Utilization of Family Planning Services among Women of Reproductive Age in Urban and Rural Communities of Imo State, Nigeria: A Comparative Study

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ABSTRACT

Background: *Nigeria is the most populous black nation in the world, with urban- rural variations. In the face of limited resources, this scenario presents a case on the need for the control of population growth in tandem with the available food, economic and other resources of the country.*

Objective: *To determine and compare the differences in family planning use among women in rural and urban communities in Imo State, Nigeria.*

Methods: *This was a comparative cross-sectional survey of 1,130 women of reproductive age group (565) in urban and (565) in rural communities of Imo state, selected using multistage sampling technique. Data were collected by interview using semi-structured questionnaire and analysed using a computer software package (EPI INFO version 3.3.2). Frequencies and percentages of relevant variables were generated, while Chi-square and t tests were used to identify associations between variables. A p-value ≤0.05 was considered significant.*

Results: *The mean age of respondents in urban areas, 32.7±7.7 years was higher than in rural areas, 31.2±8.1years, (p=0.001). More women in rural, 433 (77.2%) than urban areas, 365 (65.1%) were married (p<0.0001). More respondents had heard about family planning in urban 555(99.1%) than rural 539(96.1%) (p=0.001). More respondents in urban, 450 (80.90%), had good contraceptive knowledge, compared to rural, 303(56.10%) (p<0.0001). More respondents had ever used any form of contraception in urban, 303(53.9%), than rural 239(47.2%), counterparts, (p<0.0001). Current contraceptive use was higher among urban women, 196(35.2%) than in rural counterparts, 109 (19.5%), p<0.0001. More rural respondents currently used modern methods (74.0%) than their urban counterparts, (58.2%), p=0.002. The commonest reason for choosing any family planning method in both rural (52.3%) and urban, (49.5%) areas was that it is convenient.*

Conclusion: *This study found that though the reported awareness and knowledge about family planning in both localities were high, the overall family planning use was low. Also, family planning use was higher among women from urban communities than those from rural communities of the State. These findings may have implications for public health policies and programs especially at the grass roots. Thus, there is need for stake holders in the State to find ways of increasing the use of family planning services by making it attractive to these women through incentives especially among those living in the rural areas of the State*

Keywords: *utilization of family planning services, women of reproductive age, urban and rural communities, comparative study, Nigeria*

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INTRODUCTION

Family planning involves the control of the worlds' population with respect to the available food, economic and other resources of the world. It includes contraception, infertility management, genetic counselling, sex selection, evaluation of abortion as a means of population control.[1-3] The World Health Organization (WHO) expert committee in 1971, defined family planning as a way of thinking and living that is adopted voluntarily on the basis of knowledge, attitudes and responsible decisions by individuals and couples in order to promote the health and welfare of the family group and thus contribute effectively to the social development of the country.[2] Another WHO expert committee in 1970 had defined and described family planning as practices that help individuals or couples to attain certain objectives:- to avoid unwanted pregnancies, bring about wanted pregnancies, regulate the intervals between pregnancies, control the time at which birth occur in relation to the ages of the patient and to determine the number of children in the family.[3]

Prevention of fertility could be temporary (contraception) or permanent (sterilization). However, contraceptive methods are said to be methods that help women avoid unwanted pregnancies. Evaluation of family planning services is usually done for married women or women living with a partner aged 15-49 years. The various measures for this evaluation include: contraceptive use which is the percentage of currently married or in-union women of reproductive age who are currently using any form of contraception and contraceptive prevalence rate, which is the percentage of women of reproductive age who are using (or whose partner is using) a contraceptive method at a given point in time.[4-6.]

Nigeria has a population of 177.5 million as at 2014, and is currently the 9th largest country in the world as well as the most populous black nation in the world.[7] With natural growth rate of 2.4%, and total fertility rate of 5.7 (6.2 among rural dwellers when compared to 4.7 in urban dwellers).[7] Countries with large population density relative to available resources like Nigeria, suffer tremendously from high fertility rates.[1,8] High fertility rates are strongly associated with poor utilization of family planning services leading to inadequate spacing between births, which in turn is associated with high infant mortality and maternal mortality which is prevalent in the country.[8] Nigeria is ranked 187th out of 191 as the country with one of the poorest health indicators in the world.[9] An estimated 600,000 maternal deaths related to pregnancy occur worldwide each year, of this a total of about 52,900 maternal deaths occur in Nigeria. This is approximately 10% of maternal deaths globally, despite the fact that Nigeria is only 2% of world population.

A woman's chance of dying from pregnancy and childbirth in Nigeria is 1 in 13.[10,11]The maternal mortality ratio in Nigeria is estimated to be 800/100,000 live births with marked rural-urban variations: 351/100,000 live births for urban dwellers and 828/100,000 live births for rural dwellers.[12.] Also, WHO estimates that 13% of these deaths are due to unsafe abortion and globally, approximately 50 million women resort to induced abortion yearly, of this number at least 610,000 pregnancy terminations occur in Nigeria.[10, 11]These poor indices could be related to problem of population explosion, deprivation of scarce resources and overall poor health service delivery. Also some family planning methods have the potential of reducing the incidence of sexually transmitted diseases including HIV.[12] However, the utilization of family planning services has remained consistently low in Nigeria over a long period of time.[13-17]

Marked rural–urban differences in family planning use has been reported from several studies.[7,13-19] According to the 2013 Nigerian National Demographic Health Survey (NDHS) , the contraceptive prevalence in the rural was quite lower than in the urban, 9% and 21% respectively.[17] This trend has been the same pattern from the reports in the 1990, 1999, 2003 and 2008 NDHS's.[13-16] Also in another country wide survey in Nigeria,[18] the results were similar to that of the NDHS's with marked difference in family planning method utilization between, the urban and rural areas of the country. However some studies outside the country showed that there were no differences in family planning use between urban and rural communities.[8, 20-22] Thus the aim of this study is to determine and compare the differences in family planning use among women in rural and urban communities in Imo State, Nigeria.

