AWARENESS, KNOWLEDGE, AND PRACTICE OF PRECONCEPTION CARE AMONG WOMEN ATTENDING BOOKING CLINICS IN PUBLIC HEALTHCARE FACILITIES IN IBADAN: A CROSS-SECTIONAL STUDY

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Submission Date: 15th June, 2026
Date of Acceptance: 13th Aug., 2026
Publication Date: 31st Aug., 2026

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ABSTRACT

Background: **Preconception care (PCC) is a pre-pregnancy specialised care targeted at women of reproductive age to improve pregnancy outcomes. The study assessed the level of awareness, knowledge, and practice of PCC among women attending booking clinics in public healthcare facilities in Ibadan, Nigeria.**

Methodology: **This was a descriptive cross-sectional study conducted among 406 pregnant women at selected public healthcare facilities in Ibadan-North Local Government Area of Oyo State, Nigeria, using a structured interviewer-administered questionnaire to assess their awareness, knowledge, and practice of preconception care. Data were analysed with SPSS version 25.0 using descriptive statistics, and the level of statistically significant value set at $p < 0.05$.**

Results: **The mean age of the participants was 29.37 ±5.71 years, and 95% of them were married. Awareness of PCC was 41%, and only 50.3% of those who were aware had good knowledge of PCC. About half (49.7%) of those aware of pre-conception care utilised PCC services. Three–quarters (77.3%) of the participants planned the index pregnancy, 48.8% of them used folic acid, and only 26.6% used contraception before the index pregnancy. Marital status (p-value = 0.01) and previous history of contraceptive use (p-value = 0.03) were factors found to be significantly associated with the practice of PCC.**

Conclusion: **Awareness, knowledge, and utilization of PCC were low among women of reproductive age. Strengthening public awareness, integrating PCC into routine reproductive health services, and enhancing healthcare providers' capacity to deliver preconception care are essential to improve PCC uptake.**

Keywords: Preconception care**,** Pregnant women, Antenatal clinic, Practice of preconception care

INTRODUCTION

Preconception care (PCC) is a comprehensive package of evidence-based health interventions provided to women and couples before conception to optimise their health and reduce factors that contribute to adverse maternal and neonatal outcomes.[1,2] World Health Organisation(WHO) defines PCC as the provision of biomedical, behavioural, and social health interventions before conception to enhance their health status and minimise behaviours and other individual and environmental factors that negatively affect maternal and child health outcomes.[3] Every woman should be in good physical and mental health, particularly before, during, and after giving birth. By promoting optimal physical and mental health before pregnancy, PCC has become an important strategy for improving pregnancy outcomes through early identification and modification of biological, behavioural, and environmental risk factors.[4] Beyond preventing maternal and neonatal morbidity and mortality, PCC provides an opportunity to improve

the long-term health and well-being of women, adolescents, and future generations, regardless of pregnancy intention.[4]

Preconception care tends to address issues with reproductive health, lessen environmental dangers, toxins, drugs that are known teratogens, promote nutrition and folic acid intake. It offers advice on weight management, detects issues with genetic conditions, family history, substance use, chronic diseases, and infectious diseases, and offers guidance on vaccinations, family planning, psychosocial issues, domestic violence, and housing.[5] These interventions are particularly important in low- and middle-income countries (LMICs), where maternal and perinatal mortality remain disproportionately high, and many pregnancies are unplanned.[6–8]

Preconception care has been shown to reduce the risk of adverse pregnancy outcomes, including preterm birth and low birth weight, as well as maternal complications such as pre-eclampsia and anaemia, and neonatal complications including intrauterine growth restriction, low birth weight, and congenital anomalies.[9] Despite its recognised benefits, PCC has not been fully integrated into routine maternal healthcare in many developing countries, including Nigeria, where its delivery remains largely unstructured and underutilised.[10,11] The consequences of inadequate uptake are reflected in persistently poor pregnancy outcomes. According to the 2023 United Nations report, Nigeria accounts for approximately 28.5% of global maternal deaths, with an estimated lifetime risk of maternal death of 1 in 19 women due to pregnancy or childbirth-related complications.[12] Furthermore, preventable conditions such as neural tube defects, which can be substantially reduced through preconception folic acid supplementation, continue to contribute to neonatal morbidity and mortality.[13,14] Previous studies have identified several barriers to PCC utilisation in Nigeria, including low educational attainment, low socioeconomic status, inadequate availability of trained healthcare providers, and poor health-seeking behaviour.[10,15–17] All these could contribute to women's lack of awareness of this care and poor utilisation of this important maternal health intervention[18].

