**ORIGINAL RESEARCH ARTICLE**

# Determinants of the use of family planning methods among rural women in Plateau state, Nigeria

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## Abstract

This study aimed at determining the factors that influence family planning practice among rural women of Pankshin district in Plateau state, Nigeria. A cross-sectional study using a simple random sampling method was conducted from October to December 2019. A self-administered questionnaire was used for data collection among 302 respondents. Among respondents, 48.3% had practised family planning and the most popular family planning method ever practised was injectables (57.5%). The determinants of family planning practice were age group 29-39 and 40-49 years old (AOR=4.373, p<0.001; AOR=5.862, p<0.001), discussion with partner (AOR=9.192, p<0.001) and partner's approval (AOR=2.791, p=0.007). Findings showed an encouraging family planning prevalence with the main determinants involving male partners. Further efforts need to be made to promote family planning practice among male partners and to empower women of all reproductive age groups by providing them with relevant information that is needed for them to make informed decisions. *(Afr J Reprod Health 2022; 26[4]: 32-41).*

**Keywords:** Family planning, prevalence, determinants, rural women, Nigeria

## Résumé

Cette étude visait à déterminer les facteurs qui influencent la pratique de la planification familiale chez les femmes rurales du district de Pankshin dans l'État du Plateau, au Nigeria. Une étude transversale utilisant une méthode d'échantillonnage aléatoire simple a été menée d'octobre à décembre 2019. Un questionnaire auto-administré a été utilisé pour la collecte de données auprès de 302 répondants. Parmi les répondants, 48,3% avaient pratiqué la planification familiale et la méthode de planification familiale la plus populaire jamais pratiquée était les injectables (57,5%). Les déterminants de la pratique de la planification familiale étaient le groupe d'âge 29-39 et 40-49 ans (AOR=4,373, p<0,001 ; AOR=5,862, p<0,001), la discussion avec le partenaire (AOR=9,192, p<0,001) et l'avis du partenaire. approbation (AOR = 2,791, p = 0,007). Les résultats ont montré une prévalence encourageante de la planification familiale avec les principaux déterminants impliquant les partenaires masculins. Des efforts supplémentaires doivent être faits pour promouvoir la pratique de la planification familiale parmi les partenaires masculins et pour autonomiser les femmes de tous les groupes d'âge procréateur en leur fournissant les informations pertinentes dont elles ont besoin pour prendre des décisions éclairées. *(Afr J Reprod Health 2022; 26[4]: 32-41).*

**Mots-clés**: Planification familiale, prévalence, déterminants, femmes rurales, Nigeria

## Introduction

The Sustainable Development Goals (SDG) 3 and 5 focus on ensuring healthy lives and promoting well-being for all at all ages and achieving gender equality and empowerment for all women and girls, respectively[1]. These goals make note of family planning as a vital means towards achieving the targets set in order to achieve the goals. With the aid of the SDG, countries can leverage family planning as a political priority to increase advocacy for the family planning commitments to be implemented[1]. Thus, family planning can make the achievement of the SDG even more feasible[2]. As a result of this opportunity, many countries that have made commitments to promoting family planning use have been able to record notable changes in their mortalities, prevalence and practice[3]. Family planning is a low-cost investment that countries can apply for the sake of maternal and child's health[2–7]. This adoption helps to prevent maternal, infant and child mortality by avoiding pregnancies that were not planned for, harmful, illegal termination of pregnancies, and childbearing under circumstances

which may be dangerous to the lives of infants and the well-being of their mothers[8,9].

In Africa, Nigeria is the most populous country with a total population of 205,290,136[10] and a fertility rate of 5.3 children per woman[11]. To address this issue, Nigeria has adopted and implements family planning programs as part of the Primary Health Care package. In 2013, the Nigeria Demographic Health Survey showed that the prevalence of family planning practice was 16%. There was a disparity between urban and rural areas where the practice of any family planning method was 26.8% and 8.5% respectively. In urban areas, 95% of women had heard of at least one family planning method as opposed to 78.4% in rural areas[12]. In 2018 however, the prevalence of family planning had decreased to 19.9% in urban areas whereas it has slightly increased to 9.6% in rural areas[11]. On the contrary, the prevalence of family planning in Plateau state was 15.2% in 2013 and had increased to within 19%-24% in 2018[11]. A study conducted in Plateau State showed that women in urban areas were more likely to use family planning than women in rural areas[13].