METHODS

Study area

Imo State is one of the 36 States of Nigeria in the South Eastern Region of the country. It has a total population of about 3.93 million people, comprising more males than females (2.03 million and 1.9 million people respectively). The majority of the people living in the State are Ibos, while the other tribes in the minority are the Hausa's, Yoruba's etc.[23-25]

The State is made up of seven (7) health zones and has 27 Local Government Areas; 22 are rural while five (5) are urban as designated by the National Population Commission (NPC). An urban (Owerri Municipal) and a rural (Mbaitoli) Local Government Area (LGA) were studied. Owerri Municipal has a total population of 127,213 and a female population of about 64,223 with population density of about 5906 square/km. It consists of 751 enumeration areas. Mbaitoli has a total population of 237, 555 people and a female population of 115516 people as at 2006. The number of enumeration areas as demarcated by the National Population Commission in 2006 was 1387. The major occupations of the people are farming, fishing and artisanship in the rural areas while trading and public service are the main occupation. The main religion of the people is Christianity, with few traditionalists and Muslims. Most public and private hospitals provide some level of family planning services depending on client demand and availability of manpower and other resources.

Study design/ Study period and duration/Study population/Selection criteria.

The study was a comparative cross-sectional survey of the utilization of family planning services among women of reproductive age group (15- 49 years) in urban and rural communities in Imo state. This study was conducted from February to September 2010. The study population comprised women of reproductive age group in the selected communities. All women of reproductive age (15-49 years) whether married or single were included in this survey. For an individual to be selected she must have been resident in the enumeration areas selected for the study for at least a period of one year prior to commencement of research. Those who were absent during the study period and those who did not give their consent were excluded.

Minimum sample size estimation

Using the sample size formula for comparison of two proportions and proportions of women in reproductive age group in South East Nigeria who are currently using any form of contraceptive method among urban and rural dwellers, to be 15.2% and 8.3% respectively[18,] the sample size for this study was determined using the formulae below[26]

$$n = \frac{(Z\alpha + Z\beta)^2 \{P_1 (1- P_1) + P_2 (1-P_2)\}}{(P_1 - P_2)^2}$$

Where, n = Sample size to be estimated, P_1 = Proportion of women within the reproductive age currently using any form of contraceptive method: Urban (15.2%), P_2= Proportion of women within reproductive age group currently using any form of contraceptive method: Rural (8.2%); $Z\alpha$= Standard normal deviate at 95% confidence interval = 1.96, $Z\beta$ =Standard normal deviate corresponding to power of 1-β, (one sided percentage of normal distribution corresponding to 100%) ; β=10%; P= 100-10 = 90% significance level = 1.2816.

$$n=\frac{(1.96+1.2816)^2\{0.15(1-0.15)+0.083(1-0.083)}{(0.15-0.083)^2}$$

= 476 for each

Thus anticipating a response rate of about 90% for this study, a total sample size of 1,130 respondents were used, with 565 respondents in each.

Sampling technique

The sampling technique used for this study was the multistage type. The first stage involved the selection of the Local Government Areas that were used for the study. The list of all LGAs in Imo state was used as a sampling frame. With this, all LGAs were grouped into 2 categories. Category A was made up of 5 urban LGAs; and category B, comprised 22 rural LGAs. From each category, an LGA was selected by simple random sampling technique, using balloting. Thus Owerri municipal was selected from the urban while Mbaitoli LGA was selected from the rural category. The second stage involved the selection of the primary sampling units from the LGAs. The enumeration areas (EAs) which are geographic clusters that have been clearly demarcated by the National Population Commission (NPC), served as the primary sampling units. Then using simple random sampling technique, based on the population size of the LGAs; ten EAs were selected out of 750 EAs in Owerri Municipal while twenty were selected from 1387 EAs in Mbaitoli LGA.[25] The third stage involved the selection of the respondents that were interviewed. From each LGA, 565 women in the reproductive age group (15-49 years) were recruited for the survey. Thus, a total of 57 respondents per EA were recruited from the urban LGA and 28 respondents per EA from the rural LGA respectively. In each of the selected EAs, a random starting point was determined in the field by the supervisor using a community landmark such as village square, church, or a mosque, market, school or streets and movement was in a clockwise direction. Eligible respondents were consecutively recruited and interviewed until the required sample size for the selected EA was achieved. If no one was found present in a household, the next house was sampled instead.

In any EA where the required sample size could not be obtained, simple random sampling was used to select another EA outside those previously selected until the required size for that EA is attained Only one eligible respondent per household was interviewed during the survey. If a household had more than one eligible respondent, only one was randomly selected by simple balloting.

Data collection process, techniques and analysis

There was proper community entry, sensitization and mobilization. Each eligible and consenting woman of reproductive age group was recruited and responses elicited from them using a semi-structured, interviewer administered questionnaire. The duration for the total data collection during the survey was three months. Information from the respondents were collected using four trained female research assistants who have had previous experiences in community-based health-related research and are conversant with the terrain of these localities and also a supervisor who monitored them daily while in the field to be sure they were doing the work correctly. The

questionnaire was divided into two major sections, the first section was designed to obtain the socio-demographic characteristics of the respondents and the second section was designed to access the knowledge, awareness, practice and use of family planning services. The questionnaires were first translated to Igbo language then back translated to English and by different persons, to ensure that the original meanings of the research questions were maintained. This was to ensure validity and reliability of the study.