Although several studies have examined the determinants and utilization of preconception care in Nigeria,[15,17,19,20] relatively few have specifically evaluated the women's knowledge and awareness of preconception care, which are fundamental prerequisites for its utilization.[21] Moreover, there is limited evidence from women presenting for antenatal booking, a population in whom recall of preconception experiences is likely to be more accurate because of the proximity of pregnancy to the preconception period. Assessing women at their antenatal booking therefore provides a valuable opportunity to evaluate awareness, knowledge, and uptake of PCC while minimising recall bias and identifying missed opportunities for pre-pregnancy health interventions.

This study assessed the awareness, knowledge, and practice of preconception care among pregnant women attending antenatal booking clinics in three public health facilities in Ibadan, Nigeria. By generating context-specific evidence on women's understanding and utilisation of PCC, the study seeks to inform strategies to improve the integration, promotion, and uptake of preconception care within routine maternal healthcare services in Nigeria.

RESEARCH METHODOLOGY

This study was a descriptive cross-sectional study conducted at the booking clinics of University College Hospital (UCH), Adeoyo Maternity Teaching Hospital (AMTH), and Primary Health Centre Idi Ogungun, all located in Ibadan-North Local Government Area of Oyo State, Nigeria were purposively selected. The three hospitals represented the tertiary, secondary and primary levels of healthcare, respectively. The study was conducted between November and December 2021.

Study population: This included all pregnant women who registered for antenatal care in any of the three health institutions during the study. Participants were selected from the list of eligible attendees at the antenatal booking clinics during the study period using the total sampling technique.

Inclusion criteria: All pregnant women attending to book for antenatal care at any gestational age.

Exclusion criteria: Pregnant women <18years, women who had registered pregnancy or were receiving antenatal care in another healthcare facility, non-consenting pregnant women. Pregnant women who presented with obstetric emergencies and those with cognitive impairment or severe mental illness that limited their ability to understand or provide reliable responses to the study questions.

Sample size determination

The sample size was estimated using the Leslie Kish formula for calculating a single population proportion in cross-sectional studies:

$$n = \frac{Z^2P\ (1 - P),}{(d)^2}$$

and a sample size of 406 was obtained using a 10% attrition rate.

p = 0.431
q(1-P) = 0.569
Z = 1.96
d = 0.05

where *n* is the minimum required sample size, *Z* is the standard normal deviate corresponding to a 95% confidence level (1.96), *P* is the estimated prevalence obtained from a previous study by Adeyemo et al in Ibadan, Nigeria,[15] *q* = 1-*P*, and *d* is the desired precision of 5%. The minimum sample size obtained was 377, while a 10% allowance was made for non-response, giving a final sample size of 406 participants.

The sample size for the study was divided to represent the average population of pregnant women booking per week in the respective hospitals. At the time of the study, the estimated number of pregnant women booked per week at the selected primary, secondary, and tertiary facilities was approximately 25, 60, and 30, respectively. The sample size was proportionately divided in a ratio of 5:12:6. A total of 406 questionnaires were administered, with the distribution being 88 for the primary, 212 for the secondary, and 106 for the tertiary health facilities.

Sampling technique

A multistage non-probability sampling approach was employed for participant recruitment. In the first stage, three public healthcare facilities providing antenatal booking services in Ibadan- North LGA, Oyo State, were purposively selected as the study sites: the University College Hospital (UCH), Adeoyo Maternity Hospital, and Primary Health Centre, Idi-Ogungun.

In the second stage, proportionate quota sampling was used to allocate the calculated sample size (406 participants) among the three facilities based on their average antenatal booking attendance per week. The allocated sample sizes were 106 participants from the University College Hospital, 212 from Adeoyo Maternity Teaching Hospital, and 88 from Idi-Ogungun Primary Health Centre. Within each facility, consecutive sampling was employed to recruit eligible pregnant women attending their first antenatal booking visit. Women who met the inclusion criteria and provided informed consent were consecutively enrolled until the predetermined sample size for each facility was attained.

