HIV Risk Perception and Assessment among Youths in Rivers State, Nigeria; A Comparative Cross-sectional Study

Abstract

Introduction:HIV/AIDS remains a major global public health issue with increasing cases among young people.Several risky sexual behaviours put these youths at higher risk of HIV infection affecting the health and general well-being. Perception of health risk is a key dimension of most health behaviour models. This study assessed the risk factors of HIV infection, HIV risk perception and assessment among youths in Rivers state, Nigeria.

Methods: This was a comparative descriptive cross-sectional study investigating HIV risk perception among youths in a rural and an urban local government in Rivers State. A multistage sampling technique was used in the selection of the youths from two LGAs. A structured, pre-tested, questionnaire was used to elicit information from the respondent. Data was subjected to descriptive and inferential statistics set at $P \leq 0.05$using SPSS version 21 and EPI INFO version 7.0.

Results: Respondents mean age was 19.04 $\pm$ 3.34 and 18.50$\pm$ 2.86 years rural and urban community respectively. There were more female respondents 52.2% in the rural area and more male respondent 59.2% in the urban area. More youths in the rural than the urban (56.2% vs.39.5%; p=0.018) were sexually active. The proportion that did not use condoms consistently in the last 12 months preceding the survey was more in the rural than the urban area (72.6% vs. 46.6%; p<0.001). A larger proportion of youths in the urban areas than the rural areas(79.7% vs.61.5%)perceived themselves to have little or no risk. However, more of rural youths than urban youths (51.4% vs.36.6%)were assessed to be high risk. The sensitivity of perceived risk in the rural was higher than in the urban (37.4% vs.30.6%) while the specificity of perceived risk in the rural was lower than in the urban (63.3% vs.88.0%) population.

Conclusion: Sexual risk factors to HIV were found among youths. Youths in rural area are more likely than their urban counterpart to underestimate their personal risk of contracting HIV. Training intervention to improve HIV/AIDS knowledge, risk perception and reduction in risky sexual behavior among the youths is crucial.

Key words: Risky Sexual behaviours, HIV, Risk Perception, Risk Assessment, Youths

Introduction :

HIV/AIDS is a global public health problem that has claimed 40.4 million lives so far and is still spreading throughout all nations. Some countries have reported rising rates of new infections after years of reduction. By the end of 2022, there were an anticipated 39.0 million HIV-positive individuals worldwide, of whom 25.6 million were located in the WHO African Region. According to WHO estimates for 2023, 1.3 million persons contracted HIV and 630 000 people died from HIV-related causes in 2022 [1].HIV/AIDS is also known to occur both in the developing and developed countries [2]. In 2015, of the 2.1 million persons that were newly infected with HIV, 670,000 were young people between the ages 15 to 24 [3]. The HIV virus has been known to have great harmful impacts on the socioeconomic status of families, communities, societies of the affected, especially in the developing countries [4].

In Nigeria, HIV/AIDS is a health problem affecting people in all strata of the population [5]. HIV/AIDS has become a major public health challenge and a tenacious risk to young adults resulting in the increased incidence and prevalence of the virus. Young adults have also been noticed to be the centre of attraction as a result of certain risk factors [6]. The current national HIV prevalence in Nigeria is estimated at 1.4% with total estimated 1.9 million people living with the virus. The distribution of HIV burden across ages in Nigeria shows that 12.0% of people living with HIV are between ages 0–14 years while 75.0% are between 15– 49 years and 13.0% are 50 years and above [7].

Sexually transmitted infections (STIs), condom-less anal or vaginal sex, alcohol and drug use during sexual activity, sharing contaminated needles and other sharp objects, blood transfusions, tissue transplantation, and medical procedures involving unsterile cutting or piercing are among the conditions and behaviours that increase a person's risk of contracting HIV [1]. Several risky sexual behaviours such as early sexual initiation (before 18 years), having multiple sexual

partners and unprotected sexual intercourse, having a high-risk partner and engaging in sex work were critical factors putting young people at higher risk of HIV infection [8, 9]. In Nigeria, the prevalence of HIV among young people is estimated to be 3.5%, the highest among countries in West and Central Africa [10]. These sexual risk behaviours can lead to HIV, STDs and unintended pregnancies[11].