Quantitative data collected were cleaned and validated manually, while a computer software package (EPI INFO version 3.3.2) was used for data entry and analysis. Frequencies and percentages of relevant variables were generated, and bivariate analysis conducted using Chi-square, to test associations between variables. For the purpose of this study, knowledge of respondents about family planning was scored as follows; non-mention of any family planning method was categorized as having poor knowledge, correct mention of any two (2) or less was classified as fair knowledge and correct mention of any three (3) or more was classified as having good knowledge of family planning methods. A p-value <0.05 was considered significant.

RESULTS

A total of 565 questionnaires were distributed in each of the localities however a total of 563 and 560 were returned from urban and rural areas respectively, giving a response rate of 99.4%

Table I summarizes the socio-demographic characteristics of respondents from both rural and urban areas. Table II shows the awareness, knowledge and sources of information about family planning, while Table III shows the family planning method utilization among respondents in the localities. Table IV highlights the reasons for contraceptive choice, counselling of respondents and satisfaction with services received.

Table Ia: Socio-demographic and economic characteristics of respondents by locality

Variable	Rural n=563 Freq. (%)	Urban n=560 Freq. (%)	Total n=1123 Freq. (%)	Statistics	p-value
Age (yrs.)					
15-19	34(6.0)	14(2.5)	48(4.3)		
20-24	96(17.1)	66(11.8)	162(14.4)		
25-29	121(21.5)	143(25.5)	246(23.5)	χ^2=30.16	**0.000***
30-34	114(20.2)	109(19.5)	223(19.9)	df=6	
35-39	105(18.7)	92(16.4)	197(17.5)		
40-44	50(8.9)	94(16.8)	144(12.8)		
45-49	43(7.6)	42(7.5)	85(7.6)		
Mean ±SD	31.2±8.1	32.7±7.7	32.0±8.0	t-test=3.16	**0.001***
Marital Status					
Married	433(76.9)	365(65.9)	798(71.1)		
Single	109(19.4)	98(17.5)	207(18.4)	χ^2=47.30	**0.000***
Co-habiting	10(1.8)	58(10.4)	68(6.0)	df=3	
Previously married	11(2.0)	39(7.1)	50(4.5)		
Educational Status					
None	2(0.4)	1(0.2)	3(0.9)		
Primary	74(13.1)	22(3.9)	96(8.6)	χ^2=154.78	
Secondary	402(71.4)	271(48.4)	673(60.0)	df=4	**0.000***
Tertiary	71(12.6)	244(43.6)	315(28.3)		
Vocational	14(2.5)	22(3.9)	36(3.2)		

**statistically significant*

Table Ib: Socio-demographic and economic characteristics of respondents by locality

Variable	Rural n=563 Freq. (%)	Urban n=560 Freq. (%)	Total n=1123 Freq. (%)	Statistics	p-value
Employment status					
Employed	483(85.8)	441(78.8)	924(82.3)	χ^2=9.54	
Unemployed	80(14.2)	119(21.2)	199(17.7)	df=1	**0.002***
Religion					
Christianity					
• Catholics	261(46.3)	251(44.8)	512(45.6)		
• Pentecostal	94(16.7)	114(20.4)	208(18.5)	χ^2=3.47	
• Orthodox	194(34.6)	178(31.8)	372(33.2)	df=3	0.325
Muslim	7(1.2)	0(0.0)	7(0.6)		
Others	7(1.2)	17(3.0)	24(2.1)		
Tribe					
Ibo	550(97.7)	550(98.5)	1100(97.9)		
Hausa	8(1.4)	3(0.5)	11(1.1)	χ^2=2.60	
Yoruba	5(0.9)	7(1.4)	12(1.0)	df=2	0.273
Monthly income in naira					
<10000	346(61.5)	113(20.2)	459(40.9)		
10000 - 19999	79(14.0)	202(36.1)	281(25.0)	χ^2=271.68	
20000 - 29999	25(4.4)	120(21.4)	145(12.9)	df=5	**0.000***
30000 - 39999	19(3.4)	49(8.8)	68(6.1)		
≥40000	19(3.4)	42(7.5)	61(5.4)		
Unsure	75(13.3)	34(6.0)	109(9.7)		
Median income	**5,520**	**20,320**	**12,920**		
No of living children	**n=454**	**n=462**	**n=916**		
0	64(14.1)	67(14.5)	131(14.3)		
1-2	143(31.5)	151(32.7)	294(32.1)	t-test =10.02	**0.000***
3-4	114(25.1)	130(28.1)	244(26.6)		
>4	133(29.3)	114(24.7)	247(27.0)		
Mean ± SD	4.2±1.1	3.5±0.8	3.9±0.9		
No. of males					
0	117(25.8)	130(28.1)	247(27.0)	t-test =9.09	**0.000***
1-2	249(54.8)	239(51.7)	488(52.2)		
3-4	72(15.9)	77(16.7)	149(16.3)		
>4	16(3.5)	16(3.5)	32(3.5)		
Mean ± SD	1.8±0.6	1.5±0.4	1.6±0.5		
Type of union	**n=433**	**n=365**	**N=789**		
Polygamy	17(3.9)	33(9.0)	50(6.3)	χ^2=8.82	**0.003***
Monogamy	416(96.1)	332(91.0)	748(93.7)	df=1	

**statistically significant*

Table IIa: Awareness, Knowledge and sources of information about family planning.