Data collection:

Data were obtained using a structured interviewer-administered pretested questionnaire. The questionnaires contained sociodemographic characteristics, questions about awareness of preconception care, knowledge of preconception care and practice of the basic components of preconception care, which include medical screening, health education and counselling, nutritional assessment and folic acid supplementation, management of chronic diseases and infections (including HIV/STIs), family-planning and pregnancy-intention counselling, medication review, and promotion of healthy behaviours.[16,22]

Ethical consideration

The study was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all participants before data collection. Consent forms and questionnaires were provided in both English and Yoruba languages to ensure comprehension.

All collected data were handled confidentially, and participation was voluntary. Ethical approval was obtained from the University of Ibadan and University College Hospital Ethics Review Committee with assigned number: UI/EC/21/0758.

Data analysis

Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Awareness of PCC was determined by Yes or No answers, while level of knowledge was assessed using 50% of the total score of all the questions assessing knowledge of PCC [23] Any participant with a total score below 50% was adjudged to have poor knowledge, and those with total scores equal to or above 50% were adjudged to have good knowledge. The practise of preconception care among participants was judged by their individual response to the Yes or No prompts of the questionnaire, and the participant must have picked at least two of the PCC services she benefited from before conception to have justified practising PCC.

The data from the study were summarised using frequencies, percentages, means and standard deviation. The chi-square test was used to test for association between demographic characteristics and awareness, knowledge, and practice of preconception care. A statistically significant level of 0.05 was used in the analysis.

RESULTS

A total of 406 participants participated in this study. The mean age of the participants was 29.37±5.71 years; the modal age range was 26-30 years with a frequency of 32.1%, as shown in Table 1. This is the peak age of reproduction globally. About ninety-five per cent of the participants were married, and less than 1% were divorced. The predominant ethnic group was Yoruba (93.1%); this is the indigenous language in the study population. Very few of the participants (7.4%) had only primary education, and about half (56.7%) of the participants had tertiary education, while about one-third (50.2%) had only secondary education. A similar proportion of the participants practised Christianity (49.3%) and Islam (50.2%), respectively. Only 50 (12.3%) were health workers. The mean duration of marriage in the study was 5.31years, as most (67.2%) of the participants were in their first five years of marriage. The monthly income of more than half of the participants (56.9%) was not more than fifty thousand naira. Other details of participants' sociodemographic characteristics can be found in Table 1.

In this study, less than half of the study participants (41%) were aware of preconception care (PCC), while most other participants (59%) demonstrated poor awareness of PCC, as depicted in Fig 1. Of all participants, 50.3% demonstrated good knowledge, while 49.7% had poor knowledge of PCC. Participants with good knowledge were highest among those from

Table 1: Socio-demographic characteristics

Variable	Frequency (406)	Percent (%)
Age		
≤20	17	4.2
21-25	98	24.1
26-30	131	32.3
31-35	91	22.4
>35	69	17.0
Mean ±SD	29.37±5.71	
Marital Status		
Single	14	3.4
Married	389	95.8
Divorced	3	0.7
Ethnicity		
Yoruba	378	93.1
Igbo	19	4.7
Hausa	5	1.2
Others	4	1.0
Religion		
Christianity	200	49.3
Islam	204	50.2
Others	2	0.5
Educational level		
Primary	30	7.4
Secondary	146	36.0
Tertiary	230	56.7
Profession		
Health worker	50	12.3
Non health worker	356	87.7
Number of years in Marriage		
1-5	273	67.2
6-10	72	17.7
11-15	35	8.6
16-20	13	3.2
≥21	13	3.2
Mean ± SD	5.31±5.65	
Monthly income (N)		
0-50,000	231	56.9
51,000-100,000	132	32.5
>100,000	43	10.6

**SD- Standard deviation*

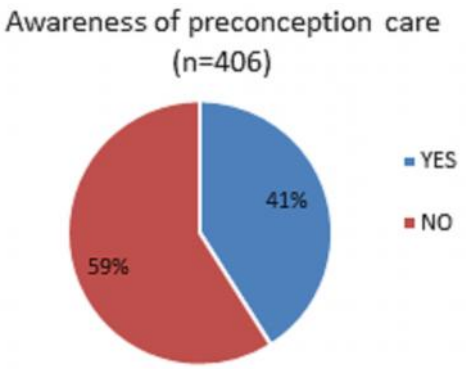

Fig 1: Pie chart showing awareness of preconception care

the University College Hospital (UCH) at 62.7%, followed by those from Idi-Ogungun at 50.0% and lowest among Adeoyo participants (Fig 2). In contrast, Participants with poor knowledge were highest among those from Adeoyo and lowest among UCH participants.

