

Full Length Research Paper

Effects of peer education on AIDS knowledge and sexual behavior among youths on national service and secondary school students in Nigeria

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Young persons are disproportionately affected by the impact of HIV in Nigeria. This paper presents findings from an evaluation of a national youth HIV prevention program designed to determine the effects of HIV prevention intervention (HPI) on Youths on Compulsory National Service (YoCNS) and Adolescents in Secondary Schools (AiSS). Data were collected from 229 YoCNS who received training on HIV prevention and 231 of their counterparts who did not. Among AiSS, data were collected from 909 respondents who were trained as peer educators and among 1005 students who were not. Data were collected in six states namely Akwa-Ibom, Enugu, Gombe, Kaduna, Plateau and Osun using a questionnaire that explored knowledge on HIV and sexual behavior and supplemented by focus group discussions and in-depth interviews. Results show that both youths and students who received HPI reported superior knowledge on HIV/AIDS than their counterparts who did not. Students in the intervention sites also reported fewer numbers of multiple sexual partners (9.7%) compared to those in the comparison sites (15.4%). The qualitative data shows that the project had positive effects on both youths and students who received the intervention. Given these positive outcomes, it is recommended that the project should not only be sustained but expanded to reach adolescents who are out of school.

Key words: HIV prevention intervention, Youths on National Service, Adolescents in Secondary Schools, Peer education, Knowledge on HIV.

INTRODUCTION

AIDS is a major public health problem in Nigeria. Several studies confirm that adolescents and youth participate in many risky sexual activities including early sexual debut (Slap et al., 2003) and unprotected sex with multiple partners (Dada et al., 1998; Ajuwon et al., 2002; Fawole et al., 2003). Consequently, adolescents and youth are disproportionately affected by the epidemic of HIV and AIDS in the country. For example, the prevalence rates for HIV among the 15-24 and 25-29 years age groups are 4.2% and 5.6% respectively (FMOH, 2008). Nigerian adolescents and other youths also face multiple challenges

including unwanted pregnancies, unsafe abortion, sexual abuse, violence or coercion to sexually transmitted infections including HIV and AIDS, most of who are unaware of how they can be helped.

Furthermore, several studies have shown that adolescents and other youths have limited HIV and, sexual and reproductive health knowledge; the proportion with a comprehensive knowledge about HIV/AIDS was 19.7% (NPC, 2009). A similar finding was observed in a localized study in Enugu state in 2009 where about 17.5% of students interviewed reported that they would definitely have sex in the next two years thus depicting their limited knowledge of HIV and reproductive health and perceived risk (Nwaorgu et al., 2009). According to the 2008 NDHS, for young adults aged 15-24 years, about 33% women compared with 95% men reported hav-

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ing sex in the last 12 months before the survey while up to 61% of the men (15-19 years) compared with 24.9% women (15-19 years) among those surveyed used condom at the last sexual intercourse (NPC, 2009), and up to 64% of adolescents have poor knowledge of the use of condom as to whether it prevents pregnancy (Nwaorgu et al., 2009).

Education through behavior change interventions remain a primary means of protecting adolescents and other youths from the epidemic of HIV/AIDS in Nigeria. Several national, international and local governmental and non-governmental agencies have responded to the threat of HIV by implementing different programs aimed at preventing HIV among adolescents and youth in Nigeria. Of the existing youth focused interventions, the initiative jointly implemented by the National Youth Service Corps (NYSC) and the United Nations Children Fund (UNICEF) is the most important because it is national in scope and sustainable.

The Global Fund supported NYSC/FLHE Youth Focused Prevention Project

The NYSC/UNICEF HIV prevention project commenced in January 2002 and was initially implemented in only ten out of the 37 NYSC camps in Nigeria using Behavior Change Communication (BCC) strategy alone. By 2003, the peer education component was introduced into the project which was scaled up to the 36 states and Abuja, the nation's capital. With the Round -5 funding to Nigeria, the Global Fund provided additional resources to support implementation of the project. The following strategies were deployed to achieve the goal of peer education mentoring by the NYSC-Peer Educator Trainers; HIV Orientation and sensitization seminars are conducted three times annually in all the 37 NYSC camps. At the orientation camps, a 6-day training of at least 100 volunteer Corps members as peer education trainers (PETs) are conducted simultaneously in the 36 states and Abuja annually. After receiving the initial training each PET is expected to recruit, train and mentor at least forty secondary school students as peer educators (PEs) during their service year. As at June 2012, a total of 53,213 corps members have been trained on peer education while these trained PETs have been able to mentor approximately 600,000 in-school pupils.

There are two key intervention strategies being supported by The Global Fund to reach In-school young people and this contributes to the national response to reaching in-school young people with HIV prevention messages in Nigeria. The first being the National Reproductive Health, HIV & AIDS Prevention and Care Project through the NYSC scheme which use the peer education (extra-curricular) approach and the FLHE, which use the curricular (classroom delivery) approach. Family Life and HIV/AIDS Education is a curricular based lifelong process of acquiring information about one's sexual

development and reproductive health issues and life skills that will enable young people to be better informed. The aim of FLHE in schools is:

- To acquire skills needed to make healthy decision about their sexual health and behavior
- To respect and value themselves and others
- For better understanding of ways of preventing pregnancy, STIs and HIV.

