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Knowledge of Family Planning and its Determinants among Undergraduates in Public and Private Universities in Osun State, Nigeria

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Abstract

Background: Family planning is the practice of controlling the number of children one has, preventing pregnancy and child spacing, particularly using contraception. It has allowed man to control family size, and prevent pregnancy at times not intended. The general name for techniques for preventing pregnancy in the initial days following sexual activity is emergency contraception (EC). These methods are intended to be used in the event of unplanned, unprotected or insufficiently protected sex; forced sexual contact; sexual assault; and contraceptive failures. **Aim:** To assess the factors influencing knowledge of family planning and the socio-demographic characteristics associated with knowledge of family planning among undergraduates in private and public universities in Osun State. **Methodology:** This study was a descriptive cross-sectional study design. The survey was carried out among 400 students in a public and a private school in Osun State. Data collection was done using a weekly structured self-administered questionnaire. The data collected was entered and analyzed using IBM SPSS version 25.0; P value was set at ($P<0.05$). **Results:** The significant socio-demographic determinants of knowledge were age in the private university, marital status in public university, tribe, and religion in both universities, father's highest level of education in both universities, mother's highest level of education in a private university, father's occupation in a private university, and living arrangement in a private university. **Conclusion:** Factors influencing family planning decisions among students included cultural norms, religious beliefs, accessibility to contraceptives, and concerns about societal acceptance.

Keywords: Contraceptive Methods, Determinants of Family Planning, Emergency Contraception, Family Planning

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BACKGROUND

Family planning is the practice of controlling the number of children one has, preventing pregnancy and child spacing, particularly using contraception. It has allowed man to control family size, and prevent pregnancy at times not intended (Oluwatosin & Abimbola, 2015).

Midwives and nurses must acknowledge the impact of cultural attitudes on women's usage of contraception. While gathering a woman's medical history, midwives and nurses should consider these beliefs to provide the proper intervention. In addition to correcting any incorrect information regarding side effects, midwives and nurses should educate patients about the various forms of contraception. According to research from John Hopkins University, effective educational initiatives may be helpful in homes, workplaces, communities, and clinics. (Population Reports, 1994). Before developing educational courses, midwives and nurses must evaluate the needs of women. Programs for education should focus on the spouse, mother, family, and friends of the woman, as these individuals have the potential to impact her use of contraception. They might encourage women to use a contraceptive method (Yanikkerem et al., 2006).

According to Endriyas et al. (2017), some women think that using contraceptives before a first pregnancy can make it more difficult for them to become pregnant later on. Ankomah, Anyati, Adebayo and Giwa (2018) have reported on such myths and misconceptions. According to Moreso, Sushela, Jacqueline, and Ashford (2015), women in rural areas prefer to have a large number of children since they provide labor for the family. In a study on the factors that facilitate the use of contraceptives, Apanya and Adam (2015) found that the usage of contraceptives rises with the number of children who survive. As the number of living children increases, the use of contraceptives increases, while others prefer having as many children rather than using contraceptives (Akinwale et al., 2020).

Every year, unplanned pregnancies lead to at least 50 million abortions worldwide, many of them being unsafe, and subsequently resulting in approximately 80,000 maternal deaths. An increase in the knowledge of family planning would reduce the number of unwanted pregnancies and the number of induced abortions (Owolabi et al., 2017).

MATERIALS AND METHODS

Study Location

Osun State University (UNIOSUN), founded in 2006, operates as a multi campus institution spread across six locations in Osun State. Each campus focuses on a specific academic discipline:

Osogbo: Main campus, Ikire: Humanities and Culture, Okuku: Social Sciences and Management, Ifetedo: Law, Ipetu Ijesha: Education, Ejigbo: Agriculture.

Fountain University (FUO), established in 2007, is a private Islamic university in Osogbo, Osun State, Nigeria. The university currently comprises five colleges: College of Basic Medical and Health Sciences, College of Natural and Applied Sciences, College of Management and Social Sciences, College of Law, and College of Arts (including future plans for Colleges of Engineering and Education).

College of Basic Medical and Health Sciences, College of Natural and Applied Sciences, College of Management and Social Sciences, College of Law, and College of Art (with College of Engineering and Education).

Study Design and Population

This research project utilized a cross-sectional study design, targeting undergraduate students in selected universities.

