

Contraceptive Knowledge, Access and Uptake among Rural and Urban Unmarried in-school Adolescents in Osun State, Nigeria: A Comparative Study

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Abstract

Background: The sexual activities and contraception practices among adolescents in many countries are of great concern to researchers and public health practitioners because of their consequent impact on pregnancy, abortion and Sexually Transmitted Infections (STIs). This study assessed the contraceptive knowledge, access, and uptake among rural and urban unmarried in-school adolescents in Osun State, Nigeria.

Methods: A cross-sectional study was carried out among urban and rural unmarried in-school adolescents in Osun State. One hundred and fifty (150) respondents each were selected from the urban and rural unmarried in-school adolescents respectively, using multi-stage sampling technique. A pre-tested self-administered questionnaire was used to collect information on the adolescents' socio-demographic characteristics, knowledge of contraception, access to contraceptives and uptake of contraceptive commodities. Questions on knowledge about contraception were scored and categorized into good (scored ≥ 4) and poor (score < 4) knowledge out of a maximum obtainable score of ten (10). Mean score was 4.0 ± 2.3 . Data were analysed using descriptive statistics, Chi-square test and logistic regression at $\alpha < 0.05$.

Results: Mean ages were 16.4 ± 1.4 and 16.6 ± 1.4 years for urban and rural respondents respectively. Contraceptive awareness was more among the urban (92.0%) than the rural (74.7%) respondents ($p < 0.001$). Fifty-two percent (52.0%) of the urban respondents had good knowledge of contraceptives compared with 34.0% of the rural respondents ($p = 0.002$). Their main sources of contraceptive knowledge for urban (73.9%) and rural (48.2%) respondents were radio and television ($p < 0.001$). About half (50.7%) of the urban respondents and 38.0% of the rural respondents knew where to purchase contraceptives ($p = 0.027$) out of which 56.6% of the urban respondents and 42.1% of the rural respondents had ever bought contraceptive commodities. Their main source of contraceptive commodities was chemist shop/supermarket (70.1%). More urban (56.0%) than rural (47.3%) respondents were sexually active and the level of contraceptive use during first coitus were 34.5% and 19.7% respectively ($p = 0.040$). Of the sexually active respondents, 76.7% (urban) and 50.0% (rural) were currently using a form of modern contraceptive. Condoms (55.6%), followed by pills (44.4%) were the most popular contraceptive method. Sex of respondents was found to be a significant predictor of access to contraceptive commodities for both urban (OR=4.19, CI=1.27-13.79) and rural (OR=3.64, CI=1.07-12.41) adolescents, while age (OR=0.29, CI=0.09-0.91) and the custodian (OR=3.25, CI=1.14-9.23) of the respondents were found to be significant predictors of utilization of contraceptives for urban adolescents and only age (OR=0.12, CI=0.31-0.68) was a significant predictor of utilization of contraceptives for rural adolescents.

Conclusions: Adolescents in the urban areas were more knowledgeable about contraceptives, having more access and uptake compared with their rural counterparts. There is need to promote information and education on contraceptives among adolescents especially in the rural areas, while abstinence and chastity are upheld.

Keywords: Access; Adolescents; Contraceptive; Knowledge; Nigeria; Rural; Uptake; Urban; Unmarried

Background

Adolescence (10-19 years), the second decade of life, marking the transition from childhood to adulthood is an important crossroad in everyone's life [1]. Approximately one-fifth (1.2 billion) of the world's population is that of adolescents with 85% of them in developing countries, including Africa, where adolescents constitute about 30% of the total population. In Nigeria, adolescents constitute about 30% of the total population, according to estimates made in 2006 [2,3].