Being a heterogeneous country that consists of diverse ethnic groups[14], there are many barriers related to negative sentiments affecting the use of family planning services. According to the World Health Organization, reasons that can be attributed to the lack of family planning practice include sentiments attached to religion, lack of access to family planning services, partner's involvement and the source of information of family planning[15–22]. Other studies noted variables such as knowledge about the advantages of family planning[22–26], availability and nearness to family planning centres[26], lack of support from partners[16,17,25,27], religious and cultural factors[17,23,24,28], influence from family and peers[7,24], socio-demographic factors (such as age and marital status)[16-17,25,28] and economic factors[20,24].

Due to the barriers associated with family planning and its low adoption, several studies have conducted investigations on the issues that are related to family planning practice in Nigeria. These include family planning practice among women in urban areas of Plateau State, Nigeria[24], utilisation of modern contraceptives among female traders in Jos South LGA of Plateau state[29], and factors influencing family planning among the Mwaghavul ethnic group in Plateau state[30]. The maternal mortality ratio in Plateau State is 905 per 100,000 live births in 2017[13], only slightly lower than the maternal mortality ratio of Nigeria with 917 per 100,000 live births[31]. Women in rural areas contributed more of this number as they were less advantage compared with women in urban areas in terms of maternal health services including family planning services[32]. Thus, our study focused on investigating family planning practice among rural women in Pankshin district and its determinants. Findings from this study can be used by government and health care representatives to further enhance family planning services and development of relevant policies, especially among those in rural communities.

# Methods

## *Study setting*

This study was conducted in Plateau state, one of the 36 states in Nigeria with the capital being Jos. Pankshin district is situated in Plateau state and comprises of 51 villages with an area of 1,524 km² and a population projection for 2017 of 279,338 with with female population about 139,200[12]. The population of this study is characterised by mostly farmers, traders and housewives. Despite Pankshin being a rural area which is characterized by people of diverse ethnic groups and languages, the English language is widely spoken and understood. Pankshin is also free from insurgency and insecurity and is home to the Federal College of Education (FCE) Pankshin, thus, providing a larger pool of respondents to participate in the study. Family planning and reproductive health service delivery is obtained from health facilities in this community, where they provided the modern methods of family planning.

## *Study design and sampling*

This study was a cross-sectional study, and data collection took place from October 2019 to December 2019. A simple random sampling method was employed to randomly select houses in the villages using the random number generator[33]. An eligible woman in the randomly selected houses was the participant in this study. In the houses where there was more than one eligible respondent for the study, the first person volunteered was selected. The inclusion criteria were women aged 18-49 years,

either single, married, ever married or in union during the study period. The exclusion criteria include pregnant and women with a form of illness or disease during the study period, such as infectious or chronic diseases that made them too sick to participate. For example, those rendered to a bedridden state. The total sample size of 320 was calculated using two proportions formula[34], based on findings from a previous study[16], at a 95% confidence interval, 80% power and 10% non-response rate. Trained research assistants were employed for data collection.

### *Study instrument*

A validated and reliable self-administered questionnaire which was written in English was employed as a tool for data collection. The questionnaire was validated and tested for reliability based on adoption and adaptation from the demographic health survey and other studies[17,19,20,22,29,35,36]. The questionnaire was pre-tested in 1 village while the remaining 50 villages were used for the data collection. The questionnaire was divided into seven sections namely socio-demographic characteristics (age, marital status, education, ethnicity, religion and income), obstetric/reproductive history (number of children, mode of delivery, complications at birth, outcome after childbirth and abortion), medical history (hypertension and diabetes mellitus), partners' involvement (discussion with partner and partner's approval), awareness of women on family planning, family planning practice, availability of family planning services and source of information. The results of internal consistency reliability tests conducted on the questionnaire for each section using the Kuder Richardson formula 20 and Cronbach's Alpha; knowledge-0.712, practice-0.981, availability and source-0.838, partner's involvement-0.989 and medical history, obstetric and reproductive history-0.716.