According to John et al. one of the main causes of the largest number of new HIV infections in Africa is youths' propensity to participate in high-risk sexual activities, such as poor health-seeking behaviours. HIV infections are especially common among young persons [12]. Youths between the ages of 15 and 24 account for the majority of new HIV infections in sub-Saharan African nations; in some, this age group's prevalence approaches 20% [13, 14]. Sexual behavioural change is still the best strategy to stop the spread of HIV. Sexual behaviour and practices have an impact on HIV infection acquisition and transmission risk [15] and influences risk perception.

Risk perceptions refer to people's beliefs about their vulnerability to danger or harm [16]. Perception of health risk is a key dimension of most health behavior models [17, 18] used to construct health promotion campaigns particularly those targeting HIV- related risk behaviours[19]. Studies have shown that greater perceived vulnerability to HIV is associated with decreased involvement in risk taking [20, 21]. The health belief model [22, 23] and the theory of planned behaviour[24, 25] are founded on the principle that there is a relationship between beliefs, attitudes and behavior.

The sexual behaviour of young people plays a major role in the trajectory of AIDS epidemic, for young people make up a large and growing population in developing countries. Sexual behaviours formed during these periods often persist into adulthood [26] influencing their health

and well-being. According to Enahoro et al sexual activity among young people is a phenomenon that can no longer be considered as 'mere speculation' but need intervention [27]. An intervention study have shown that training increased HIV/AIDS knowledge, improved risk perception and reduced risky sexual practices among study population [28]. Nevertheless, there is a general neglect of HIV/AIDS programmes in rural communities even though people living with HIV/AIDS often return to their rural communities after contracting HIV/AIDS in urban areas [26].

Studies have been conducted on the knowledge, attitudes and practices (KAP) of young people on HIV/AIDs [15, 29, 30]. Continuous monitoring of the trend in risky sexual behaviors, especially among the youths is very important, as these behaviors significantly impact the prevalence of HIV in the population. There is limited information about HIV risk perception and assessment among youths in rural and urban communities in Rivers State of Nigeria. This study assessed the risk factors of HIV infection, HIV risk perception (including self-perceived risk, assessed risk of contracting HIV and risk assessment of their friends) among youths in Rivers state, Nigeria.

Material and Methods

Study Design, Location and Sampling Techniques

This was a comparative descriptive cross-sectional study investigating HIV risk perception among youths in a rural and an urban local government in Rivers State. A multistage sampling technique was used in the selection of the youths. Two Local Government Areas (LGAs) in the state, 1 rural, 1 urban were randomly selected, using the list of LGAs as a sampling frame. A ward was randomly selected from each LGA, from each ward using the list of communities as a sampling frame, 1 community was randomly selected, Bodo (rural) and Rumukalaghor (urban).Cluster sampling was carried out in each of these communities.The starting household was determined randomly by balloting while the next nearest households to the right were pre-selected until the sample size was reached.

The sample size was determined using the formula for the comparison of 2 proportions [31]. correcting for 10% non-response and adjusting for clustering effects, a sample size of 600 was used

Study Population

Youths between the ages of 15-24 years in the communities of study were used. Inclusion Criteria: Youths who participated in the study had to be resident in the area for at least 6 months. Exclusion Criteria: Those who were not willing to participate or were too ill to do so.

Respondents were recruited over 6 weeks in by four field assistants who were youths of both sexes in each community.

Study Instrument

A structured, pre-tested, interviewer-administered questionnaire was used, some of the questions were adapted from a previous study done[32]. The study instrument was made up of 2 sections namely A: socio-demographic profile such as age, marital status, religion etc, B:

HIV risk perception (including self-perceived risk, assessed risk of contracting HIV and risk assessment of their friends using a Likert-like scale).