The onset of adolescence is considered a crucial developmental transition, due to the confluence of changes that occur across this level of development. It is a period full of adventure in all sphere of human endeavours including sexual practices [2]. The sexual activities among adolescents in many countries have resulted into unplanned/unwanted pregnancy, early childbearing, unsafe abortion and Sexually Transmitted Infections (STIs) including Human Immunodeficiency virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Adolescent childbearing is one of the important factors responsible for the rapid population growth in the world [4], and this is heavily concentrated among teenagers that belong to poor and low-income families, most of whom are unmarried [4]. About 75 million of the estimated 180-200 million pregnancies that occur in the world annually are reportedly unintended, and a high proportion of these occur among the adolescents [5]. Worldwide, one in four girls become a mother before the age of 19 years and every year an excess of about 14 million adolescent girls give birth, while about 4.4 million have abortions [6]. This incidence is particularly high in Africa where majority of the world's young people live [7]. In developing countries, maternal mortality is high, with an average Maternal Mortality Ratio (MMR) of 440 deaths per 100,000 live births. In sub-Saharan Africa, this figure reaches 920 deaths per 100,000 live births with one in three women giving birth before age 20 and pregnancy-related morbidity and mortality rates particularly high in this group [8]. Adolescents in developing countries are increasingly engaging in sexual intercourse, especially unsafe intercourse with infrequent use of condoms and other contraceptives, as well as having multiple sexual partners [9,10]. A comparative study among single women in southeast Nigeria revealed that, more urban than rural respondents (68.3% versus 12.5%) began sexual activity during adolescence and the prevalence of contraceptive use during first coitus were 48.4% and 13.7%, respectively [11].

Abortion during adolescence has led to deaths and health consequences such as infertility, pelvic inflammatory disease, uterine perforation, amongst others. In Nigeria, 50% of maternal deaths are among adolescents due to illegal abortion, while abortion complications accounts for about 72% of all deaths among girls under the age of 19 years [12].

Contraceptives have been acknowledged to be an effective means of combating the problem of unwanted pregnancy, sexually transmitted infections and unsafe abortion [13]. However, adolescents form one of the largest groups with an unmet need for reproductive health services [14,15].

Many studies have been carried out about adolescent sexuality in Nigeria, but only a few have compared rural and urban in-school adolescents' knowledge, access and contraceptive use in this environment. From an international perspective, any study on the sexual health of Nigerian adolescents is of significance to sub-Saharan Africa, as a third of African adolescents live in Nigeria and the country's birth rate among adolescents is one of the highest in the world [16]. This study assessed the contraceptive knowledge, access and uptake among rural and urban unmarried in-school adolescents in Osun State, with a view to making recommendations that will ultimately help in improving the health of Nigerian adolescents.

Methods

Study areas

The study was carried out in Osun State, Southwest Nigeria. The state is divided into three senatorial districts namely, Osun Central, Osun East and Osun West, each comprising of ten Local Governments (thus making thirty (30) Local Governments) and one area office, located in Osun east senatorial district. The state has 136 public nursery schools, 1,207 public primary schools and 326 public secondary schools. In addition, there are numerous private nursery, primary and secondary schools in the state. Most of these schools are located in the urban areas. The State has two youth and adolescent friendly centres in the urban area (one is owned by a Non-Governmental Organization and the other owned by the State government), while there is none in the rural areas. They offer pre and post HIV counselling and testing, distribution of condom and recreation services.

Study design

A cross-sectional study design was used. The study

population were unmarried adolescents (10-19 years) attending selected public Senior Secondary Schools in Osun State, Nigeria.

Sample size determination

Sample size formula for comparing two independent proportions was used to calculate the minimum sample size. The calculated minimum sample size for each group was 121 taking prevalence P_1 and P_2 as 58% for urban and 40% for rural adolescents who had knowledge of contraception based on previous studies [12,17]. However, to take care of non-response and to allow for adequate representativeness, 150 questionnaires were administered to each group giving a total of 300.

Sampling technique

The study employed multistage sampling technique in recruiting study participants. One Local Government Area (LGA) was selected from each of the three Senatorial Districts in Osun state, using Simple Random Sampling (SRS) by balloting. The list of all Public Secondary schools in the selected three LGAs was obtained from the State Ministry of Education. From this list, one rural and one urban Public senior secondary school was selected in each of the three LGAs using simple random sampling technique by balloting (making a total of six (6) schools). From each of the selected schools, the total number of all SS1 to SS3 students and their respective sampling frame was obtained. The desired sample size was selected using stratified sampling with proportional allocation of respondents from the different arms (SS1-SS3) in the selected secondary schools. The respondents from each arm were selected by simple random sampling technique by balloting.