### *Data analysis*

Statistical analysis was conducted using International Business Machines'(IBM) Statistical Package for Social Sciences (SPSS) version 25. Data was screened for error. Normality testing was checked using a histogram with a normal curve for continuous data. The descriptive analysis used frequency and percentage for categorical data and mean and standard deviation (SD) for continuous data. Pearson's Chi-square or Fisher exact test were conducted to examine the association between family planning practice as the dependent variable and socio-demographic characteristics, obstetric and reproductive history, medical illnesses, partner' involvement, and awareness of family planning as the independent variables. To examine the determinants of family planning practice, a multivariate analysis was conducted beginning with simple logistic regression. All variables that were significant at $p<0.25$ in simple logistic regression were included in the multiple logistic regression. At the final model, multiple logistic regression with 95% confidence interval was carried out using a backwards-conditional regression approach after model fit was checked. Significance level was set at alpha 0.05.

## Results

### *Socio-demographic characteristics of respondents*

A total of 302 respondents participated in this study yielding a response rate of 94.4%. A post-hoc power analysis of this study using GPower yielded 99.6% power, indicating that the result of this study has sufficient power to detect statistical differences[37]. The mean ± standard deviation (SD) for age was 31.48 ± 7.74. Majority of the respondents were married (97.7%), of Ngas ethnicity (91.4%), were Christians (97.7%), slightly more than half of them had attained secondary school education (55.0%) and earned an income below N9999 (79.5%).

### *Prevalence, methods, awareness and distance to services of family planning*

The prevalence of ever practised family planning among respondents was 48.3%, while 26.5% of them were currently practising family planning. The most popular family planning methods ever practised by the respondents were injectables (57.5%), pills (34.9%) and implants (31.5%). The male condom was only practised by 7.5% of the respondents. Among the 302 respondents, majority of them knew that family planning is beneficial (92.7%), is used for child spacing (91.4%) and limits the number of children (92.1%). Family planning services were reported by the family planning users (146 respondents) to be either very near or near to their homes (74.6%).

**Table 1:** Distribution of respondents according to socio-demographic factors (N=302)

| Variables | n (%) |
|---|---|
| **Age** | |
| 18-28 | 166 (38.4) |
| 29-39 | 122 (40.4) |
| 40-49 | 64 (21.2) |
| **Marital status** | |
| Single and others | 7 (2.3) |
| Married | 295 (97.7) |
| **Education level** | |
| No schooling/Primary | 110 (36.4) |
| Secondary | 166 (55.0) |
| Tertiary | 26 (8.6) |
| **Ethnicity** | |
| Ngas | 276 (91.4) |
| Others | 26 (8.6) |
| **Religion** | |
| Christian | 295 (97.7) |
| Muslim | 62 (2.3) |
| **Income** | |
| Below N9,999 | 240 (79.5) |
| Above N10,000 | 62 (20.5) |

### *Partners involvement and source of information*

Less than half of the respondents (48.3%) discussed family planning with their partners, and about half (53%) of their partners approved family planning practice. Only those who practised family planning answered questions on the source of obtaining information on family planning information i.e., 48.3% respondents. Out of the these, 88.3% reported that the hospital personnel were the main source of information on family planning, followed by family and friends (10.3%).