Since commencement, FLHE implementation in different states have made significant progress and spread to more schools (both upper primary and secondary schools). As at June, 2012, a total of 11,607 teachers have been trained to deliver FLHE messages through the minimum prevention package of intervention (MPPI) strategies to in-school youths across the 36 states and FCT while more than 1,200,000 students have thus been reached based on the nationally approved minimum prevention package intervention which utilizes at least three different approaches in reaching out to in-school pupils. These MPPI approaches include classroom delivery of FLHE messages which has been mainstreamed into the teaching curriculum of teachers, assembly talk and other extra-curricular activities such as songs, role play and drama.

The National Reproductive Health, HIV & AIDS Prevention and Care Project through the NYSC Scheme, is one of the major projects being undertaken by the NYSC. The goal of the project is to increase access to sexual, reproductive health and HIV education and life skills for adolescents and young people in order to reduce the spread of the HIV epidemic in Nigeria.

Specific objectives of the project are to:

- mobilize political commitment and broad-based partnerships to support the implementation of the project
- increase knowledge of reproductive health and HIV preventive practices among corps members
- provide life skills to volunteer corps members to promote peer education and support protective behavior among young people through peer education in communities of primary assignment
- build the capacity of volunteer corps members to contribute to the national response on HIV prevention, care and support for people living with/and affected by HIV and AIDS in their communities of primary assignment and
- support the institutionalization of the project into the NYSC scheme.

An evaluation was conducted in 2012 to assess the impact of the NYSC & FLHE projects on the AIDS-knowledge, attitude towards people living with HIV and sexual behavior among recipients of the interventions including the PETS and secondary schools students. The evaluation was designed to assess the implementation of projects implemented by PETS in their respective schools. The outcomes from the evaluation are presented in this article.

Table 1. Selection of Corps members by state.

Group	Akwa-Ibom n (%)	Enugu n (%)	Gombe n (%)	Kaduna n (%)	Osun n (%)	Plateau n (%)	Total N (%)
Intervention	35 (15.3)	40 (17.5)	40 (17.5)	40 (17.5)	40 (17.5)	34 (14.8)	229 (49.8)
Non-intervention	25 (10.8)	40 (17.3)	40 (17.3)	40 (17.3)	40 (17.3)	46 (19.9)	231 (50.2)
Total	60 (13.0)	80 (17.4)	80 (17.4)	80 (17.4)	80 (17.4)	80 (17.4)	460 (100.0)

Table 2. Selection of students by state.

Group	State						Total N (%)
	Akwa-Ibom n (%)	Enugu n (%)	Gombe n (%)	Kaduna n (%)	Osun n (%)	Plateau n (%)	
Intervention	158 (17.4)	152 (16.7)	39 (4.3)	187 (20.6)	230 (25.3)	143 (15.7)	909 (47.5)
Comparison	161 (16.0)	157 (15.6)	281 (28.0)	144 (14.3)	88 (8.8)	174 (17.30)	1005 (52.5)
Total	319 (16.7)	309 (16.1)	320 (16.7)	331 (17.3)	318 (16.6)	317 (16.6)	1914 (100)

METHODOLOGY

The study was national in scope with data being collected from each of the geo-political zones of the country. The zones and the respective states were South-south (Akwa-Ibom), South East (Enugu), North central (Kaduna), North east (Gombe), North central (Plateau) and South west (Osun). The evaluation employed a quasi-experimental design in which data were collected from schools where interventions had taken place and comparison schools where there were no interventions. Data for this article were derived from interview of both PETs and the students who received the intervention. Both qualitative (focus group discussion and in-depth interview) and quantitative data collection (survey) methods were used in the study.

Sample size and Sampling Procedures

Selection of PETS

Similarly, corps members were selected to participate and in each state, corps members were selected on the ratio of 1:4 population of sampled students such that 1 corps member to 4 students population were selected, thus a total of 460 corps members were selected per state including the intervention and comparison comparison groups (Table 1). Corps members were randomly selected in like manner on the basis of their LGA during the Community Development meeting days

and sampling was done among PETs and non-PETs such that there were 40 corps members selected per group. In each state, two LGAs were randomly selected and in each of the LGAs sampled, a list of all the secondary schools, by ownership and location were obtained from the State Ministry of Education. In each LGA, four secondary schools were sampled ensuring proportionate representation of the different categories of secondary schools in the LGA.

Students

The sample size for students ranged from 317 in Plateau to 320 in Gombe (See Table 2). Sample selection was conducted in three stages: the selection of six states out of 36 states plus FCT from the six geo-political zones, and in each state all the LGAs were arranged according to their population size. The list of LGAs per state served as the sampling frame for the random selection of two LGAs where one urban and one rural LGA was selected using the NPC criteria. And in each LGA, the list of schools was obtained and schools were sorted out into secondary schools while taking into consideration schools where peer education interventions have taken place. In each LGA, two secondary schools were selected; while in each school, a total of 80 students were randomly selected from each school and a total of 320 students per state including the intervention and comparison groups (See Table 2). This was done using the school enrolment register and students in secondary classes had equal chance of being selected.

Table 3. Selection of Teachers by state.

Group	State						Total N (%)
	Akwa- Ibom n (%)	Enugu n (%)	Gombe n (%)	Kaduna n (%)	Osun n (%)	Plateau n (%)	
Intervention	19 (20.7)	21 (22.8)	0 (0.0)	19 (20.7)	20 (21.7)	13 (14.1)	92 (39.8)
Comparison	19 (13.7)	19 (13.7)	40 (28.8)	22 (15.8)	19 (13.7)	20 (14.4)	139 (60.2)
Total	38 (16.5)	40 (17.3)	40 (17.3)	41 (17.3)	39 (16.9)	33 (14.3)	231 (100)

Selection of Teachers

Teachers were also selected to participate in each state. They were selected in the proportion of 1:10 with the number of students selected for the study (that is 1 teacher to 10 students) [Table 3].