Approximately half (49.7%) of the participants who were aware of PCC utilised preconception care services before their pregnancy (Fig 3). Less than half (48.8%) of the participants used folic acid treatment before pregnancy, while about 51.2 % did not use folic acid preconceptionally. About three–quarters (77.3%) of the participants planned a pregnancy before getting pregnant, while about one-fifth (22.7%) of participants had unplanned pregnancies. A few had received advice on diet (15%), weight loss (14.6%), change of

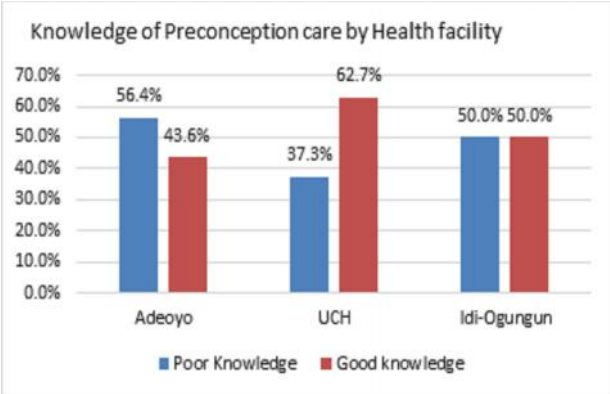

Fig 2: Knowledge of preconception care by health facility

Table 2: Factors associated with awareness of preconception care

Variable	Awareness (406)		Chi-square	P-value
	Yes (41%)	No (59%)		
Age				
≤29	91(42.3)	124(57.7)	0.54	0.46
>29	74(38.7)	117(61.3)		
Marital Status				
Single/Divorced	8(47.1)	9(52.9)	0.30	0.58
Married	157	232(59.6)		
Ethnicity				
Yoruba	150(39.7)	228(60.3)	8.96	**0.03**
Igbo	13(68.4)	6(31.6)		
Hausa	2(40.0)	3(60.0)		
Others	0(0.0)	4(100)		
Religion				
Christianity	85(42.5)	115(57.5)	3.70	0.16
Islam	78(38.2)	126(61.8)		
Others	2(100.0)	0(0.0)		
Educational Level				
Primary and below	8(26.7)	22(73.3)	14.45	**<0.01**
Secondary	45(30.8)	101(69.2)		
Tertiary	112(48.7)	113(51.3)		
Profession				
Health worker	27(54.0)	23(46.0)	4.22	**0.04**
Non health worker	138(38.8)	218(61.2)		
Monthly income(N)				
0-50000	86(37.2)	145(62.8)	2.61	0.27
51000-100000	60(45.4)	72(54.5)		
>100000	19(44.2)	24(55.8)		
Number of years in marriage				
≤ 5	112(41.0)	161(59.0)	0.05	0.82
>5	53(39.8)	80(60.2)		

