



Prevalence and Socio-Demographic Determinants of Current use of Contraceptive Methods among Women in an Urban Community in Port Harcourt, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author NEU designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors INO and BMM managed the analyses and literatures searches for the study. Author INO wrote up the final manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Contraceptive use is the intentional desire of an individual to prevent or limit pregnancy and it is one of the major components of family planning, an important pillar in the prevention of over-population, which has become a most pressing global problem.

Materials and Methods: The study adopted a cross-sectional design that aimed at identifying the prevalence and determinants of current contraceptive use among women aged 18-49 years in a community in Port Harcourt, the capital city of Rivers State, Nigeria. A semi-structured questionnaire was administered to 216 women recruited from two clusters chosen randomly out of six clusters in the study area. Data were analyzed using SPSS version 20. Chi-square test was used to test for association between socio-demographic variables and contraceptive use. Logistic regression was used to identify determinants of uptake.

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Result: One hundred and five women (55.22%) were currently using contraceptive methods. Older than 29 years, being married/cohabiting, and having two or more living children were significantly associated with contraceptive use ($P < 0.05$).

Conclusion: This study identified a high proportion (55.22%) of women in our locality to be current users of modern contraceptive methods when compared to national average (27.0%). The male condom was the commonest used modern method (30.5%). The withdrawal method and prolonged breastfeeding were the preferred traditional methods (20.0% and 7.6% respectively). Older age of women (above 29 years), living with a partner, and having at least two living children were positive determinants of current contraceptive use.

Keywords: Contraception; women; prevalence; determinants.

1. INTRODUCTION

Overpopulation, together with the resulting enormous demand on available resources have been blamed for the current COVID-19 pandemic. Densely populated cities and packed commercial places have also been likened to Petri-dishes for coronavirus transmission and other epidemics. Human overpopulation is a most pressing global problem gradually inducing global warming, environmental pollution, and desertification with resultant habitat losses. Others are ecosystem disruption and the depletion of natural resources leading to the inability to sustain the biological environment [1,2].

The world population is estimated to be about 7.8 billion in the year 2021. This figure has been estimated to rise to about 8.5 billion by 2030 [3]. Most of this increase is expected to occur in developing countries with high rates of fertility and birth rates, which Schivone and Blumenthal have blamed partly on low contraceptive use. The rapid population increase has been identified as a problem requiring urgent attention [4].

One of the six pillars of the Safe Motherhood Initiative to reduce the death of women in developing nations is family planning [5]. Adopting the principles of family planning while applying the various contraceptive methods are important factors in controlling population growth as well as preventing maternal deaths from pregnancy-related challenges [6].

Planning childbirth helps women stay healthy, complete their education, contribute to the economic wellbeing of the family and the society, and are better prepared to raise healthier children [7]. Some of the determinants of contraceptive use as shown by various studies include the woman's level of education, contraceptive knowledge, age of a woman, and income. Others are social interactions with peers,

religious/cultural beliefs, and community attitudes towards modern contraceptives [8 -10].

A Nigerian National Survey showed that cultural beliefs are serious barriers to discussions on family planning especially among young women in Nigeria. Young women who seek contraceptive services are seen as promiscuous, wayward, and stigmatized. As a result of this, they have intimate relationships without any contraceptive cover which exposes them more to sexually transmitted infections, including HIV, unwanted pregnancies, complications of unsafe abortions, and unprepared deliveries [11,12].

The population of Africa continues to be on an upward trend. Studies have noted that the rate of population increase in sub-Saharan Africa appears to be more than is seen in other regions of the world. Africa is projected to account for up to 21% of the population of the world by 2050 [13,14].

Nigeria, which is a developing country in sub-Saharan Africa, is ranked the seventh most populous country in the world, with more than 200 million people [15]. The annual population growth rate is about 3.2%, with an average fertility rate of 5.7 per woman [16]. One out of ten pregnancies in Nigeria is not properly timed and planned for, which still hinges on low contraceptive use. The World Bank estimations for contraceptive prevalence in Nigeria have been variable, hovering averagely between 13.4 % in 1994 and 36.0% in 2018 with much regional variations [17,18].

Another report showed that Nigeria has the second-highest number of maternal deaths in the world at 59,000 deaths per year, as well as a high incidence of unwanted pregnancies and unsafe abortions (19). Report from another country showed that , almost half of all deaths in women of reproductive age were caused by problems of pregnancy and childbirth [20].

