Factors associated with contraceptive use among female nurses in university of Calabar teaching hospital (UCTH), Calabar, Cross-river state, Nigeria

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ABSTRACT

Background: Contraceptives are beneficial in the prevention of unwanted pregnancies, sexually transmitted infections, among others hence having a great effect on the health of women, their entire families and the population as a whole. Healthcare providers such as nurses play a major role in educating the populace about contraception and to encourage its adoption. **Objective:** This study aimed to assess the knowledge, attitude and practice of contraception use among female nurses of reproductive age in the University of Calabar Teaching Hospital. **Materials and methods:** A cross-sectional descriptive study of 216 nurses was conducted using simple random sampling technique to select the participants. A pretested, self-administered, semi-structured questionnaire was employed to obtain information from respondents. Data analysis with SPSS 20.0 was done using descriptive statistics to summarize variables and inferential statistics (Chi-square) used to test the association between categorical variables. Level of significance was set at 5%. **Results:** The mean age was 33.07 ± 7.71. All participants were aware of contraception knowledge was adequate in majority of respondent (77.3%). Majority (88.4%) of respondent had favourable attitude towards contraceptive use with 68.5% using some form of contraception Major reason for non-use of contraception was fear of side effects (12.1%). Factors significantly associated with contraceptive use were age ($p < 0.001$), marital status ($p<0.001$), tertiary education ($p=0.048$), having at least one child ($p<0.001$), tertiary level of education of partner ($p=0.001$), good knowledge of contraception ($p=0.001$) and good attitude towards contraceptive use ($p<0.023$). **Conclusion:** The study shows that age, marital status, level of education, number of children, educational qualification of partner, knowledge of contraceptives, and attitude to contraceptive use were significantly associated with this finding.

Key words: Contraceptive use, Contraception, Knowledge, Practice, Nurses

INTRODUCTION

Despite the known benefits of contraceptives in preventing unwanted pregnancies and reducing unsafe abortions, their use remains low among women of reproductive age in several sub-Saharan African countries, including Nigeria. Globally, a significant number of women of reproductive age (15-49) use some form of contraception. The use of contraception advances the human right of people to determine the number and spacing of their children. Contraceptive methods can either be traditional (like withdrawal or calendar-based methods) or modern methods.

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Modern contraception refers to safe and effective methods that enable women to control unwanted pregnancies and these includes a wide range of options like pills, injectable, implants, condoms, and intrauterine devices (UNDESA, 2022).
Unmet need for contraception globally is high, with an estimated 40% of pregnancies unintended worldwide, this has huge adverse

impact on maternal, child and family's health and wealth (D'Souza, 2022) According to WHO, in 2021, out of the 1.9 billion women aged 15–49, 1.1 billion required family planning and among them, 874 million used modern contraceptive methods, while 164 million needed contraception, which was not being satisfied. (WHO, 2023). The global satisfaction rate of the demand for family planning by modern methods, as measured by Sustainable Development Goals (SDG) indicator 3.7.1, has remained stagnant at approximately 77% from 2015 to 2022. Hence, globally in 2022, the contraceptive prevalence of any method was estimated at 65% and of modern methods at 58.7% for married or in a union woman (WHO, 2023). In Nigeria, studies have shown a range of contraceptive use, with some studies indicating higher rates among women with higher education, in urban areas, and of certain ethnicities. According to NDHS 2023 – 2024, the contraceptive prevalence rate (CPR) in Nigeria is 20% among currently married women and 50% among sexually active unmarried women. Fifteen percent of currently married women and 38% of sexually active unmarried women use a modern contraception method (NDHS 2023 – 2024).

A review of literature by D'Souza et al, 2022, identified the following factors that influence the use of contraceptives: women's knowledge, beliefs, and perceptions of side effects and health risks. Male partners have a strong influence, as do peers' views and experiences, and families' expectations. Lack of education and poverty is also linked with low contraception use, and social and cultural norms influence contraception and expectations of family size and timing. Contraception use also depends upon their availability, the accessibility, confidentiality and costs of health services, and attitudes, behavior and skills of healthcare practitioners.

