Factors Associated with Joint Decision on Contraceptive Use Among Married Women in Nigeria: Evidence from Repeated Cross-Sectional, Nationally Representative Data

Matthew A. Alabi [1]*, Motunrayo I. Fasasi [2], Osayekemwen Ojo-Ebenezer [3]

[1] Programmes Division, Population Council, Abuja, Nigeria.

[2] Department of Nursing, Fountain University, Osogbo, Nigeria.

[3] Department of Sociology, Baze University, Abuja, Nigeria.

*Corresponding Author: Matthew A. Alabi, Programmes Division, Population Council, Abuja, Nigeria.

Abstract

Despite the decline in fertility reported in sub-Sahara Africa, fertility level remains high. For instance, sub-Sahara Africa has witnessed decline in fertility level from 6.3 to 4.6 between 1990 and 2019 relative to global fertility decline of 3.2 in 1990 to 2.5 in 2019 (UNDESA, 2020) Similarly, within the same period, use of modern contraceptives among women of reproductive age has increased from 13% to 29% (UNDESA, 2020) Notwithstanding the improvement witnessed between 1990 and 2019 in sub-Sahara Africa, Total Fertility Rate (TFR) in the continent remains high, thereby contributing significantly to the high population in the region. In Nigeria, fertility level remains high (TFR=5.0), with a corresponding low modern contraceptive prevalence (mCPR) among currently married women 15-49 years, estimated at 18% (NBS and UNICEF, 2022) This is against Federal Government of Nigeria target of 27% by the year 2020 (NPC and ICF International, 2019). Two years down the line, the goal of achieving modern contraceptive prevalence of 27% is far from being achieved.

Keywords: fertility rate; woman; Nigeria

Introduction

Despite the decline in fertility reported in sub-Sahara Africa, fertility level remains high. For instance, sub-Sahara Africa has witnessed decline in fertility level from 6.3 to 4.6 between 1990 and 2019 relative to global fertility decline of 3.2 in 1990 to 2.5 in 2019 (UNDESA, 2020) Similarly, within the same period, use of modern contraceptives among women of reproductive age has increased from 13% to 29% (UNDESA, 2020) Notwithstanding the improvement witnessed between 1990 and 2019 in sub-Sahara Africa, Total Fertility Rate (TFR) in the continent remains high, thereby contributing significantly to the high population in the region. In Nigeria, fertility level remains high (TFR=5.0), with a corresponding low modern contraceptive prevalence (mCPR) among currently married women 15-49 years, estimated at 18% (NBS and UNICEF, 2022) This is against Federal Government of Nigeria target of 27% by the year 2020 (NPC and ICF International, 2019). Two years down the line, the goal of achieving modern contraceptive prevalence of 27% is far from being achieved.

Vast number of studies (Adebowale et al., 2013; Ahinkorah et al., 2021; Ahmed & Seid, 2020; Asiimwe et al., 2014; Geremew & Gelagay, 2018;

Jacobs et al., 2017; Lasong et al., 2020) have identified individual and contextual level factors as predictors of modern contraceptive use among women. Individual level factors such as maternal age, parity, level of education and contextual factors such as place of residence, exposure to media and household wealth index predominate in the majority of these studies. However, there seems to be paucity of studies that have systematically explore the influence of joint decision making on modern contraceptive use overtime despite studies (Eshete & Adissu, 2017; Mutombo & Bakibinga, 2014; Nketiah-Amponsah et al., 2012, 2022) confirming positive association between joint decision and use of modern contraceptive. According to these studies, in settings where both partners jointly decide on contraceptive use resulted in higher contraceptive prevalence rate relative to areas where contraceptive use is not jointly decided. These studies also found knowledge of contraceptives, younger age group, wealth index, level of education, level of woman's autonomy and number of living children were mainly associated with joint decision on contraceptive use.

Moreso, even though women have the right to take decision regarding

their reproductive health independently, in most societies, especially low-income countries, the decision of the woman is often set aside by their partner (Abu Aragaw, 2015; Delbiso, 2013; Hameed et al., 2014) This will obviously affect the fertility behaviour of the woman including fertility preference and decision to control number of children. Other African studies (Asresie et al., 2020; Bogale et al., 2011; Eshete & Adissu, 2017) have found a link between joint contraception decision-making and place of residence. Some authors (Eshete & Adissu, 2017) in Southern Ethiopia for instance, found more than half of the women jointly decide contraceptive use with their partner, although with differentials according to place of residence. More women residing in urban areas were more likely to jointly decide the use of contraceptive with the partners relative to their rural counterpart. The urban-rural differentials revealed better contraceptive knowledge (which might be attributed to better exposure to media and other information sources) and age difference among women residing in the rural area predicted joint decision on contraceptive use, while among women from rural area, high fertility level and support from the parent of the women significantly predicted joint decision on contraceptive among partners (Eshete & Adissu, 2017).