### *Factors associated with family planning practice*

Table 2 shows the association between family planning and the independent variables that were significant after the bivariate analysis. Results showed significant association between age ($X^2$ = 27.550, p<0.05), discussion with partner ($X^2$ = 104.754, p<0.05), partner's approval ($X^2$ = 73.583, p<0.05), the number of children ($X^2$ = 17.187, p<0.05), mode of delivery (p<0.05), complications at birth ($X^2$ = 11.697, p<0.05), outcome after delivery ($X^2$ = 11.744, p<0.05), family planning being beneficial (*p*<0.05), spacing children (*p*<0.05), limiting the number of children (*p*<0.05), and family planning practice among respondents. However, there was no significant association between marital status ($X^2$ = 1.122, p>0.05), education ($X^2$ = 0.367, p>0.05), ethnicity ($X^2$ = 0.055, p>0.05), religion ($X^2$ = 1.122, p>0.05), income ($X^2$ = 2.952, p=0.090), hypertension (p>0.05), abortion (p>0.05), diabetes (p>0.05), family planning having side effects (p>0.05) and family planning practice.

### *Determinants of family planning practice among women in rural areas of Pankshin district*

To ascertain the factors that influenced the use of family planning among women in rural areas, logistic regression was used. For the preliminary model (simple logistic regression showing crude odds ratio -COR), the variables with p<0.25 were age, income, discussion with partner, partner's approval, number of children, family planning being beneficial, family planning spacing children and family planning limiting the number of children.

In the final model, the determinants of family planning practice were age, discussion with partner, and partner's approval as seen in the table below with adjusted odds ratio (AOR). Respondents who fell within the age group 29-39 and 40-49 years old had 4.3 and 5.7-times higher odds of family planning practice than those within the age group 18-28 (AOR=4.373, 95% CI: 2.197-8.703, p<0.05; AOR=5.862, 95% CI: 2.522-13.625, p<0.05). Those who had discussed family planning with their partners had 9.2 times higher odds of family planning practice than those who not had discussions with their partners (AOR=9.192, 95% CI: 4.356-19.400, p<0.05). Respondents who had gained the approval of their partners had 2.8 times higher odds of family planning practice than other respondents who had not gained partner's approval (AOR=2.791, 95% CI: 1.329-5.862, P=0.007). The predictive model for the practice of family planning is Log (the practice of family planning among women) = -2.687 + [1.475:1.768 x age, 2.218 x discussion with partner and 1.026 x partner's approval].

## Discussion

Understanding the determinants that influence family planning practices is key in providing the necessary interventions for policy makers and researchers, especially in rural areas where women are disadvantaged as regard socio-economic