With many SSA countries still having challenges to the provision of optimal access to safe abortion care, non–use or inconsistent use of contraceptives account for most of the unsafe abortions. (Luchuo et at, 2021) The effects are high maternal mortality and morbidity rates, especially among young people. The contraceptive challenges and their resultant morbidities and mortalities occur at the backdrop that SSA countries have signed up to meeting the Sustainable Development Goal (SDG) 3.8 target of achieving health for all by the year 2030 (Luchuo, et al 2012).

Health care visits during pregnancy, childbirth and during the post-natal period is crucial in expanding the uptake of contraceptive care in resource-poor settings such as Nigeria (Ajayi et al. 2018) and health care workers including nurses play a pivotal role during this visit. Health care providers play a major role in conveying information to the populace about all forms of contraceptives and so, their beliefs and choices could influence their counselling on contraceptives. (Gothwal et al, 2020). A lot of work has been done among women in the general population regarding their knowledge, attitude and practice of contraceptive use, however limited work has been done among health workers especially nurses in this study setting. We therefore assessed the factors associated with contraceptive use among female nurses in the University of Calabar Teaching Hospital (UCTH), Calabar, Cross-River state, Nigeria. The result of this study could guide policy makers on interventions to improve

contraceptive uptake among women in Cross River State.

MATERIALS AND METHODS

This is a cross-sectional descriptive study that was carried out at University of Calabar Teaching Hospital (UCTH) which is a tertiary hospital situated in Calabar Municipality, Calabar, Cross River State in South-South Nigeria. UCTH is bounded in the east by the great Qua River, west by Etta- Agbor, north by Satellite-town and south by the university of Calabar. It serves as a training centre for resident doctors, medical students, nurses, laboratory scientists, radiographers, physiotherapists and a research centre. There are 15 clinical departments which include: Community Medicine, Family Medicine, Internal Medicine (Cardiology, Respiratory, Endocrinology, Gastroenterology, Nephology, Neurology, Dermatology), General Surgery, Obstetrics and Gynaecology, Ophthalmology, Paediatrics, Laboratory Medicine (Haematology, Medical Microbiology and Parasitology, Pathology), Orthopaedics, Otorhinolaryngology, Pharmacy, Physiotherapy, Radiology, Anaesthesiology, Oral and Maxillofacial Surgery. The major Religion of the state is Christianity and as such most families are monogamous. The total number of nurses in UCTH are 515. The nurses in UCTH work in ten different departments which include; Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Accident and Emergency, Laboratory medicine, Community medicine, Family medicine, Theatre and Intensive care unit. There are different ranksamong nurses which include which include Deputy director, Assistant director, Chief nursing officer, Assistant chief nursing officer, Principal nursing officer, Senior nursing officer, Nursing officer I, Nursing officer II, Nursing officer.

Eligibility criteria

All consenting female nurses working in University of Calabar Teaching Hospital on duty who have worked for at least 3 months. However, nurses who had attained menopause, on annual leave or too sick to participate were excluded from the study.

Sample size estimation

The minimum sample size, n, was calculated using Cochran formula (Cochran, 1977) and assuming 10% non-response, the minimum estimated sample size was 216

Sampling method

To ensure all departments that nurses offer services are represented, each department of the hospital that had nurses was selected - Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Accident and Emergency, Laboratory medicine, Community medicine, Family medicine, Theatre and Intensive care unit and proportionate allocation was applied to determine the number of nurses to select per department.

Simple random sampling technique using computer generated table of random numbers was used to select the desired number of participants, using the departmental list of nurses as a sampling frame

Data collection

A semi-structured, self-administered questionnaire was used to collect information. The questionnaire was divided into five sections, the first section was on socio-demographic characteristics and remaining four

sections were exploring questions around the four objectives which are knowledge, attitude, practice and factors associated with use of contraceptives among female nurses of reproductive age in UCTH. The questionnaire was pretested on twenty nurses at the psychiatry hospital, Calabar.