Variable	Rural Freq. (%)	Urban Freq. (%)	Total Freq. (%)	Statistics (χ^2)	p-value
Ever heard about family planning	**n=563**	**n=560**	**N=1123**		
Yes	539(96.1)	555(99.1)	1093(97.4)	11.37	**0.001***
No	24(3.9)	5(0.9)	29(2.6)	df=1	
****Family planning methods known**	**n=539**	**n=555**	**N=1094**		
Pills	302(53.6)	351(62.6)	653(59.7)		
Injections	303(53.8)	347(61.9)	650(59.4)		
Condoms	294(52.2)	340(60.6)	634(58.0)		
IUCD Loops	187(33.2)	246(43.9)	433(39.6)		
NFP/Rhythm	136(24.2)	275(49.0)	411(37.6)	324.35	
Withdrawal Methods	111(19.7)	144(27.0)	255(23.3)	df=12	**0.000***
Abstinence	59(10.5)	95(16.9)	154(14.1)		
Sterilization Methods	40(7.1)	143(25.8)	183(16.7)		
Exclusive Breastfeeding	26(4.6)	32(5.7)	58(5.3)		
Diaphragm	4(0.7)	67(11.9)	71(6.5)		
Implants	26(4. 6)	20(3.6)	46(4.2)		
Foam/Jelly/ Spermicide	6(1.1)	42(7.5)	48(4.4)		
Traditional Methods	21(3.7)	7(1.3)	28(2.6)		
Level of knowledge	**n=539**	**n=555**	**N=1094**		
Poor(none)	37(7.0)	14(2.5)	51(4.7)		
Fair (1-2methods)	199(36.9)	91(16.6)	290(26.5)	78.75	
Good (≥3)	303(56.1)	450(80.9)	755(68.8)	df=2	**0.000***

**statistically significant*

Table IIb: Awareness, Knowledge and sources of information about family planning.

Variable	Rural n=539 Freq. (%)	Urban n=555 Freq. (%)	Total N=1094 Freq. (%)	Statistics (χ^2)	p-value
****Sources of information**					
Radio	230(40.9)	479(85.4)	709(64.9)		
Nurses/CHEW	323(57.4)	293(52.2)	616(56.4)		
Friends/Relatives	322(57.2)	257(45.8)	579(53.0)		
Television	113(20.1)	199(35.5)	312(28.5)		
Doctors	29(5.2)	189(33.7)	218(19.9)		
Church	71(12.6)	145(25.5)	216(19.8)		
Magazines	46(8.2)	96(17.1)	142(13.0)	456.64	
School	49(8.7)	76(13.6)	125(11.4)	df=12	**0.000***
August meeting	25(4.4)	88(15.7)	113(10.3)		
Market	62(11.1)	7(1.3)	69(6.3)		
Work place	0(0.0)	15(2.8)	15(1.4)		
Chemist	10(1.8)	3(0.5)	13(1.2)		
Town crier	4(0.7)	7(1.3)	11(1.0)		
NGO	2(0.4)	8(1.4)	10(0.9)		
TBA/Native healer	7(1.2)	1(0.2)	8(0.7)		
Pharmacy	1(0.2)	6(1.1)	7(0.6)		
Is family planning important?					
Yes	521(96.7)	539(97.1)	1060(96.9)	0.07	
No	18(3.3)	16(2.9)	34(3.1)	df=1	0.794
****Importance of FP**	**(n=521)**	**(n=539)**	**(N=1060)**		
Prevent Unwanted Pregnancy	206(36.6)	193(34.4)	399(37.8)		
To limit family size	86(15.5)	286(50.9)	372(35.2)		
Used for child spacing	165(29.3)	189(33.7)	354(33.5)		
Better take care of one's children	126(22.4)	197(35.1)	325(30.8)		
For Proper Growth and				94.30	**0.000***
Development of the Baby	132(23.5)	169(30.1)	301(28.5)	df=8	
Freedom to Choose When to be					
Pregnant	114(20.3)	170(30.3)	284(26.9)		
Permits Savings	122(21.7)	151(26.9)	273(25.9)		
Prevent Premature aging	57(10.1)	150(26.7)	207(19.6)		
Others	17(3.0)	12(2.2)	29(2.3)		

**statistically significant*

Table III: Family planning method utilization among respondents in the localities

Variable	Rural n=563 Freq. (%)	Urban n=560 Freq. (%)	Total N=1123 Freq. (%)	Statistics (χ^2)	p-value
Ever used any method of family planning					
Yes	239(42.5)	303(54.1)	542(48.3)		
No	324(57.5	257(45.9)	581(51.7)	14.81	
Current use of any form family planning method					
Yes	109(19.4)	196(35.2)	305(27.2)		
No	454(80.6)	364(64.8)	818(72.8)	37.71	
Total	**563(100)**	**560(100)**	**1123(100)**	df=1	**0.000***
****Methods ever used**	**n=239**	**n=303**	**N=542**		
Condom	105(43.9)	108(36.0)	213(39.5)		
Injections	61(25.5)	67(22.3)	128(23.8)		
Pills	53(22.2)	75(25.0)	128(23.8)		
NFP/Rhythm	36(15.1)	83(27.7)	119(22.1)		
Withdrawal method	32(13.4)	67(22.3)	99(18.4)	56.58	
IUCD/loop	29(12.1)	58(19.3)	87(16.1)	df=7	**0.000***
Breastfeeding	7(2.9)	44(14.7)	51(9.5)		
Abstinence	4(1.7)	24(6.6)	24(4.5)		
Tubal ligation	0(0.0)	15(5.0)	15(2.9)		
Others**	1(0.4)	16(5.3)	16(3.2)		
Main form of method ever used					
Modern method	182(76.1)	197(64.9)	379(69.9)	7.36	**0.006***
Natural method	57(23.8)	106(35.1)	163(30.1)	df=1	
Proportion of ever used still currently using					
Yes	109(45.6)	196(64.7)	305(56.3)	19.77	**0.000***
No	130(54.4)	107(35.3)	237(43.7)	df=1	
Methods currently used	**n=109**	**n=196**	**n=305**		
Condom	40(36.7)	51(26.0)	91(29.8)		
Injection	21(19.3)	34(17.4)	55(18.0)		
IUCD/Loops	17(15.6)	38(19.4)	55(18.0)		
Pills	19(17.4)	24(12.2)	43(14.1)	39.06	
NFP/Rhythm	14(12.8)	48(24.5)	62(20.3)	df=6	**0.000***
Withdrawal	16(14.7)	39(19.9)	55(18.0)		
Breastfeeding	2(1.8)	15(7.7)	17(5.6)		
Abstinence	1(0.9)	24(12.2)	25(8.2)		
Tubal ligation	0(0.0)	15(7.7)	15(4.9)		
Others**	1(0.9)	14(7.1)	15(4.9)		
Form of method currently used					
Modern method	81(70.1)	114(58.2)	195(63.9)	9.75	**0.002***
Natural method	28(25.9)	82(41.8)	110(36.1)	df=1	
Total	**109(100)**	**196(100)**	**305(100)**		