Data collection

Data were collected using pre-tested semi-structured self-administered questionnaire developed by reviewing previous studies on our topic. The questionnaire collected information on adolescents' socio-demographic characteristics, knowledge of contraception, access to contraceptives and uptake of contraceptive commodities. The questionnaire was interpreted into Yoruba language and back translation into English Language. This was done in order to retain the original meaning of the questions. Seven research assistants were recruited and trained to help in the administration of the questionnaires. These research assistants were residents in the Department of Community Medicine, Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital, Osogbo. The questionnaires were pre-tested among 30 unmarried in-school adolescents in one urban and one rural public secondary schools in Osogbo LGA, Osun State. The exercise helped us to identify some ambiguous questions, which were either re-phrased or removed completely in line with our study objectives.

Data processing and analysis

The questions on knowledge of the respondents about contraception were scored and categorised into good and poor knowledge. A correct answer was scored 1 and a wrong answer was scored 0. The maximum score possible for knowledge was 10, the mean score calculated was 4.0 ± 2.3 . The respondents who scored below the mean were regarded as having poor knowledge, while those who scored up to or above the mean were regarded as having good knowledge. Data collected were edited daily so as to ensure all the required items were appropriately answered. Data entry and analysis were done using Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics were carried out and Chi-square test was used to compare categorical variables. Multivariate analysis was done using binary logistic regression to examine the predictors of knowledge, access and uptake of contraceptives. All analyses were done at the 95% significance level with a $p < 0.05$.

Ethical consideration

Ethical clearance for the study was obtained from the Ethical Review Committee of Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital Osogbo and approval and permission to conduct the study was obtained from Osun State Ministry of Education. The Parent Teachers Association and Principals of selected schools were properly informed and their consent was obtained. The study participants who were less than 18 years were given consent forms to be filled by their parents or guardians while those that were 18 years and above filled the consent forms before they were recruited into the study. Respondents were assured of confidentiality of the information obtained from them during the study; this was done by ensuring that their names were not collected during the interview. Participation was voluntary.

Results

A total of 300 questionnaires were administered in all, 150 in the rural and 150 in the urban Secondary schools. All the questionnaires were completed, giving a response rate of 100%. There were slightly more females (50.7%) than males (49.3%). The mean age of the urban respondents was 16.4 ± 1.4 years and that of the rural respondents was 16.6 ± 1.4 years. There were more of the late adolescents in rural areas and more of the early and middle adolescents in urban areas (Table 1).

Respondents' knowledge about contraception

Ninety-two percent (92.0%) of the urban respondents and 74.7% of the rural respondents were aware of contraception. This difference was statistically significant ($p < 0.001$). Almost all, (95.2%) of the respondents knew about condom as a form of contraception, while 30.4% of the urban respondents and 36.6%

Variables	Residence n (%)		N (%)	Chi square	df	p-value
	Urban (n=150)	Rural (n=150)	Total (N=300)			
Gender						
Male	79 (52.7)	69 (46.0)	148 (49.3)	1.33	1	0.248
Female	71 (47.3)	81 (54.0)	152 (50.7)			
Age group (yrs.)						
10-13	3 (2.0)	0 (0.0)	3 (1.0)	**6.64	2	*0.036
14-16	79 (52.7)	67 (44.7)	146 (48.7)			
17-19	68 (45.3)	83 (55.3)	151 (50.3)			
Religion						
Christianity	86 (57.3)	71 (47.3)	157 (52.3)	**3.69	2	0.157
Islam	63 (42.0)	76 (50.7)	139 (46.4)			
Traditional	1 (0.7)	3 (2.0)	4 (1.3)			
Tribe						
Yoruba	141 (94.0)	130 (86.7)	271 (90.3)	**4.84	2	0.089
Igbo	3 (2.0)	8 (5.3)	11 (3.7)			
Hausa/Fulani	6 (4.0)	12 (8.0)	18 (6.0)			
Class						
SS1	58 (38.7)	50 (33.3)	108 (36.0)	1.37	2	0.503
SS2	55 (36.7)	55 (36.7)	110 (36.7)			
SS3	37 (24.6)	45 (30.0)	82 (27.3)			
Family type						
Monogamous	92 (61.3)	62 (41.3)	154 (51.3)	12.01	1	*0.001
Polygamous	58 (38.7)	88 (58.7)	146 (48.7)			
Who do you live with						
Both parents	86 (57.3)	43 (28.7)	129 (43.0)	44.14	3	*<0.001
Others***	64 (42.7)	107 (71.3)	171 (57.0)			

*Statistically significant; **Likelihood ratio used; ***Others: Father only, Mother only, Relatives, Friend, Living alone

Table 1: Socio-demographic characteristics of respondents by their residence.

of the rural respondents also knew about pills. Fifty-two percent (52.0%) of urban and 34.0% of rural respondents had good knowledge about contraceptives. There was statistically significant difference in contraceptive knowledge categories between the urban and rural respondents ($p=0.002$) (Table 2). Their main sources of information about contraception for urban (73.9%) and rural (48.2%) were radio and television ($p<0.001$), followed by friends (32.4%) for both groups of respondents.