Data analysis

The questionnaires were inspected to detect errors and omissions to ensure they were properly filled. They were manually sorted out and coded before being entered and cleaned for statistical analysis using statistical package for social science (SPSS VS 25). Socio-demographic variables were reported in frequencies and percentages, means $\pm$ standard deviation for categorical and continuous variable respectively.

Scores of zero and one were assigned to every negative or positive knowledge questions respectively. Respondents' knowledge was assessed based on 25 questions with a total score of 65 summing up all correct answers required from all questions. The percentage score was generated from answers provided. Nurses and other health care workers are expected to have very high knowledge of contraceptive (Musliudin et al 2018; Bhargava et al, 2017), scoring <75% was assessed as having poor knowledge, while scores >75% were used to connote fair and good knowledge.

Similarly, a total number of 15 questions were used to assess the attitude of respondents toward contraceptive use. Scored of one and zero respectively were assigned to every positive and negative attitude, with a total score of 15. The percentage of <75 was assessed as poor attitude and >75% as good attitude.

Important summary statistics was obtained and associations were examined using chi-square test. Significance level was set at 0.05

Ethical consideration

Ethical approval was obtained from the University of Calabar Teaching Hospital Health and Ethical Committee (HREC) Verbal informed consent was duly sought and obtained from research participants who volunteered to take part in the study. The research participants were assured of confidentiality of information elicited.

RESULTS

Two hundred and sixteen female reproductive age nurses were studied and the response rate was 100%. *Table 1* shows that: the mean age was 33.07±7.71 years with majority of the respondents 86(39.8%) in the age group 20-29 years, and married 125(57.9%). Christianity was the dominant religion with Pentecostal 120(55.6%) followed by Catholics, 59(27.3%) denominations constituting the majority respondents. A greater number of respondents 181(83.8%) had tertiary level of education. A higher proportion had no children 81(37.5%). *Table 2* shows that awareness of contraception was 100%, with only about 7 out 10 0f nurses 150(69.4%) being aware of emergency contraception. The commonest method of contraception mentioned by respondents was Pills 208(96.3%) followed by implants 195(90.3%). Spermicides was the least known method 131 (60.6%).

Table 1: Socio-demographic factors of Nurses in UCTH

Variable	Frequency	Percentage
Age groups (in years)		
<20	2	1.0
20-29	86	39.8
30-39	80	37.0
40-49	48	22.2
Mean Age ± SD	33.07±7.71	
Marital status		
Single	78	36.1
Cohabiting	4	1.9
Married	125	57.9
Separated	2	0.9
Widowed	7	3.2
Religion		
Christianity	213	98.6
Islam	2	0.9
Traditional	1	0.5
Christian Denomination		
Catholic	59	27.3
Anglican	13	6.0
Presbyterian	24	11.1
Pentecostal	120	55.6
Level of education		
BSN	181	83.8
School of Nursing	35	16.2
Tribe		
Efik	60	27.8
Ejagham	24	11.1
Ekoi	22	10.2
Ibibio	46	21.3
Yoruba	7	3.2
Igbo	43	19.9
Others	14	6.5
Number of children		
None	81	37.5
One	25	11.5
Two	36	16.7
Three	46	21.3
Four or more	28	13.0

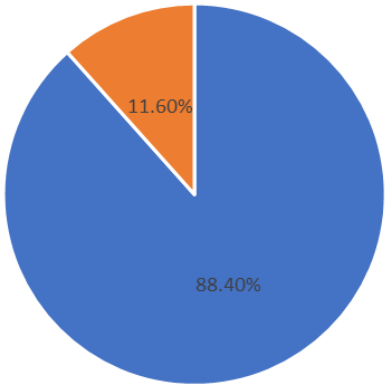
Table 2: Awareness of various forms of contraceptives among nurses in UCTH, Calabar