**statistically significant*

***multiple response*

*Others**=diaphragm, implants, traditional methods and foams/jelly/spermicides*

Table IV: Reasons for contraceptive choice, counselling of respondents and satisfaction with services received

Variable	Rural n=109 Freq.(%)	Urban n=196 Freq. (%)	Total N=305 Freq. (%)	Statistics (χ^2)	p-value
****Reasons for preferring the method used**					
It is convenient	57(52.3)	97(49.5)	156(50.5)		
Easy to use	48(44.0)	47(24.0)	95(31.2)		
	10(9.2)	78(39.8)	88(28.9)		
Recommended by Health Care Professional					
It is effective	13(11.9)	69(35.2)	82(26.9)	47.17	
Has less side effects	14(12.8)	33(16.8)	47(15.4)	df=8	**0.000***
It is cheap	14(12.8)	29(14.8)	43(14.1)		
	12(11.0)	19(9.7)	31(10.2)		
Recommended by friends and relatives					
	11(10.1)	15(7.7)	26(8.5)		
Can be used without partners knowledge					
Is easily reversible	8(7.3)	14((7.1)	22(7.2)		
Counselled before commencement					
Yes	53(49.1)	124(66.3)	183(60.0		
No	55(50.9	66(33.3)	121(40.0)	8.65	
Total	109(100)	196(100)	305(100)	df=1	**0.003***
Would want to go back to the provider					
Yes	71(65.1)	164(83.7)	235(77.1)	13.61	
NO	38(34.9)	32(16.3)	32(22.9)	df=1	**0.000***
Intention to continue current method					
Yes	94(86.2)	128(65.3)	222(72.8)		
No	12(11.0)	56(28.6)	68(22.3)	15.20	
Not sure	3(2.8)	12(6.1)	15(4.9)	df=2	**0.000***
****Issues discussed during counselling**	**n=53**	**n=124**	**N=183**		
Effectiveness of method/cost	27(50.9)	71(54.6)	98(53.6)		
Duration of Methods / Availability	30(56.6)	35(29.6)	65(35.5)		
Side effects/complications	29(54.7)	19(15.3)	48(26.2)	20.91	
Types of method	6(11.3)	4(3.2)	10(5.5)	df=4	**0.000***
Failure rate	3(5.7)	14(11.2)	17(9.3)		
Persons who counselled them	**(n=53)**	**(n=124)**	**(n=183)**		
Nurse	41(77.3)	69(53.1)	110(60.1)		
Doctor	4(7.6)	48(36.9)	52(28.4)	15.98	
[1]Others	8(15.1)	13(10.0)	21(11.5)	df=2	**0.000***
Satisfied with services rendered	**(n=53)**	**(n=130)**	**(n=183)**		
Yes	48(90.0)	104(80.0)	152(83.1)		
No	2(3.8)	21(16.1)	23(12.6)	5.13	
Not sure	3(5.6)	5(3.9)	8(4.3)	df=2	**0.033***
****Reasons for wanting to discontinue**	**n=12**	**n=56**	**N=68**		
Side Effects	8(66.7)	19(44.2)	27(39.7)		
Not Effective i.e. failed	2(16.7)	12(28.9)	14(20.6)		
Want to get pregnant	2(16.7)	17(39.5)	19(27.9)	6.35	
Spouse Objection	4(33.3)	2(4.7)	6(8.8)	df=2	0.011*
Biased by provider	1(8.3)	6(14.0)	7(10.3)		
[2]Others	3(25.0)	5(8.9)	8(11.8)		

**=statistically significant, [1]= pharmacists, chemist dealer, friends/neighbours and clergy. [2]=religious reasons, needs a change now, and not convenient*

DISCUSSION

There were variations in some of the socio-demographic and economic characteristics between the rural and urban respondents as observed in this study and this pattern has been reported in other studies.[14-18] The median age at first marriage among respondents in this survey was 23.2years. It's slightly higher among the urban women (24.2 years) than that of their rural counterparts (22.0 years). This pattern of rural-urban variations in age at first marriage has been reported in previous national surveys in Nigeria from; 1990-2013. [14-17] It was higher than the current national average of 18.1 years[17] but almost the same for figures reported from the South eastern part of Nigeria where this study was conducted, 22.7 years, and South western Nigeria 22.6.[17,27] This slight increase in age at first marriage found in this study might be due to increasing emphasis on girl child education which will in turn better the lots of women especially during pregnancy and childbirth.

The awareness of family planning in this survey was high in both urban and rural communities, 99.1% and 96.1% respectively, though higher in the urban than rural areas, $p<0.05$. There was a statistically significant difference in level of knowledge between the urban and rural women ($p<0.05$). This pattern of higher awareness and knowledge about family planning among urban women than their rural counterparts had been reported by other studies.[16-,18] This overall awareness reported was relatively higher than the national figure which stood at 85% in 2013[17], (urban 95.4% versus rural 78.4%), figures reported from Enugu in South eastern Nigeria (81.7%),[28] and a country wide survey in Nigeria 2006, (67.1%). The figure was similar to that reported from Imo state in 2013, [17] Lagos[29] and Nepal.[30] This high awareness may be likely due to; increased contraceptive information disseminated through the mass media and high economic hardship experienced in the country causing families to look for ways of limiting their family size.