Instrument for data collection and data collection process

Data were collected using In-depth Interview (IDI) guide among PETs, and a separate Focus Group Discussion (FGD) guide and questionnaire among both the students and PETs. The IDI and FGD were recorded on audio tapes and later transcribed for analysis. IDI and FGD carried out among the PETs explored their activities as PETs including the numbers of students trained, impacts of the peer-education training on the students as well as the impacts the peer-education training has had on the corps members themselves. A total of nine FGDs and 6 IDIs were conducted among the NYSC PETs. The FGD carried out among the students explored impacts of the FLHE and peer education training programmes have had on these students. Fifteen 15 FGDs were carried out among the students.

The questionnaire for students consisted of 75 items that assessed demographic information, knowledge about HIV/AIDS, attitude towards persons living with HIV, perceptions of personal risk to HIV infection and sexual behaviour. The questionnaire for the PETS consisted of similar variables but included a component of their activities in their respective schools. The data were collected by trained interviewers who used a standardized training manual and interviewers guide and supervised by Monitoring and Evaluation team. Each questionnaire administered was reviewed and vetted on the field to ensure that they had been properly completed. The questionnaires were later collated and numbered serially according to the states where they had been collected. Official permission of the NYSC headquarters and the federal Ministry of Education were

obtained before commencing the research. In addition, informed consent was obtained from each respondent by providing information about the objectives of the study, that the data will be used for research purposes and that participation was voluntary.

Data analyses

Qualitative data were transcribed verbatim from the audio tapes and analysed using a thematic approach. Epi-data statistical software was used for quality comparison checks of the quantitative data entry and editing. The data were exported to SPSS 15.0 software for subsequent analyses. The analysis is descriptive and the data are presented in tables. Among the PETs, those with a correct knowledge of each of the knowledge question were awarded a point leading to the construction of a 58-point AIDS knowledge score. A similar process was performed among students who had a maximum AIDS/Reproductive knowledge score of 26. A 16-point scale was developed to assess the attitude of students towards PLWHA, condom use and abstinence. Comparison of means scores by study population (intervention/comparison) and by location, age group, gender and educational levels were done using t-test. Frequency distributions were generated for categorical variables while the Chi-square test was employed for the comparison of proportions and for assessing associations in contingency tables. The p-value was set at 0.05.

RESULTS

Socio-demographic characteristics

Socio-demographic data of both NYSC corps member, teachers and students are presented on Table 3 4,5 and 4 6 respectively. Over half of the corps members (52.8%) in the comparison group were males while among the intervention group, more than half (56.3%) were females. Majority of the respondents in both groups fall between the age

Table 4. Socio-demographic data of NYSC Corps Member.

Variable	Intervention n (%)	Comparison n (%)	Total N (%)
Sex			
Male	100 (43.7)	122 (52.8)	222 (48.3)
Female	129 (56.3)	109 (47.2)	238 (51.7)
Age group (Years)			
<20	4 (1.7)	2 (0.9)	6 (1.3)
21 – 25	88 (38.4)	102 (44.2)	190 (41.3)
26 – 30	130 (56.8)	113 (49.9)	243 (52.8)
>30	7 (3.1)	14 (6.1)	21 (4.6)
Place of primary assignment			
School	169 (74.4)	192 (83.5)	361 (79.0)
Non-governmental Organization	4 (1.8)	2 (0.9)	6 (1.3)
Private Organization	13 (5.7)	3 (1.3)	16 (3.5)
Government establishment	34 (15.0)	31 (13.5)	65 (14.2)
Others	7 (3.1)	2 (0.9)	9 (2.0)
Religion			
Christianity	198 (86.6)	171 (74.7)	369 (80.7)
Islam	29 (12.7)	54 (23.6)	83 (18.2)
Traditional	1 (0.4)	3 (1.3)	4 (0.9)
Others	0 (0.0)	1 (0.4)	1 (0.2)
Ethnicity			
Yoruba	56 (27.5)	47 (22.3)	103 (24.8)
Hausa	21 (10.3)	48 (22.7)	69 (16.6)
Ibo	74 (36.3)	57 (27.0)	131 (31.6)
Others	53 (28.8)	59 (28.0)	112 (27.0)
Marital Status			
Single	197 (86.0)	189 (81.8)	386 (83.9)
Married	32 (14.0)	37 (16.0)	69 (15.0)
Living in Union	0 (0.0)	5 (2.2)	5 (1.1)
Father's level of Education			
No formal education	16 (7.5)	16 (7.3)	32 (7.4)
Primary education	31 (14.5)	20 (9.2)	51 (11.8)
Secondary education	49 (22.9)	51 (23.4)	100 (23.1)
Tertiary education	118 (55.1)	131 (60.1)	249 (57.6)
Mother's level of Education			
No formal education	24 (57.1)	18 (8.3)	42 (9.8)
Primary education	28 (47.5)	31 (14.3)	59 (13.7)
Secondary education	59 (27.7)	59 (27.2)	118 (27.4)
Tertiary education	102 (47.9)	109 (50.2)	211 (49.1)

the age group of 26 – 30 years. Very few of the respondents were below (1.3%) and above (4.3%) the age of 20 and 30 years respectively. Majority (79.0%) of the respondents serve in the school. The dominant religion and tribe was Christianity (80.7%) and Ibo (31.6%) About 83.9% of the respondents were not yet married (Table 4).