Sample Size

Determination and Sampling Technique

The minimum sample size of 180 was calculated using the single independent proportions formula.

$n = 2(Z\alpha+Z\beta)^2 \times P(1-P) / (P_1 - P_2)^2$

$Z\alpha$ = Normal standard deviates correspondingly to the probability of beta, i.e., the probability of making Type 1 error 5% = 1.96

$Z\beta$ = Normal standard deviate correspondingly to the probability of alpha, i.e., the probability of making Type 2 error using a power of 95% = 1.64

P = Arithmetic average of the two proportions (P_1 and P_2) based on the previous study

P_1 = Prevalence of private university; 41% = 0.41

P_2 = Prevalence of public university; 60% = 0.6

Using the formula above, P = 0.41 + 0.6 / 2 = 0.505

Plugging in the values, we get mn = P = 0.41 + 0.6 / 2 = 0.505

$n = 2(1.96 + 1.64)^2 \times 0.505(1 - 0.505) / (0.41 - 0.6)^2 = 179.48$

Rounding it up to the nearest whole number makes it 180. Ten percent of the sample size was added to take care of attrition and compensate for the potential dropout.

This gives a total of 200 participants.

Multi-stage sampling technique was used in the selection of the respondents.

Research Instrument and Data Collection Methods

A structured, interviewer-administered questionnaire was used as the study instrument. It was designed to gather information on the factors influencing their knowledge of family planning and socio-demographic characteristics associated with family planning.

Validation and Pre-test of the Instrument

Questionnaires were sorted out to check for errors and omissions at the end of collection of data. Thereafter, data were entered into the computer and analyzed using Statistical Package for Social Sciences (SPSS) version 25.0. Frequency distribution tables, charts and graphs were

generated from variables while cross-tabulation and test statistics were done where applicable. Chi-square was used to compare rates, ratios, and proportions while Fisher's exact test was used when cells have expected values less than 5. T-test was used to determine the association between the continuous variables. Inferential statistics were done using chi-square to assess and compare the relationships among the categorical variables (independent) with the (dependent variable). All the significant variables during the bivariate analysis were imputed into the logistic model. Adjusted odds ratio (AOR) and 95% confidence interval were also obtained. The level of significance was set at p-value less than 0.05.

Measurement of Outcome Variables

For the questions, a positive determining factor answer was scored 1 and negative was scored 0. The mean score of the maximum score for the responses were calculated.

Chi-square was used to find the association between socio demographic factors and knowledge.

Data Analysis

After data collection, the questionnaires were reviewed for errors and omissions. The data were then entered into a computer and analyzed using Statistical Package for Social Sciences (SPSS) version 25.0. Frequency distribution tables, charts, and graphs were generated for various variables, and cross-tabulations and statistical tests were conducted where relevant. The chi-square test was used to compare rates, ratios, and proportions, while Fisher's exact test was applied when expected cell counts were less than 5. A t-test was employed to examine associations between continuous variables. Inferential statistics, including chi-square, were used to evaluate and compare the relationships between categorical independent variables and the dependent variable. Significant variables identified during bivariate analysis were included in the logistic regression model. Adjusted odds ratios (AOR) and 95% confidence intervals were calculated, with statistical significance set at a p-value of less than 0.05.

RESULTS

Table 1: Socio-demographic Characteristics of Respondents (n=400)

Variable	Categories	University Type			
		Public (200)		Private (200)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Age	15–19	46	23.0	104	52.0
	20–24	140	70.0	89	44.5
	25–29	14	7.0	7	3.5
Sex	Male	74	37.0	86	43.0
	Female	126	63.0	114	57.0
Level	200	66	33.0	114	57.0
	300	66	33.0	52	26.0
	400	64	32.0	33	16.5
	500	4	2.0	1	0.5

