

KNOWLEDGE, PRACTICE AND BARRIERS TOWARD PRECONCEPTION CARE PRACTICES AMONG NURSES IN SELECTED HOSPITALS, OSOGBO NIGERIA: A QUANTITATIVE APPROACH

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ABSTRACT

Preconception care has a positive impact on reduction in mortality and decreases the risk of adverse health effects for the woman, fetus, and neonate by optimizing the woman's health and knowledge before planning and conceiving a pregnancy. This study investigate the knowledge, practice and barriers towards preconception care practices among nurses in selected hospitals, in Osogbo. The design of this study is descriptive cross-sectional, the target population are nurses and sample size determined is 62 by Yaro Yamane's formular. The instrument use for this study is a structured pre-tested questionnaire. Data were analysed using the statistical package for Social Sciences (SPSS) 25th version, presented in percentages, tables and frequencies including Chi-Square. The sociodemographic characteristics of the respondents shows that majority of respondents are within 21 to 30years (48.3%), female (93.5%) and are Christians by religion (59.7%). Further findings reveal that majority of respondents are ADNS (25.8%) with 1 – 9 years of experience (62.9%). This study noted that the respondent knowledge about preconception care is very high (75%) and the practice is low (49%). The result of this also study revealed that lack of awareness and practice of preconception care (93.5%), Lack of preconception care policy and preconception care guidelines (85.5%), lack of provision and utilization of preconception care services within the healthcare system (71%), Limited Resources like time, health workforce, instruments, guidelines and reimbursements (93.5%), cultural beliefs (66.1%) and organizational issues within hospitals 57(71%) are the barriers to the practice of preconception care in this study This study indicate that the practice of preconception care among respondents is low.(49%) The result of the hypothesis tested shows that there is a relationship between nurses' years of experience and the practice of preconception care ($P=0.199$) Based on the result of this study, it was recommended that the public should be health-educated and properly sensitized on the importance of preconception care and that the government should try to make available the required medical supplies to encourage preconception care.

Keywords: Barriers; preconception care practices; nurses; hospital.

INTRODUCTION

Globally, the World Health Organization (WHO, 2023) has raised concerns about persistently high maternal mortality rates. In 2017, an estimated 295,000 women lost their lives during and after pregnancy and childbirth, as reported by WHO and UNICEF (2019). WHO (2023) further noted that approximately 4.1 million infants succumbed within their first year of life in 2020. Additionally, data from the US National Center for Health Statistics for 2017 revealed elevated rates of pregnancy complications and adverse outcomes, including congenital anomalies, low birth weight, and preterm deliveries. Given the limited progress in improving pregnancy outcomes, the global healthcare community has increasingly emphasized the importance of preconception care as an additional strategy to mitigate these persistent issues (Atrash and Jack, 2020).

Preconception care plays a pivotal role in reducing mortality and minimizing health risks for women, fetuses, and neonates by optimising women's health and knowledge before planning and conceiving a pregnancy, as emphasised by Demisse et al. (2019). In the United States, the Centers for Disease Control and Prevention's Select Panel on Preconception Care has recommended integrating preconception care into routine healthcare for all women of reproductive age during every interaction with the healthcare system (Ojifinni and Ibisomi, 2020). Nevertheless, research has revealed a concerning lack of provision and utilization of preconception care services within the healthcare system in Nigeria, as noted by Ekem et al. (2018). A study conducted in Sokoto, in

the North-Western region of Nigeria, indicated a low level of awareness and practice of preconception care, with only 20.6% of participants reporting awareness of its existence (Umar et al., 2019). These findings align with research among women in Ibadan, southwest Nigeria, which reported that only 2.5% of participants used folic acid during the preconception period (Ojifinni and Ibisomi, 2020). These collective studies suggest that preconception care remains at a relatively low level of adoption throughout the country.