Notwithstanding studies(Blackstone et al., 2017; Bogale et al., 2011; Prata et al., 2017; Upadhyay & Karasek, 2012) that examined factors associated with joint decision on contraceptive use, emphasizing the role of partners, this study, examines the predictors of joint decision on modern contraceptive use over a ten year period 2008-2018, taking into account the low modern contraceptive prevalence that has persist over time and paucity of studies examining trends using data from different data point.

Materials and Methods

Study Area

Nigeria has one of the highest fertility rates in the world with a TFR of 5.0 and low modern contraceptive prevalence of 18% among married women 15-49 years (NBS and UNICEF, 2022). The study performed a secondary analysis of the three most recent repeated cross sectional nationally representative survey data (2008, 2013 and 2018).

Data Source, population, sampling, and sample size

Data were pooled from three successive Demographic and Health Surveys (individual recode) datasets for the year 2008, 2013 and 2018. The DHS is a nationally representative survey which collects data from women of reproductive age 15-49 years who had given birth to at least one live birth for the five-year period preceding the survey and have at least three surviving children. The sampling design consisted of stratified three-stage cluster approach. By grouping each state into urban and rural areas, stratification was achieved. Within each cluster, a complete list of households was generated, resulting in a sampling frame for selecting households. Analysis of data was restricted to women currently married and living with their partner, having at least three surviving children in the age group 20-40 years. Weighted sample size 2018, 2013 and 2008 was (14,410, 16,804 and 18,009) making a total sample of 49,223 women.

Measurement of Variables

The outcome variable is decision to jointly use contraceptive between the woman and her partner. A question was asked from the woman – who makes decision when using contraception? The response to the question was categorized into – mainly respondent; mainly husband/partner; joint decision; others. However, in this study, the responses were categorized into two namely: joint decision coded as "1", otherwise "0". Explanatory variables used in this study were based on their significant association with the outcome variable at the bivariate analysis and literature (Blackstone et al., 2017; Nketiah-Amponsah et al., 2012) which include: age, age at birth, place of residence (rural or urban), region of residence, educational attainment, occupation (working; not working), household wealth index (based on NDHS classification), antenatal attendance, place of delivery, decision on large household purchases and exposure to mass media. Media exposure was measured from a composite of three variables namely: frequency of listening to radio, television and reading newspaper. It was then dichotomized as either exposed to at least one media source, coded as 1, and not exposed to any media source, coded as 0. Knowledge of contraceptives was defined as knows at least one method of contraception, coded as 1, while knows no method was coded as 0. The variable Children Ever Born (CEB) was recoded into high fertility (TFR>4) and low fertility (TFR <4).

Data Analysis

In performing the analysis, due to the complex nature of the DHS data, Stata "svy" command was applied to handle the complex DHS design. Both univariate and multivariate analyses were performed. At the univariate level, descriptive analysis namely (frequency and percentage) was performed. At the bivariate level, association were tested using chi square and unadjusted binary logistic regression (tables not shown). At the multivariate level, binary logistic regression was performed. The binary logistics regression provides logit and odds effect of each of the explanatory variables on joint decision on contraceptive use among women and their partners. The results were presented as Adjusted Odds Ratio (AOR) and confidence intervals at 95% level of significance.

Ethical Approval

Approval to use the dataset was gotten from Measure DHS website upon registration and making request for the use of the data. The protocol used for the survey was reviewed and approved by the National Health Research Ethics Committee of Nigeria (NHREC) and the ICF Institutional Review Board. All the questionnaires were finalized in English and translated into the three major languages of Hausa, Yoruba and Igbo.

Results

Socio-demographics

Table 1 presents the socio-demographic characteristics of the women. Women age group 20-30 years account for 64% in 2008 and 2013 and 61% in 2018. Nearly two thirds were in the low fertility regime (63% vs. 63% vs. 64%) for the year 2008, 2013 and 2018 respectively. Higher proportion (45%) of the women had no formal education, (28.8%) had secondary education, while (8%) had tertiary education. The proportion of women residing in rural area was 69% in 2008, 64% in 2013 and 60% in 2018. Also, more than two thirds of the women had between 1-4 children (75% vs. 73% vs. 72%) for the year 2008, 2013 and 2018 respectively. The level of autonomy among the women revealed little or no change over the ten-year period; 51% had autonomy in 2008, 46% in 2013 and 51% in 2018. Joint decision making on contraceptive use between the women and their partner was very low. Only 9% of the women in 2008, 10% in 2013 and 12% in 2018 jointly decide on contraceptive use with their partner.

