ORIGINAL RESEARCH ARTICLE

Factors influencing contraceptive use among women of reproductive age in plantation farming communities in South-South Nigeria

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Abstract

The use of contraceptives by women of reproductive age remains one of the cost-effective ways of reducing maternal, infant, and child mortality and achieving a decline in the high fertility rate in the country. This was a descriptive cross-sectional study aimed to assess the association between the location of residence, occupation, and education level and the current use of contraceptives among women of reproductive age resident in plantation farming communities in South-south Nigeria. The test of associations between the dependent and independent variables and covariates was conducted using the Likelihood ratio Chi-square as appropriate. Multiple logistic regressions using the best-fit option of covariate selection were done with the use of contraceptives as the dependent variable. Of the 609 participants recruited, 189 (31.03%) were currently using a contraceptive. Women with secondary education were less likely to use contraceptives compared to the none educated [AOR=0.07; CL: 0.013-0.39]. Location and age were also significant predictors of the use of contraceptives by women in plantation farming communities in Nigeria. Deliberate and purposeful targeting of women and girls of reproductive age in plantation farming communities should be prioritized in the universal access to contraceptive use. *(Afr J Reprod Health 2023; 27 [2]: 67-75).*

Keywords: Contraceptives, plantation, farming communities, reproductive age, Nigeria

Résumé

L'utilisation de contraceptifs par les femmes en âge de procréer reste l'un des moyens rentables de réduire la mortalité maternelle, infantile et juvénile et de parvenir à une baisse du taux de fécondité élevé dans le pays. Il s'agissait d'une étude transversale descriptive visant à évaluer l'association entre le lieu de résidence, la profession et le niveau d'éducation et l'utilisation actuelle de contraceptifs chez les femmes en âge de procréer résidant dans les communautés agricoles des plantations du sud-sud du Nigeria. Le test des associations entre les variables dépandantes et indépandantes et les covariables a été effectué en utilisant le rapport de vraisemblance Chi-carré, le cas échéant. Des régressions logistiques multiples utilisant l'option la plus adaptée de la sélection des covariables ont été effectuées avec l'utilisation de contraceptifs comme variable dépandante. Sur les 609 participants recrutés, 189 (31,03%) utilisaient actuellement un contraceptif. Les femmes ayant fait des études secondaires étaient moins susceptibles d'utiliser des contraceptifs que les femmes sans instruction [AOR = 0,07 ; CL : 0,013-0,39]. Le lieu et l'âge étaient également des prédicteurs significatifs de l'utilisation de contraceptifs par les femmes dans les communautés agricoles des plantations au Nigeria. Le ciblage délibéré et délibéré des femmes et des filles en âge de procréer dans les communautés agricoles des plantations devrait être une priorité dans l'accès universel à l'utilisation des contraceptifs. *(Afr J Reprod Health 2023; 27 [2]: 67-75).*

Mots-clés: Contraceptifs, plantation, communautés agricoles, âge de procréer, Nigeria

Introduction

The birth and mortality rates in Nigeria are high[1-3]. Nigeria's population is the largest in Africa and seventh in the world with a growth rate of 3.2 percent[4-5]. By age 21, half of the women had given birth and by age 25, 75 percent of women have given birth[6]. The maternal mortality rate is estimated at 917 deaths per 100,000 live births and approximately 35 percent of all global maternal deaths in 2017 were accounted for by Nigeria and India with the highest number[7]. The infant mortality rate was 67 deaths per 1,000 live births, a child mortality rate of 67 deaths, and under-5 death of 132 deaths per 1,000 live births. This implies that 1 in 8 children in Nigeria die before their fifth birthday[6]. These figures are among the highest in the world because of the low demand for

contraceptives and unmet needs for family planning[8]. The total fertility rate is 5,300 births per 1,000 women[6,9]. One-third of all maternal deaths annually worldwide could be prevented if women's needs for family planning are met[10]. Increased use of contraceptives in some developing countries had resulted in a 26 percent reduction in the maternal mortality rate and a 40 percent reduction in the annual number of maternal deaths in the last 20 years[11]. Also, family planning helps to improve the health and finances of families, and equally helps to improve the care of and well being of children[12].

One of the States in Nigeria that reflects the low use of contraceptives and high fertility rates is Cross River State. The fertility rate for the State is 3.7 and the mean number of children ever born to women aged 40-49 is 5.1[6]. Only 18.9 percent of sexually active women aged 15-49 are currently using any modern method of contraception. The unmet need for family planning among currently married women is 35 percent, and the State has one of the highest unmet needs in the country[6].

