Original

Family Planning Knowledge and its Determinants among Mothers attending Antenatal Clinic at a Health Facility in Rivers State, Nigeria
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Abstract

Background: Family planning is a cost-effective public health practice that safeguards women against high-risk pregnancies, unintended pregnancies, unsafe abortions, and sexually transmitted diseases, including HIV/AIDS using a variety of techniques. The study aimed to identify family planning knowledge and its determinants among mothers attending antenatal clinics at a health facility in Rivers State, Nigeria.

Methods: A prospective cross-sectional observational study of 284 mothers who attended antenatal clinics at a Model Primary HealthCare Centre was conducted for three months. Data was collected using semi-structured, interviewer-administered questionnaires, and IBM SPSS version 25 was used for data analysis. The Pearson Chi-square test was used for associations. Binary logistic regression was used for the determinants of maternal knowledge. A p-value < 0.05 at a 95% confidence interval was considered statistically significant.

Results: 178 (62.7%) mothers were between the ages of 21 and 30 years, with a mean age of 26.8 ± 4.6 years. 209 (73.6%) mothers agreed that family planning was beneficial. 37 (13.0%) mothers had poor knowledge, 69 (24.3%) had fair knowledge, and 178 (62.7%) had good knowledge of family planning. The injectables (214, 49.1%) were the frequently mentioned family planning method. Age, marital status, educational status, occupation, and antenatal clinic attendance were significantly associated with the level of family planning knowledge. However, only marital status and antenatal clinic attendance were determinants of maternal knowledge of family planning.

Conclusion: Many of the mothers had good knowledge of family planning. Marital status and antenatal clinic attendance were determinants of maternal knowledge of family planning.

Keywords: Family planning, contraception, knowledge, determinants, Rivers State, Nigeria

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Introduction

The world's population is projected to increase to 8.6 billion people by 2030 and many developing countries are already experiencing the effects of a high population.[1] Population expansion that goes unchecked in areas with scarce resources causes a range of issues for everyone.[1] Therefore, several countries have implemented many population-related policies to lower the high fertility rate.[1]

Family planning is a low-cost public health intervention that has immediate and long-term positive effects on people, families, and the country.[2,3] It improves women's reproductive health.[4-6] Family planning reduces maternal mortality while safeguarding women from high-risk pregnancies, unwanted pregnancies, unsafe abortions, and sexually transmitted diseases, such as HIV/AIDS, using the various contraceptive methods that are available.[5-7] Due to the poor uptake of contemporary birth control methods, several developing countries have high fertility rates.[2] The lowest modern contraceptive prevalence rate (mCPR), accounting for 21% of the global total, is in Sub-Saharan Africa (SSA).[6,9]

Initiatives to increase Nigeria's CPR have been unsuccessful; hence, it is low. In 2012, the Nigerian government established a mCPR target of 27% by 2020 with assistance from some international donors.[10] The availability of family planning services at all levels of healthcare has increased, and media efforts have been launched to raise awareness and encourage women to ask for and accept free access to contemporary contraception.[11-13] Common contraception methods include the use of intrauterine devices(IUDs), injectables, implants, oral contraceptive pills, barrier methods (external and internal condoms, diaphragms), vaginal rings, and traditional methods (calendar methods, withdrawal methods, and other traditional methods).[4,6] The low rate of contraceptive use in Nigeria can be associated with individual, family, and cultural factors. Effective contraceptive use is undermined by a variety of factors, such as culture, religion, myths and misconceptions, the number of surviving children, employment status, a partner's lack of support, and others.[14-16]

The South-South geopolitical zone (20.6%), followed by the South-East (21.0%) and the South-West (26.2%), has the lowest percentage of all women taking contraception.[10] Women of reproductive age in Northwest Nigeria were found to have an awareness level of 82.4%, and about half of these women were reported to be using contraception currently.[17]

Additionally, previous studies reported that covariates like age, education, occupation, marital status, and ethnicity predict the knowledge and use of contraceptives.[18,19]

Limited information exists on family planning knowledge and its determinants among mothers attending antenatal clinics at a health facility in Rivers State, Nigeria. The study aimed to assess family planning knowledge and factors associated with the knowledge.