Among teachers, there were more females than males in both intervention and comparison and majority fall to the age group above 40 years in both groups. Majority

(75.8%) practice Christian religion also, a large percentage (80.3%) of the respondents is already married and majority came from monogamous type of family (Table 5).

Over half of the students in both intervention (56.0%) and comparison (53.4%) group were females. About half (50.2%) were within the age 11 – 15 years and only 3.5% are married. The highest level of education among their parents is tertiary education (Father; 48.8%, mother; 40.8%) [Table 6].

Table 5. Socio-demographic data of the Teachers

Variable	Intervention n (%)	Comparison n (%)	Total N (%)
Sex			
Male	26 (28.3)	66 (47.5)	92 (39.8)
Female	66 (71.7)	73 (52.5)	139 (60.2)
Age (years)			
<30	7 (7.7)	28 (20.4)	35 (15.2)
31 – 35	16 (17.6)	28 (20.4)	44 (19.3)
36 – 40	31 (34.1)	29 (21.2)	60 (26.3)
>40	37 (40.7)	52 (38.0)	89 (39.0)
Type of school graduated from			
University	68 (84.0)	93 (72.1)	161 (76.7)
Polytechnic	3 (3.7)	27 (20.9)	30 (14.3)
Monotechnic	10 (12.3)	9 (7.0)	19 (9.0)
Religion			
Christianity	76 (88.4)	99 (72.8)	175 (75.8)
Islam	10 (11.6)	36 (26.5)	46 (19.9)
Traditional	0 (0.0)	1 (0.7)	1 (0.5)
Ethnicity			
Yoruba	19 (40.4)	19 (25.0)	38 (16.5)
Hausa	6 (12.8)	35 (46.1)	41 (33.3)
Ibo	22 (46.4)	22 (28.9)	44 (35.8)
Marital Status			
Single	15 (16.5)	29 (21.0)	44 (19.2)
Married	76 (83.5)	108 (78.3)	184 (80.3)
Living in Union	0 (0.0)	1 (0.7)	1 (0.4)
Family type			
Monogamous	78 (90.7)	111 (84.7)	189 (87.1)
Polygamous	8 (9.3)	20 (15.3)	28 (12.9)

Table 6. Socio-demographic characteristics of the Students

Variable	Intervention n (%)	Comparison n (%)	Total N (%)
Sex			
Male	617 (44.0)	239 (46.6)	856 (44.7)
Female	784 (56.0)	274 (53.4)	1058 (55.3)
Age group			
<10 years	103 (7.4)	54 (10.6)	157 (8.3)
11 – 15 years	687 (49.4)	266 (52.2)	953 (50.2)
>15 years	600 (43.2)	190 (37.3)	790 (41.6)
Religion			
Christianity	969 (71.0)	307 (60.6)	1276 (68.2)
Islam	386 (28.3)	193 (38.1)	579 (30.9)
Traditional	8 (0.6)	6 (1.2)	14 (0.7)
Others	1 (0.1)	1 (0.2)	2 (0.1)
Ethnicity			
Yoruba	251 (23.3)	136 (32.8)	387 (26.0)
Hausa	265 (24.7)	145 (34.9)	410 (27.5)
Ibo	356 (33.1)	56 (13.5)	412 (27.7)
Others	203 (18.9)	78 (18.8)	281 (18.9)

Table 6. Cont.

Marital Status			
Single	1327 (96.9)	485 (95.5)	1812 (96.5)
Married	43 (3.1)	23 (4.5)	66 (3.5)
Family type			
Monogamous	1032 (76.2)	379 (75.2)	1411 (75.9)
Polygamous	322 (23.8)	125 (24.8)	447 (24.1)
Type of school			
Boys only	130 (9.3)	27 (5.3)	157 (8.2)
Girls only	189 (13.3)	83 (16.3)	269 (14.1)
Mixed	1079 (77.4)	399 (78.4)	1478 (77.6)
Father's level of Education			
No formal education	71 (5.2)	24 (5.0)	95 (5.2)
Primary education	181 (13.4)	59 (12.3)	240 (13.1)
Secondary education	437 (32.3)	167 (34.8)	604 (32.9)
Tertiary education	665 (49.1)	230 (47.9)	895 (48.8)
Mother's level of Education			
No formal education	105 (7.8)	31 (6.4)	136 (7.5)
Primary education	202 (15.1)	80 (16.5)	282 (15.5)
Secondary education	470 (35.0)	192 (39.7)	662 (36.3)
Tertiary education	564 (42.1)	181 (26.5)	745 (40.8)

Table 7. Mean Knowledge on HIV/AIDS and other STIs among PETs (58 points knowledge scale).

Statistics	Intervention (n = 229)	Non-intervention (n = 231)	Total (n = 460)
Mean	37.3	31.9	34.6
Standard Deviation	5.9	8.2	7.6

t = 8.081, p = 0.00

Table 8. Mean Knowledge on HIV/AIDS and other STIs among Teachers (58 points knowledge scale).

Statistics	Intervention (n = 92)	Comparison (n = 139)	Total (n = 231)
Mean	37.86	35.39	36.38 ± 7.67
Standard Deviation	7.87	7.39	7.66

t = 2.42; p = 0.016

Knowledge on HIV/AIDS and other Sexual transmitted infections

The data on knowledge of HIV/AIDS and STI among the intervention and comparison groups of PETS are shown in Table 7. Knowledge was significantly higher among the intervention group (37.3) than the comparison group (31.9) ($p < 0.05$) with a difference of 5.38 points (Table 7).