In Osogbo, the capital of Osun State, Nigeria, the healthcare system faces challenges typical of many urban settings, including resource limitations, inadequate training, and a high patient load. These challenges may affect the ability of nurses to offer preconception care services. Additionally, cultural beliefs, lack of awareness, and organizational issues within hospitals may further impede the practice of preconception care by nurses. Understanding the specific barriers in this context is crucial to improving care delivery. The responsibility of incorporating evidence-based clinical practices like preconception care primarily falls on healthcare providers. Medical professionals such as doctors, nurses, midwives, and pharmacists are essential in delivering preconception care. To do so effectively, they need to possess the necessary knowledge, maintain a favourable attitude, and acquire the essential skills, as emphasized by Fekene et al. (2018). Consequently, this study aims to investigate the barriers toward preconception care practices among nurses in selected hospitals in Osogbo. By identifying these barriers, healthcare stakeholders can develop targeted strategies to enhance preconception care services, ultimately improving maternal and child health outcomes in the region.

OBJECTIVES

The main objectives of this study was to investigate the barriers towards preconception practices among nurses in selected hospitals in Osogbo.

Specific objective:

1. to assess the knowledge of preconception care among nurses in selected hospitals in Osogbo.
2. to identify the predictors of preconception care among nurses in selected hospitals in Osogbo.
3. to determine the barriers to preconception care among nurses in selected hospitals in Osogbo.

METHODOLOGY

Study design: This study used a descriptive cross-sectional design to investigate the barriers towards preconception care practices among nurses in selected hospitals in Osogbo, Osun State.

Setting: This study was carried out in the State Specialist Hospital, Asubiaro, Osogbo, and UNIOSUN Teaching Hospital, Osogbo, Osun State. There are about 20 units within the hospitals which are: male and female medical ward, male and female surgical ward, Special Care Baby Unit, infant welfare unit, Ante-natal clinic, eye clinic, Dental clinic, Antenatal ward, Labour ward, Postnatal ward, Theatre, Administrative section, Accident and Emergency unit, Outpatient department, Pharmacy, Health record Department, Mortuary and kitchen. The hospitals render antenatal, perinatal and postnatal care. For this research, the antenatal clinic, infant welfare clinic, antenatal ward, labour ward, postnatal ward and gynaecology ward were used.

Target Population: The target population are registered nurses in Hospitals in Osogbo, while the study was carried out among registered nurses working in the antenatal clinic, infant welfare clinic, antenatal ward, postnatal ward and gynaecology ward in State Specialist Hospital, Asubiaro and UNIOSUN Teaching Hospital, Osogbo, Osun State.

Inclusion Criteria: All registered nurses working in the selected hospitals and units in Osogbo were eligible for participation

Exclusion Criteria: Nurses on leave at the time of data collection and nurses who didn't give consent to participate in the study were exempted.

Sampling Technique: Total population used

Instrument: Data were collected from respondents using a structured pre-tested questionnaire over a period of three weeks. The questionnaire assessed the knowledge, level of preconception care practices, and barriers to preconception care practice among nurses in Oshogbo. The questionnaire consists of four (4) sections namely:

Section A: contains 5 questions that measure the socio-demographic characteristics of respondents in terms of gender, age, religion, cadre and years of experience.

Section B: contains 22 questions on the assessment of knowledge about preconception care;

Section C: contains 10 questions on assessment of the level of preconception care practices among nurses.

Section D: contains 7 questions to highlight the perceived barriers to preconception care practice. The instrument consists of a total number of 44 items.

Validity: The face and content validity of the instrument was done with the use of literature guided by the predetermined objectives. The instrument was presented to the research, statistician and nursing experts, after review, their comments and criticisms were used to develop a final draft which was used for data collection.

Reliability: A test-retest reliability study was conducted among 10% of the respondents, this was done in a separate study setting, and a reliability coefficient of 0.8 was calculated..

Data collection: The researcher went to the study settings personally to administer the questionnaire. The instruments were given to the respondents to fill on site and retrieved immediately after filled.