Method

Study Area: The study was conducted at the Model Primary Health Care Centre (MPHC), Pott Johnson, Port Harcourt, Rivers State. Rivers State is one of the thirty-six (36) states of the Federal Republic of Nigeria, located in the south-south geopolitical zone of the country with a population of more than 5 million people of different tribes and languages.[20] The MPHC gets patients from its catchment areas, which include the township axis, eastern bypass, and marine base area of Port Harcourt.

Research Design: A prospective cross-sectional observational study was conducted among mothers attending an antenatal clinic at the Model Primary Health Care Centre, Pott Johnson, Port Harcourt, Rivers State, Nigeria, for three months. The minimum sample size "n" was calculated using Fisher's formula for sample size determination for cross-sectional studies,[21] as shown, n = z^2pq/d^2. At 95% confidence interval (C.I.), normal deviation z = 1.96, d = 0.05, and p = prevalence of 0.21 for south-south Nigeria (9), q = 1-p, and a 10% non-response rate, the calculated minimum sample size was 283; however, 284 were used.

Sampling Method: A convenience sampling method was used. The MPHC conducts an antenatal clinic twice a week on Tuesdays and Thursdays. Data were collected only on Tuesdays. The average attendance per antenatal clinic was 70. The 284 participants were spread over 12 weeks (24 participants each week for 11 weeks and 20 participants on the 12th week). Mothers were interviewed in English and, when necessary, in Nigerian Pidgin English for better understanding.

Data collection instrument: A pre-tested, interviewer-administered semi-structured questionnaire with open- and closed-ended questions adapted from previously validated studies[17,22] was used for data collection. The questionnaire had two sections. Section one was on the biodata of the mothers. The biodata was on maternal age, religion, marital status, occupational status, and

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education. Section two was on the knowledge of mothers in family planning. There were five questions on knowledge, which included whether mothers had heard about contraception, three (3) correct family planning methods, and whether family planning was beneficial.

Data Management: The data were entered into Microsoft Excel 365 (Microsoft, Redmond, Washington, DC, USA), cleaned, validated, and transferred to IBM SPSS Version 25.0 (IBM, Armonk, New York, USA). The data set was revalidated with the in-built validation functions of IBM SPSS Version 25. The responses of the mothers to questions on knowledge were scored. There were five (5) questions on knowledge of family planning. Each correct response received one mark which if converted to a percentage is 20%, (1/5 x 100%), while an incorrect or "don't know" response received a zero mark. All the scores were summed up to give a maximum score of 5 (100%) and a minimum score of zero (0). Scores of 0–3 (0%-30%) were classified as poor knowledge, 4–6 (40%-60%) as fair knowledge, and 7 – 10 (70%-100%) as good knowledge.[23] Univariate analysis was performed, and the data were presented as frequency tables.

Categorical variables were expressed in percentages, while continuous variables were expressed as the mean and standard deviation. The Pearson Chi-square test was used to test associations between the independent (maternal characteristics) and dependent (maternal knowledge of family planning) variables. The significant variables were further subjected to binary logistic regression. In the binary logistic regression analysis, good and fair knowledge were categorised as good knowledge, and poor knowledge was classified as poor knowledge. Also, the following variables were categorised: maternal age ($\geq$20: <20), marital status (married: not married), educational status (informal: formal), occupation (employed: unemployed), number of children ($\geq$4: <4), and mother attending an antenatal clinic (yes: no). A p-value less than 0.05 was considered statistically significant at a 95% confidence interval.

Ethical approval: Ethical approval was obtained from the Rivers State Primary Health Care Management Board, Port Harcourt. Permission was obtained from members of staff of the health facility. Informed consent was obtained from the mothers. Verbal consent was obtained where written consent was not possible. The aim and benefit of the study were explained to all the participants. Participants were free to participate and free to decline further participation at any stage of the study. All information obtained from the data collected was treated as very confidential.

Results

Sociodemographic characteristics of the respondents

Table 1 shows the sociodemographic characteristics of the respondents.

Many respondents, 178 (62.7%), were aged 21 to 30 years with a mean age of 26.8 $\pm$ 4.6 years; Christians, 263 (92.6%); married, 179 (63.0%); housewives, 183 (64.5%); and had secondary education, 108 (30.0%).