The mean knowledge of teachers on HIV/AIDS and other Sexual transmitted infections was 36.68 ± 7.67 . Mean

knowledge was higher among intervention group than the comparison group with a difference of 2.47 points ($p < 0.05$); (Table 8). Among the students, the mean knowledge on HIV/AIDS/STI was 33.08 ± 7.35 . This was significantly higher among intervention group than the comparison group with a difference of 1.29 points (Table 9). Mean knowledge on the reproductive health among students was 16.27 ± 6.96 . There was no significant difference on the knowledge between the intervention and comparison group ($p > 0.05$); (Table 9).

Table 9. Comparison of students' mean knowledge on HIV/AIDS/STI and Reproductive Health among intervention and comparison groups.

Mean knowledge	Intervention (n = 909)	Comparison (n = 1005)	Total (n = 1914)	Test statistics and p – value
HIV/AIDS/STI (max score=54)	33.43 ± 7.34	32.14 ± 7.29	33.08 ± 7.35	3.41; 0.001
Reproductive health (max score=26)	16.43 ± 6.97	15.82 ± 6.89	16.27 ± 6.95	0.697, 0.09

Table 10. NYSC corps members Experience of STI symptoms and places known to go for counseling or treatment.

Variable	Intervention n (%)	Non-intervention n (%)	Total N (%)
Experience STDs symptoms during the past 12 months			
Yes	35 (15.6)	24 (10.9)	59 (13.3)
No	190 (84.4)	196 (89.1)	386 (86.7)
Do you know where to go for help if you have STI			
Yes			
No	213 (96.4)	182 (85.0)	395 (90.8)
	8 (3.6)	32 (15.0)	40 (9.2)
Preferred place for counseling and treatment			
Hospital			
Traditional doctor	220 (96.9)	206 (94.5)	426 (95.7)
Chemist	1 (0.4)	6 (2.8)	7 (1.6)
Pharmacy	1 (0.4)	3 (1.4)	4 (0.9)
Friends	10 (4.4)	10 (4.6)	20 (4.5)
Relatives	1 (0.4)	3 (1.4)	4 (0.9)
	1 (0.4)	2 (0.9)	3 (0.7)

Experience of STI symptoms and places known to go for counseling or treatment

Fifty nine (13.3%) of all the respondents (NYSC corps members) indicated that they had experienced STI symptoms during the 12 months preceding the survey. This consisted 15.6 % and 10.9% among intervention and comparison group respectively (Table 10). More of the respondents from the intervention group (96.4%) than the comparison group (85.0%) indicated that they know where to go for help if they experience symptoms of sexually transmitted diseases (STDs). The main preferable place for counseling and treatment among the two groups was hospital (95.7%). More of the respondents in intervention group (80.8%) had ever been tested for HIV infection than those in the comparison group (68.8%), ($p < 0.05$).

Sources of information about HIV/AIDS and other STIs in the 12 months preceding the study

Comparing the source of information about HIV/AIDS and other STIs in the 12 months preceding the survey among PETs, more of the respondents in the intervention group received the information from NYSC orientation camp (92.9%) and NYSC PET (87.2%) than those from the comparison group; 81.2% and 43.8% 65.9% respectively (Table 11).

Comparing the source of information about HIV/AIDS and other STIs in past 12 months among teachers, more of the respondents in the intervention group received the information from NYSC PET (52.7%), friends (62.6%) and during the training of teacher on FLHE (64.8%) than those in the comparison group; 30.4%, 44.9% and 35.2% respectively (Table 11).

Table 11. Sources of information about HIV/AIDS and other STIs in past 12 months from respondents (NYSC corps members-PETs, Teachers and Students)

Source	Intervention			Comparison			Total		
	Student	Teacher	PETs	Student	Teacher	PETs	Student	Teacher	PETs
	n (%)			n (%)			N (%): Chi-square & p-value		
Parents/adult relatives	924 (66.1)	32 (48.5)	99 (43.8)	311 (60.9)	34 (24.6)	93 (42.7)	1235 (64.7): 4.6; 0.033	66 (28.8): 2.96; 0.085	192 (43.2): 0.059, 0.81
Television/radio	1018 (72.8)	78 (39.2)	183 (81.0)	392 (76.7)	121 (87.7)	179 (82.1)	1410 (73.9): 2.94; 0.086	199 (86.9): 0.19; 0.67	362 (81.5): 0.095, 0.76
Teacher	1074 (76.8)	NA	210 (92.9)	348 (68.1)	NA	177 (81.2)	1422 (74.5): 14.98; 0.00	NA	387 (87.2): 13.64, 0.00
Medical personnel	792 (56.7)	67 (43.5)	148 (65.5)	267 (52.3)	87 (63.0)	137 (62.8)	1059 (55.5): 2.99; 0.084	154 (67.2): 0.095	285 (64.2): 0.34, 0.56
Churches/Mosques	531 (38.0)	51 (56.0)	92 (40.7)	186 (36.4)	64 (46.4)	88 (40.4)	717 (37.6): 0.41; 0.52	115 (50.2): 2.05; 0.152	180 (40.5): 0.005, 0.94
Newspaper/magazines	824 (59.0)	65 (71.4)	142 (62.8)	290 (56.8)	96 (69.6)	133 (61.0)	1114 (58.4): 0.77; 0.38	161 (70.3): 0.091; 0.76	275 (61.9): 0.16, 0.69
NYSC PET	846 (60.6)	48 (52.7)	197 (87.2)	277 (54.2)	42 (30.4)	95 (43.8)	1123 (58.9): 6.23; 0.013	90 (39.3): 11.4; 0.001	292 (65.9): 92.76, 0.00
Friends	774 (55.4)	57 (62.6)	135 (60.0)	242 (47.4)	62 (44.9)	123 (56.7)	1016 (53.2): 9.73; 0.002	119 (52.0): 6.89; 0.009	258 (58.4): 0.50, 0.48
Posters/Billboards	586 (42.1)	65 (71.4)	151 (67.1)	196 (38.4)	82 (60.3)	127 (58.5)	782 (41.1): 2.04; 0.15	147 (64.8): 2.96; 0.085	278 (62.9): 3.49, 0.062
Training of Teachers	NA	79 (64.8)	NA	NA	43 (35.2)	NA	NA	122 (53.3): 68.23, 0.00	NA
NYSC orientation camp	NA	NA	210 (92.9)	NA	NA	177 (81.2)	NA	NA	387 (87.2): 13.64, 0.00