Table 3: Factors associated with practice of preconception care

Variable	Practice of Preconception care (165)		Chi-square	P-value
	Yes (49.7%)	No (50.3%)		
Age				
≤29	45(49.5)	46(50.5)	0.005	0.94
>29	37(50.0)	37(50.0)		
Marital Status				
Single/Divorced	0(0.0)	8(100)	-	**<0.01**
Married	82(52.2)	75(47.8)		
Ethnicity				
Yoruba	77(51.3)	73(48.7)	2.02	0.36
Igbo	4(30.8)	9(69.2)		
Hausa	1(50.0)	1(50.0)		
Others				
Religion				
Christianity	46(54.1)	39(45.9)	3.03	0.22
Islam	36(46.2)	42(53.8)		
Others	0(0.0)	2(100.0)		
Educational Level				
Primary and below	4(50.0)	4(50.0)	0.23	0.89
Secondary	21(46.7)	24(53.3)		
Tertiary	57(50.9)	55(49.1)		
Profession				
Health worker	18(66.7)	9(33.3)	3.72	0.05
Non health worker	64(46.4)	74(53.6)		
Monthly income(N)				
0-50000	40(50.0)	40(50.0)	0.95	0.62
51000-10000	31(51.7)	29(48.3)		
>100000	11(57.9)	8(42.1)		
Number of years in marriage				
≤ 5	60(53.6)	52(46.4)	2.09	0.15
>5	22(41.5)	31(58.5)		
History of contraception				
Yes	30(62.5)	18(37.5)	4.44	**0.03**
No	52(44.4)	65(55.6)		

medications (15.9%), general health (12.2%) and treatment of sexually transmitted infections (25.6%). Only 26.6% of the pregnant women had a history of contraceptive use before the index pregnancy, while a majority of participants (73.4%) were not on any contraceptive method before their index pregnancy. This reflects persistently low contraceptive uptake. Few (19.5%) of the participants had general medical check-ups before getting pregnant, while most of the participants (80.5%) did not have a recent general medical check. This may be reflective of poor health-seeking behaviour of the populace.

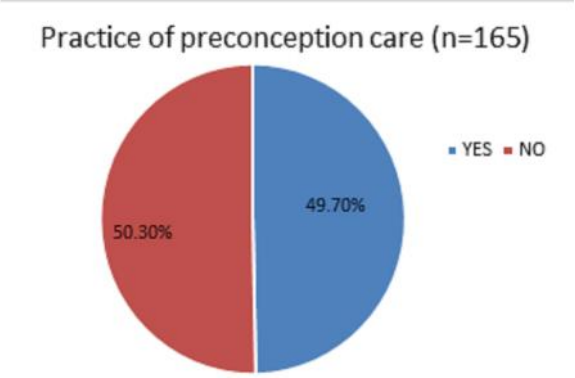

Fig 3: Practice of preconception care among participants

The ethnicity (Sχ^2=8.96, p-value =0.03), educational status (χ^2=14.45, p-value <0.01), and profession (χ^2=4.22, p-value =0.04) of the participants were significantly associated with awareness of preconception care. However, age, marital status, religion, monthly income and duration of marriage were not significantly associated with awareness of preconception care, as shown in Table 2. Age, marital status, ethnicity, religion, educational status, profession, monthly income, duration of marriage, as well as the history of contraceptive use were not significantly

associated with the level of knowledge of preconception care among the participants.

The marital status (p-value =0.01) and history of contraceptive use (χ^2=4.44, p-value =0.03) were significantly associated with the practice of preconception care. However, age, ethnicity, religion, educational status, profession, monthly income, and duration of marriage were not significantly associated with utilization of preconception care services among the participants, as shown in Table 3

DISCUSSION

This study assessed awareness, knowledge, practice of PCC and related factors among pregnant women at booking clinics across all three levels of care at selected public health facilities in Ibadan, Nigeria. It revealed a low level of awareness, knowledge, and practice of preconception care among pregnant women. The majority of participants had tertiary-level education and were married, with a mean age of 29.4 years and within five years of marriage. These findings indicate that the participants were relatively young in their marital unions and, consequently, may have a higher likelihood of desiring or planning additional children. Generally, the age of the participants was comparable to similar studies in Lagos, Nigeria and the Amhara region in Ethiopia, which reported mean ages of 31.52 years and 33.2 years, respectively.[24,25] The socio-demographic characteristics are also similar to those reported in the previous studies by Akinajo et al in Lagos and Adeyemo et al in Ibadan, and this was not surprising because the participants were all interviewed in the southwestern region of Nigeria.[15,24]

Findings from the present study showed that awareness of preconception care was 41%, which is lower than 76% and 63% reported in earlier studies in the same region by Olowokere *et al.* and Akinajo *et al.*[24,26] but is more than 20.6% in a study conducted in the Northern part of Nigeria by Umar *et al.*[20] The low level of awareness among the participants in this study despite being highly educated and relatively young participants could probably be attributed to non-availability of organised PCC in the study facilities. It is reasonable to expect that the level of education, with the majority of participants having a tertiary degree and some participants being health workers, would have a considerable impact on their level of awareness, but the findings actually stated otherwise even among the participants who booked in tertiary and secondary health facilities.