Variables	Residence n (%)		N (%)	Chi square	df	p-value
	Urban (n=150)	Rural (n=150)	Total (N=300)			
Have you heard about contraception?						
Yes	138 (92.0)	112 (74.7)	250 (83.3)	16.22	1	* <0.001
No	12 (8.0)	38 (25.3)	50 (16.7)			
Contraceptive methods known***	n= 138	n= 112	N=250			
Condom	134 (97.1)	104 (92.9)	238 (95.2)	2.44	1	0.118
Pills	42 (30.4)	41 (36.6)	83 (33.2)	1.06	1	0.303
Injectables	33 (23.9)	24 (21.4)	57 (22.8)	0.22	1	0.641
Calendar method	8 (5.8)	7 (6.3)	15 (6.0)	0.02	1	0.881
Periodic abstinence	6 (4.3)	8 (7.1)	14 (5.6)	0.91	1	0.339
Emergency contraceptive	8 (5.8)	4 (3.6)	12 (4.8)	0.67	1	0.413
Others	7 (5.0)	1 (0.9)	8 (3.2)	3.49	1	**0.062
Knowledge categories	n=150	n=150	N=300			
Poor knowledge	72 (48.0)	99 (66.0)	171 (57.0)	9.91	1	*0.002
Good knowledge	78 (52.0)	51 (34.0)	129 (43.0)			

*Statistically significant; **Fishers exact test used; ***Multiple responses allowed; Others: IUCD, Diaphragm, Implant

Table 2: Knowledge about contraception among respondents by their residence.

Respondents' access to contraceptives

About half (50.7%) of the urban respondents and 38.0% of the rural respondents knew where to purchase contraceptives. The difference between urban and rural respondents was statistically significant ($p=0.027$). Among these respondents, 78.2% of the respondents knew contraceptives can be purchased at the chemist or supermarket. 53.9% of the urban respondents and 35.1% of the rural respondents agreed that the distance between their house and the places of procurement of contraceptive was walking distance and this difference was statistically significant ($p=0.031$). Also health facility and community based distributor as places of procurement were significantly different between the urban and rural respondents ($p=0.038$). About half (50.4%) of the respondents had ever bought contraceptive commodities. Of these, 74.4% of the urban respondents and 62.5% of the rural respondents

purchased their contraceptives from the chemist or supermarket. The purchase of contraceptives from the hospital and community based distributors were significantly different between urban and rural respondents ($p<0.05$) (Table 3).

Respondents' uptake of contraceptives

Fifty-six percent (56.0%) of respondents in the urban and 47.3% in the rural had sexual intercourse in the past, with a mean age at first sex of 14.1 ± 1.6 years and 15.3 ± 2.3 years respectively, this difference was statistically significant ($p=0.004$). The level of contraceptive use during first coitus were 34.5% for urban and 19.7% for rural ($p=0.040$). Among the sexually active, 76.7% of the urban respondents and 50.0% of the rural respondents were currently using contraceptives. This difference was statistically significant ($p=0.025$). 55.6% of these respondents were currently using condom while 44.4% were on pills (Table 4).