NA = Data not available.

Among the students, more of the respondents in the intervention group received the information from PET (60.6%), friends (55.4%), parents/adult relatives (66.1%) and Teachers (76.8%) than those in the comparison group, 54.2%, 47.4%, 60.9% and 68.1% respectively.

Attitudes of the students towards HIV prevention, PLWHA, condom use and abstinence among students

The data on attitude of students towards HIV prevention, PLWHA, condom use and abstinence between the

intervention and the comparison group is shown on Table 12. The students in the intervention schools have a significant more positive attitude towards these variables (11.0) than their counterparts in the comparison schools (10.4) ($p < 0.05$).

Sexual behavior

Many (68.8%) of the PETs reported that they had experienced sexual intercourse but the percentage was higher in the intervention group (70.4%) than the comparison group (67.1%). Overall mean age of sexual

Table 12. Comparison of attitude of students towards HIV prevention, PLWHA, condom use and abstinence between intervention and comparison groups.

Statistics	Intervention (n = 1401)	Comparison (n = 513)	Total (n = 1914)
Mean	10.91	10.37	10.76
Standard Deviation	3.8	3.7	3.78

t = 2.76, P = 0.006

Table 13. Sexual behavior of PETS in the intervention and comparison groups.

Variable	Intervention (n=223)	Comparison (n=210)	Total (n=433)
Ever experience sexual intercourse			
Yes	157 (70.4)	141 (67.1)	298 (68.8)
No	66 (29.6)	69 (32.9)	135 (31.2)
Mean age of sexual debut	20.89 ± 3.96	21.19 ± 3.7	21.02 ± 3.8
Circumstance of the first sexual intercourse (N = 306)			
Rape	6 (3.7)	2 (1.4)	8 (2.6)
Under pressure	21 (13.0)	12 (8.3)	33 (10.8)
To obtain money	2 (1.2)	1 (0.7)	3 (1.0)
Drunk	6 (3.7)	0 (0.0)	6 (2.0)
Having fun	107 (66.5)	103 (71.0)	210 (68.6)
To get pregnant (female alone)	6 (7.5)	11 (16.7)	17 (11.6)
Number of sexual partner in the 12 months preceding survey			
1	205 (90.3)	176 (84.6)	381 (87.6)
>1	22 (9.7)	32 (15.4)	54 (12.4)

debut was 21.02 ± 3.8. More respondents in the comparison group (15.4%) reported having multiple sexual partners than their counterparts in the intervention group (9.7%) (Table 13).

Almost all (95.9%) the teachers reported having only one sexual partner in the past six months. Those who reported they had more than one partner among comparison group was higher than that of intervention group; with 8 persons (6.0%) in the comparison group and one person (1.1%) in the intervention.

On the test for HIV infection, equal percentage (21.7%) of both intervention and comparison group have ever been tested for HIV infection.

With respect to the sexual behavior of students, the mean age of sexual debut was 13.94 ± 4.9. A higher percentage of students in the comparison group (10.3%) reported having more than one sexual partner during the 12 months preceding the study than the intervention group (7.1%) (Table 14).

Findings from FGD and IDI

Training and mentoring of students by PETS

The findings from the IDI showed that many of the PETS met the quota of training 40 students as PE. Some even exceeded the quota.

For example one of the PETS said during an IDI that he trained 75 students as PE, but was only able to graduate 65 of them. Another PET said that he started with 72 but they later remained 46. One the respondents put it as follows:

“Initially when I started, they were about 75 but some of them were not interested so I graduated 65 of them”

Another corps member also said:

“We were supposed to mentor at least 40 students and I have been able to achieve this, I taught and encouraged them to be hard-working and have set goals”

However, attrition is a source of concern among PE.

Table 14. Students' Sexual behavior and practices.

