianity	523 (81.6)	118 (18.4)	3.040 (1.742 – 5.302)	<0.001
Other Religion	35 (59.3)	24 (40.7)		
Sex				
Male	246 (80.4)	60 (19.6)	1.106 (0.764 – 1.602)	0.592
Female	315 (78.8)	85 (21.2)		

Abbreviation: CI, confidence interval; OR, odds ratio

Association between Risky Sexual Behaviour and HIV Risk Perception

In the overall study population, the proportion of adolescents having some HIV risk perception was greater among those who were sexually active than those who had not had sexual intercourse in the past 1 year (25.9% versus 18.6%, p= 0.035). Being sexually active was independently associated with HIV risk perception (Table 6).

Among sexually active adolescent respondents, bivariate analyses showed that having first sexual intercourse before 14 years, and not using condom at last sexual intercourse were not associated with having HIV risk perception. However, number of sexual partners was associated with HIV risk perception, with a greater proportion of the adolescents who had multiple sexual partners considering themselves to be at risk of getting HIV infection than those with 1 sexual partner. (38.9% versus 20.9%, p = 0.019).

In multivariate analyses, adjusting for residential location, ethnicity, religion, and age, the association between multiple sexual partners and HIV risk perception persisted. The odds of the adolescents with multiple sexual partners perceiving themselves to be at risk of HIV infection was greater than that of the adolescents with single sexual partners (AOR=2.39, 95% CI: 1.101 – 5.199, p=0.028).

DISCUSSION

The finding of this study that about a quarter (27.7%) of the adolescents were sexually active agrees with a previous study among in-school young people in Accra, Ghana, which reported that 25 % of young people were sexually experienced.[7] The 14.8 years mean age at first sexual intercourse and the 31% proportion of adolescents with multiple sexual partners found in the previous study also agrees with the findings of this study. The findings of this study including the high proportion of adolescents who did not use condom at their last sexual intercourse (65.4%) and the fact that about half (51.8%) of the of the sexually active adolescents started sexual intercourse before age 14 suggest that despite the generally low self-assessed HIV risk perception among the adolescents in study, a good number of them were involved in risky sexual behaviour. The adolescents might be undertaking these sexual risk behaviour to

learn more about themselves and to explore the world of sexuality. Our finding that a small proportion of adolescents has HIV risk perception is consistent with a study in Cameroun which reported that only 20.7% out-of-school youth perceived themselves to be at high risk of getting HIV.[15] Our figure was however lower than the finding of a study in rural Cameroon which reported that 39.4% of secondary school female perceived themselves to be at high risk of HIV infection.[19] A study in Ghana, also reported a generally low risk perception for adolescents with 15% of females and 16% of males perceiving themselves to be at risk of HIV.[9] The

proportion of adolescents perceiving themselves to be at risk of HIV infection is lower than that of adults as a study in Ghana had reported that among persons above 18 years, 40.4% men and 35.9% women perceived themselves to be at risk for HIV infection.[20]

The reported low HIV risk perception among the adolescents may be as a result of difficulties the young people might have in correctly assessing their risk of getting the disease. In an earlier study in Zimbabwe, it was found out that 27% females and 80% males who considered themselves to have no risk or small risk of getting HIV were actually at moderate or high risk of contracting HIV.[21] The adolescents might have underreported their risk as youth in general think that they are not vulnerable to diseases.
The high stigma attached to HIV infection in Ghana could be another possible reason which made most of the adolescents not to think of themselves of ever getting HIV.

Table 6 Bivariate and multivariate analyses of relationship between risky sexual behaviour and HIV risk perception among adolescent respondents.

Factor	HIV Risk Perception		Crude Odds Ratio	p-value	Adjusted Odds Ratio ¥	p-value
	Low	High				
	n (%)	n (%)	OR (95% CI)		AOR (95% CI)	
Being Sexually Active (Had sex in the last 1 year) (N=542)						
Yes	140 (74.1)	49 (25.9)	1.539 (1.029-2.273)	0.035	1.333 (0.869-2.045)	0.188
No	402 (81.4)	92 (18.6)				
Age at First Sexual Intercourse (N=106)						
Below 14 years	54 (75.0)	18 (25.0)	0.865 (0.395-1.895)	0.718		
≥ 14 years	52 (77.6)	15 (22.4)				
Used Condom at last sexual intercourse (N=134)						
No	90 (76.9)	27 (23.1)	0.733 (0.365-1.472)	0.382		
Yes	44 (71.0)	18 (29.0)				
Number of Sexual Partners (105)						
2 or More	33 (61.1)	21 (38.9)	2.411 (1.145-5.079)	0.019	2.393 (1.101-5.199)	0.028
1	72 (79.1)	19 (20.9)				