Variables	Residence n (%)		N (%)	Chi square	df	p-value
	Urban (n=150)	Rural (n=150)	Total (N=300)			
Know where to purchase contraceptives						
Yes	76 (50.7)	57 (38.0)	133 (44.3)	4.88	1	*0.027
No	74 (49.3)	93 (62.0)	167 (55.7)			
Sites of purchase of contraceptive commodities***						
	n= 76	n= 57	N= 133			
Chemist/supermarket	62 (81.6)	42 (73.7)	104 (78.2)	1.19	1	0.275
Hospital	39 (51.3)	19 (33.3)	58 (43.6)	4.28	1	*0.038
Community based distributor	4 (5.3)	9 (15.8)	13 (9.8)	**4.08	1	*0.043
Friends	4 (5.3)	5 (8.8)	9 (6.8)	**0.63	1	0.428
Distance between house and place of purchase						
Walking distance	41 (53.9)	20 (35.1)	61 (45.9)	4.67	1	*0.031
Not a walking distance	35 (46.1)	37 (64.9)	72 (54.1)			
Ever bought contraceptive commodities						
Yes	43 (56.6)	24 (42.1)	67 (50.4)	2.73	1	0.099
No	33 (43.4)	33 (57.9)	66 (49.6)			
Places of purchase of contraceptive commodities***						
	n= 43	n= 24	N= 67			
Chemist/supermarket	32 (74.4)	15 (62.5)	47 (70.1)	1.05	1	0.307
Hospital/clinic	25 (58.1)	7 (29.2)	32 (47.8)	5.18	1	*0.023
Community based distributors	6 (14.0)	2 (8.3)	8 (11.9)	**0.49	1	0.486
Friends	0 (0.0)	3 (12.5)	3 (4.5)	**6.42	1	*0.011

*Statistically significant; **Fishers exact test used; ***Multiple responses are allowed

Table 3: Respondents' access to contraceptive commodities by their residence.

Variables	Residence n (%)		N (%)	Chi square	df	p-value
	Urban (n=150)	Rural (n=150)	Total (N=300)			
Ever had sexual intercourse?						
Yes	84 (56.0)	71 (47.3)	155 (51.7)	2.26	1	0.133
No	66 (44.0)	79 (52.7)	145 (48.3)			
Mean age at first sex (in years)⁺⁺	14.1±1.6	15.3±2.3				*0.004
Used contraceptives at first sexual intercourse	n=84	n= 71	N=155			
Yes	29 (34.5)	14 (19.7)	43 (27.7)	4.21	1	*0.040
No	55 (65.5)	57 (80.3)	112 (72.3)			
Ever used any form of modern contraceptives						
Yes	43 (51.2)	24 (33.8)	67 (43.2)	4.74	1	*0.029
No	41 (48.8)	47 (66.2)	88 (56.8)			
Currently using any contraceptive method	n= 43	n= 24	N=67			
Yes	33 (76.7)	12 (50.0)	45 (67.2)	4.99	1	*0.025
No	10 (23.3)	12 (50.0)	22 (32.8)			
Types of contraceptives currently used	n= 33	n= 12	N= 45			
Condom	20 (60.6)	5 (41.7)	25 (55.6)	1.28	1	0.258
Pills	13 (39.4)	7 (58.3)	20 (44.4)			
Respondents reasons for choosing contraceptive method^{***}						
Convenience	25 (75.8)	8 (66.7)	33 (73.3)	**0.36	1	0.548
Easily accessible	20 (60.6)	7 (58.3)	27 (60.0)	0.02	1	0.891
More effective	10 (30.3)	7 (58.3)	17 (37.8)	2.94	1	0.086
Only method known	9 (27.3)	6 (50.0)	15 (33.3)	2.05	1	0.153
Cheaper	7 (21.2)	3 (25.0)	10 (22.2)	**0.07	1	0.787
*Statistically significant; **Fishers exact test used; ***Multiple responses allowed						

Table 4: Respondents' exposure to sex and use of modern contraceptives by their residence.

Association between location and selected outcome variables

Adolescents in urban areas were three and half times more likely to have heard about contraception compared with those in rural areas (OR=3.9, 95%CI=1.95-7.82, p<0.001). Adolescents in urban areas were one and half times more likely to have had access to contraceptives compared with those in rural areas (OR=1.7, 95%CI=1.06-2.65, p=0.014). Adolescents in urban areas were two times more likely to have used contraceptives compared with those in the rural areas (OR=2.1, 95%CI=1.20-3.70, p=0.004).

Predictors of access to contraceptives among urban and rural respondents

Sex of respondents was found to be a significant predictor of access to contraceptive commodities. Male respondents in the urban area were four times more likely to have had access to contraceptive commodities than their female counterparts. Male respondents in the rural area were 3.6 times more likely to have had access to contraceptive commodities than their female counterparts (Tables 5 and 6).