Data analysis: Data entry was done using the Statistical Package for Social Science version 25. Variables were analysed using descriptive statistics in the form of tables, frequencies and percentages. Chi-square was used in the analysis of the formulated hypotheses. The statistical significance was set at $P=0.05$.

Ethical considerations: Permission to carry out the study at the two facilities was approved by the ethical committees. A formal introduction was done as a written opening statement at the beginning of the questionnaire and also verbally at the point of administration of the questionnaire. Participation was made voluntary, informed consent was obtained, information was kept confidential and anonymity was maintained.

Study limitations

The study was limited to two research settings in Osogbo, Osun State of Nigeria, hence the study cannot be generalized to all nurses.

RESULTS

A total of 77 questionnaires were administered to respondents and retrieved with 62 properly filled, hence an 80.5% response rate was achieved.

The mean age of the respondents was 35.37 years. Table 1 presents the sociodemographic characteristics of the respondents. The sociodemographic characteristics of the respondents show that majority of respondents are within 21 to 30 years (48.3%), female (93.5%) and are Christians by religion (59.7%). Further findings reveal that majority of respondents are ADNS (25.8%) with 1–9 years of experience (62.9%).

Table 1: Sociodemographic Characteristics of Respondents

Variables	Categories	Frequency (n=62)	Percent (%)
Age (in years)	21-30	30	48.3
	31-40	13	21.0
	41-50	13	21.0
	51-60	6	9.7
	Mean±SD	35.37±10.57	
Gender	Male	4	6.5
	Female	58	93.5
Religion	Islam	25	40.3
	Christianity	37	59.7
Cadre	NOII	15	24.2
	NOI	13	21.0
	PNO	1	1.6
	SNO	10	16.1
	CNO	4	6.5
	ADNS	16	25.8
	DDNS	3	4.8
Years of experience	1-9	39	62.9
	10-19	9	14.5
	20-29	11	17.7
	30-35	3	4.9

Knowledge of Nurses on Preconception Care

Table 2 shows that 83.9% of the respondents agreed that preconception care deals with a healthy lifestyle and 16.1% stated no, 98.5 of respondents agree that all adolescents and persons of childbearing age are eligible for preconception while 1.6% stated no. 96.8% of the respondents agree Folic acid supplementation is a part of preconception care. 3.2% state no. 90.3% of respondents agree Genetic counseling and screening are part of preconception care and 9.7% state no. 98.4% of the respondents agrees that healthy food choices contribute to a good pregnancy outcome while 1.6% stated no. 96.8% of the respondents agreed that taking the

required immunisations will contribute to a better pregnancy while 3.2% stated no. 79% of the respondents agreed that Preconception care reduces the incidence of unwanted and unplanned pregnancy while 21 stated no. 64.5% of the respondents agreed that women with a body mass index of less than 18.4Kg/m² are at risk of developing an adverse pregnancy outcome while 35.5% stated no. 83.9% of the respondents agreed that women with a body mass index of more than 29.4Kg/m² are at risk of developing an adverse pregnancy outcome while 16.1% Stated no. This study noted that the respondent knowledge about preconception care is very high (75%).