These deaths could be averted or brought to the barest minimum if adults in countries such as Nigeria are empowered with information, knowledge, self-will, and other needed resources to accept and utilize modern contraceptive methods. Contraceptive use has been noted to not only improve health-related outcomes such as reduction in maternal and child mortality but also produce good socio-economic outcomes for the families, communities, and the country at large [21].

As the global political class and the healthcare force are grappling with containing the current pandemic with its high morbidity and mortality rates, it is also not out of place to talk about and plan for population control since the natural tendency will be towards compensatory over-fertility when the pandemic is brought under control [22].

This study aimed to determine the prevalence and socio-demographic determinants of current contraceptive use before the pandemic as the data was collected before the onset of the pandemic. The result will help in post-pandemic population policies and developmental plans.

2. MATERIALS AND METHODS

2.1 Study Area

The study was conducted in Rumuolumeni, which is one of the major areas of Port Harcourt city, the capital of Rivers State in the south-south geo-political zone of Nigeria. Port Harcourt is considered the centre of the Nigerian oil industry.

Rumuolumeni is a host community for a tertiary educational institution, as well as within 5km driving distance of another tertiary educational institution. These educational institutions have fairly good and functional university health centres. There are three standard public health centres within its 5km radius. Rumuolumeni is in Obio/Akpor local government area. There are numerous reproductive health and healthy lifestyle programs operated by governmental and non-governmental organisations in the area, targeting the local population.

2.2 Study Design

A descriptive, cross-sectional design was used for the study.

2.3 Eligibility Criteria

All Women within the age group 18-49 years residing in the locality were eligible. Eighteen

years was chosen because this is the age of consent in Nigeria.

Women in the age group 18-49 years who were too ill either mentally or physically to participate and temporary visitors to the locality were excluded.

2.4 Sampling Method

Rumuolumeni community is naturally demarcated into six geographical areas each with an indigenous name. Each area was taken as a population cluster. A sampling frame of the six clusters was then made. Simple random sampling was used to select two clusters. Which were Iwofe and Mgbuosimini. Questionnaires were administered to all women who met the inclusion criteria in Iwofe and 162 women consented and were recruited. In Mgbuosimini the second cluster, 54 women were recruited to make up the total sample size of 216 women.

2.5 Study Instrument

The study instrument used was a previously validated semi-structured questionnaire, which was adapted from literature [23,24] and pretested to allow for a good understanding of questions and expected answers. The questionnaire was interviewer-administered. Contraceptive methods were classified into traditional and modern contraceptive methods. Traditional methods included the use of herbs, wearing of traditional beads, withdrawal method, calendar method or rhythm method, fertility awareness, and prolonged breastfeeding method. The modern methods included barrier, hormonal, intrauterine devices, emergency contraception, and permanent methods, which include male and female sterilization. Current use of the contraceptive method was defined as the proportion of women 18–49 years of age or their partners who reported using any method of contraception at the time of the study.

2.6 Study Procedure

Four research assistants were trained for a period of one week to enable them to visit, do community entry and map out the geographical area. The training helped the Assistants to appreciate and understand the research objectives and questionnaire. Data collection was from January 2019 to the end of February 2019.

2.7 Data Analysis

Data generated from the questionnaire were coded and entered into a Microsoft excel sheet and then moved into Statistical Product and Service Solutions (SPSS) version 20. Frequency tables and cross-tabulation were used for data presentation. Summary statistics were obtained and a test of association was done using Chi-Square and logistic regression to test for relationship and the strength of association between women's age, education, marital status, number of living children, the desired number of children, income, and contraceptive use. Logistic regression was used to identify the determinants of contraceptive use in this study with significance level set at $P < 0.05$ at a 95% confidence interval. Chi-Squared and t-tests were conducted between proportions and means as appropriate with confidence interval set at 95% and a p-value of less than 0.05 considered significant.

2.8 Validity and Reliability

Content and face validity were ensured by the academic board of the department. The questionnaire was pretested in Rumuigbo community, also part of Port Harcourt, among 40 women. The questionnaire was validated by previous studies [23,24].

3. RESULTS

3.1 Response Rate/Completeness of Data

A total of 216 questionnaires were administered to women aged 18-49 years but only 205 of the questionnaires were properly filled given a response rate of 98.7%. Out of the 205 participants studied, 18(8.2%) were aged 18-19 years, 89 (43.4%) were within the ages 20-29 years, while 98 (47.8%) were aged over 29 years. The mean age was 29.4 +/- 7.4. Married women were 117(57.1%), 78 (38.1%) were single, 7(3.4%) were living with a partner, and 3(1.5%) were widowed. Those without education were 5(2.4%), while 97(47.3%) had tertiary education.