**Table 2:** Association between family planning practice and independent variables (N=302)

| | Categories | Ever used | | | | Total | | $X^2$ | p-value |
|---|---|---|---|---|---|---|---|---|---|
| | | Yes | | No | | | | | |
| | | n | % | n | % | n | % | | |
| **Age** | 18-28 years | 34 | 11.3 | 82 | 27.2 | 116 | 38.5 | 27.550 | <0.05* |
| | 29-39 years | 75 | 24.8 | 47 | 15.6 | 122 | 40.4 | | |
| | 40-49 years | 37 | 12.3 | 27 | 8.9 | 64 | 21.2 | | |
| **Marital status** | Single and others | 2 | 0.6 | 5 | 1.7 | 7 | 2.3 | - | 0.449 [a] |
| | Married | 144 | 47.7 | 151 | 50.0 | 295 | 97.7 | | |
| **Education** | No schooling/Primary | 52 | 17.2 | 58 | 19.2 | 110 | 36.4 | 0.367 | 0.832 |
| | Secondary | 80 | 26.5 | 86 | 28.5 | 166 | 54.9 | | |
| | Tertiary | 14 | 4.6 | 12 | 4.0 | 26 | 8.6 | | |
| **Ethnicity** | Ngas | 134 | 44.4 | 142 | 47.0 | 276 | 91.4 | 0.055 | 0.840 |
| | others | 12 | 4.0 | 14 | 4.6 | 26 | 8.6 | | |
| **Religion** | Christianity | 144 | 47.7 | 151 | 50.0 | 295 | 97.7 | - | 0.449 [a] |
| | Islam | 2 | 0.7 | 5 | 1.7 | 7 | 2.3 | | |
| **Income** | Below N9999 | 110 | 36.4 | 130 | 43.0 | 240 | 79.5 | 2.952 | 0.090 |
| | Above N10000 | 36 | 12.0 | 26 | 8.6 | 62 | 20.5 | | |
| **Discussion with partner** | Yes | 115 | 38.1 | 31 | 10.3 | 146 | 48.3 | 104.754 | <0.05* |
| | No | 31 | 10.3 | 125 | 41.4 | 156 | 51.7 | | |
| **Partners approval** | Yes | 115 | 38.1 | 46 | 15.2 | 161 | 53.3 | 73.583 | <0.05* |
| | No | 31 | 10.3 | 110 | 36.4 | 141 | 46.7 | | |
| | 0-2 | 37 | 12.3 | 75 | 24.8 | 112 | 37.1 | 17.187 | <0.05* |
| **Number of children** | 3-5 | 88 | 29.1 | 62 | 20.5 | 150 | 49.7 | | |
| | 6-8 | 21 | 7.0 | 19 | 6.3 | 40 | 13.2 | | |
| **Mode of delivery** | Caesarean section | 2 | 1.0 | 2 | 1.0 | 4 | 1.3 | - | <0.05 [a]* |
| | Vaginal | 144 | 47.7 | 142 | 47.0 | 286 | 94.7 | | |
| **Complications at birth** | Yes | 14 | 4.6 | 15 | 5.0 | 29 | 9.6 | 11.697 | <0.05* |
| | No | 132 | 43.7 | 130 | 43.0 | 262 | 86.8 | | |
| **Outcome after delivery** | Alive | 145 | 48.0 | 138 | 45.7 | 283 | 93.7 | 11.744 | <0.05* |
| | Not alive | 9 | 3.0 | 8 | 2.6 | 17 | 5.6 | | |
| **Abortion** | Yes | 19 | 6.3 | 15 | 5.0 | 34 | 11.3 | 0.872 | 0.368 [a] |
| | No | 127 | 42.1 | 141 | 46.7 | 280 | 92.7 | | |
| **Hypertension** | Yes | 13 | 4.3 | 9 | 3.0 | 22 | 7.3 | 1.097 | 0.377 [a] |
| | No | 133 | 44.0 | 147 | 48.7 | 280 | 92.7 | | |
| **Diabetes mellitus** | Yes | 3 | 0.3 | 1 | 1.0 | 4 | 1.3 | - | 0.357 [a] |
| | No | 143 | 47.4 | 155 | 51.3 | 298 | 98.7 | | |
| **Family planning is beneficial** | Yes | 143 | 47.4 | 137 | 45.4 | 280 | 92.7 | - | <0.05 [a] * |
| | No | 3 | 0.3 | 19 | 6.3 | 22 | 7.3 | | |
| **Family planning spaces children** | Yes | 142 | 47.0 | 134 | 44.4 | 276 | 91.4 | - | <0.05 [a] * |
| | No | 4 | 1.3 | 22 | 7.3 | 26 | 8.6 | | |
| **Family planning to limit children** | Yes | 142 | 47.0 | 136 | 45.0 | 278 | 92.1 | - | <0.05[a] * |
| | No | 4 | 1.3 | 20 | 6.6 | 24 | 7.9 | | |
| **Family planning has side effects** | Yes | 86 | 28.5 | 101 | 33.4 | 187 | 59.0 | 1.091 | 0.343 |
| | No | 60 | 19.9 | 55 | 18.2 | 115 | 38.1 | | |

[a] (*) significant $p < 0.05$. ([a]) Fisher exact test.

development, access to health services and empowerment.

Family planning prevalence in our study was twice of that from the national demographic health survey in 2018[11]. In comparison with studies conducted in other rural areas in Nigeria[38,17,39] and another study in a rural area in Plateau State[28], the findings of this result was relatively higher. Their prevalence was between 25.7% and 35.8%. The increased prevalence of family planning practice among rural women in our study was encouraging as it showed that more women in rural communities are practising family planning. This could be as a result of the efforts made by the state government to invest in reproductive health by allocating funds specifically to address this issue[40].