For self-perceived risk assessment study participants were asked to rate their likelihood to contract HIV infection now or in the near future using a Likert-like scale of 'no risk', 'little risk', 'moderate risk' and 'high risk'. The ratings were then dichotomised into categories of 'little or no risk' and 'moderate-to-high risk'.

For Interviewer-assessed risk perception,the following was used for the grading

Zero (0) = when the risk indicator was absent and correspond to 'no risk'.

One (1)= when participants had less than four-lifetime sexual partners, a positive history of unprotected sex, one recent STI symptom, or a previous history of STI.

Two (2) = when participants had four or more lifetime sexual partners, two or more recent STI symptoms, or repeated history of STIs.

The average score was then calculated and youths with scores lower than average were classified as low to no risk and those with scores greater than average were classified as moderate to high risk. This was carried out to check if respondents underestimated their risk of HIV infection or not, when compared to selected HIV risk indicators.

In addition they were asked to compare their perceived risk with that of their friends using a 5 point Likert type of scale comprising 'much less risk', 'less risk', 'same risk', 'more risk', and 'much more risk'. The investigator assessed their risk based on known risk factors for HIV,

similar to a study carried out by [32] on a Likert-like scale of 'no risk', 'little risk', 'moderate risk' and 'high risk' and then this was also dichotomised into categories of 'little or no risk' and 'moderate-to-high risk'.

Sensitivity and specificity were calculated for interviewer assessed risk and self-perceived risk.

Sensitivity was calculated using the formula= a/ (a+c); Specificity was calculated using the formula=d/ (b+d). Where a= Subjects with a true-positive test result. (In this case true-positive assessed HIV risk)

b = Subjects with a false-positive test result; c= Subjects with a false-negative test result; d= Subjects with a true-negative test result.

Data Analysis

The data was entered, collated and cleaned using EXCEl and exported to IBM SPSS version 21 and EPI INFO version 7.0 for analysis. Alpha was set at $P \leq 0.05$, and the confidence interval was set at 95%. Kappa statistic was used to check the difference between the perceived and assessed risk. The Socio-demographic variables were presented in tabular forms; descriptive statistics such as mean and standard deviation for the quantitative variables were calculated. A Chi-square test was used to compare differences in proportion.

Ethical Clearance

Ethical approval was obtained from the Ethics Committee of the University of Port Harcourt Teaching Hospital with number UPTH/ADM/90/S.II/VOL.X/754. Additionally, permission was obtained from the relevant authorities at the state and local government officesas well as stakeholders in the communities. Informed consent was obtained the respondents and assent obtained from respondents below 18 years in addition to parental consent.

Results

Table 1 socio-demographic characteristic of rural and urban youths in Rivers State. The respondents in the rural community were older with a mean age of 19.04 $\pm$ 3.34 years when compared to respondents in the urban community with a mean age of 18.50$\pm$ 2.86 years. This difference in age distribution in the rural and urban areas was statistically significant ($p \leq 0.05$). Most, 350 (58.5%) of all the respondents were in the age group 15-19 years. There were more female respondents 156 (52.2%) in the rural area while there were more male respondent 177 (59.2%) in the urban area. These differences were also statistically significant (χ^2 $p \leq 0.05$).

Table 2 shows the factors used for the interviewer-assessed HIV risk. A total of 168 (56.2%) rural and 118 (39.5%) urban respondents were sexually active. This difference was statistically significant ($\chi 2$ $p \leq .0.05$). Among youths that were sexually active (n=286), 77(45.8 %) in the rural, which is lower than in the urban area (n= 77, 65.3%) used condoms at last sexual activity. This was made up of 35(48.6%) males, 42 (43.8%) females in the rural, and 51(79.7%) males, 26 (48.1%) females in the urban. The proportion that did not use condoms consistently in the last 12 months preceding the survey among youths was much higher (n= 122, 72.6%) in the rural than the urban area (n= 55, 46.6%). This was made up of 26 (36.1%) males, 20(20.8%) females in the rural, and 44(68.8%) males, 19(35.2%) females in the urban. These observed differences were statistically significant ($\chi 2$ $p \leq 0.05$).