Variable	Intervention	Comparison	Total
Ever had sexual intercourse			
Yes	259 (18.6)	87 (17.1)	346 (18.2)
No	1131 (81.4)	423 (82.9)	1554 (81.8)
Mean age of sexual intercourse	13.96 ± 5.13	13.91 ± 4.5	13.94 ± 4.9
With whom the respondent had ever had sex with (N = 332)			
Females only	86 (34.8)	38 (44.7)	124 (37.3)
Males only	67 (27.1)	22 (25.9)	89 (26.8)
Both sexes	94 (38.1)	25 (7.5)	119 (35.8)
Circumstance of the first sexual intercourse (N = 336)			
Rape	47 (19.0)	14 (16.5)	61 (18.4)
Under pressure	50 (20.1)	16 (18.4)	66 (19.6)
To obtain money	28 (11.2)	5 (5.7)	33 (9.8)
Drunk	10 (4.0)	1 (1.1)	11 (3.3)
Having fun	78 (31.3)	32 (36.8)	110 (32.7)
To get pregnant (female alone)	28 (11.3)	7 (8.0)	35 (10.5)
Number of sexual partner in the past 12 months (N = 331)			
1	235 (92.9)	70 (89.7)	305 (92.1)
>1	18 (7.1)	8 (10.3)	26 (7.9)

The FGD findings also reveal that PETs trained students both individually and jointly; however most conducted the training individually. Numbers of the students trained by corps members ranged from 18 to 80 individually and 60 to 120 jointly. Here are the verbatim responses of some of the respondents:

"We are two in our school and we have over 60 students we are mentoring now, so we divide them into two"

"I have 42. I'm the only one in my school"

"We are three and we have more than 120 students"

Perceived Impact of Peer Education program on students among corps members

The data from both IDI and FGD confirm that the peer education training programme had several positive effects on the students such as increase in knowledge of HIV/AIDS, adoption of preventive behavior and acquisition of life skills. As one PET put it,

"As regards impact, when the program started I did a pre-test (for the students) and after the program I did another test and their knowledge have really improved at to a great extent"

Another respondent also said:

"Yes, the females have also improved. I think they are more outspoken than before when I came. I can say that there has been improvement in their lives"

The students who participated in the FGD also confirmed that the program had improvement in their behaviors and display of assertive and negotiation skills. These are attested in the quotations from female participants below:

"It affects certain things in my life. I can know when to say No to a guy, don't do this to me, don't touch me, get behind me and all that; but before I will just leave them"

"It affects me because I live with my dad and he didn't teach me anything. It is from the school I learnt many things. When I saw my period for the first time I didn't know how to handle it, I don't know anything about menstruation until my teacher taught me in school"

"We are very conscious of some of our lackadaisical behavior like careless sitting postures. Some girls do sit carelessly before but after we have been taught, we have been very conscious of our sitting to prevent being approached by any promiscuous guy"

"Some of our boys have been changing their bad behavior such as flirting around, sagging and others"

The quotations from male participants express similar positive outcomes. :

"It affects my behavior positively because I learnt some things from it like abstaining from sex to avoid contracting diseases like AIDS"

"It helped me in my puberty stage. My peers wanted to influence me negatively to join their bad behavior because I was the smallest but I know it wasn't good for me at that stage".

"I have learnt how to say no to watch pornographic materials. I also have the confidence to tell a friend with pornographic pictures on his phone to delete them. It has also given me self-esteem"

"I've had so many opportunities to have sex with a girl but when I remember all I was told and the consequences, with the help of God, I was able to hold myself. I also got to know I have to leave things like having sex for now. Because we have also been told once you start having sex, it affects your memory and retention, so I decided to put a hold to it till I achieve my goal in life and get married"

The program has also had positive effects on the PETs themselves. Some of the PETs said the peer-education programme has impacted their behaviors positively. As one PETs puts it,

"It has made me to be very careful in some things, for example, going into barbing salon now, I cannot just go and share clipper with other persons anyhow. I always make sure that the clipper is being sterilized. I cannot just pick a razor blade that someone else has used and start using it. All these things, I did not take important before the training"

Perceived Impact of Peer Education program on students among teachers

Findings from FGD

During the focus discussion, discussants were of the opinion that the programme was actually meeting the desired objectives as their students are now aware of the risk associated with involving in premarital sex. The students now seek counseling on those issues related to their sexuality. Here is the quotation from of the discussants:

"The students are now aware of the evil congruencies of the ignorance of the pre-marital sex after training and counseling them about what they should do about their health lives"

Another person also said:

"They do come to us for counseling, even on what they cannot tell/ask their parents"

The discussants also affirmed that the programme has made significant impacts in the life of the students because it has education them in the area of family life and HIV/AIDS. It has also helped them in the aspect of life skills. Here is the verbatim from one of the discussants:

"It has made significant impact on the students because it has improved on them in the area of family life and HIV/AIDS education. You see the students discussing it right now. When implementing the programme. I have one of my students that got pregnant, the best she could do was to get settle with the man that made her pregnant. It has really helps her to take right decision"

Some other discussants also affirmed this and said:

"Actually it has really helped in my schools, it is boarding school, in term of using razor blade or sharp objects has reduced in my school through the enlightenment of the FLHE programme"

"In my own case they are dressing well and behaving well. I have a girl in my school that said she could not wait without having sex within a month but now it has stopped due to the FLHE programme"

Findings from the KII and IDI among Teachers

As regards the relevance of the curriculum content to the cultural settings, all respondents affirmed that the contents were really relevant and they started the implementation of the immediately after the training. Respondents confirmed the programme impacted the students especially adoption of positive behaviour. As one of the respondents put it;

"At times, they (students) sneak out (of the school compound), but now, we are not experiencing such again. Also cases of drug abuse and sexual harassment been reduced among them"

Few of the teachers also said that they have also trained some others teachers in their school.

Principal from different schools confirmed that more than one teacher were trained for the FLHE in their respective schools, this ranged from two to five teachers in different schools.