Table 2: Knowledge of Nurses on Preconception Care

	Responses (n=62)	
	Yes F (%)	No F (%)
Preconception care deals with a healthy lifestyle	52(83.9)	10(16.1)
All adolescents and persons of childbearing age are eligible for pre conception	61(98.4)	1(1.6)
Folic acid supplementation is a part of preconception care	60(96.8)	2(3.2)
Genetic counselling and screening are part of preconception care	56(90.3)	6(9.7)
Wound dressing is a component of preconception care	13(21)	49(79)
Components of preconception care include maintaining a healthy weight	58(93.5)	4(6.5)
Prayer and fasting is a component of preconception care	26(41.9)	36(58.1)
HIV Screening is a part of preconception care	59(95.2)	3(4.8)
Healthy food choices contribute to a good pregnancy outcome	61(98.4)	1(1.6)
Taking the required immunisations will contribute to a better pregnancy	60(96.8)	2(3.2)
Cancer screening a component of preconception care	50(80.6)	12(19.4)
Smoking cessation will contribute to a better pregnancy outcome	53(85.5)	9(14.5)
Men should undergo genetic screening as part of preconception care	51(82.3)	11(17.7)
Preconception care reduces the incidence of unwanted and unplanned pregnancy	49(79)	13(21)
Vaccines to be taken to enhance preconception care		
Hepatitis	50(80.6)	12(19.4)
Measles	26(41.9)	36(58.1)
BCG	14(22.6)	48(77.4)
Rubella	18(29)	44(71)
Polio	20(32.3)	42(67.7)
Tetanus	49(79)	13(21)
Alcohol consumption before pregnancy reduces the chance of a good pregnancy outcome	53(85.5)	9(14.5)
Smoking before pregnancy reduces the chance of a good pregnancy outcome	53(85.5)	9(14.5)
Obesity reduces the chance of a good pregnancy outcome	58(93.5)	4(6.5)
Lack of folic acid/multivitamin use contributes to a poor pregnancy outcome	59(95.2)	3(4.8)
All women of reproductive age take 0.4 mg (400 mcg) of folic acid daily	50(80.6)	12(19.4)
Women with a body mass index of less than 18.4Kg/m ² are at risk of developing an adverse pregnancy outcome	40(64.5)	22(35.5)
Women with a body mass index of more than 29.4Kg/m ² are at risk of developing an adverse pregnancy outcome	52(83.9)	10(16.1)

Practice of Preconception Care among Nurses

Table 3 displays the preconception care practices by nurses. The majority (88.7%) of the respondents rendered preconception care services or counselling to anyone in the course of practice while (11.3%) did not. Findings reveals that only 40.3% of Nurses' practice of preconception care has an accessible written protocol regarding preconception care while 59.7% did not. Only 33.9% of nurses' offer HIV testing and management and 66.1% did not. Only 14.5% practice weight control and 85.5% did not. Only 12.9% practice genetic counselling 87.1% did not. 74.2% practice fertility counselling and 25.8% did not. 84.5% Gives health education on the importance of preconception folic acid supplementation and 12.5% did not. 6.5% of respondents gives

health education about the dangers of environmental hazards and toxins while 93.5% did not. Further result show that 93.5% of respondents' counsels about the importance of partner involvement in preconception care while 6.5% did not. 4.8% of respondents gives health education on the importance of preconception folic acid supplementation while 95.2% did not 85.5% of respondents carry out assessments of patients' exposure with environmental hazards & toxin while 14.5% did not. 6.5% of respondents gives health education on the importance of Cigarette, alcohol and other substance use and 93.5% did not, lastly, 88.7% of respondents gives health education and conducts referral for genetic screening test and 11.3% did not. This study indicates that the practice of preconception care among respondents is low (49%)

Table 3: Practice of Preconception Care among Nurses

Variables	Responses (n=62)	
	Yes f(%)	No f(%)
Never rendered preconception care services or counselling to anyone in the course of practice	55(88.7)	7(11.3)
Nurses' practice of preconception care has an accessible written protocol regarding preconception care	25(40.3)	37(59.7)
Type of preconception care/ services offered		
HIV testing and management	21(33.9)	41(66.1)
Weight control	9(14.5)	53(85.5)
Genetic counselling	8(12.9)	54(87.1)
Fertility counselling	46(74.2)	16(25.8)
Gives health education on the importance of preconception folic acid supplementation	54(87.1)	8(12.9)
Gives health education about the dangers of environmental hazards and toxins	4(6.5)	58(93.5)
Counsels about the importance of partner involvement in preconception care	58(93.5)	4(6.5)
Gives health education on the importance of preconception folic acid supplementation	3(4.8)	59(95.2)
Carry out assessments of patients' exposure with environmental hazards & toxin	53(85.5)	9(14.5)
Gives health education on the importance of Cigarette, alcohol and other substance use	4(6.5)	58(93.5)
Gives health education and conducts referral for genetic screening test	55(88.7)	7(11.3)
	49%	51%