The low contraceptives use and unmet needs for family planning are associated with several factors such as the geographical location of residence, education level, and occupation of women[13]. The level of development of a community[14], the socio-economic characteristics of the community, socio-demographic factors, availability of health facilities, and the attitudes and beliefs of the society may also shape contraceptive use[14-17]

Also, accessibility to health facilities and availability of contraceptive options within the community may affect women's choice of contraceptives[15,18]. In addition, people who are educated are more likely to use family planning services. Women's education level predicts their socioeconomic status, occupation, and decision-making power and autonomy[13,17,19,20]. Also, there is a higher likelihood of the use of contraceptives among employed women than their unemployed counterparts[21,22] as their involvement in occupation reduces the desire of having more children than women who do not work[23].

Though there are studies on the use of contraceptives in Nigeria conducted among women in urban[10,13,24] and rural[25-29] areas, we did not find studies on contraceptive use by women living in plantation farm settlements in literatures reviewed. Women employed in the agricultural production sectors are more likely to have a high fertility rate[30]. Farming is common in Cross River State, especially in the rural areas where the contraceptives unmet needs are very high[6]. Settlements and communities grow and expand arising from the plantations, farming, and related economic and social activities and over time evolve a culture unique to the environment[31-32]. The study objective was to assess the associations between the geographical location of residence, education level, and occupation of women and the current use of contraception among women of reproductive age resident in plantation farming communities in Nigeria. We hypothesized that the geographical location of residence, education level, and occupation of women in plantation farming communities will be positively associated with the current use of contraception.

Methods

Study design, study setting, and study population

The study was a questionnaire-based descriptive cross-sectional study conducted in Cross River State located in South-south Nigeria. The survey was conducted in March and April 2022. The survey recruited married and unmarried women of reproductive age (15- 49 years), who are residents within four plantation farming communities in the state. Those included in the study were sexually active women who gave consent to participate in the study and those who declined were excluded from the study.

Sample size

The Leslie Kish formula (1965) was used to estimate the sample size with a standard normal deviate set at 1.96 which corresponds to 95% confidence level, an estimated contraceptive prevalence for married women of 16%[33], and the desired level of precision of 5%. The estimated sample size for each community was 207, and 621 for the three communities.

Sampling procedure

To recruit respondents for the study, a multi-stage sampling technique was used. The simple random sampling technique was used in the first stage to select three of eight local government areas (Akamkpa, Ikom, and Yakurr) where the plantation farming communities are located. Thereafter, one plantation/ farming community (Mbarakom and Akparabong farm) was selected from Akamkpa and Ikom respectively, and two contiguous communities (Ekom Agoi/Agoi Ibami) were selected from Yakurr using the simple random method. Households surveyed in each community were selected using the convenience sampling technique.

Data collection

Trained and experienced field data collectors collected data through personal interviews using the mobile app KoBoToolbox. A two-day orientation and training were conducted for the data collectors to acquaint them with the study objectives, the survey methodology, and the data collection instrument. Information collected was the socio-demographic data and the current use of contraceptives.

Current use of contraceptives: The current use of modern contraceptive methods (male condoms, pills, implants, injectables, intrauterine contraceptives device, and sterilization) was the dependent variable. Respondents were asked if they were currently using any of the listed modern contraceptives. A respondent was assigned '1' if currently using a modern contraceptive, and '0' if not using any modern contraceptive.

The independent variables were the residential location (Akparabong farm, Ekom Agoi/Agoi Ibami, and Mbarakom), occupation (unemployed, self-employed, and civil servant), and education level (none, primary, secondary, and tertiary). Covariates were the women's age (categorized as 15 – 19 years, 20 – 29 years, 30 – 39 years, 40 – 49 years), religion (Muslim, Catholic, Orthodox/Protestants, and Pentecostal), and marital status (single, married, separated, and widowed).

Data processing and analysis

The data were exported and analysed using the Stata 14. Descriptive variables were presented in tables as percentages and frequencies. The test of associations between the dependent and independent variables and covariates was conducted using Chi-square tests or Likelihood ratio Chi-square as appropriate. Multiple logistic regressions using the best-fit option of covariate selection were done with the use of contraceptives as the dependent variable. The crude and adjusted odds ratios were calculated using multivariate logistic regression with the best-fit option. The outcome, use of contraceptive was a binary variable while the major predictor is location, a nominal variable. Age and educational status, the covariates were ordinal variables and adjusted for in the model with the adjusted odds ratios. The ordinal variables were modeled with indicator variables using the lowest levels as reference. Hosmer Lemeshow goodness of fit test was used to check the models for consistency.