Most of the sexual partners amongst youths, 115 (68.5%) in the rural as well as 93 (78.8%) in the urban areas were boyfriend or girlfriends not living with respondents. The mean number of lifetime partners among rural respondents was 4.53 ± 1.95; more than twice reported for urban respondents 2.00 ± 2.00 ($\chi 2$ $p \leq 0.05$). Respondents in the rural area, 36 (12%) had more recent

symptoms of STIs than urban 14 (4.7%). Similarly, the past history of STIs was higher in rural, 57(19.1 %) than urban population 16 (5.4).

Table 3 shows relationship between self-perceived susceptibility to HIV and interviewer assessed susceptibility among Youths in Rural and Urban Communities in Rivers State. About 110 (38.5%) rural youths perceived themselves to be high risk while 60 (20.3%) of the urban youths perceived themselves to be same. A large proportion of youths in the rural area 176 (61.5%) perceived themselves to have little or no risk though less than 235 (79.7%) of urban youths perceived themselves to be same.About half, 147 (51.4%) of rural youths were assessed to be high risk while 108 (36.6%) of urban youths were assessed to be same. One hundred and thirty nine (48.6%) of rural youths were assessed to be low risk while 187 (63.4 %) of urban youths were assessed to be same.

Kappa of -0.021 reported for rural data showed poor agreement between the assessed and perceived risk among respondents while that for the urban data (0.178) showed only a slight agreement. Youths in rural area are more likely than their urban counterpart to underestimate their personal risk of contracting HIV.

Table 4 shows the sensitivity of perceived risk in the rural (37.4%) was higher than in the urban (30.6%) while the specificity of perceived risk in the rural (63.3%) was lower than in the urban (88.0%) population. The negative predictive value in the rural respondents (47.7%) was lower among rural than urban (68.0%) residents.

Table 5 shows that more youths in the rural area, 156 (54.5%) estimated their friends risk of contracting HIV to be higher than in the urban population, 118 (39.6%). This difference was not statistically significant. On the other hand the proportion that estimated their friend's risk to be

lower or the same as their own was lower in the rural, 34(11.9%) than urban, 64 (21.4%). This difference was statistically significant (χ^2, $p \leq .0.05$).

Discussion

This study assessed the risk factors of HIV infection, HIV risk perception (including self-perceived risk, assessed risk of contracting HIV and risk assessment of their friends) among youths in Rivers state, Nigeria. Finding revealed that more than half (56.2%) of the youths in the rural community were sexually active, this proportion was higher than their urban counterpart (39.5%). Accordingly, a survey of young people in Nigeria who lived in both rural and urban areas revealed that over half (53.5%) of the participants were sexually active, with a higher percentage living in rural than in urban areas (64.9% vs. 44.1%) [33]. A qualitative study also revealed that young people who spent their early adolescence in rural areas were reported to be involved in risky sexual acts than those raised in urban areas because they were not properly guided[34]. This implies the need for health education and awareness campaigns focusing more in the rural areas.

With respect to the use of condoms, a higher proportion (54.2%) of the youths in the rural areas did not use condoms at their last sexual activity than their urban counterpart. This was in line with a study among youths in South Africa that found that (45.7%) of the participants did not use condom during their last sexual intercourse, more (56.0%) of the out of school youth compared to their counterparts (44.0%) [35]. A lower proportion was found in a study in Osun state that found that only 34% of them reported using a condom for the first time; half of them were from rural areas and the other half were from cities ($p = 0.003$); the prevalence was higher (45.1%) during the most recent sex [36]. However, there was no statistically significant difference in condom use at last vaginal sex act between respondents resident in rural and urban areas (65%

vs. 62%; p = 0.54) among youths[343]. Although condom usage among youths was generally low, it was higher among the rural residents. This signifies the need to raise awareness on the correct and consistence use of condoms especially among youths residing in rural areas.