Certain socio-demographic characteristics can affect the decision that women take regarding their family planning practice. Our study found significant association between age and family planning practice. This is consistent with a study carried out in a rural area in Plateau State, Nigeria[28].

**Table 3:** Regression model for determinants of family planning practice

| Variable | Categories | P-value | [COR, 95% CI (LL-UL)] | P-value | [AOR,95% CI(LL-UL)] |
|---|---|---|---|---|---|
| **Age** | 18-28years | Ref. | | | |
| | 29-39 years | <0.05* | 3.849[2.240-6.611] | <0.05* | 4.373[2.197-8.703] |
| | 40-49 years | <0.05* | 3.305[1.748-6.250] | <0.05* | 5.862[2.522-13.625] |
| **Income** | Below N9999 | Ref. | | | |
| | Above N10000 | 0.087 | 1.636[0.930-2.878] | | |
| **Discussion with partner** | | | | | |
| | Yes | <0.05* | 14.985[8.557-26.149] | <0.05* | 9.192[4.356-19.400] |
| | No | Ref. | | | |
| **Partner's approval** | Yes | <0.05* | 8.871[5.247-14.998] | 0.007* | 2.791[1.329-5.862] |
| | No | Ref. | | | |
| **No of children** | 0-2 | Ref. | | | |
| | 3-5 | <0.05* | 2.877[1.727-4.794] | | |
| | 6-8 | 0.03* | 2.240[1.074-4.672] | | |
| **Family planning is beneficial** | Yes | Ref. | | | |
| | No | 0.003* | 0.151[0.044-0.523] | | |
| **Family planning to space children** | Yes | Ref. | | | |
| | No | 0.002* | 0.172[0.058-0.511] | | |
| **Family planning to limit children** | Yes | Ref. | | | |
| | No | 0.003 | 0.192[0.064-0.575] | | |

Note: (*) – significant $p$ <0.05, S.E- standard error, Hosmer and Lemeshow test (p=0.473), classification table (overall percentage: 80.5%), Cox and Snell R squared (0.379), Nagelkerke R squared (0.506), ROC=0.861, COR = crude odd ratio, AOR = adjusted odd ratio, CI = confidence interval, LL = lower limit, UL = upper limit.

Predominantly in African societies, family planning was discussed and practiced more among married women. However, marital status was not significantly associated with family planning in this study as was the case in other studies [28,38]. This could be due to only a small number single, ever married or women in union participated in this study. A study[28] noted that lack of education was one of the reasons for low family practices in African settings. In our study, reverse is the case as there were more educated respondents and a higher family planning prevalence, nevertheless, there was no significant association between family planning and education as was the case with another study carried out in Plateau State[39]. Ngas was the major ethnic group among respondents in this study with no significant association between ethnicity and family planning practice. Christianity was the major religion among respondents even though there was no significant association between religion and Christianity as was the case with other studies carried out in Plateau State[40-41]. The level of income that the respondents earned every month did not have a relationship with their family planning practice. This result differed from that of other studies[19]. Our study showed that majority of the respondents knew the benefits of family planning. Our findings were higher than the results of a study in Sudan[37]. Women in our sample had higher knowledge compared to previous studies in terms of family planning helping to space children[42-43] and limiting the number of children[42–44]. However, we did not find a significant association between education and family planning prevalence among respondents.

The most popular methods of family planning ever used in our study were injectables, pills and implants, which is consistent with the findings of previous studies[4,17,22,28,36,43,47]. In 2018, the Nigeria Demographic Health Survey reported that male condom was the highest family planning method used (19%)[11]. On the contrary, our study showed that male condom which required partner's participation was not highly practised. This further supports arguments made by researchers on male involvement that states that family planning is being regarded as a woman's concern[45]. In addition, a recent study by the Lancet Global Health found that the introduction and practice of implants among respondents is one of the reasons for the increased prevalence[3,36]. Moreover, a study in Ghana found that most of the respondents indicated that the facilities in which they received family planning

services were within two kilometres[9] where it was associated with higher odds of family practice among women (p-value=0.035). Therefore, more efforts should be undertaken to make long term family planning methods available and accessible to rural communities.