Barriers to the Practice of Preconception Care

As presented in Table 2, the results revealed that Lack of awareness and practice of preconception care (93.5%), Lack of preconception care policy and preconception care guidelines for guiding (85.5%), lack of provision and utilization of preconception care services within the healthcare system (71%), Limited Resources like time, health workforce,

instruments, guidelines and reimbursements (93.5%), cultural beliefs (66.1%) and organizational issues within hospitals 57(71%) are the barriers to the practice of preconception care in this study while Inadequate training, and a high patient load (14.5%), inability of nurses to offer preconception care services (8.1%), Not having favourable attitude (14.5%) and Not acquiring of the essential skills (9.7%) are not barriers.

Table 2: Barriers to the Practice of Preconception Care

Variables	Responses (n=62)		Sig*
	Yes f (%)	No f (%)	
Lack of awareness and practice of preconception care,	56 (90.3)	6 (9.7)	*
Lack of preconception care policy and preconception care guidelines for guiding	53(85.5)	9(14.5)	*
lack of provision and utilization of preconception care services within the healthcare system	44(71)	18(29)	*
Inadequate training, and a high patient load.	9(14.5)	53(85.5)	
inability of nurses to offer preconception care services	5(8.1)	57(91.9)	
Limited Resources like time, health workforce, instruments, guidelines and reimbursements	58(93.5)	4(6.5)	*
cultural beliefs	41 (66.1)	21 (33.9)	*
organizational issues within hospitals	44(71)	18(29)	*
Not having favourable attitude	9(14.5)	53(85.5)	
Not acquiring of the essential skills	6 (9.7)	56 (90.3)	

There will no relationship between nurses' years of experience and the practice of preconception care.

The result of this study shows that there is a relationship between nurses' years of experience and the practice of preconception care (P=0.199)

Table 4: Relationship between Nurses' Years of Experience and the Practice of Preconception Care

Variables	Practice of preconception care among nurses		χ^2	df	P	
	Good practice	Poor practice				
Years of experience	0-9	32(82.1%)	7(17.9%)	4.654	3	0.199
	10-19	9(100%)	0(0%)			
	20-29	11(100%)	0(0%)			
	30-35	3(100%)	0(0%)			
	Total	55(88.7%)	7(11.3%)			

χ^2 : Pearson chi square value, df: degree of freedom, P: Probability value, *: significant at $P < .050$

DISCUSSION

This study investigates the knowledge, practice and barriers to preconception care practices among nurses in selected hospitals in Osogbo. The sociodemographic characteristics of the respondents showed that the majority of respondents are between 21 to 30years, female and are Christians by religion. Further findings reveal that the majority of respondents are ADNS with 1 – 9 years of experience.

The findings revealed a significantly high level of knowledge among nurses regarding preconception care. These findings agree with Ogunsanmi *et al.*(2021) who revealed that the Health Workers in Alimosho Local Government showed a high level of knowledge, practice and positive attitudinal disposition towards preconception care in Lagos State, Nigeria.

This study indicates that the practice of preconception care among respondents is low. This study is not in support of Ogunsanmi *et al.* (2021), who observe a high level of knowledge, practice and positive attitudinal disposition towards preconception care among Health Workers in Alimosho Local Government. This study is similar to Ukoha *et al.* (2022) who reported that preconception care practice among primary health care nurses in public health facilities in South Africa was very good (87.8%).

The barriers to the practice of preconception care in this study were a lack of awareness and practice of preconception care, a lack of preconception care policy and preconception care guidelines for guiding, a lack of provision and utilisation of preconception care services within the healthcare system, limited resources like time, health workforce, instruments, guidelines and reimbursements, cultural beliefs and organisational issues within hospitals. This study is in line with Ekem *et al.* (2018), who noted that the lack of provision and utilisation of preconception care services is a barrier to the practice of preconception care. This study supports Umar *et al.* (2019), who observed that a low level of awareness and practice of preconception care is a barrier. This study aligns with Fekene *et al.* (2018), who reported a favourable attitude and acquiring the essential skill as barriers to the practice of preconception care. This study is similar to Chutke *et al* (2022), who noted that the perceived challenges to preconception care practices include a lack of a comprehensive preconception care program, a limited health workforce, as well as limited availability of specialist services in India.