Variable	Frequency	Percentage
Awareness about contraception		
Yes	216	100.0
No	0	0
Awareness about Emergency contraception		
Yes	150	69.4
No	66	30.6
Awareness about methods of contraception		
Condoms	208	96.3
Diaphragm	139	64.4
Spermicides	131	60.6
Pills	190	88.0
Injectable	190	88.0
Implants	195	90.3
Intrauterine device	178	82.4
Tubal ligation	151	69.9
Vasectomy	153	70.8
Withdrawal	155	71.8
Abstinence	143	66.2
Lactational amenorrhoea	135	82.5
Calendar method	147	68.1

Figure 1 shows that majority (77%) of the nurses had adequate knowledge of different aspect of contraceptives, while Figure 2 shows that 8 out of every 10 respondents had a good attitude towards contraception. However, Figure 3 shows that only 68.5% of the nurses had ever used contraceptive despite being sexually active. A representation of the possible reasons for non-utilization of contraceptive methods (Figure 4) revealed a wide distribution of these reasons among the study population. Fear of side effects (18.1%), desire of children (11.1%), partner disapproval (9.7%), religious beliefs (7.4%), are shown to have the greatest influence on contraceptive use among the respondents.

Figure 1: Overall knowledge score of contraceptives among nurses in UCTH Calabar.

Figure 2: Attitude towards contraceptive use among nurses in UCTH Calabar.



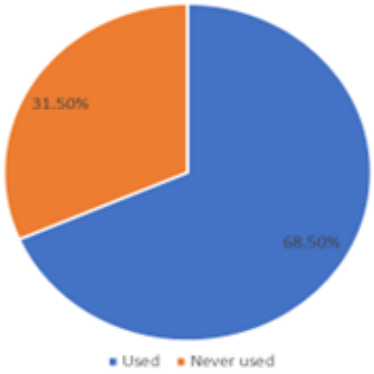


Figure 3: Prevalence of Contraceptive Use among Nurses in UCTH.

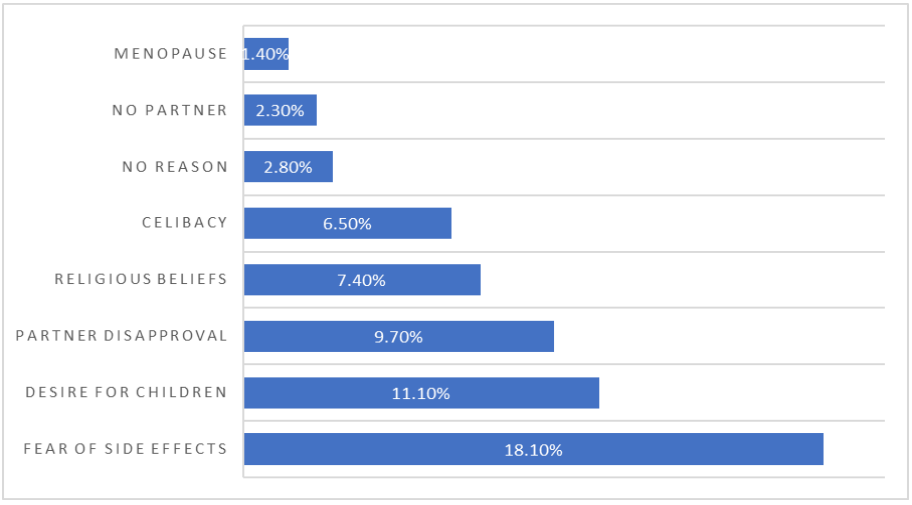


FIGURE 4: Reasons for current non-contraceptive utilization by Nurses in UCTH, Calabar.