Table 1: Sociodemographic characteristics of respondents

Characteristics	Frequency (N=284)	Percentage (%)
Maternal Age (years)		
≤ 20	13	4.58
21-30	178	62.68
31-40	64	22.54
> 40	29	10.21
Mean (SD)	**26.8 ± 4.6**	
Religion		
Christian	263	92.61
Muslim	12	4.23
Others	9	3.17
Marital Status		
Married	179	63.03
Single	43	15.14
Others	62	21.83
Occupational Status		
Housewife	183	64.45
Unemployed	76	26.76
Civil Servant	11	3.37
Others	14	4.93
Educational Status		
No education	69	24.30
Primary	83	29.23
Secondary	108	30.03
Post-secondary	24	8.45

Table 2 showed that all the respondents had heard about family planning and that health workers were the major source of information (66.2%). Injectables were the most frequently mentioned method of family planning, at 214 (49.1%). Most mothers said family planning was beneficial, 209 (73.6%). On the overall knowledge of family planning, 178 (62.7%) had good knowledge, 69

(24.3%) had fair knowledge, and 37 (13.0%) had poor knowledge.

Table 2: Knowledge of respondents on family planning

Characteristics	Frequency (n=284)	Percentage (%)
Heard about family planning		
Yes	284	100.0
No	0	0.0
Source of Information [*Multiple responses applied*] (n=468)		
Health workers	310	66.24
Neighbours	70	14.96
Radio/Television	56	11.97
Social media	32	6.84
Three family planning methods commonly mentioned and used [*Multiple responses applied*] (n= 436)		
Barrier methods	102	23.39
Oral pills	55	12.61
Injectables	214	49.08
Tetanus injections	37	8.49
Implants	28	6.42
Is family planning beneficial?		
Yes	209	73.59
No	75	26.41
Overall knowledge of family planning (%)		
Good (70-100%)	178	62.68
Fair (40 – 60%)	69	24.30
Poor (0- 30%)	37	13.03

Table 3 shows maternal factors associated with knowledge of family planning. Statistically significant factors were the age of mothers, marital status, educational status, and whether the mother attended an antenatal clinic.

Table 3: Maternal factors associated with knowledge of family planning

Characteristics	Good knowledge N=178	%	Fair knowledge N=69	%	Poor knowledge N=37	%	χ^2	Df	p-value
Age of mother (years)									
≤20	4	2.25	7	10.14	2	5.41			
21 – 30	124	69.66	32	46.38	22	59.46	20.159	6	0.003*
31 – 40	35	19.66	21	30.43	8	21.62			
> 40	15	8.43	9	13.04	5	13.51			
Marital status							29.588		
Married	126	70.79	37	53.62	16	43.24			
Single	22	12.36	9	13.04	12	32.43		4	0.000*
Others	30	16.85	23	33.33	9	24.32			
Educational Status									
None	47	26.40	16	23.19	6	16.22	18.000		
Primary	65	36.52	11	15.94	7	18.92		6	0.006*
Secondary	55	30.90	37	53.62	16	43.24			

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Characteristics	Good knowledge N=178	%	Fair knowledge N=69	%	Poor knowledge N=37	%	χ^2	Df	p-value
Post-secondary	11	6.18	5	7.25	8	21.62			
Occupation									
Housewife	134	75.28	32	46.38	17	27.03			
Unemployed	36	20.22	27	39.13	13	35.14	30.038	6	0.000*
Civil servant	5	2.81	4	5.80	2	5.41			
Other	3	1.69	6	8.70	5	13.51			
No of Children									
1-3	52	29.21	9	13.04	12	32.43			
4-6	93	52.25	42	60.87	19	51.35	8.280	4	0.082
>6	33	18.54	18	26.09	6	16.22			
Mother attended the Antenatal clinic (ANC)									
Yes	168	94.38	54	78.26	29	78.38	16.728	2	0.000*
No	10	5.62	15	21.74	8	21.62			

* Statistically significant

Table 4 shows the determinants of maternal knowledge of family planning. The marital status and the mother's attendance at the antenatal clinic were determinants of maternal knowledge of family planning.