Variables	Categories of variable	Odds' ratio	95% Confidence Interval	
			Lower	Upper
Sex	Female (Ref.)	1	1.272	13.789
	Male	4.188*		
Socioeconomic status	High (Ref.)	1	0.045	7.749
	Low	0.590		
Family type	Polygamous (Ref.)	1	0.137	3.448
	Monogamous	0.686		
Age group	≤15 years (Ref.)	1	0.534	19.814
	≥16 years	3.253		
Custody	Both parents (Ref.)	1	0.574	10.469
	Others	2.452		

*Statistically significant; Ref: Reference

Table 5: Predictors of access to contraceptives among urban respondents.

Variables	Categories of variable	Odds' ratio	95% Confidence Interval	
			Lower	Upper
Sex	Female (Ref.)	1	1.070	12.411
	Male	3.644*		
Socioeconomic status	High (Ref.)	1	0.372	2.353
	Low	0.936		
Family type	Polygamous (Ref.)	1	0.405	5.228
	Monogamous	1.455		
Age group	≤15 years (Ref.)	1	0.290	4.857
	≥16 years	1.187		
Custody	Both parents (Ref.)	1	0.594	5.201
	Others	1.757		

*Statistically significant; Ref: Reference

Table 6: Predictors of access to contraceptives among rural respondents.

Predictors of utilization of contraceptives among urban and rural respondents

Age and custody were found to be significant predictors of utilization of contraceptives among urban respondents. Adolescents less than or equal to 15 years were less likely to have used contraceptives than those aged 16 years and above. Also respondents who live with single parent, relatives or alone were three times more likely to have used contraceptive than those living with both parents. Age was the only significant predictor of utilization of contraceptive among rural respondents (Tables 7 and 8).

Variables	Categories of variable	Odds' ratio	95% Confidence Interval	
			Lower	Upper
Sex	Male (Ref.)	1	0.183	1.377
	Female	0.503		
Socioeconomic status	Low (Ref.)	1	0.310	5.053
	High	1.251		
Family type	Monogamous (Ref.)	1	0.524	3.855
	Polygamous	1.421		
Age group	≥16 years (Ref.)	1	0.092	0.907
	≤ 15 years	0.289*		
Custody	Both parents (Ref.)	1	1.143	9.229
	Others	3.248*		

*Statistically significant; Ref: Reference

Table 7: Predictors of utilization of contraceptives among urban respondents.

Variables	Categories of variable	Odds' ratio	95% Confidence Interval	
			Lower	Upper
Sex	Male (Ref.)	1	0.534	3.898
	Female	1.443		
Socioeconomic status	Low (Ref.)	1	0.125	1.573
	High	1.450		
Family type	Monogamous (Ref.)	1	0.392	2.715
	Polygamous	1.031		
Age group	≥16 years (Ref.)	1	0.310	0.684
	≤ 15 years	0.120*		
Custody	Both parents (Ref.)	1	0.372	3.328
	Others	1.113		

*Statistically significant; Ref: Reference

Table 8: Predictors of utilization of contraceptives among rural respondents.

Discussion

This study compared the contraceptive knowledge, access, and uptake among rural and urban unmarried in-school adolescents in Osun State. The socio-demographic characteristics of students studied were comparable to the findings of previous studies in Nigeria [2,18]. There were slightly more female than male respondents although the males were more in the urban.

Majority of the respondents were from the Yoruba tribe. This was not surprising given the area of study. The urban respondents were significantly younger than their counterparts from the rural areas. This is similar to the finding in a study done among in-school adolescents in South India, where the urban respondents were significantly younger than their rural counterparts [19]. This finding is not surprising as children in the urban areas tend to start school early than those in the rural areas [20].