Table 3 reveals a significant relationship between several factors and contraceptive use among nurses in UCTH. The following variables were found to be significantly associated with practice of contraception: Age (p<0.001), Being married (p <0.001), level of education (p=0.048), number of children (p<0.001), Educational qualification of partner(p<0.000), Knowledge of contraceptives (p<0.001), and Attitude to contraceptive use (p<0.023).

TABLE 3: Factors associated with the use of contraception by nurses in UCTH

Variable	Practiced	Not practiced	Chi-square	P-value
Age				
<20	0 (0%)	2 (2.9%)		
20-29	44(29.7%)	42(61.8%)	26.599	**0.000**
30-39	67 (45.3%)	13(19.1%)		
40-49	37(25%)	11(16.2%)		
Marital status				
Single	38 (25.7%)	40(58.8%)		
Cohabiting	3(2.0%)	1(1.5%)		
Married	101(68.2%)	24(35.3%)	23.341	**0.000**
Separated	1(0.7%)	1(1.5%)		
Widowed	5(3.4%)	2(2.9%)		
Level of education				
Tertiary	129(87.2%)	52(76.5%)		
School of nursing	19(12.8%)	16(23.5%)	3.922	**0.048**
Number of children				
None	43(29.1%)	38(55.9%)		
1	15(10.1%)	10(14.7%)		
2	26(17.6%)	10(14.7%)		
3	38(25.7%)	8(11.8%)	21.936	**0.000**
4 or more	26(17.6%)	2(2.9%)		
Educational qualification of partner				
Primary	0(0%)	1(1.5%)		
Secondary	3(2%)	6(9.1%)		
Tertiary	80(54.1%)	20(30.3%)	Fisher's exact	**0.000**
Post graduate	47(31.8%)	18(27.3%)		
Knowledge of contraceptives				
Adequate	124(83.8%)	43(63.2%)	11.217	**0.001**
Inadequate	24(16.2%)	25(36.8%)		
Attitude to contraceptive use				
Positive	136(91.9%)	55(80.9%)	5.518	**0.023**
Negative	12(8.1%)	13(19.1%)		

DISCUSSION

The mean age of respondents was 33.07±7.71 years with more than two-thirds of respondents falling into the 20-39 years' age category. More than half of the respondents were married (57.9%). These findings were consistent with a study on knowledge and behaviour regarding birth prevention amongst health care providers by Bhargava et al (2017) in India.

Despite all respondents in study setting being aware of contraceptive, the prevalence of contraceptive use indicated that greater than half of respondents (68.5%) have used one or more forms of contraception even though they were sexually active. Though results from this study shows a high prevalence rate of contraceptive use, this is in contrast with several studies in Nigeria have shown a very low contraceptive prevalence rate which isn't commensurate with the high level of awareness (Eko et al., 2013). This might be as a result of the in-depth knowledge about contraceptives, its mechanisms of action, correct usage, benefits and side effects among the correspondents, hence having an edge over the general populace. In this study, all respondents were aware of contraceptives, with the major sources of information being School (76.4%) and Health personnel (61.1%). Although, a study done on health workers by Gothwal et al (2020) had health personnel (75.7%) as their major source of information and another study in Iraq had social media as the main source of information on contraception (Abdulridha, 2021). Majority of respondents had good knowledge (77.3%) and this corresponds to a study done among health care providers by Al-Musa et al (2019). Other studies also show similar trend of good knowledge of contraception (Bhargava et al 2017, Waheeda et al 2019). Regarding emergency contraceptives, in this study, one-third of respondents did not know about emergency contraception. This is relatively poor considering their responsibilities as certified nurses to educate the populace on all forms of contraception, with emergency contraceptives as an option for prevention of unwanted pregnancy and hence reducing mortality that could arise from illegal abortions.