The result of the hypothesis tested shows that there is a significant relationship between nurses' years of experience and the practice of preconception care.

RECOMMENDATIONS

This study shows that the barriers to effective practice should be dealt with by First, the public needs awareness and proper sensitization about preconception care, as 91.9% of the study population affirmed that the lack of awareness of the public about preconception care is a major barrier to the practice. Based on the findings from this study, the following recommendations were made: proper awareness and sensitization of the public should be done. This will enable the populace to seek proper medical attention before conception. Also, clear preconception care guidelines should be formulated for guiding health care practice.

Conflict of interest

The author declares that there are no conflicts of interest.

REFERENCES

- Atrash H, Jack B. Preconception Care to Improve Pregnancy Outcomes: The Science. *J Hum Growth Dev.* 2020; 30(3):355-362.
- Chutke AP, Doke PP, Gothankar JS, Pore PD, Palkar SH, Patil AV, Deshpande AV, Bhuyan KK, Karnataki MV and Shrotri AN (2022) Perceptions of and challenges faced by primary healthcare workers about preconception services in rural India: A qualitative study using focus group discussion. *Front. Public Health* 10:888708. doi: 10.3389/fpubh.2022.888708
- Demisse TL, Aliyu SA, Kitila SB, Tafesse TT, Gelaw KA, Zerihun MS, (2019). Utilization of preconception care and associated factors among reproductive age group women in DebreBirhan town, North Shewa, Ethiopia. *Reprod Health.* 2019;16(1):1–10.
- EkemNN, Lawani LO, Onoh RC, Iyoke CA, Ajah LO, Onwe EO, et al. Utilisation of preconception care services and determinants of poor uptake among a cohort of women in Abakaliki Southeast Nigeria. *J ObstetGynaecol (Lahore).* 2018;38(6):739–44. <https://doi.org/10.1080/01443615.2017.1405922>.
- Fekene, D. B., Woldeyes, B. S., Erena, M. M., & Demisse, G. A. (2020). Knowledge, uptake of preconception care and associated factors among reproductive age group women in West Shewa zone, Ethiopia, 2018. *BMC Women's Health*, 20(1), 30. <https://doi.org/10.1186/s12905-020-00900-2>
- Kassa A, Yohannes Z, (2018). Women's knowledge and associated factors on preconception care at Public Health Institution in Hawassa City, South Ethiopia. *BMC Res Notes.* 2018;11(1):841. <https://doi.org/10.1186/s13104-018-3951-z>.
- Norris SA, Ho JCC, Rashed AA, Vinding V, Skau JKH, Biesma R, (2018). Pre-pregnancy community-based intervention for couples in Malaysia: application of intervention mapping. *BMC Public Health.* 2018;16(1):1167.]
- Ogunsanmi O, Munachimso D, Elebiju Ol, Kukoyi O, (2021). Preconception Care: Knowledge, Attitude and Practice among Health Workers in Alimosho Local Government Area, Lagos State, Nigeria. *International Journal of Caring Sciences*, Volume 14 | Issue 1 | Page 51
- Ojifnni O. O. and Ibisomi L. (2020). Preconception care practices in Nigeria: A descriptive qualitative study. *BMC Reproductive Health* 2020;17:172.
- Umar A, Nasir S, Tunnu K, Singh S, Ibrahim U, Hassan M. (2019). Awareness and perception of preconception care among women in Usman Danfodiyo University Teaching Hospital, Sokoto, North-Western Nigeria. *Journal of Family Medicine and Primary Care* 8(5);p1696-1700.
- World Health Organization (2023). Maternal Mortality. Accessed from <https://www.who.int/news-room/factsheets/detail/maternal-mortality>