Results

A data of 609 respondents were analyzed after excluding the data of 12 participants with incomplete questionnaires. Table 1 shows the socio-demographic characteristics of the respondents. Out of the 609 study participants, 223 (36.62%) were residents in Ekom Agoi/Agoi Ibami, 202 (33.17%) in Mbarakom, and 184 (30.21%) in Akparabong farm. Also, 275 (45.16%) were aged 20-29 years, 295 (48.44%) were married, and, 430 (70.61%) had completed secondary education. There were 189 women (31.03%) currently using contraceptives. Figure 1 reveals that 46.5% of those currently using contraceptives were residents in Ekom Agoi/Agoi Ibami.

Table 2 displays the results of the association between socio-demographic characteristics and the use of contraceptives. The location of residence (p=0.002) and age (p=0.012) was significantly associated with the use of contraceptives.

Statistically significant predictor of the use of contraceptives was being resident in Ekom Agoi/Agoi Ibami (OR; 1.70 [1.12-2.59], p=0.013.

Table 1: Socio-demographic characteristics of the study population and use of contraceptives among women of reproductive age in plantation farming communities in South-south Nigeria [N= 609]

| Variable	Number (609), n (%)	Use contraceptive N=189, 31.03%	Non-contraceptive user N=420, 68.97%
Location			
Akparabong farm	184 (30.21)	51 (27.72)	133 (72.28)
Ekom Agoi/Agoi Ibami	223 (36.62)	88 (39.46)	135 (60.54)
Mbarakom	202 (33.17)	50 (24.75)	152 (75.25)
Age (in years)			
15-19	97 (15.93)	33 (34.02)	64 (65.98)
20-29	275 (45.16)	99 (36.00)	176 (64.00)
30-39	172 (28.24)	37 (21.51)	135 (78.49)
40-49	65 (10.67)	20 (30.77)	45 (69.23)
Education level			
None	13 (2.13)	6 (46.15)	7 (53.85)
Primary	101 (16.58)	37 (36.63)	64 (63.37)
Secondary	430 (70.61)	126 (29.30)	304 (70.70)
Tertiary	65 (10.67)	20 (30.77)	45 (69.23)
Marital status			
Single	287 (47.13)	102 (35.54)	185 (64.46)
Married	295 (48.44)	78 (26.44)	217 (73.56)
Widowed	13 (2.13)	3 (23.08)	10 (76.92)
Separated	14 (2.30)	6 (42.86)	8 (57.14)
Occupation			
Unemployed	151 (24.79)	52 (34.44)	99 (65.56)
Self-employed	426 (69.95)	125 (29.34)	301 (70.66)
Civil servant	32 (5.25)	12 (37.50)	20 (62.50)
Religion			
Muslim	2 (0.33)	1 (50.00)	1 (50.00)
Catholic	55 (9.03)	19 (34.55)	36 (65.45)
Orthodox/Protestants	304 (49.92)	101 (33.22)	203 (66.78)
Pentecostal	248 (40.72)	68 (27.42)	180 (72.58)
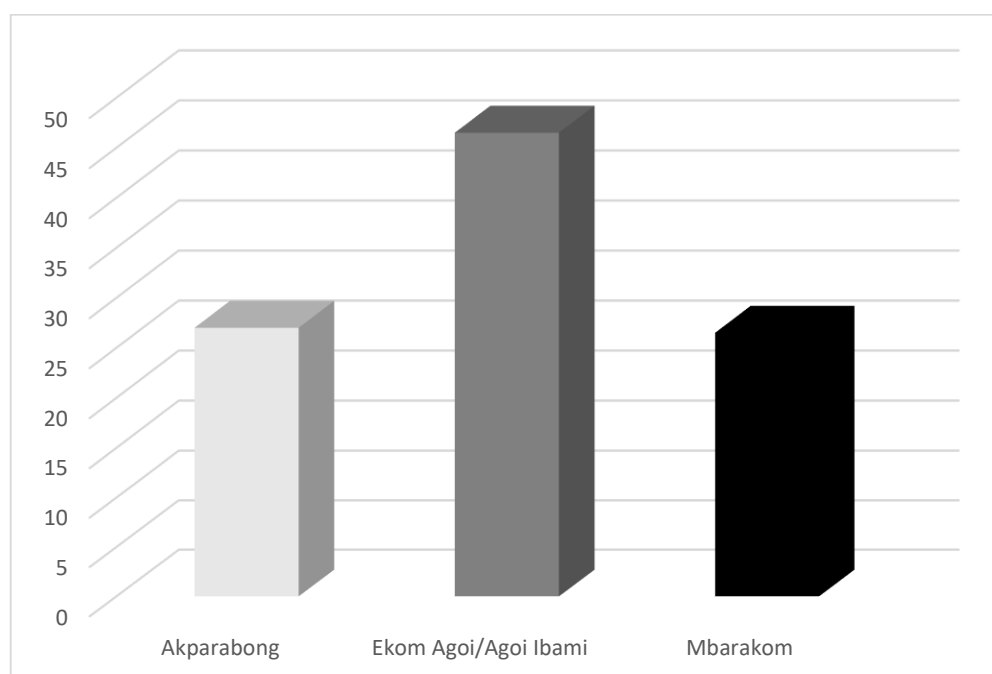
Figure 1: Percent of contraceptive users