Department	Anatomy	63	31.5	39	19.5
	Nursing	70	35.0	103	51.5
	Computer science	67	33.5	58	29.0
Marital status	Single	140	70.0	146	73.0
	Married	15	7.5	15	7.5
	In a relationship	45	22.5	39	19.5
Tribe	Yoruba	150	75.0	136	68.0
	Igbo	22	11.0	27	13.5
	Hausa	22	11.0	9	4.5
	Others (EDO)	6	3.0	28	14.0
Religion	Islamic	40	20.0	16	8.0
	Christianity	145	72.5	175	87.5
	Traditionalist	15	7.5	9	4.5
Mother's highest level of education	Primary	22	11.0	11	5.5
	Secondary	47	23.5	27	13.5
	Tertiary	130	65.0	167	81.0
	None	1	0.5	0	0.0
Father's highest educational level	Primary	11	5.5	7	3.5
	Secondary	44	22.0	19	9.5
	Tertiary	143	71.5	174	87.0
	None	2	1.0	0	0.0
Mother's occupation	Skilled	128	64.0	162	81.0
	Unskilled	24	12.0	12	6.0
	Semi-skilled	31	15.5	20	10.0
	Unemployed	17	8.5	6	3.0
Father's occupation	Skilled	131	65.5	173	86.5
	Unskilled	30	15.0	9	4.5
	Semi-skilled	27	13.5	12	6.0
	Unemployed	12	6.0	6	3.0
Who do you live with?	Alone	62	31.0	28	14.0
	With both parents/guardian	127	63.5	163	81.5
	With a friend	11	5.5	9	4.5

It showed the socio-demographic characteristics of respondents (n=400). Among public university respondents, the majority were aged 20 to 24 years (70.0%), whereas in private

universities, the majority were aged 15 to 19 years (52.0%). In public universities, 63.0% of respondents were females, while in private universities, 57.0% were females. Most respondents in public universities were in the 200, 300, and 400 levels (33.0%, 33.0%, and 32.0%, respectively), while in private universities, the majority were in the 200 level (57.0%). For departments, the majority of public university respondents were in Nursing (35.0%), whereas in private universities, most were in Nursing (51.5%). Regarding marital status, most respondents in public universities were single (70.0%), as were most respondents in private universities (73.0%). The majority of respondents in public universities were Yoruba (75.0%), while in private universities, the majority were also Yoruba (68.0%). Most respondents in public universities practiced Christianity (72.5%), while in private universities, most also practiced Christianity (87.5%).

In private universities, the majority of respondents' mothers had tertiary education (65.0%), while in public universities, most mothers also had tertiary education (81.0%). The majority of the respondents' fathers in private universities had tertiary education (71.5%), and in public universities, most fathers also had tertiary education (87.0%). Regarding mothers' occupations, the majority in private universities had mothers who were skilled workers (64.0%), whereas in public universities, the majority had mothers who were also skilled workers (81.0%). Most of the respondents' fathers in private universities were skilled workers (65.5%), while in public universities, the majority were also skilled workers (86.5%). Regarding living arrangements, most respondents in private universities lived with both parents or guardians (63.5%), as did most respondents in public universities (81.5%).

Table 2: Determining Factors Influencing Family Planning (n=400)

Variable	Categories	University Type			
		Public (200)		Private (200)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
What is the primary reason you haven't used any family planning methods?	Lack of knowledge about available options	12	6.0	19	9.5
	Never had sex	71	35.5	93	46.5
	Concerns about effectiveness	36	18.0	27	13.5
	Accessibility issues (cost, location)	13	6.5	2	1.0
	Side effects	15	7.5	8	4.0
	None	53	26.5	51	25.5
Are you comfortable discussing family planning with a healthcare	Yes	148	74.0	137	68.5
	No	52	26.0	63	31.5

provider?					
Do you think family planning is important for young people like yourself?	Yes	153	76.5	148	74.0
	No	47	23.5	52	26.0
Which factor most influences the choice of family planning methods among undergraduates?	Knowledge of family planning methods	73	36.5	68	34.0
	Cultural norms and beliefs	47	23.5	34	17.0
	Religion	18	9.0	30	15.0
	Partner approval	37	18.5	42	21.0
	Gender	25	12.5	26	13.0
Which factor most influences the choice and knowledge of family planning methods among undergraduates?	Contraception use	94	47.0	86	43.0
	Cultural norms and beliefs	53	26.5	63	31.5
	Religion	29	14.5	23	11.5
	Gender	24	12.0	28	14.0
Which of the following cultural norms is most likely to discourage undergraduates from using family planning?	Emphasis on early marriage and childbearing	75	37.5	67	33.5
	Pressure to conform to traditional gender roles	31	15.5	37	18.5
	Open communication about sexual health	41	20.5	52	26.0
	Strong family support for responsible parenthood	38	19.0	36	18.0
	Others	15	7.5	8	4.0