About fifty per cent of the participants who were aware of preconception care had poor knowledge of preconception care, which revealed a knowledge gap and is consistent with earlier studies.[19,27] Akinajo *et al.* and Olowokere *et al.*, however, reported a higher level of knowledge of PCC in a similar population.[24,26] Unlike other studies where level of education, profession and economic status were factors associated with adequate knowledge of preconception care, these factors were not associated with knowledge of preconception care in our study population.[15,19,27] Almost half of the pregnant women studied who were aware of preconception care utilized one or two of the components of PCC before the index pregnancy. This is higher than the findings reported in Lagos, Nigeria, where 34.2% of the participants practised preconception care before the index pregnancy[24] But more importantly, our study reported that the majority of participants did not take folic acid preconception. This essential vitamin has been shown to prevent neural tube defects such as spina bifida.[28] A previous study shows a similar 44.5% of women in the reproductive age group took folic acid as preconception supplementation.[20] Abdulkareem et al in a study done at a Cottage Hospital in Osun State, however, noted that only 12.6% knew the actual time for initiation of folic acid to prevent neural tube defects in the fetuses, which might be responsible for the low uptake of folic acid before conception observed in most women planning pregnancy.[29]

The majority of participants (77%) planned their index pregnancy, which is higher than findings by Kasim *et al.*[19] where the authors noted that only 47.4% of the participants had planned pregnancy, though the majority were aware of the need to be in good health before getting pregnant.[19] Only one-quarter of the study participants used contraceptives before the index pregnancy, and very few had preconception counselling, treatment of sexually transmitted diseases when indicated, and a general medical check-up before the index pregnancy. A comprehensive medical evaluation is an essential component of any quality maternal care services and should ideally commence during the preconception period and continue throughout pregnancy to facilitate the early detection of maternal diseases and prevention of fetal congenital anomalies.[30] Routine medical examinations are also important for the early identification and management of chronic diseases, including cardiovascular diseases, diabetes mellitus, and malignancies, which could affect fetal and maternal outcomes.[30,31] The low uptake of preconception medical evaluations observed among the study participants underscores the need for intensified public health education on the importance and benefits of these medical examinations before pregnancy. Government agencies and other relevant

health authorities should strengthen health information dissemination on pre-conception medical check-ups and care through mass media and community-based awareness campaigns to improve knowledge, promote informed health-seeking behaviour, and increase the uptake of all essential components of preconception care among women of reproductive age.

Factors that were significantly associated with the practice of PCC were marital status and previous use of contraceptives. All those who practised preconception care were married. This shows that the husband's acceptance of maternal healthcare services could significantly affect women's attitude towards healthcare services, which substantiates that being married is one of the factors affecting the utilisation of maternal healthcare services as reported in a previous study[1].

This study revealed a major lacuna in the provision of maternal healthcare services within the public health facilities assessed, which may reflect broader deficiencies in Nigeria's public healthcare system regarding preconception care. These gaps are evidenced by the low level of awareness, poor knowledge of the essential components of PCC, and the suboptimal practice and utilization of the limited preconception care services identified among the study participants. Creating awareness of this specialized care and educating women on how its various components can be accessed through the different healthcare facilities providing these services could substantially improve knowledge and utilization, particularly among women of reproductive age. This is especially important because the essential components of preconception care can be delivered as an integrated package whenever a woman presents for any individual component of PCC. Furthermore, incorporating comprehensive preconception care services into the benefit package of the National Health Insurance Authority (NHIA) scheme could reduce financial barriers and significantly enhance the uptake and utilization of PCC.

Limitations

This was a cross-sectional study; therefore, causal inferences cannot be made regarding the direction of relationships between sociodemographic characteristics and awareness, knowledge and PCC practice among the participants. In addition, the accurate recall of the preconception activities and care they had while preparing for pregnancy might be difficult for some participants. Lastly, the use of a non-probability sampling technique in data collection could have also introduced selection bias in this study.