Table 2: Association between socio-demographic characteristics and use of contraceptives among women of reproductive age in plantation farming communities in South-south, Nigeria [N= 609]

Variable	Total	Use of contraceptive		X^2 value	P-value
		User =189, 31.03% (n%)	Non user=420, 68.97% (n%)		
Location					
Akparabong farm	184	51 (27.72)	133 (72.28)		
Ekom Agoi/Agoi Ibami	223	88 (39.46)	135 (60.54)	12.0702	0.002*
Mbarakom	202	50 (24.75)	152 (75.25)		
Occupation					
Unemployed	151	52 (34.44)	99 (65.56)		
Self-employed	426	125 (29.34)	301 (70.66)	2.0115	0.366
Civil servant	32	12 (37.50)	20 (62.50)		
Education level					
None	13	6 (46.15)	7 (53.85)		
Primary	101	37 (36.63)	64 (63.37)		
Secondary	430	126 (29.30)	304 (70.70)	3.4728	0.324
Tertiary	65	20 (30.77)	45 (69.23)		
Age (in years)					
15-19	97	33 (34.02)	64 (65.98)		
20-29	275	99 (36.00)	176 (64.00)		
30-39	172	37 (21.51)	135 (78.49)	10.8619	0.012*
40-49	65	20 (30.77)	45 (69.23)		
Marital status					
Single	287	102 (35.54)	185 (64.46)		
Married	295	78 (26.44)	217(73.56)		
Widowed	13	3 (23.08)	10(76.92)	6.9235	0.074
Separated	14	6 (42.86)	8(57.14)		
Religion					
Muslim	2	1 (50.00)	1(50.00)		
Catholic	55	9 (34.55)	36(65.45)		
Orthodox/Protestants	304	101 (33.22)	203 (66.78)	2.8479	0.416
Pentecostal	248	68 (27.42)	180 (72.58)		

*significant @ p<0.05 level, $^{\delta}$Likelihood ratio chi-square

Table 3: Multivariable logistic regression analysis showing the predictors of contraceptive use

Variable	Unadjusted OR (95%CI)	p-value	Adjusted OR 95% CI	p-value
Location				
Akparabong farm	Reference		Reference	
Ekom Agoi/Agoi Ibami	1.70 (1.12-2.59)	0.013*	2.29 (1.33- 3.94)	0.003*
Mbarakom	0.86 (0.54-1.35)	0.508	1.17 (0.64- 2.15)	0.606
Age (in years)				
15 -19			Reference	
20 -29			4.50 (1.46-13.87)	0.009*
30 -39			3.87 (1.00-14.90)	0.05*
40 -49			2.33 (0.12- 46.67)	0.571
Education level				
None			Reference	
Primary			0.39 (0.11- 1.30)	0.125
Secondary			0.07 (0.013- 0.39)	0.003*
Tertiary			0.20 (0.008- 4.67)	0.315

Women in Ekom Agoi/Agoi Ibami had significantly higher odds of using contraceptives compared with Akparabong farm [AOR 2.29; 95% CI (1.33, 3.94), p=0.003] after adjusting for age and education level. Also, women aged 20-29 years old [AOR: 4.50, 95% CI (1.46, 13.87), p=0.009] and 30-39 years old [AOR: 3.87, 95% CI (1.00, 14.90), p=0.05), had significantly higher odds of using contraceptives than those 15-19 years old after adjusting for location and education (Table 3).

Discussion

The study identified the factors influencing contraceptive use among women of reproductive age in plantation farming communities in South-

south Nigeria. The use of contraceptives remains one of the cost-effective ways of reducing maternal, infant, and child mortality and achieving a decline in the high fertility rate in the country. As shown in the results of the study, there is a low prevalence of contraceptive use as only 3 in every 10 women were current users of a modern method of contraceptive. Women residents in Ekom Agoi/Agoi Ibami were more likely to use contraceptives as approximately four out of ten women were currently using a modern contraceptive. Compared to women aged 15 to 19, women aged 20 to 29 were more likely to be current users of contraceptives. Women with secondary education were found to be much less likely to be users of contraceptives.