Socio-demographic characteristics	Study Period			
	2008 (N=14,410)	2013 (N=16,804)	2018 (N=18,009)	Total (N=49,223)
Age groups	n (%)	n (%)	n (%)	n (%)
15 – 19	9194 (63.8)	10717(63.8)	11018 (61.2)	30,928 (62.8)

20 – 24	5216 (36.2)	6087 (36.2)	6991 (38.8)	18294 (37.2)
Fertility regime				
Low (1-4 children)	9129 (63.4)	10640 (63.3)	11552 (64.1)	31321 (63.6)
High (5+)	5281 (36.6)	6164 (36.7)	6457 (35.9)	17902 (36.4)
Age at first birth				
< 20 years	8019 (55.7)	9703 (57.7)	10033 (55.7)	27,755 (56.4)
20-29 years	6043 (41.9)	6682 (39.8)	7372 (40.9)	20,097 (40.8)
30+ years	348 (2.4)	419 (2.5)	604 (4.4)	1371 (2.8)
Religion				
Christianity	6279 (43.8)	6190 (36.8)	6785 (37.7)	19255 (39.2)
Islam	7824 (54.6)	10353 (61.6)	11131 (61.8)	29307 (59.6)
Traditional and others	225 (1.6)	261 (1.6)	92 (0.5)	579 (1.2)
Education				
No formal education	6428(44.6)	8035(47.8)	7918(44.0)	22380(45.5)
Primary	3301(22.9)	3131(18.6)	2595(14.4)	9027(18.3)
Secondary	3752(26.1)	4488(26.7)	5787(32.1)	14026(28.5)
Tertiary	929(6.4)	1151(6.9)	1709(9.5)	3790(7.7)
Wealth quintile				
Poorest	3203(22.2)	3828(22.8)	3803(21.1)	10834(22.0)
Poorer	3138(21.8)	3669(21.8)	3896(21.6)	10703(21.7)
Middle	2688(18.7)	3049(18.1)	3604(20.1)	9342(19.0)
Rich	2612(18.1)	3061(18.2)	3426(19.0)	9098(18.5)
Richest	2768(19.2)	3197(19.1)	3280(18.2	9246(18.8)
Residence				
Urban	4516(31.3)	6111(36.4)	7244(40.2)	17870(36.3)
Rural	9894(68.7)	10694(63.6)	10765(59.8)	31353(63.7)
Region				
North-central	2065(14.3)	2438(14.5)	2570(14.3)	7073(14.4)
North-east	2206(15.3)	2804(16.7)	3104(17.2)	8114(16.5)
North-west	4349(30.2)	6145(36.6)	6278(34.9)	16772(34.1)
South-east	1303(9.0)	1335(7.9)	1722(9.6)	4360(8.9)
South-south	1837(12.8)	1523(9.1)	1608(8.9)	4969(10.0)
South-west	2649(18.4)	2559(15.2)	2726(15.1)	7934(16.1)
Work status				
Not working	4193(29.1)	4833(28.8)	0(0.0)	9026(18.3)
Working	10217(70.9)	11971 (71.2)	18009(100.0)	40197(81.7)
Number of living children				
1-4	10690(75.0)	12151(73.0)	12896(72.3)	35737(73.3)
5-8	3420(24.0)	4284(25.8)	4722(26.5)	12426(25.5)
At least 8	142(1.0)	201(1.2)	222(1.2)	565(1.2)
Media exposure				
No	6984 (48.5)	5368(31.9)	6656(37.0)	19,008(38.6)
Yes	7426(51.5)	11436 (68.1)	11353(63.0)	30.215(61.4)
Autonomy				
No autonomy	7123(49.4)	9000(53.6)	8852(49.2)	24976(50.7)
Has autonomy	7286(50.6)	7804(46.4)	9157(50.8)	24247(49.3)
Decision on contraceptives				
Joint decision	1360(9.4)	1698(10.1)	2175(12.1)	5233(10.6)
Individual decision	13050(90.6)	15107(89.9)	15834(87.9)	5233(10.6)

Table 1: Socio-demographics Characteristics

Bivariate Result

The pattern of association between socio-demographic characteristics and joint decision on contraceptive use was similar for the ten-year period (table 2). For the year 2008, higher proportion of respondents who jointly decide on contraceptives were women in the younger age group 20-30 years (52%) low fertility regime (72%), whose age at first birth is between 20-29 years (62%), affiliated to Christianity (75.5%), had secondary education (48%), from the richest household wealth (50%), residence in urban area (59.4%), from the South-west region (43.3%), working (82.5%), with between 1-4 surviving children (79.1%), exposed to media (68,2%) and had autonomy (72.5%).