In this study attitude of nurses towards contraceptive use was adequate in 88.4% of the respondent, this is similar with findings in Kashmir study. (Wani et al, 2019), but contrast a study in Ibadan where many healthcare providers had poor attitudes towards the provision of contraceptives for unmarried adolescents. (Ahanonu, 2014) and in a study in Osun state where 22.4% of health workers believe that using contraceptives will make them promiscuous. (Omishakin, 2015) However, in this study, 11.6% of nurses had poor attitude towards contraceptive use, this has policy implication for stakeholders if Nigeria has to improve its current contraceptive usage to meet SDG target 3.7 of ensuring universal access to sexual and reproductive health-care services, including for family planning, information and education by 2030 (United Nations, 2025)

Despite being in a sexual relationship, more than 3 out of every 10 nurses in this setting had never used a method of contraception. This is dissatisfactory with respect to the depth of knowledge on contraceptives expected of them to have had as trained nurses. This is comparable with a study done in Calabar south where 36.4% of the respondent used contraceptives (Eyong and Eghong, 2017). Fear of side effects was a major reason for non-use of contraceptives (18.1%). This is at variance with similar studies which identified desire to have a child as the most common current reason for not using contraceptives (Kasa *et al,* 2018; Gothwal *et al*; Olaleye et al, 2019). Other reasons stated for

non-current utilization among participants in this study included desire for children desire for children (11.1%), partner disapproval (9.7%), religious beliefs (7.4%), celibacy (6.5%), no reason (2.8%), no partner (2.3%) and menopause (1.4%).

In our study, several factors were significant associated with contraceptive use and this include - age, marital status, level of education of respondents, number of children, educational qualification of respondents' partners, knowledge and attitude of respondents towards contraception. Older age significantly influenced use of contraceptives with respondents over the age of 30 more likely to use contraceptives compared to their younger counterparts ($p<0.001$) and this is in-keeping with findings in the NDHS 2023, where contraceptive utilization among females was noticed to rise with increase in age until it began to decline at the age of 40 years and above. The similarity may possibly be due to increased awareness and enlightenment on contraception from several sources with increasing age. Also, respondents who were married, had a higher practice of contraception compared to the unmarried ($p<0.001$), this is comparable with a study by Gothwal et al (2020).

This could imply that as respondents attained the higher level of education, their knowledge of contraception also increases translating in the use of contraceptives. However, these findings are in contrast to a study in Malawi were those that had primary school level of education were more likely to use contraception. (Mandiwa et al, 2018) Similarly, respondents whose partners had a tertiary and post graduate educational qualification were more likely to use contraceptive ($p<0.000$) implying that more literate partners positively influenced their use of contraception. Those respondents who had two children or more, (60.9%) were more likely to use contraceptive than those who had less than two children (30.1%) ($p<0.001$). This may be because they might have achieved their desire family size. Correspondingly participants with good knowledge ($p<0.001$) and positive attitude($p<0.023$) of contraceptives were more likely to use contraception compared to those with poor knowledge and negative attitude, this is similar to a study done by Nikokeza, (2018) among community health extension workers in Rwanda and another study by Preethy et al, 2022. Also comparable with a study in Ghana where knowledge and attitude were associated with contraceptive use. (Abrah, 2021) More so studies have shown that training and supporting health workers on contraceptives lead to increase uptake of contraceptives in the community. (Mazzei et al. 2018)

CONCLUSION

Nurses by their training and role as health educators are responsible to counsel and provide contraceptives to the general populace. However, about 23% nurses in University of Calabar Teaching Hospital have inadequate knowledge of contraception, with about 3 out of every 10 respondents having not having used a contraceptive method. Several factors were significantly associated with contraceptive use among nurses in UCTH. These factors were age, marital status, level of education, number of children, educational qualification of partner, knowledge of contraceptives, and attitude to contraceptive use.

The main reasons for non-use among the study population were fear of side effects, partner's disapproval, desire for children and religious beliefs. Considering the impact of contraception in controlling population growth, STD's as well as the reduction in maternal and infant mortality and the close proximity of the nurses to the populace, its therefore pertinent for policy

makers and stakeholders to seek ways to increase the knowledge of nurses on contraception in addition, address the barriers to contraceptive utilization.

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