The strengths of this study are the inclusion of unmarried sexually active girls and women and the large sample size. There is also the element of diversity as it covered four communities in three local government areas. This element is lacking in similar studies in Cross River State[27,34]. The study also included all women both in marital union and those not, in marital union relative to the previous studies[29,35,36] on unmet needs, which mainly focused on currently married women or those in unions, therefore, leaving out the single, divorced, separated, and widowed. Also, this is one of the first studies carried out in plantation farming communities in the state. The recruitment of respondents in their households gives credence to the generalization of the findings to the plantation farming communities and makes it possible for extrapolating the results to other communities with similar population indices.

Although the contraceptive prevalence among the women was (31.03 %), it is far higher than the state prevalence (18.9%)[6] and 16%[33] and contraceptive prevalence in an earlier study in the state, which showed a prevalence of 17.2%[27]. These varied rates can be attributed to the locality and the time the studies were conducted[37]. However, the increased prevalence rate in this study could also be because, the majority of the respondents had at least a secondary education presupposing that they may have been exposed to family planning information, which may influence their use. A similar finding was reported by[38]. Women aged 15-19 years made up over a quarter of those using contraceptives and this corroborates a report[6], which reveals that in

Nigeria, 19% and 57% of women initiate sexual intercourse at age 15 and 18 respectively and by age 20, 7 out of 10 women have had sexual intercourse. To prevent unwanted pregnancy, young adolescent women adopt the use of contraceptives.

The study finding shows that approximately, one out of every two women using a modern contraceptive in the three communities was resident in Ekom Agoi/Agoi Ibami while one out of every four women who were using any contraceptives was resident in Akparabong farm and Mbarakom. This indicates that the use of contraceptives varies significantly with the community of residence. This finding corroborates a report that the community and individual women's circumstances significantly vary with the covert use of contraception[39]. Awareness creation and the timing of the study is also a factor in the increase in prevalence[40]. Ekom Agoi/Agoi Ibami in addition to being a plantation farming community are also trading communities where women from neighboring communities and other states frequently patronize their agro products like garri (cassava flour), yams, plantain, etc. This cross-regional interface is likely to have created a lot of social interactions and enhanced their exposure to information. Women living in communities where they are encouraged to work are more prone to using contraceptives. The informal sector, which characterizes the Nigerian economy, is largely represented in the study, as the majority of the respondents were self-employed and engaged either as farmers, artisans, or petty traders.

Age was also found to be significantly associated with the use of contraceptives in the plantation farming communities studied. Studies have consistently shown a significant relationship between the age group and the current use of at least one family planning method[27,41]. The study finding reveals that older women were more likely to use contraceptives than younger adolescents and this supports the finding[41] but disagrees with the findings that older women aged 25-34 years were less likely to use contraception compared to younger women aged 15-24 years[42]. This is attributed to the desire for childbearing by younger women and also due to the societal premium on children. The respondents with secondary education were found to be less likely to use

contraceptives than the none educated. This finding is at variance with a previous study[42], which found that having an education was significantly associated with higher odds of contraceptive usage compared to those with no schooling. Although the study did not show that educational attainment had a direct influence on the use of contraceptives, there is no doubt about its role in women's empowerment, age at marriage, number of children, and ultimately healthy reproductive health. Thus, the promotion of women and the girl child education would be a fruitful way to increase the uptake of contraceptives.

Ethical consideration

Ethical clearance for the study was obtained from the Cross River State Ministry of Health Research Ethics Committee (REC NO. CRSMOH/RP/REC/2021/223). Oral informed consent was obtained from study participants after the study was explained to them.

Conclusion

Our findings suggest that location of residence and age are determinants of the use of contraceptives. Thus, deliberate and purposeful targeting of women and girls of reproductive age in plantation farming communities should be prioritized in the universal access to contraceptive use. This will not only address inequality but will also ensure that we leave no one behind as a cardinal focus of the sustainable development goals.

Limitations

As a cross-sectional study, it is not a cause-effect relationship study but only suggests an association. The use of a convenience sample makes the study suffer from bias in sample selection. The study, however, contributes to our understanding of the determinants of contraceptive use among women of reproductive age in plantation farming communities.

Competing interest

The authors declare no competing interest in this work.

Contribution of authors

VAU, NEI, and GEB developed the initial research project. UVA coordinated the state survey. The manuscript was reviewed and approved by all the authors.

Acknowledgments

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