Most of the sexual partners amongst youths, in both rural and urban areas were boyfriend or girlfriends not living with respondents. The mean number of lifetime partners among rural respondents was more than twice reported for urban respondents. Correspondingly, Folayan et al found that most of the sexual partners practicing anal, oral and vaginal sex were reported withspouses, boy/girlfriends and casual sex partners and more resident in the rural area reporting having more than one sexual partner (29.5% vs 20.4%) [33].A South African study found that out of school youth had a 45% probability of having multiple sexual partners compared to university students [35]. Having multiple sexual partners increases the vulnerability of young people in contracting HIV infections. Health education and communications especially using media platform is crucial to encourage correct and consistent condom usage.

More young people in the rural area, had more recent symptoms of STIs and higher past history STIs than the urban population. A study found that among the youth who were diagnosed with STI in the past 12 months, 85% were out of school youth compared to 15% of the university students [35]. More female than males in both the rural and urban areas reported symptoms and history of STIs [33]. Access and utilization of sexual and reproductive health services and productsis mandatory among young people in Nigeria.

A higher proportion (38.5%) of the rural youths than the urban youths (20.3%) perceived themselves to be high risk. A larger proportion of youths in the urban centers (79.7%) than the rural areas (61.5%) perceived themselves to have little or no risk. This shows that majority of the

youths had low HIV self-risk perception. A much lower proportion of personal risk perception were found in a study in Borno state, it was shown that urban areas, 18 (5.1%) reported no risk to HIV, 24 (6.8%) said they had a low risk, only 5 (1.4%) observed they had a high risk, while 288 (82.1%) did not know they were at risk. In rural areas, 171 (11.9%) reported having no risk of contracting HIV, 206 (14.3%) acknowledged low personal risk, and 28 (1.9%) said they had a high risk, while 943 (65.5%) did not know they were at risk [15]. Considering the synergy between HIV and risky sexual behaviour, another study revealed that more (54.6%) out of school youth had a low HIV risk perception as compared to university students (45.4%) [35]. Another study among adolescent girls and young women found that the sexually active who did not have a known HIV-positive status reported having low HIV risk perception; 13% reported high risk perception, and 14% did not know their perceived level of risk [37]. In another survey, the majority of students (72.5%) assessed their risk as low, 8.5% assessed their risk as high and 19.1% did not know their risk [38].

Generally, adolescents and young adults had a very low self-perceived risk of contracting HIV. Perception of STD/HIV risk is the main driving force for HIV testing. Inaccurate self-perception or objective perception of risk can impede HIV diagnosis and treatment. Sexual behavioural change communication remains the most effective way of preventing transmission of HIV infection. This implies the need for health education and trainings to increase HIV/AIDS knowledge, improved risk perception and reduced risky sexual practices among youths in Nigeria and the world at large.

Risk factors used for interviewer-assessed HIV risk were having sexual experience, no condom usage, type and number of sexual partners, having unprotected sexual intercourse and history of STIs. Findings revealed that half, (51.4%) of the rural youths were assessed to be high risk while

(36.6%) of urban youths were assessed to be same. However, a higher proportion of the urban youths (63.4%) than the rural youths (48.6%) were assessed to be low risk. In contrast, a study among young African Americans using the epidemiological risk assessment indicated that based on their sexual behaviours and activities, they were mostly (100%) at moderate/high risk of contracting STDs/HIV [39].

Youths in rural area are more likely than their urban counterpart to underestimate their personal risk of contracting HIV. The sensitivity of perceived risk in the rural (37.4%) was higher than in the urban (30.6%) while the specificity of perceived risk in the rural (63.3%) was lower than in the urban (88.0%) population. More youths in the rural area, (54.5%) estimated their friends' risk of contracting HIV to be higher than in the urban population, although the observed differences were not statistically significant. Urban-rural residence is an important variable that influences sexual and reproductive health outcomes [33]. The distinction between HIV sexual risk perception of adolescents and young persons' resident in urban and rural Nigeria is important because of the disparities in these two locations' availability to health care facilities, cultural norms, and living conditions [40].