Strength

The study was conducted across the three levels of our health facilities, capturing pregnant women from different socioeconomic backgrounds and levels of literacy, therefore reducing the observation bias in the outcomes of the study. The findings of this study might be a reflection of the larger public health systems in Nigeria because all three levels of health facilities were represented in this study. In addition, the research tool was obtained from previous studies done on this subject in this region and adapted to reflect PCC services and care available in the settings.

CONCLUSION

Awareness and knowledge of preconception care among pregnant women attending government antenatal booking clinics in Ibadan were suboptimal, with correspondingly low utilisation of preconception care services. Level of education and profession influenced women's awareness of PCC, while marital status and history of use of contraception were associated with its practice. Strengthening public awareness, integrating preconception care into routine reproductive health services, and enhancing healthcare providers' capacity to deliver preconception counselling may improve uptake and contribute to better maternal and neonatal health outcomes in the public health facilities in Nigeria.

Source(s) of funding: Self

Acknowledgement:

We sincerely appreciate the immense cooperation of the participants in this study. Also, we indeed appreciate the significant contributions and advice from the academic staff members of the Department of Obstetrics and Gynaecology, University of Ibadan.

Presentation at a meeting: Yes (Scientific conference of the Society of Gynaecologists and Obstetricians of Nigeria, 2022)

Author's contribution:

O.O – Design, planning, conduct, data analysis, interpretation of results, and manuscript writing

J.I – Design, planning, conduct, interpretation of results, and manuscript writing

O.B – Design, Data analysis, interpretation of results, and manuscript writing

Group of medical students*– Design, planning, conduct, interpretation of results, and manuscript writing