The common sources of information in both localities were; radio, nurses and chews, friends/relatives and Television. This is similar to sources mentioned in other studies within Nigeria, [17,18,31-33] but differs from that reported by Abiodun et al., in a Southwestern Nigerian urban town in which electronic media was low.[29] Further analysis showed that respondents in the urban areas heard about family planning more from radios, television, magazines, work place, doctors, church, schools and August meetings, than their rural counterparts while respondents from the rural areas heard more from friends and relatives, traditional birth attendants (TBAs) traditional healer and markets than their urban counterparts ($p<0.05$). The results were similar to the findings in a country wide survey in 2006 were most people in the urban areas heard about family planning more from the mass media than their rural counter parts.[18]

The family planning methods most known in the rural areas of this survey were injection, 53.8%, pills 53.6%, condoms, 52.2%, and intrauterine contraceptive devices (IUCD)/loops, 33.2%, while the least known were Diaphragm 0.7% and vasectomy 0.9%. The commonest known in the urban were; pills, 62.6%, injection 61.9%, and condoms 60.6%, with the least known being traditional methods. This trend is similar with the pattern in other studies reviewed though there were slight variations.[15-18] There is a need to put more efforts in family planning information dissemination in the rural areas and make concerted efforts to develop adequate manpower that could be deployed to these areas. The education of the girl child is very important in that it will increase the knowledge of family planning and thus improve family planning service utilization and also help to erase some of the superstitious beliefs that have posed great threat to family planning

utilization. Thus, compulsory education of the girl child needs to be enforced through the universal basic education programme.

Overall, 43.3% of all women in this survey had ever used a method of contraception at some time in their life, (38.9 percent had ever used any modern method while only 4.4 percent ever used any traditional method or natural method). This was higher than the National value which stood at 29% in both 2003 and 2008 Nigerian NDHS.[15,16] It was also higher than the figures gotten in a country wide survey in Nigeria, 22.1%,[18] among under graduates in Nigeria, 38.1%,[34] and in sub-urban community in Oyo state, Nigeria, 29.5%,[35] while higher figures had been reported among abortion seekers in Nigeria, 81.2 percent,[36] among women in high density low income urban areas of Enugu, Nigeria, 75%,[37]and in a survey in Ilorin Nigeria, 52%.[38] Further breakdown of the results of the survey showed that ever use among urban women, (53.9%), was significantly higher than that found among their rural counterparts, (42.7%), p<0.05. This was in line with the pattern reported other studies.[15-17] In both rural and urban communities, the most commonly ever used method was condoms, in the rural, it was followed by injections, pills and natural family planning/rhythm methods while in the urban it was followed by natural family planning method/rhythm, pills, injections, and IUCD/loop. None of the respondents ever used sterilization method, diaphragm, and implants, in the rural areas. Traditional method was the least ever used in both the urban and rural communities. The pattern of ever use was similar to findings in 2003, 2008 and 2013 NDHS where condom was the commonest followed by injectables.[15-17] This pattern was also observed in a survey in Enugu State, and among Nigerian undergraduates in Nigeria[35,37] but slightly differs from the findings among abortion seekers in Nigeria[36] and among adolescent mothers in sub-urban community in Oyo State[34] where the commonest ever used method were pills, and injectables.

The overall current contraceptive use in this survey was 27.3%. Prevalence for modern family planning was 18.2% and 9.1% for natural or traditional methods. The contraceptive prevalence rate (married and living with partner) was 26.6%; while the current contraceptive use among those who were neither unmarried nor living with any partner was 28.9%. Though this rate was low, it was still higher than the national figure which stood at 15% for all methods and 10% for modern method[17] but closer to the values reported from studies in rural/urban areas of Imo State, (27.0%)[17,37],Oyo State (26.6%)[35], and Bauchi state, (26.0%)[40] It was also higher than rates reported in Enugu, 20%[28], a country wide survey in Nigeria, (14.6%)[18], a rural community in Plateau state,(18.0%)[41], a rural community in North west Nigeria, (4.0%)[33] and a study from Ethiopia, (25.4%)[19]. Some other studies reported higher rates than the figures gotten in this survey.[8,22,30,35,36,42] This low contraceptive use found in an area where the population growth rate, infant and maternal mortality were still high [36,42] despite high contraceptive knowledge is a public health threat to the region and its inhabitants including the health care delivery system. This could lead to population explosion with its subsequent problems. In this survey, finding revealed that the contraceptive use was significantly higher among urban respondents (35.2%) than their rural counterparts, (19.5%), p<0.05. This has been the reported trend in Nigeria since 1990 NDHS till date, [13-17] both for National, South East region and states, including the State studied. The same trend was also seen in a country wide survey in Nigeria,[18] and another study in Ethiopia, [19] but was quite different from findings in Sudan and India where there was no different in use between rural and urban women[8,22]. This significant difference in contraceptive use between the two localities can

partly explain the pattern of health indices which is worst in the rural areas of the country. It is worthy to note that on the average, for every 15 percent points increase in contraceptive use in the community, there is a reduction of 1 birth per woman.[8] This can be explained by the differences in socio-demographic/economic characteristics of women in both localities. It could also be caused by a lot of barriers to contraceptive practice in the localities which can only be checked by sustained well-articulated health education programs.