For the occupation of women and their partners, 74 (36.1%) women and 102 (49.8%) partners were into business, 51 (24.9%) and 30 (14.6%) were students, while 20 (9.8%) women were house wives.

For monthly income status, 47 (22.9%) women and 37 (18.1%) partners had income ranging from N10, 000 – N50, 000.00, 16 (7.8%) and 31 (15.1%) had N60, 000.00 – N100.000.00 income. Income ranges from N100, 000 to over N200,

000 monthly were reported by 4.7% of the female participants and 17.5% of their partners. Two-thirds of the women desired 4-6 children 138 (67.3%), for other categories see Table 1. The mean desired number of children was 4.02 +/- 1.36. The proportion of women who had 1-3 living children was 81(41.5%), and 71 (34.6%) had no child yet. The mean number of living children was 1.86 +/- 1.82. Finally, the mean age at first birth was 25.04 +/- 4.59.

The study was limited by the fact that only quantitative tools were adopted for a study like this on determinants of contraceptive use. More in-depth information could have been obtained if qualitative tools were included during the data collection.

Out of the 205 who were recruited for the study, only 105 (55.2%) were currently using contraceptive methods while 100(48.2%) were not currently using any contraceptive method. Respondents who used modern methods were 68 (64.76%) while 37 (35.24%) were currently using traditional methods. Modern methods currently in use included male condom 32 (30.5%), 6 (5.7%) used oral pills, 4 (3.8%) used inject table and intrauterine device was used by 2 (1.9%) of the women. Commonest traditional methods currently in use by respondents were withdrawal method 21 (20.0%), prolonged breastfeeding 8 (7.6%), periodic abstinence 6 (5.7%).

For the duration of contraceptive use, 60 (57.1%) of the respondents have used methods for 1-5 years and 3 (2.9%) used methods for >10 years.

Respondents that were older than 29 years old had a statistically significantly higher proportion of current use of contraceptive methods (55.24% vs 44.76%) ($X^2 = 4.18$ $P < 0.05$) compared to those that were 29 years old or younger.

The logistic regression analysis showed that respondents that were older than 29 years were 1.85 times more likely to currently using contraceptive methods compared to those that were 29 years old or younger (OR=1.85; $P = 0.04$; 95% CI: 1.06-3.22).

Respondents who were married or living with a partner had a statistically significant higher tendency to the current use of contraceptive methods (68.57% VS 31.43%) ($X^2 = 5.2$ $P < 0.05$) compared to those that were either single or widowed.

Table 1. Socio-demographic characteristics of respondents

Characteristics	Frequency n=205	Percentage (%) 100
Age in years		
18-19	18	8.8
20-29	89	43.4
30-39	80	39.0
40-49	18	8.8
Mean age	29.4 ± 7.4	
Religion		
Christianity	189	92.2
Islam	15	7.3
African Traditional Religion	1	0.5
Marital Status		
Single	78	38.1
Married	117	57.1
Living with partner	7	3.4
Widowed	3	1.5
Educational Status		
None	5	2.4
Primary	16	7.8
Secondary	87	42.4
Tertiary	97	47.3
Occupation		
Business/Trader	74	36.1
Student	51	24.9
Housewife	20	9.8
Unemployed	20	9.8
Company employee	3	1.5
Farming	4	2.0
Occupation of Partner		
Business/Trader	102	49.8
Company employee	30	14.6
Student	30	14.6
Civil Servant	27	13.2
Unemployed	10	4.9
Clergy	4	2.0
Farmer	2	1.0
Monthly income		
No monthly income	132	64.4
N10, 000 - N50, 000	47	22.9
N60, 000 - N100, 000	16	7.8
N100, 000 - N150, 000	4	1.9
N160, 000 - N200, 000	4	1.9
> N200, 000	2	0.9
Monthly income of Partner		
No regular monthly income	101	49.3
N10, 000 - N50, 000	37	18.1
N60, 000 - N100, 000	31	15.1
N100, 000 - N150, 000	16	7.8
N160, 000 - N200, 000	7	3.4
> N200, 000	13	6.3
Desired Number of children		
1-3	51	24.9
4-6	138	67.3
>6	9	4.4

Characteristics	Frequency n=205	Percentage (%) 100
None	7	3.4
<i>Mean</i>	4.02 ± 1.36	
Number of living children		
1-3	85	41.5
4-6	47	22.9
>6	2	0.9
None	71	36.4
<i>Mean</i>	1.9 ± 1.8	
Mean age at first delivery	25.0 ± 4.6	