Almost all of the urban respondents and about three quarters of the rural respondents have heard about contraception and contraceptive methods. This finding is consistent with the study done in Cross River State which showed a significant difference in the level of awareness about contraceptive methods among rural and urban secondary school students. Students in the urban were found to be more aware than their rural counterparts [21]. A similar study among in-school adolescents in Lagos revealed that majority (91%) of the adolescents have heard about contraceptives [22]. The respondent's major sources of information about contraceptives were radio, television and friends. This finding agrees with the results from a previous study among adolescents in Ghana where majority (60%) indicated that the television and radio were their sources of information followed by friends (30%) [23]. Also, a similar study in Lagos showed that majority (71%) of the respondents acquired information about contraceptives through the mass media; other sources were schools and friends [22]. Information obtained from friends about the use and practice of contraception are often misleading as they may contain a lot of misinformation, distortion, falsehood and misconceptions [24]. One report indicated that parents are now having courage to discuss more about sexual matters with their children than in the past [2]. This is a welcome development because they will be in a better position to guide their children against unsafe sexual practices. Condom was the most common type of contraceptives known by both groups followed by oral pills. This agrees with the findings of other studies conducted among adolescents [25-27]. Adolescents and most young people have high awareness of condoms than most contraceptive methods [26]. This is probably due to ease of use, access, cost and the much publicity given to it with the onset of HIV pandemic.

Categorized knowledge about contraceptives showed that more than half of the urban respondents had good knowledge compared with a third of the rural respondents. This finding was statistically significant. Association between location and selected outcome variables in this study also revealed that adolescents in urban areas were three and half times more likely to have heard about contraceptives compared with those in the rural areas and this difference was statistically significant. This could be due to the fact that those in the urban areas tend to be more enlightened because they have better access to information compared with their rural counterparts [28]. Hence, there is urgent need to educate this target group about contraceptives with emphasis on the available methods and use.

As regards accessibility to contraceptive commodities, only half of the urban respondents and almost two-fifth of the rural respondents knew where to access it. Association between location and selected outcome variables in this study also revealed that adolescents in urban areas were one and half times more

likely to have had access to contraceptives compared to those in the rural areas. This difference is statistically significant. Chemists and supermarkets were their commonest sites of procurement of contraceptives. This is similar to the findings in other studies [29,30]. Hospital and community based distributors were significantly different among the two groups of respondents. This difference may be due to the fact that there are more hospitals in the urban areas compared with the rural areas [31] and the community based distributors are more in the rural areas [32].

Almost three-fifths of the urban respondents and more than two-fifths of the rural respondents were sexually active. This is similar to a study done among secondary school students in southwest Nigeria where half of the respondents were sexually active [33]. Among the sexually active, half of the urban respondents and about one-third of the rural respondents had ever used any form of modern contraceptives. This difference is statistically significant. Association between location and selected outcome variables in this study also revealed that adolescents in urban areas were two times more likely to have used contraceptives compared with the rural respondents. This difference is statistically significant. This is not surprising because urban adolescents have better access to information [34] on contraceptives compared with their rural counterparts. Among the respondents that had ever used contraceptives, significantly half of the rural respondents and about three-quarters of the urban respondents were currently using one form of modern contraceptives or the other. The reasons for their choice of contraceptives were convenience, easy accessibility and effectiveness.

Gender was the only determinant of access to contraceptive commodities identified among urban and rural respondents. Male respondents were found to be more likely to have had access to contraceptives than their female counterparts. This may be as a result of the male condom being readily available at the supermarkets and pharmacy stores than other types of contraceptives. The predictors of utilization of contraceptives identified among urban and rural respondents were age and custodian of the respondents. Adolescents less than or equal to 15 years were less likely to have used contraceptives than those aged 16years and above. This is similar to the findings in a study done in Anambra State where age (older adolescents; $p=0.041$) was a predictor of contraceptive use among the sexually active adolescents [35]. Also, respondents who live with single parent, relatives or alone were more likely to have used contraceptive than those living with both parents. This could be because adolescent brought up by both parents are well nurtured and monitored as compared to those brought up by single parent.

Conclusion

This study showed that majority of the urban and rural respondents were aware of contraception and contraceptive methods. However, the urban respondents had better knowledge of contraceptives than their rural counterparts. Urban respondents had better access to contraceptive commodities than their rural counterparts. The contraceptive prevalence rate was significantly higher among the urban respondents than the rural respondents and the most commonly used contraceptive methods by both groups were condom and pills. Sex of respondents was found to be a significant predictor of access to contraceptive commodities for both urban and rural adolescents, while age and custody were found to be significant predictors of utilization of contraceptives for urban adolescents and only age was a significant predictor of utilization of contraceptives for rural adolescents. There is need to promote information and education on contraceptives among in-school adolescents especially in the rural areas in order to improve their knowledge, access and uptake.

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