The pattern of family planning method use for ever use in this survey was similar to the pattern for current family planning method use. In both the urban and rural areas, the commonest used methods were condoms, 26.0% and 36.7% respectively. This was followed by injections, pills, and IUCD/loop in the rural areas of the survey while in the urban, it was followed by natural family planning/rhythm method, withdrawal methods, IUCD, and injections. The least used method in both the rural and urban communities of the survey was the traditional methods, followed by abstinence in the rural, (0.92% each), and vaginal foams/jelly/Spermicide, (1.02%), in the urban areas. In the rural areas, none of the respondents used diaphragm, foams / jelly / Spermicide, implants and sterilization method which was in contrast with their urban counterparts where these methods were used, though usage was low. Natural family planning and withdrawal methods were used commonly in the urban when compared to their rural counterparts and in this survey, $p<0.05$. This was almost the trend in the 2003, 2008 and 2013 NDHS [15-17] and results from other studies[8,28,36,43] though with slight variations. The increased use in natural family planning methods (Rhythm and Withdrawal) among urban residents in the study was similar to finding in Imo State in 2008.[37]

Another area of interest was the increased use of female sterilization method that was observed in this study. The prevalence of female sterilization among the urban respondents was (7.6%), this was higher than the results in all the studies reviewed from Nigeria.[17,18,28,33,34,37-42] This shows there is some marginal improvement in utilization of terminal methods which could be due to increased awareness about the effectiveness of the method. Despite being high for the country, when compared with figures reported from Asia and Europe it was very low[43, 44]. The high use of condom could be because of its availability at service points in almost all parts of the country, it does not need much skill as to know how to use it and has dual role of preventing pregnancy and transmission of sexually transmitted infections.

Reasons for choosing a particular type of contraception can likewise increase the utilization of family planning either directly or indirectly. Major factors which influenced the choice of family planning methods for users were; it is convenient for me, in both rural and urban, 52.4% and 49.5% respectively. It is therefore logical to assume that where the users are offered a range of commodities that are effective and convenient, usage is likely to increase. This pattern is consistent with results from other studies.[17,18,37] Other factors that could likely affect family planning use were; factors that affect individual continuity of a particular family method they are presently using. More people in the rural areas (82.2%) wants to continue using the same method than counterparts in the urban areas (69.6%), ($P<0.05$). This could likely be due to availability of wide range of family planning options in the urban areas and increased knowledge about family planning methods and their side effects.

The commonest reason for discontinuation in both rural and urban areas was the presence of side effects, 44.2% and 66.67% respectively. This was consistent with reasons reported in several other studies within and outside the country. [8,15-18,28,36,] Side effects have been a prominent problem among

users of modern family planning methods in both rural and urban areas. This could be due to improper counselling on side effects of these methods which many respondents misinterpret. Thus proper counselling should be channeled towards explaining the side effects of these methods to clients and allowing them to make informed choices. Among those who are currently using any form of family planning, about half of them, (49.1%) in the rural areas and two-third (66.3%), in the urban areas were counseled before starting use. More people were counseled in the urban before starting use than rural ($P<0.05$). This is likely because many people in the rural communities patronize patent dealers who might not have counseled them or if counseled, wrong information may have been given to clients.

CONCLUSION

The overall family planning use in this survey was low, (27.3%) despite a reported high awareness and knowledge about family planning in both localities. Family planning utilization was found to be higher among women from urban communities than those from rural communities of the state. The findings from this study may have implications for public health policies and programs especially at the grass roots in the state. Thus there is need for stake holders in the state to find ways of increasing the use of family planning services by making it attractive to these women through incentives especially among those living in the rural areas of the state.

ETHICAL CONSIDERATION

Ethical clearance was given by Nnamdi Azikiwe University Teaching Hospital Nnewi Ethics Committee; written informed consent was obtained from all the respondents.

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REFERENCES

1. Population Reference Bureau. World Population Data Sheet of the Population Reference Bureau, Washington D.C, USA, 2006; UNDP.
2. World Health Organization (WHO). Evaluation of Family Planning. Techn. Rep. Series. WHO, Geneva; 1971: No 483:1.
3. World Health Organization (WHO). Evaluation of Family Planning Services. Techn. Rep. Series. WHO, Geneva; 1970: NO 442:1-3
4. Jones HW. Contraception. Novaks Text Book of Gynaecology, 11th Edition. Williams and Wilkins Baltimore USA. 1988:8.
5. Park K. Demography and family planning. Parks Textbook of Preventive and Social Medicine. 16th edition. M/s Banarsidas, Bhanot and co. 2002: 325-328.
6. Govan ADT, Hodge CH, Callender H, Garrey MM. Contraception. Gynaecology illustrated 4th edition. Churchill Livingston, 23 Ravelston Terrace, Edinburg. 1977:400-407.
7. Population Reference Bureau. The urban-rural divide in health and development (data sheet). Washington DC USA, 2015. Online at www.prb.org.