Key-informants affirmed that the programme has impacted the students positively in the aspect awareness and knowledge on HIV/HIV, including those things they need to avoid as adolescents. One of the participants said:

"I know that some awareness have created a sort of fear in the heart of the students. At this adolescent stage, you know they may want to do what adults are doing, but this program has curbed their excesses of immoral sexual activities"

Here are the excerpts from other respondents:

"As I said, their attitude has changed because in a co-educational institution like this, there is always the problem of sex education to the children. The children have responded positively. Issues of unwanted pregnancy and drop-outs are no longer common. If a child drops out, it should be due to academic incompetence and nothing more"

"For the female students, in the past we have been getting the problem of pregnancy but now since we have implemented this program here, we have not seen anything like that"

"From the activities from Corps members and teachers I, since the last session, for example, we have not recorded any female student get pregnant. I think we have record an achievement compare with previous session"

"We achieve result in that aspect most especially from the ladies they talk to boys to their face that they mind their businesses."

It was also affirmed that the programme has also impacted the life of the teachers.

“Yes, there were impacts both on the students and the teachers. The students are even singing songs on HIV, the teacher are also cracking joke and the information is passed to us through that since both the adults and children are affected by HIV, so we teacher are also taught on it”

“The program I believe has had impact on the teachers because some of the teachers might have not been aware of even of the disease itself and some of the methods of contracting

Suggestion for improvement

Suggestion made for improvement included provision of adequate teaching aids, intermittent training to prevent brain drain, incentives to motivate the teacher, and provision of provision of projector. Here is verbatim suggestion from one of the discussants:

“The school should be given projector so that they (students) can be seeing those things because when Miss Muwa brought it and they see these pictures they were now scared. It makes them know it’s (HIV) real it not just a myth. It’s not hearsay; it is something that is happening around us”

The programme should be improved through continual workshop and trainings, as well as proper monitoring of the programme.

DISCUSSION

Adolescents and other youth are disproportionately affected by the epidemic of HIV/AIDS in Nigeria. Therefore any intervention targeted at this population is an investment in the right direction. The intervention that the PET had received and the educational activities they had implemented have had a positive impact on their knowledge of HIV/AIDS. Both PETs and students from the intervention sites had superior knowledge on HIV/AIDS and reproductive health than their counterparts in the comparison sites. This finding agrees with the results of previous studies of secondary school students that knowledge can increase after any educational intervention (Osole, 1998; ARFH, 1998; Ajuwon and Brieger, 2007). This improvement is not only encouraging but also desirable since the acquisition of knowledge is usually the first stage in the process of changes in behavior. However, knowledge alone is often not sufficient in itself to produce change in sexual behavior in most people (Coates, 1991).

Another salutary component of the intervention is the fact that PET and students from intervention schools held more positive attitudes towards PLWHA and safe sex practices than their counterparts in the comparison

schools. Similar findings have been reported among a cohort of university students who received HIV prevention interventions (YEF, 2009) and among youths in North Central Nigeria which showed that peer education can bring about attitudinal changes towards HIV prevention among youths (Abu-Saeed and Abu-Saeed, 2013). In addition, we found positive aspects of the intervention in that fewer percentages of PETs and students in the intervention reported having sexual intercourse with multiple partners than those in the control. Reduction in number of sexual partners lowers the risk of sexual transmission of HIV.

Another aspect of this study is that NYSC PETs were highly committed to the intervention programme. This was evident from the point that some of the PET adopt more than expected number of students for the intervention in their respective schools. These positive outcomes are attributable to the adoption of peer education, a strategy that have proven to be effective in HIV prevention among adolescents and other young persons in different settings including schools (Ajuwon and Brieger, 2007), out of school population (Ajuwon et al., 2010) such as female hawkers (Ajuwon et al., 2001) and female apprentices (Akinbami, 2012). Such interventions select individuals who share demographic characteristics (e.g., age or gender) or risk behaviors with a target group and train them to increase awareness, impart knowledge and encourage behavior change among members of that same group (Medley et al., 2009). When well trained and adequately supervised, young person’s can serve as effective change agents to influence the behavior of their peers. Despite the sensitivity and potential stigma associated with HIV Counseling and Testing services, peer educators successfully influenced many of their peers to use this service (Ajuwon et al., 2010). The initial training coupled with the continue education and supportive supervision provided by instructors, teachers and project team during monthly meetings sustained the interest and enthusiasm of the peer educators from the beginning until the evaluation of the project. The implication is that Peer education should be implemented as a complement to other interventions used to promote this service among young persons.

However, these positive outcomes must be interpreted in the context of one main limitation of this study; there was no baseline data for either PETs or students. Such data would have been used to compare the levels of knowledge that both the students and PETs had prior to and after the commencement of the NYSC/ARFH project.

CONCLUSION

The NYSC/ARFH project is one of the most sustained youth HIV prevention program in Nigeria. Both quantitative and qualitative data show that the project has

produced several positive multiplier effects on the knowledge and behavior of youths on national service and secondary school students. The project is a good example of how young persons are being empowered to bring about change not only in themselves but also impact positively among in-school adolescents in Nigeria. There is therefore the need to sustain and even expand the program such that PETs reach out to not only students but also adolescents working in the informal sector including apprentices. This initiative would require strong advocacy targeting the instructors through leaders of their associations. Although the challenge of attrition among peer educators reported by the PETs is not new, it however deserves attention through the application of innovative interventions such as incentives.

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