Table 2. Respondents' Use of contraceptives

Characteristics	Frequency n=205	Percentage (%)
Current contraceptive use		
Yes	105	55.2
No	100	48.8
Current methods used (n=105)		
Male condom	32	30.5
Withdrawal method	21	20.0
Implant	16	15.2
Female condom	8	7.6
Prolonged breastfeeding	8	7.6
Oral pills	6	5.7
Periodic abstinence	6	5.7
Injectable	4	3.8
Intrauterine device	2	1.9
Fertility awareness	2	1.9
Duration of current use (n=105)		
< 1 year	40	38.1
1-5 years	60	57.1
6-10 years	2	1.9
>10 years	3	2.7

The logistic regression analysis showed that respondents who were married or living with a partner were 2.01 times more likely to use contraceptive method compared to those that were either single or widowed (OR = 2.01; P= 0.02; 95% CI: 1.14-3.56).

4. DISCUSSION

Concerning contraceptive use, this study found out that 55.2% of the study population were currently using any method. This finding is high when compared with the national prevalence which varies between 15% and 28% [16]. Sixty-eight (64.76%) of current users preferred modern methods while 37 (35.24%) used traditional methods.

The current contraceptive-use prevalence in this study is similar to a previous community survey from the capital city of Abia a contiguous state to ours. They obtained a prevalence of current users of 51.4% [24]. The Abia state study is

strikingly similar to ours in socio-demographics and results. More than half of their respondents were older than 29 years old, were married or in a union. Other studies in Nigeria corroborated our finding [25, 26]. We found other studies also from southern Nigeria that differed from ours in that they reported low current contraceptive prevalence rates at only 21.6% and 25.4% respectively. The difference we found was that in one of the studies, a third of their study participants were young, and unmarried, which correlated with the result they obtained [2,27]. Our study area has a tertiary educational institution and numerous health facilities and active non-governmental organizations' presence. Therefore it is easy to infer that adults living here will have a high level of education, more access, and exposure to health services and health information which may likely lead to increased contraceptive access and use, although we did not notice any association between current use and educational or income status.

Table 3. Socio-demographic determinants of current Contraceptive Use

Socio-demographic factors	Current Contraceptive Use		Total	Chi-square (X ²)	P-value	Odds Ratio (OR) [95% CI]
	Yes Freq (%)	No Freq (%)				
Age						
>29	58 (59.18)	40 (40.82)	98 (100)	4.18	0.04*	1.85 (1.06-3.22)
≤29	47 (43.93)	60 (56.07)	107 (100)			
Total	105	100	205			
Marital Status						
Married Living with partner	72 (58.06)	52 (41.94.0)	124 (100)	5.21	0.02*	2.01(1.14-3.56)
Single Widowed	33 (40.74)	48 (59.26.0)	81 (100)			
Total	105	100	205			
Educational Status						
Secondary Education	51 (47.22)	57 (52.78.0)	108 (100)	1.14	0.285	0.71 (0.41-1.23)
Tertiary	54 (55.67)	43 (44.33)	97 (100)			
Total	105	100	205			
Income status of the respondent						
Have monthly income	35 (47.95)	38 (52.05)	73 (100)	0.304	0.581	0.82 (0.46-1.45)
No monthly income	70 (53.03)	62 (46.97)	132 (100)			
Total	105	100	205			
Income status of Partner						
Have monthly income	51 (49.04)	53 (50.96)	104 (100)	0.244	0.621	0.84 (0.48-1.45)
No monthly income	54 (53.47)	47 (46.53)	101 (100)			
Total	105	100	205			

*Statistically significant (p<0.05)

For modern contraceptive methods used, the male condom had the highest proportion of usage, and this correlated well with the study in nearby states [2,24]. Our study location as pointed out earlier has a large tertiary educational institution and it is widely known that such locations are targets for increased reproductive health activities such as awareness campaigns of condom use to prevent contracting HIV/AIDS. The traditional contraception method used most often in this locality was the withdrawal method, followed by prolonged breastfeeding and abstinence. These findings were in agreement with the nationwide National Demographic and Health Survey [28] which reported that male condoms, oral pills, and injectables were modern methods routinely used and that women using traditional methods used mostly the withdrawal and prolonged breastfeeding methods.