8. Ibnouf AH, Vander BHW, Maarse JAM. Utilization of Family Planning Services by Married Sudanese Women of Reproductive Age .Eastern Mediterranean Health Journal. 2007; 13(6):1-8.
9. World Health Organization (WHO). The World Health Report 2005. Make Every Mother and Child Count. WHO, Geneva, 2005.
10. Federal Ministry of Health (FMOH) Nigeria. The Maternal and Newborn Roadmap. Abuja 2005.
11. Population Reference Bureau. Women of Our World. 2005:4. www.prb.org. Accessed 30th August 2016.
12. United Nations Fund for Population Activities (UNFPA). Population issues: Improving Reproductive Health; Family Planning. Page 1.www.unfpa.org. Accessed 10thAugust 2016.
13. Federal office of Statistics. National Demographic and Health Survey. Macro International Inc. FMOH Abuja, 1990
14. National Population Commission (Nigeria). Demographic and Health Survey. Macro International, Inc . FMOH Abuja, 1999.
15. National Population Commission (Abuja, Nigeria). Demographic and Health Survey. Macro International Inc 2003. Federal ministry of Health Abuja 2003.
16. National population commission (Nigeria). Demographic and Health Survey. Macro International Inc. FMOH Abuja, 2008.
17. National population commission (Nigeria). Demographic and Health Survey. Macro International Inc. FMOH Abuja, 2013.
18. Oye-Adeniran BA ., Adewole IF., Umoh AU., Adesina O., Abidoye G., Ekanem EE, et al. Community Based Study of Contraceptive Behaviour in Nigeria. African Journal of Reproductive health. 2006; 10[2]:90-140.
19. Mekonnen W., Worku A. Determinants of low family planning use and high unmet need in Butajira District, South Central Ethiopia. Reproductive Health, 2011;8:37.
20. World Health Organization (WHO). Evaluation of Family Planning Services. Technical Report Series, NO 569. WHO, Geneva ; 1975.
21. World Health Organization(WHO). Evaluation of Family Planning Services. Tech Rep Series, No 587. WHO Geneva 1976.
22. Sharma V., Mohan U., Das V., Awasthi S. Socio-demographic determinants and knowledge, attitude, practices: Survey of family planning. J Fam. Med Primary Care, 2012;1:43-47.
23. Government of Imo State of Nigeria. Ministry of Works and Transport: Department of Lands, Survey and Urban Development; Planning Studies in Imo State. Regional Physical Master Development Plan. Physical Resources Report. Vol 1; Main Report, March 1984.
24. Government of Imo state. Statistical Year Book: Imo State Planning and Economic Development Commission, Owerri, 2006.
25. Federal Republic of Nigeria. National Population Commission. Official Gazette Feb.2009; No. 2: Vol. 96: April 2006.
26. Bamgboye EA. ,A Companion of Medical Statistics, First Edition. Ibipress and Publishing Co., 94 Ladapo Str, Oke-Padre,Ibadan.2006, p.146-156.
27. Araoye MO. Contraception and Unmet Needs Among Adults of Reproductive Age in Kwara State, Nigeria. Nigeria Med. Journal. 2003;43:(3): 48-53.
28. Onuzurike BK, Uzochukwu BSC. Knowledge Attitude and practice of family planning amongst women in high density low income urban of Enugu, Nigeria Afri J. Reproductive health. 2001; 5(2) 83-89
29. Abiodun OP, Usman SO, Olomide J, Hamza S, Adesina A. Contraceptive practices in a Southwestern Nigerian urban population. Int J Health Sci Res. 2016;6(7):264-269.
30. Pokharel B, Soni S, Shrestha N. Knowledge and

attitude on family planning methods among married women of reproductive age (15-49) of Kakani VDC, Nuwakot, Nepal. Int J Health Sci Res. 2016;6(6):262-267.

31. Arowojulu. AO., Ilesanmi AO, Roberts OA., Okunola MA. Sexuality, Contraceptive Choice and AIDS Awareness among Nigerian Undergraduates. Afr J. Reproductive Health. 2002; 6[2]: 71-78.
32. Olukoya AA. Pregnancy Termination: Results of community-based study in Lagos. Int. J. Gynaecol Obstet 1987, 25:4-46
33. Raji MO, Oche MO, Kaoje AU, Raji HO, Anglo JT. Awareness and utilization of family planning commodities in a rural community of North West, Nigeria. Caliphate Medical Journal. 2013;1(4):103- 107.
34. Arowojulu AO., Ilesanmi AO., Roberts OA, Okunola MA. Sexuality, Contraceptive Choice and AIDS Awareness among Nigerian Undergraduates. Afr J. Reproductive Health. 2002; 6[2]: 71-78.
35. Mesgnaw F. Comparative Study of the Characteristics of Family Planning Service Users and Non-users in North West Ethiopia. Afri J. Reprod. Health. 2006 ;10 [1] : 62-70.
36. Adewale IF., Oye-Adeniran BA., Iwere .N., Oladukun A., Gbadegesin A. and Babarinsa IA. Contraceptive Usage among Abortion Seekers in Nigeria . INAJM. 2002:21(2):112-114.
37. Nwachukwu I., Obasi OO. Use of Modern Birth Control Methods among Rural Communities in Imo State, Nigeria. Afr Reprod Health. 2008:12[1]: 101-108.
38. Onwasigwe C.N. Contraceptive Knowledge and Practice Among Married Women in Enugu Metropolis. Orient Journal of Medicine. 2001;13:(3 & 4): 63-65.
39. Olaseha OI., Ajuwon AJ., Onyejekwe OC. Reproductive Health Knowledge and Use of Contraceptive Among Adolescent Mothers in a Sub-urban Community in Oyo state, Nigeria. African J. Med. Sci.2004; 33: 139-143
40. Kana MA, Tagurum YO, Hassan ZI, Afolanranmi TO, Ogbeyi GO, Difa JA *et al.* Prevalence and determinants of contraceptive use in rural Northeastern Nigeria: Results of a mixed qualitative assessment. Ann Nigerian Med.2016;10:3-10
41. Agbo HA, Ogbonna C, Okeahialam BN. Factors related to the uptake of contraceptive in a rural community in Nigeria: A cross-sectional study. J Med Trop. 2013;15:107-112.
42. Envuladu EA, Agbo HA, Mohammed A, Chia L, Kigbu JH, Zoakah AI. Utilization of modern contraceptives among traders in Jos Plateau State, Nigeria. Int J Med Biomed Res. 2012;1(3):224-231.
43. Orji, EO., Onwudiegwu U. Prevalence and determinants of contraceptive use in a defined Nigerian population. J. Obstet. and Gynaecol. 2003;22 [5]: 540-3.
44. Chadwick N, Dhillon BS , Kumbo 1, Saxena N.C. Contraceptive knowledge practice and utilization of services in the rural areas of India . Indian Journal of Medical Sciences. 2003; 57(7&9): 303-310.
45. Spinelli. A., Talamanca IF., Lauria L. Patterns of Contraceptive use in 5 European Countries. American Journal of Public Health. 2000;90:(9):1403-1408