Have you ever encountered any side effects using any of these methods?	Yes	49	24.5	38	19.0
	No	110	55.0	137	68.5
	Not sure	41	20.5	25	12.5
Have you ever had any formal sex education or family life education, If yes? Does it influence knowledge of family planning?	Yes	147	73.5	147	73.5
	No	53	26.5	53	26.5

Table 2 shows determining factors influencing family planning (n=400). In public universities, the primary reason for not using any family planning methods was never having had sex (35.5%), while in private universities, this was also the primary reason (46.5%). Among public university respondents, 74.0% were comfortable discussing family planning with a healthcare provider, compared to 68.5% in private universities. Most respondents at public universities (76.5%) believed that family planning is important for young people like themselves, while 74.0% of private university respondents shared this belief. Knowledge of family planning methods was the most influential factor in the choice of family planning methods among public university respondents (36.5%), while in private universities, partner approval was the most influential factor (21.0%). Contraception use was the most influential factor in the choice and knowledge of family planning methods among public university respondents (47.0%), while in private universities, cultural norms and beliefs were the most influential (31.5%). The cultural norm most likely to discourage undergraduates from using family planning in public universities was the emphasis on early marriage and childbearing (37.5%), while in private universities, it was open communication about sexual health (26.0%). Regarding side effects from using family planning methods, 24.5% of public university respondents reported having encountered side effects, compared to 19.0% in private universities. The majority of the respondents in both public and private universities had received formal sex education or family life education, with 73.5% of the respondents in both types of universities indicating it influenced their knowledge of family planning.

Table 3: Association between Respondents' Knowledge of Family Planning and Socio-demographic Characteristics (n=400)

Variable	Categories	Total Knowledge					
		Public (200)		Private (200)		Statistics	
		Poor	Good	Poor	Good	Poor	Good
Age	15–19	11	41	14	84	X^2 = 1.205	X^2 = 22.489
	20–24	33	103	25	68	P =0.547#	**P = 0.000#**

	25–29	10	2	8	1		
Sex	Male	20	56	25	59	X^2 = 2.041	X^2 = 0.000
	Female	34	90	22	94	P = 0.153’	P = 1.000’
Level	200	14	61	20	85		
	300	20	47	12	39	X^2 = 4.458	X^2 = 5.835
	400	19	36	15	27	P = 0.216#	P = 0.120
	500	1	2	0	2		
Department	Anatomy	19	41	11	31	X^2 = 3.415	X^2 = 2.629
	Nursing	14	63	20	76	P = 0.181#	P = 0.269#
	Computer science	21	42	16	46		
Marital status	Single	66	81	19	120	X^2 = 17.011	X^2 = 1.998
	Married	2	11	7	10	P = **0.000#**	P = 0.368#
	In a relationship	12	28	14	30		
Tribe	Yoruba	69	83	23	111	X^2 = 12.372	X^2 = 19.465
	Igbo	6	14	7	22	P = **0.005#**	P = **0.000#**
	Hausa	2	18	6	5		
	Others (EDO)	3	5	4	22		
Religion	Islamic	23	17	0	16	X^2 = 31.657	X^2 = 20.220
	Christianity	52	93	32	143	P = **0.000#**	P = **0.000#**
	Traditionalist	5	10	8	1		
Mother’s highest level of education	Primary	4	17	5	7	X^2 = 2.828	X^2 = 17.181
	Secondary	18	28	9	19	P = 0.419#	**P = 0.000#**
	Tertiary	57	75	26	134		
	None	1	0	0	0		
Father’s highest educational level	Primary	2	7	6	3	X^2 = 9.617	X^2 = 13.172
	Secondary	16	27	3	17	**P = 0.022#**	**P = 0.004#**
	Tertiary	61	85	31	140		
	None	1	1	0	0		
Mother’s occupation	Skilled	53	83	24	130	X^2 = 5.554	X^2 = 6.571
	Unskilled	10	12	5	9	P = 0.135#	P = 0.087#
	Semi – skilled	9	19	10	13		
	Unemployed	8	6	1	8		
Father’s occupation	Skilled	61	28	75	140	X^2 = 1.661	X^2 = 24.577
	Unskilled	9	5	17	8	P = 0.646#	**P = 0.000#**
	Semi – skilled	8	4	18	9		
	Unemployed	2	3	10	3		
Who do you live with?	Alone	17	37	6	30	X^2 = 1.515	X^2 = 7.400
	With both parents/guard	59	76	30	125	P = 4.69#	**P = 0.025#**