Conflicts of interest: None declared by all authors

REFERENCES

1. World Health Organization. Preconception Care to Reduce Maternal and Childhood Mortality and Morbidity. WHO Headquarters, Geneva Meeting report. 2012.
2. **Schrag PG.** Global action plan for the prevention of non-communicable diseases. In: World Health Organization: Global action plan for prevention and control of Non-communicable diseases. 2013. 1–103.
3. Department of Maternal, Newborn C and AH. Preconception care: maximizing the gains for maternal and child health. In: World Health Organization. 2013. 1–8.
4. **Harper T,** Kuohung W, Sayres L, *et al.* Optimizing preconception care and interventions for improved population health. Fertil Steril. 2023;120(3P1):438–448.
5. **Ayalew Y,** Mulat A, Dile M, Simegn A. Women's knowledge and associated factors in preconception care in adet, west gojjam, northwest Ethiopia: A community based cross sectional study. Reprod Health. 2017;14(15):1–10.
6. **Ukoha WC,** Mtshali NG, Adepeju L. Current state of preconception care in sub-Saharan Africa: A systematic scoping review. African J Prim Heal Care Fam Med. 2022;14(1):1–11.
7. **Barrow A,** Jobe A, Barrow S, *et al.* Prevalence and factors associated with unplanned pregnancy in The Gambia: findings from 2018 population-based survey. BMC Pregnancy Childbirth. 2022; 22(1):1–11.
8. **Mitchell EW,** Levis DM, Prue CE. Preconception health: Awareness, planning, and communication among a sample of US men and women. Matern Child Health J. 2012;16(1):31–39.
9. **Jourabchi Z,** Sharif S, Lye MS, *et al.* Association Between Preconception Care and Birth Outcomes. Am J Health Promot. 2019 Mar 1;33(3):363–371.
10. **Ojifinni OO,** Ibisomi L. "Is the health system ready?" A qualitative exploration of stakeholders' opinions about the feasibility of preconception care services in the Nigerian health system. Reprod Health. 2022 Jun 29;19(153):1–12.
11. **Ojifinni OO,** Ibisomi L. Preconception care practices in Nigeria: a descriptive qualitative study. Reprod Health. 2020 Nov 4;17(172):1–13.
12. Report U nations. Nigeria: Maternal and Newborn Health Country Profile - Healthy Newborn Network. 2023.
13. **Aweke MN,** Fentie EA, Agimas MC, *et al.* Folic acid supplementation during preconception period in sub-Saharan African countries: A systematic review and meta-analysis. PLoS One. 2025 Jan 1;20(1):1–24.
14. **Wakoya R,** Afework M. Burden of Neural Tube Defects and Their Associated Factors in Africa: A Systematic Review and Meta-Analysis. Int J Pediatr (United Kingdom). 2023;2023(1):1–25.
15. **Adeyemo AA,** Bello OO. Preconception care: What women know, think and do. African J Med Heal Sci. 2021;20(2):18–26.
16. **Poix S,** Elmusharaf K. The cost of inaction on preconception health in Nigeria: An economic impact analysis. Glob Public Health. 2024;19(1):1–14.
17. **Oyedeji OE,** Morakinyo GE, Oyedeji YO, *et al.* Assessment of Awareness and Prior Utilization of Preconception Care and Associated Factors among Pregnant Women in Southwest Nigeria. Niger Med J. 2026 Jul 10;67(3):898–908.
18. **Mason E,** Chandra-Mouli V, Baltag V, *et al.* Preconception care: Advancing from "important to do and can be done" to "is being done and is making a difference." Reprod Health. 2014;11(3): 1–9.
19. **Kasim R,** Draman N, Kadir AA, Muhamad R. Knowledge, Attitudes and Practice of Preconception Care among Women Attending Appointments at a Rural Clinic in Kelantan. Educ Med J. 2016;8(4):57–68.
20. **Umar A,** Nasir S, Tunau K, *et al.* Awareness and perception of preconception care among women in Usmanu Danfodiyo University Teaching Hospital Sokoto, North-Western Nigeria. J Fam Med Prim Care. 2019;8(1):696–700.
21. **Doe PF,** Alhassan A, Otchere BA, *et al.* Factors influencing preconception care awareness and knowledge among women in Africa: a systematic review. Vol. 7, Frontiers in Reproductive Health. Frontiers Media SA; 2026. 1–17.
22. Federal Ministry of Health and Social Welfare, Nigeria. National Preconception Care Guideline: Ensuring a Risk-Free Conception Experience. Abuja: Federal Ministry of Health and Social Welfare; 2024. 2024.
23. **Teshome F,** Kebede Y, Abamecha F, ... Practice of preconception care and associated factors among pregnant women in manna district, Southwest Ethiopia: A community-based cross-sectional .. Women's Heal Care. 2021;10(519):1-8.
24. **Akinajo O,** Osanyin GE, Okojie O. Preconception care: Assessing the level of awareness, knowledge and practice amongst pregnant women in a tertiary facility. J Clin Sci. 2019;16(1):87–92.
25. **Demeke M,** Yetwale F, Mulaw Z *et al.* Knowledge and attitude towards preconception care and associated factors among women of reproductive age with chronic disease in Amhara region referral

hospitals, Ethiopia, 2022. BMC Womens Health. 2024 Dec 1;24(184):1–12.
26. **Olowokere A,** Komolafe A, Owofadeju C. Awareness knowledge and uptake of preconception care among women in Ife Central Local Government Area of Osun State Nigeria. J Community Med Prim Heal Care. 2015;27(2):83–92.
27. **Fekene DB,** Woldeyes BS, Erena MM, Demisse GA. Knowledge, uptake of preconception care and associated factors among reproductive age group women in West Shewa zone, Ethiopia, 2018. BMC Womens Health. 2020 Feb 19;20(1).
28. **Abate BB,** Kumsa H, Kibret GA, *et al.* Preconception Folic Acid and Multivitamin Supplementation for the Prevention of Neural Tube Defect: An Umbrella Review of Systematic Review and Meta-analysis. Neuroepidemiology. 2025 Aug 1;59(4):412–425.
29. **Abdulkareem SA,** Hameed IA, Mosimabale MM, *et al.* Late Initiation and Overuse of Folic Acid Supplements/: A Public Health Challenge in Maternal Nutrition. React Eng Environ Appl Sci. 2025;1(1):16–23.
30. World Health Organization. World Health Organization. Preconception care: maximizing the gains for maternal and child health. Geneva: WHO; 2013. 2013.
31. **Ojeda LI,** Valencia CM, Cardozo Buitrago N, *et al.* FIGO good practice recommendations on preconception care: A strategy to prevent preterm birth. Int J Gynecol Obstet. 2025 Nov 1;171(2): 574–587.