The use of male condoms is male-partner driven because culturally, decent girls are not expected to procure or carry condoms as it is generally associated with infidelity and promiscuity. Partners also feel slighted if females suggest the use of a condom. We also know that the condom is convenient, easy to access, and generally affordable, often free. Barrier methods such as condoms are particularly suitable when people are in their younger ages when mutual fidelity is harder so they can benefit from the double action of protection against both pregnancy and sexually transmitted diseases including HIV/AIDS [29]. Oral contraceptive pills have been noted to be commonly preferred by younger educated women who still intend to have children. Our study revealed a high proportional use of implants, as 15% of the women used it as against the study by Muluken, et al [30], conducted in another African country where only 4.3% of women used implants. The reason for this high uptake of implants could be due to increased awareness and accessibility of this method as the services are provided almost free in Rivers State. In our locality, women have been noted to receive implants without the knowledge and consent of their partners, a very important barrier to uptake, therefore, making it a preferred option for married women who have chosen to take charge over such decisions.

A woman's age was seen to be significantly associated with contraceptive use. Women in this study who were older than 29 years were significantly more likely to be current users of any contraceptive method compared with women

younger than 29 years. This is supported by other studies [24,30,31]. In one study, it was noted that the use of contraception was highest amongst the age group 30-34 years. The reason for low use in ages 29 years and younger is that many of them are young, still in school, and may not be in any serious regular relationships. Therefore, family planning may not be a frontline goal at this stage of their lives. Those that have started childbearing may not have achieved the desired number of children and will be reluctant to use modern contraceptive methods. The mean age at first birth in this study of 25.0 ± 4.6 years also supports our finding. Hossain and colleagues [32] also affirmed that a woman's age plays a vital role in contraceptive use. Their study showed that women less than 20 years old were 15% less likely to be current users compared with 20-24 years old women. They noted a higher likelihood of using contraceptive methods with increasing age until 39 years of age and thereafter a decline.

In assessing the relationship between marital status and contraceptive use, we found that married women and those living with partners had a significantly higher likelihood of currently using contraception, as compared to those that were either never married, single or widowed. This finding agrees with the general notion that married women and women in a form of union have more stable and frequent intimate relationships than single women that necessitate contraceptive use. This is in agreement with other studies on factors affecting contraceptive use in Nigeria and other countries [2, 33, 34].

This study also found out that women with two or more children were associated more with current contraceptive use compared with those that have one or no child. This shows that women would not want to commence using contraception except they have given birth to two or more children. Another study [30] on determinants of contraceptive use supported this finding as women in their study having two or more living children were 7.75 times more likely to utilize contraceptive methods than those who did not have or desire children. The Nigerian NDHS [28] affirms this as it reported that women usually will not start using contraceptive methods except they have given birth to at least a child and that only 2% of women without any living children use any method of contraception, compared to 21% having 3 or four children.

Our study however did not agree with the anecdotal view that a woman's educational level

and income status for either the respondent or her male partner positively influence the current use of a contraceptive method ($p>0.05$). Hossain et al also reported that women's education had shown no significant association with contraceptive use. The partner's occupation also did not show a significant association with contraceptive use [32].

Women from our region of the country delay entering intimate relationships and childbearing when they are acquiring some education and pursuing careers and when they do have children, they tend to have a lesser number of children compared to the less educated women. The more educated women, therefore, tend to report less need and use for contraceptive methods. It is also common knowledge that since more educated women tend to start childbearing late, the period of fecundity becomes much shortened, resulting in less use of contraception. Literature reviewed failed to support our finding. However, one study from Ghana corroborated our findings. They showed that women who had no formal education were using more modern contraceptive methods than educated women who either did not use any method or if they used, were less effective methods. The reason being that women in lower socioeconomic status were reached more through organized grassroots reproductive health programs that provided most contraceptive methods free of charge and as such they had free and closer access to contraceptive use [35].

5. CONCLUSION

In conclusion, our study showed that a high proportion of women aged 18 - 49 years in our locality are current users of a modern contraceptive method compared with the national average. The male condom was the commonest used modern method. The withdrawal method and prolonged breastfeeding were the preferred traditional methods. Older age of women, living with a partner, and having at least two living children were positive determinants of contraceptive use.

CONSENT AND ETHICAL APPROVAL

Ethical approval to carry out this research was obtained from the University of Port Harcourt Ethical Review Board. Written Permission was also obtained from the community leaders in the selected clusters. Every woman interviewed

granted consent before the interview. Information obtained from each participant was not divulged to another. The interview was conducted where participant's privacy was ensured.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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