ian				
With a friend	4	7	4	5

#likelihood ratio and continuity correction

The table above shows the association between respondents' knowledge of family planning and socio-demographic characteristics (n=400). In public universities, the age group of 15-19 years had 11 respondents with poor knowledge and 41 with good knowledge, while in private universities, this age group had 14 with poor knowledge and 84 with good knowledge. The association was not significant for public universities (X^2 = 1.205, P = 0.547#) but was significant for private universities (X^2 = 22.489, P = 0.000#). For sex, there was no significant association in both public (X^2 = 2.041, P = 0.153') and private (X^2 = 0.000, P = 1.000') universities.

Regarding the level of study, there was no significant association in public (X^2 = 4.458, P = 0.216#) and private (X^2 = 5.835, P = 0.120) universities. The department variable showed no significant association in both public (X^2 = 3.415, P = 0.181#) and private (X^2 = 2.629, P = 0.269#) universities. Marital status had a significant association in public universities (X^2 = 17.011, P = 0.000#) but not in private universities (X^2 = 1.998, P = 0.368#). Tribe was significantly associated with knowledge in both public (X^2 = 12.372, P = 0.005#) and private (X^2 = 19.465, P = 0.000#) universities.

Religion showed a significant association with knowledge in both public (X^2 = 31.657, P = 0.000#) and private (X^2 = 20.220, P = 0.000#) universities.

For mother's highest level of education, there was no significant association in public universities (X^2 = 2.828, P = 0.419#), while a significant association was found in private universities (X^2 = 17.181, P = 0.000#). Father's highest educational level showed a significant association in both public (X^2 = 9.617, P = 0.022#) and private (X^2 = 13.172, P = 0.004#) universities.

Mother's occupation showed no significant association in public (X^2 = 5.554, P = 0.135#) and private (X^2 = 6.571, P = 0.087#) universities. Father's occupation had no significant association in public universities (X^2 = 1.661, P = 0.646#), but a significant association was found in private universities (X^2 = 24.577, P = 0.000#).

Living arrangement showed no significant association in public universities (X^2 = 1.515, P = 4.69#), while a significant association was found in private universities (X^2 = 7.400, P = 0.0

DISCUSSION

This section discusses the examined level of knowledge, perceptions and the socio-demographic characteristics influencing knowledge, among undergraduate students in Osun State, Nigeria.

The analysis compares the socio-demographic characteristics of students in public and private universities. Public universities have mostly older students (20-24 years), while private universities have younger ones (15-19 years). Both public (63%) and private (57%) universities have more female students than In public universities. Students are evenly spread across levels

(200-400), whereas in private universities, 200-level students dominate (57%). Nursing is the most popular field, especially in private universities. Most students in both public (70%) and private (73%) universities are single, reflecting their young age. Yoruba students are the majority in both public (75%) and private (68%) universities.

Christianity is the dominant religion, particularly in private universities (87.5%).

Most students' parents, especially in public universities, have tertiary education, suggesting a link between parental education and student access to higher education. Skilled professions are common among students' parents in both public (mothers 81%, fathers 86.5%) and private universities. Most students live with both parents or guardians, more so in public universities (81.5%).

In both public (35.5%) and private (46.5%) universities, the most common reason for not using contraception is that many students are abstinent. This highlights that not all students are sexually active, influencing their perspective on family planning.

Students in public universities (74%) are slightly more comfortable discussing family planning with healthcare providers than those in private universities (68.5%). This difference could be due to varying access to services or levels of stigma.

Most students in both public (76.5%) and private (74%) universities believe family planning is important for young people, showing broad recognition of its relevance beyond marriage or adulthood.

Public university students (36.5%) prioritize their knowledge when deciding on contraceptives, while private university students are more influenced by partner approval (21%) and cultural norms (31.5%).