Abbreviation: CI, confidence interval; OR, odds ratio; AOR, adjusted odds ratio.
¥Adjusted for residential location, ethnicity, religion, and age

Older adolescents and those residing in urban areas might have been exposed to more HIV information and had more experience with people living with HIV than younger adolescents and those residing in rural areas. This might have influenced more of the adolescents who were older and those who were residing in urban areas than those who were younger and those residing in rural areas to have some HIV risk perception. Why more of the adolescents belonging to the major ethnic group and religion in the area had no HIV risk perception than those belonging to the minor tribes and religions could be attributed to several reasons.

It is possible that adolescents of the major religion and tribe might have greater sense of belonging and identity than their counterparts who did not belong to the major tribe or religion. This sense of belonging and identity might have lifted their self-esteem and perception that they were at no risk for HIV infection. Christian adolescents might have been using their Christian faith perspective to perceive themselves to be at no risk of HIV infection. Even though some studies have found sex as a factor that is associated with HIV risk perception, our study did not establish an association between sex and HIV risk perception. Like the other recent studies that reported on gender difference in HIV risk perception in Ghana,[9,20] this study could not establish statistically significant difference in HIV risk perception between males and females.

Both the males and females adolescents in the study area generally judged their risks of getting HIV as low.
Girls and boys might be learning to express their sexual views and beliefs in the same way.

Adolescents who reported that they have never had sex in the past year (sexually inactive) were less likely to consider themselves to have some risk of getting HIV than those who reported that they have had sex within a year to the study. This finding agrees with finding of

other studies which reported that ever had sex and sexual risk behaviour were significant factors associated with risk of contracting HIV.[10,19]
Adolescents who involved themselves in sexual intercourse could more easily than those who were not sexually active to admit their susceptibility to HIV infection as most the adolescents reported that they did not use condom during their last sexual intercourse.

Among sexually active adolescents, the strength of the association between multiple sexual partners and HIV risk perception was evident even after considering the effect of the other factors that independently showed significant association with HIV risk perception (age, religion, ethnicity, and residential location). Sexually active adolescents with multiple sexual partners were 2.39 times more likely than those with single sexual partner to assess themselves to be at risk for HIV infection.
This agrees with a study in Ethiopia which found that youth having two or more sexual partners perceived themselves to be at high risk of getting HIV infection than their counterparts with one sexual partner.[8]
The acceptance of their risk of HIV infection because of the adolescents' behaviour could be attributed to their knowledge and information about how HIV is transmitted.

This finding of this study that suggests absence of association between condom use at least sexual intercourse and HIV risk perception among adolescents agrees with a recent study in South Africa that found that no significant impact of consistency of condom use on HIV risk perception among adolescents and young adults.[14] It is other factors such as parental approval, social norms, and accessibility of condoms in the community overshadowed the individual adolescent's perceived HIV risk in influencing condom use at least sexual intercourse.

IMPLICATIONS FOR INTERVENTIONS

Efforts to reduce HIV infection among young people in Ghana must be sustained as it holds the hope of HIV prevention in country. The situation where adolescents generally perceived themselves to be at no risk of HIV infection despite their involvement in risky sexual behaviour needs to be addressed. This calls for a focus on interventions that help adolescents to have correct HIV risk perception of themselves.

It is a good step that a good number of the adolescents who were involved in risky sexual behaviour perceived themselves to have some risk of getting HIV. This could be attributed to the impact of the services of stakeholders of HIV prevention in the country. Moving forward, there could be planning and development of HIV interventions that build on the adolescents' belief of the seriousness of practicing risky sexual behaviors; introduce adolescents to available HIV prevention intervention in the country; build confidence in the efficacy of HIV interventions; and sustain the involvement of the media, peers and relatives of adolescents in the fight against HIV among adolescents. The dominant religious group, here the Christian group, and the rural communities should not be left out as the findings also suggest that belonging to the dominant religious organization and residing in rural areas were factors associated with having no HIV risk perception among the adolescents.

CONCLUSION

Only few of the adolescents in the study perceived themselves to be at risk of HIV infection. Those who were sexually active were more likely to have some HIV risk perception than those who were not sexually active. Among sexually active adolescents, a risky sexual behavior in term of multiple sexual partners was also found to be associated with HIV risk perception. Adolescents with multiple sexual partners were more likely to have some HIV risk perception than adolescents with single sexual partners.

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