Our study shows that hospital personnel served as the primary source of information. Likewise, other studies reported hospital personnel as the significant informants on family planning[17,42,46,47,49,50]. These could be due to the delivery of information during their antenatal check-ups in the hospitals. Previous studies also showed that hospitals were the first point of reference for family planning information and adoption[6,36,51]. Family and friends may have made suggestions on certain alternatives for family planning, but hospital personnel remained the central referral points.

One of the determinants found in our study was age. Previous studies have reported a significant association between age and family planning practice. Unlike our study which used young age as the reference group, previous studies found significant association between young age and family planning practice[24,42,52]. However, other studies whose results were similar to ours showed significant associations between family planning practice with women aged 24-35 years[53] and women aged 35-44 years[25] compared to other age groups. These differences could be due to different cultural background, empowerment and partner's involvement[25,53]. Our study showed that women who had discussions with partners and those who had gotten partners approval had higher odds of practising family planning. Our findings consistent with findings from previous studies where husband's support was a strong determinant of family planning practice[18] and discussion with a partner was a predictor of family planning practice[51]. Another study in Myanmar also reported discussion with a partner as a determinant[52]. In line with the findings of previous studies, our study showed that women who have gained support from their partners are more actively involved in family planning practice. Despite the lack of active participation from partners as can be seen from the low use of condoms, women are still practicing family planning. This implies that with the right empowerment and backing from their partners, women can increasingly become more involved in practicing family planning. For family planning programs to succeed, involvement from partners remains crucial[54]. Thus, partners' involvement is still very relevant and much needed to enhance the uptake of family planning. The importance of partners being involved in family planning decision making has been emphasised by past literatures[41,47,51].

## Ethical clearance

Ethical approval for this study was obtained from the Universiti Putra Malaysia's ethical committee (JKEUPM-2019-235) and the Ministry of Health in Plateau State. Verbal permission was obtained from the village head in Pankshin district, and written consent was obtained from the participants. Participation was voluntary, and they could opt-out from the study at any time.

## Limitations

Our study had several limitations. Our study population were mainly in their thirties, of Ngas ethnicity and Christians. These group of women may have different practice on family planning compared to other women in Nigeria. Furthermore, data was collected using self-administrated questionnaire with no exclusion criteria on illiteracy was made. Those illiterate women could have employed the help of family members or friends in filling up the questionnaires. Therefore, this study finding especially on knowledge needs to be interpreted with caution. Further studies need to be carried out in other rural communities to compare with our study findings.

## Conclusion

This study was conducted to examine the determinants of family planning practice among women in rural areas of Pankshin district in Plateau state. Findings revealed that the prevalence of family planning practice in rural areas had improved in comparison with the findings of other studies carried out in other rural areas in Nigeria, as well as their knowledge on the benefits of family planning. Family planning services were reported to be near to their homes which might contribute to women empowerment and increase in family uptake in our study population. Nevertheless, further efforts should be made to provide more family services in rural communities on a community level and improve on the sources of family planning

information by not only relying on hospital personnel at the facility level. By doing so, the family planning practises among women in rural areas could be further improved. Family planning should be targeted to all reproductive age groups. Men, particularly sexual partners are an important target group to further improve family planning practises among women in rural communities.

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## Competing interests

All authors declare that they have no potential conflicts of interests.

## Contribution of authors

Conceptualisation: PLS, NA. Validation: NA, PYL. Formal analysis: PLS, NA, PYL. Methodology: PLS, NA, PYL. Data curation: PLS. Writing-original draft preparation: PLS. Writing-review and editing: PLS, NA, PYL, PMS. Supervision: NA, PYL, PMS.

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