Table 4: Determinants of maternal knowledge of family planning

Variables	Good Knowledge N=247	Poor Knowledge N=37	Adjusted Odds Ratio P-Value
Age (years)			
< 20	11	2	Adjusted Odds Ratio (AOR) = 0.96. 95% C.I.= 0.18 to 3.62. p = 0.80
≥ 20	236	35	
Marital Status			
Married	163	16	AOR= 2.55 95% C.I.=1.27 to 5.12. p= 0.008*
Not married	84	21	
Educational Status			
Informal education	63	6	AOR= 1.77. 95% C.I. = 0.71 to 4.41. p= 0.219.
Formal education	184	31	
Occupation			
Employed	9	2	AOR = 0.69. 95% C.I. = 0.15 to 2.98. p=0.605.
Unemployed	238	35	
No of Children			
< 4	61	12	AOR= 1.68. 95% C.I. = 0.33 to 1.44. p=0.315.
≥ 4	186	25	

Variables	Good Knowledge N=247	Poor Knowledge N=37	Adjusted Odds Ratio P-Value
Antenatal clinic attendance			
Yes	222	29	AOR=2.45. 95% C.I.=1.02 to 5.87. p=0.042*
No	25	8	

Statistically significant

Discussion

Most contraceptive users were between the ages of 21 and 30, while a minority were under the age of 20. These findings agree with similar studies conducted in Ilorin and Sokoto.[24,25]

In Nigeria, more than 60% of young people are sexually active and are responsible for 60% of the country's 600,000 induced abortions, low contraceptive usage among adolescents is an issue of concern.[26] For fear of being stigmatized as promiscuous, these young individuals can be reluctant to use the family planning clinic's methods. There could be additional factors such as the family planning clinic's repeated health talks about abstinence from sexual activity. Additionally, youth may be fearful of the negative effects of birth control pills.

Many mothers heard about family planning, and health workers were the major source of the information. This is because most of them attended antenatal clinics and had health talks on family planning. This agrees with the findings of similar studies that the antenatal clinic was the main source of information on contraception.[17] However, this is in contrast with other studies in Anambra State and Southwest Nigeria, where the media served as the primary source of information about contraception.[27, 28]

The most mentioned form of family planning was the use of injectables. In contrast, intrauterine contraceptive device (IUCD) was mentioned more in different studies.[29] In this study and the study conducted in Sokoto, oral contraceptive pills (OCPs) were the least popular method.[24] This may be because there are other convenient ways for family planning without swallowing a pill every day. Furthermore, most of these OCPs may be easily acquired from local pharmacies or drug shops, thus these women would not even need to go to the hospital to get the prescriptions. Many mothers agreed that family planning was beneficial. This may

be due to their good knowledge of family planning from the health workers as reported in other studies in Nigeria.[17,30-32]

The proportion of mothers with poor knowledge of family planning suggests gaps in the contents of health talks on family planning during antenatal clinics, as this was the main source of information on family planning for most mothers.

Statistically significant maternal factors associated with knowledge of family planning in this study included maternal age, marital status, educational status, maternal occupation, and the mother's attendance at an antenatal clinic. However, marital status and the mother's attendance at the antenatal clinic were determinants of maternal knowledge of family planning. The reason for this may not be unconnected with the couples' desire before marriage to limit the number of children they would have after marriage. Also, mothers get information on family planning at the antenatal clinic in a language they understand. This finding is in contrast with other studies in Nigeria which reported that maternal educational status is a determinant of contraceptive uptake because, during the antenatal clinic, mothers are educated on the benefits of contraception and encouraged to do family planning.[17,30-33]

Implication of the study: Since antenatal clinics served as the majority of mothers' primary source of family planning information, the percentage of mothers with poor knowledge of family planning methods (13%) indicates inadequacies in the information provided during the health talk sessions to mothers. There is a need to improve the content of the health education talks on family planning through training and re-training of the health workers.

Limitations: The convenience sampling technique may introduce sampling and selection bias and the results obtained may not be generalized since there is no way to tell if the sample is representative of

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the population. Furthermore, it is possible that the participants were too sensitive to the study and that their responses did not accurately reflect how they would have responded in a non-experimental setting. On the questions, they may have overreported or underreported. However, one depended on their desire to disclose the truth.

Conclusion

Most mothers were between 21–30 years old, while few were less than 20 years. Many heard about family planning from health workers during health talks in the antenatal clinic. Injectables were the most frequently mentioned family planning methods. Overall, mothers had good knowledge of family planning. Of the Statistically significant maternal factors associated with knowledge of family planning, only maternal marital status and the mother's attendance at the antenatal clinic were determinants of maternal knowledge of family planning.

Declarations

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