Our study has its limitation. The study's cross-sectional design may have under-reported risk perception due to the use of an interviewer administered questionnaire, and the role of social desirability bias. Self-reported sexual risky behaviors may have led to under-reporting due to the sensitive questions on sex from adolescents and young persons. Methods like audio computer assisted self-interviews could help reduce social desirability bias and accurately measure sexual and HIV risk perception. Despite the limitation, our research offers proof that information on protective sexual behaviours, including STI prevention and management, should be included in sexual and reproductive health education programmes for young adults in Nigeria.

Conclusion

The study showed significant differences in the sexual risk factors to HIV, HIV self-risk perception and assessment of young adults resident in urban and rural, Rivers State Nigeria. This study suggests that most youths perceived their risk for acquiring HIV as low. This implies that HIV-risk perceptions among youths are highly inaccurate, which may be due to the influence of other factors directly or not directly related to sexual behaviour. Since self-perception of risk may be important in health decision-making among youths, understanding the social mechanisms HIV risk factors is crucial.

We recommend greater efforts of HIV/AIDS campaigns to be intensified in both rural and urban centers especially among non-governmental organizations, voluntary organizations and the Government. There is need to increase awareness level through the media, seminars, lectures, post and handbill. More stringent adoption and implementations of policies on matters that will reduce the spread of HIV virus should be strictly adhered to. Training intervention to improve HIV/AIDS knowledge, risk perception and reduction in risky sexual behavior among the youths is crucial.

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Table 1: Socio-demographics of Youths in Rural and Urban Communities in Rivers State

Variables	N= 299 Rural n(%)	N = 299 (Urban) n(%)	N=598 Total (%)	p - value
Age				
15-19	160 (53.5)	190 (63.5)	350 (58.5)	*0.013**
20-24	139 (46.5)	109 (36.5)	248 (41.5)	*0.009**
Total	299 (100)	299 (100)	598 (100)	*0.037**
Mean age	19.05 $\pm$ 3.342	18.50 + 2.861		
	t- test	*df=1, p = 0.037*		
Sex				
Male	143 (47.8)	177 (59.0)	320 (53.5)	*0.005**
Female	156 (52.2)	122 (40.8)	278 (46.5)	*0.005**
Total	299 (100)	299 (100)	598 (100)	
Religion				
Christian	295 (98.7)	286 (95.7)	581 (97.2)	*0.839*
Muslim	3 (1.0)	12 (4.0)	15 (2.5)	*0.106*
Traditional	1 (0.3)	1 (0.3)	2 (0.3)	*0.386*
Total	299 (100)	299 (100)	598 (100)	
Marital Status				

Single	250 (83.6)	289 (96.7)	539 (90.1)	*0.187*
Married	27 (9.0)	9 (3.0)	36 (6.0)	*0.023**
Living with partner	22 (7.4)	0 (0.0)	22 (3.7)	*0.001**
Divorced	0 (0)	1(0.3)	1 (0.2)	*0.665*
Total	299 (100)	299 (100)	598 (100)	
Educational Status				
No formal education	32 (10.7)	4 (1.3)	36 (6.0)	*0.001**
Primary	113 (37.8)	82 (27.4)	195 (32.6)	*0.084*
Secondary	152 (50.8)	211 (70.6)	363 (60.7)	*0.014**
Tertiary	2 (0.7)	2 (0.7)	4 (0.7)	*0.540*
Total	299 (100)	299 (100)	598 (100)	
Occupation				
Student	162 (54.2)	247 (82.6)	409 (68.4)	0.001*
Unemployed	86 (28.8)	17 (5.7)	103 (17.2)	0.001*
Others	24 (8)	23 (7.7)	47 (7.9)	0.952
Business	14 (4.7)	7 (2.3)	21 (3.5)	0.324
Farmer	13 (4.3)	0 (0)	13 (2.2)	0.006*
House wife	0 (0.0)	4 (1.3)	4 (0.7)	0.280
Civil servant	0 (0.0)	1 (0.3)	1 (0.2)	0.665
Total	299 (100)	299(100)	598(100)	

Table 2: Interviewer-assessed Risk factors for HIV of Youths in Rural and Urban Communities in Rivers State