In public universities, early marriage and childbearing (37.5%) are the primary cultural barriers to family planning, while in private universities, limited communication about sexual health (26%) is the main deterrent.

Concerns over contraceptive side effects are present in both public (24.5%) and private (19%) universities, which can discourage continued use.

A large majority (73.5%) of students in both groups reported that formal sex or family life education positively influenced their knowledge of family planning.

Positive attitudes toward family planning are seen in 60% of private university students and 57% of public university students. However, a significant percentage (40% in private and 43% in public universities) still hold negative views or face challenges, indicating areas needing improvement.

Overall, while most students recognize the value of family planning, various factors—ranging from abstinence to cultural influences—shape their attitudes and behaviors.

Several factors emerged as influential in family planning decisions among undergraduate students. Cultural norms and religious beliefs significantly shaped attitudes towards contraceptive use, with concerns about societal acceptance and traditional gender roles influencing decision-making (Ijadunola et al., 2016). Accessibility issues, including cost and availability of contraceptives, posed barriers, particularly among students from low-income

backgrounds (Djamba & Kimuna, 2017). These findings underscore the multifaceted nature of reproductive health decision-making among young adults, necessitating holistic approaches that address socio-cultural, economic, and educational factors (UNFPA, 2020).

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In public universities, age did not significantly influence family planning knowledge, while in private universities, it did, suggesting that older students in private universities have better knowledge. A significant difference was found between male and female students' knowledge of family planning in either public or private universities, indicating similar awareness levels across genders. Neither the year of study nor the academic department significantly impacted students' knowledge in both public and private universities.

In public universities, marital status significantly influenced family planning knowledge, but in private universities, it had no significant impact. Cultural background played a significant role in knowledge levels in both public and private universities, suggesting that ethnic practices and beliefs affect family planning awareness. Religious beliefs had a strong impact on family planning knowledge in both types of universities, reflecting how religious teachings can shape students' understanding.

In public universities, the mother's education level was not significantly linked to knowledge, but in private universities, it was. The father's education was significantly associated with better knowledge in both public and private universities. The mother's occupation did not significantly influence knowledge in either setting, but the father's occupation was significant in private universities, indicating it may affect students' exposure to information. Living arrangements did not affect knowledge in public universities but were significant in private universities, showing that the living environment can influence family planning understanding.

Overall, these findings highlight how factors like age, tribe, religion, and parental influence vary in their impact on students' knowledge of family planning, depending on the type of university they attend.

CONCLUSION

This study provides a comprehensive evaluation of determining factors and sociodemographic factors associated with family planning among undergraduate students in Osun State, Nigeria.

This study revealed the positive and negative factors influencing family planning and socio-demographic characteristics that had and had no association with family planning among students in public and private universities.

Study Limitation

This was a descriptive cross-sectional study design and social desirability bias could have been introduced because of the use of the interviewer-administered type of data collection tool. However, the research assistants were well-trained to minimize this bias.

Ethical and Consent to Participate

This was obtained from the research ethical committee of the College of Health Sciences at Osun State University. Official approval to conduct the study was obtained from each head of department (HOD) of Osun State University. Every participant was fully informed about the aim and the design of the study. An informed consent was obtained from the respondents before the administration of the questionnaire.

Right of Decline/Withdraw from Study

Participants were informed that their involvement was voluntary and that there would be no negative consequences if they chose not to take part in the study.

Confidentiality of Data

All information gathered was kept confidential. The names of the respondents were not requested.

Consent to Publish

It is not applicable.

Availability of Data and Materials

Data can be made available upon request from external researchers by contacting the corresponding author.

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Author's Contribution

Authors, Quadri Ayomide Osasea and Opakunle Fo, contributed to the development of the study concept. Quadri Ayomide Osasea and Omogbemile Oluwakemi Esther were involved in data collection. Data entry, analysis, and interpretation were conducted by Quadri Ayomide Osasea, Opakunle Fo, and Abosede Abolaji Olorunnisola. Manuscript preparation and critical review were carried out by Quadri Ayomide Osasea, Opakunle Fo, and Abosede Abolaji Olorunnisola. All authors reviewed and approved the final version of the manuscript.

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Conflicts of Interest

The authors declare that they have no conflicts of interest related to the publication of this paper.

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