Variables	N= 299 Rural n (%)	N = 299 (Urban) n (%)	N=598 Total (%)	p – value
Proportion Sexually Active				
Ever had sex.	168 (56.2)	118 (39.5)	286(47.8)	0.018*
Never had sex	131 (43.8)	181 (60.5)	312(52.2)	0.024*
Total	299 (100)	299 (100)	598 (100)	
Condom use at last sexual activity n=168				
Yes	77 (45.8)	77 (65.3)	154 (54.0)	*0.921*
No	91 (54.2)	41 (34.7)	132 (46.0)	*0.001**
Total	168 (100)	118 (100)	286 (100)	
Consistent condom use in last 12 months				
Yes	46 (27.4)	63 (53.4)	109 (38.1)	*0.197*
No	122 (72.6)	55 (46.6)	177 (61.9)	*0.001**
Total	168 (100)	118 (100)	286 (100)	
Types of Partners				
Spouse	27 (16.0)	9 (7.6)	36 (12.6)	*0.022**
Live in partner	22 (13.1)	0 (0.0)	22 (7.7)	*0.001**

Boyfriend/girlfriend	115 (68.5)	93 (78.8)	208 (72.7)	*0.245*
Acquaintances	4 (2.4)	13 (11.0)	17 (5.9)	*0.131*
Clients/Prostitutes	0 (0.0)	1(0.8)	1 (0.3)	*0.666*
Others	0 (0.0)	2 (1.9)**	2 (0.7)	*0.759*
Total	168 (100)	118 (100)	286 (100)	
Recent symptoms of STIs				
Present	36 (12.0)	14 (4.7)	50 (8.4)	*0.016**
Absent	263 (88.0)	285 (95.3)	548(91.6)	*0.474*
Total	299 (100)	299 (100)	598 (100)	
Past history of STIs				
Present	57 (19.1)	16 (5.4)	73 (12.2)	*0.001**
Absent	242 (80.9)	283 (94.6)	525 (87.8)	*0.159*
Recent history of unprotected sex				
Present	91 (54.2)	41 (34.7)	132 (22.1)	*0.001**
Absent	77 (45.8)	77 (65.3)	154 (25.8)	*0.921*
Lifetime number of sexual partners				
<4	99 (33.1)	87 (29.1)	186 (31.1)	*0.529*
≥4	68(22.7)	25 (8.4)	93 (15.6)	*0.001**
Mean no of lifetime partners	4.53± 1.95	2.00 ±2.00		*df=1; p=0.001**

*p≦0.05 ** *Case of rape* Fishers exact *** *p≦0.05

Table 3: The relationship between self-perceived susceptibility to HIV and interviewer assessed susceptibility among Youths in Rural and Urban Communities in Rivers State

Variable	N = 299 n (%) Assessed risk Rural			N = 299 n (%) Assessed risk Urban		
Perceived risk	High	Low	Total	High	Low	Total
Medium to high risk	55 (19.2)	55 (19.2)	110 (38.5)	33 (11.2)	27 (9.2)	60 (20.3)
Low or no risk	92 (32.2)	84 (29.3)	176 (61.5)	75 (25.4)	160 (54.2)	235 (79.7)
Total	147(51.4)	139(48.6)	286 (100)	108 (36.6)	187 (63.4)	295 (100)
Kappa	-0.021			0.178		

Table 4: Sensitivity and specificity of perceived risk against assessed risk among Youths in Rural and Urban Communities in Rivers State

Variable	Rural	Urban
Sensitivity of perceived risk	37.4	30.6
Specificity of perceived risk	63.3	88.0
Negative predictive value	47.7	68.0

Table 5: Assessment of friend's risk of contracting HIV compared to respondents (optimistic bias) among Youths in Rural and Urban Communities in Rivers State

	Rural n = 286	Urban n = 295	N = 581 Total (%)	p value
Low risk	34 (11.9)	64 (21.4)	98 (16.9)	0.650
Same risk	96 (33.6)	113 (38.0)	209 (36.0)	0.881
More risk	156 (54.5)	118 (39.6)	274 (47.2)	0.071