Similarly, in the year 2013, higher proportion of respondents who jointly decides contraceptive use were evenly distributed among the age group 20-30 years (50.0%) and 31-40 years (50.0%). However, the proportion was higher among women in the low fertility regime (73.4%), whose age at first birth is between 20-29 years (59.6%), affiliated to Christianity (75.6%), had secondary education (55%), from the richest household wealth (52%), residence in urban area (65.0%), from the South-west region (38.1%), working (83.0%), with between 1-4 surviving children (78.1%), exposed to media (92.1%) and had autonomy (80.4%).

In the year 2018, the proportion of respondents who jointly decides

contraceptive use was higher among the age group 20-30 years (51.4%), women in the low fertility regime (72.0%), whose age at first birth is between 20-29 years (58.1%), affiliated to Christianity (69.6%), had secondary education (53.3%), from the richest household wealth (42.0%), residence in urban area (65.7%), from the South-west region (31.8%), with between 1-4 surviving children (76.1%), exposed to media (87.4%) and had autonomy (75.4%).

Overall, for the ten years period 2008-2018, younger age group 20-30 years, women in the low fertility regime, age at first birth, religion, level of education, household wealth, place and region of residence, work status, number of surviving children, exposure to mass media and autonomy were all significantly associated with joint decision on contraceptives use among the women and their partners.

Socio-demographic characteristics	Joint decision on contraceptives			
	2008 (N=14,410)	2013 (N=16,804)	2018 (N=18,009)	Total (N=49,223)
Age groups	n (%)	n (%)	n (%)	n (%)
20 – 30 years	706(51.9)	852(50.2)	1119(51.4)	2677(51.2)
31 – 40 years	654 (48.1)	846(49.8)	1056(48.6)	2556(48.8)
χ^2 *(p-value)*	77.33**	108.06**	56.78**	228.11**
Fertility regime				
Low (1-4 children)	978(71.9)	1246(73.4)	1564(71.9)	3788(72.4)
High (5+)	382(28.1)	452(26.6)	611(28.1)	1445(27.6)
χ^2 *(p-value)*	30.18**	52.85**	40.26**	126.10**
Age at first birth				
< 20 years	462(34.0)	600(35.4)	785(36.1)	1848(35.3)
20-29 years	839(61.6)	1012(59.6)	1264(58.1)	3114(59.5)
30+ years	59(4.4)	86(5.0)	126(5.8)	271(5.2)
χ^2 *(p-value)*	84.29**	108.12**	96.79**	291.90**
Religion				
Christianity	1023(75.5)	1283(75.6)	1514(69.6)	3819(73.1)
Islam	315(23.2)	401(23.6)	656(30.2)	1372(26.2)
Traditional and others	17(1.3)	14(0.8)	5(0.2)	36(0.7)
χ^2 *(p-value)*	142.82**	257.07**	235.92**	633.18**
Education				
No formal education	111(8.1)	89(5.2)	198(9.1)	397(7.6)
Primary	326(23.9)	372(19.3)	320(14.7)	973(18.6)
Secondary	651(47.9)	934(55.0)	1160(53.3)	2745(52.5)
Tertiary	273(20.1)	347(20.5)	498(22.9)	1118(21.3)
χ^2 *(p-value)*	220.36**	342.39**	320.00**	875.86**
Wealth quintile				
Poorest	54(4.0)	29(1.7)	91(4.2)	173(3.3)
Poorer	97(7.1)	99(5.8)	197(9.0)	394(7.5)
Middle	164(12.0)	250(14.7)	375(17.3)	789(15.1)
Rich	367(27.0)	431(25.4)	598(27.5)	1395(26.7)
Richest	679(49.9)	890(52.4)	913(42.0)	2481(47.4)
χ^2 *(p-value)*	157.58**	181.51**	177.72**	510.86**
Residence				
Urban	807(59.4)	1017(65.2)	1429(65.7)	3343(63.9)
Rural	553(40.6)	591(34.8)	764(34.3)	1890(36.1)
χ^2 *(p-value)*	149.77**	132.13**	183.31**	493.86**

Table 2: Socio-demographics Characteristics and joint decision on contraceptive use

**variable work status was missing in the 2018 dataset

Socio-demographic characteristics	Joint decision on contraceptives			
	2008 (N=14,410)	2013 (N=16,804)	2018 (N=18,009)	Total (N=49,223)
Region				
North-central	181(13.3)	228(13.4)	302(13.9)	711(13.6)
North-east	38(2.8)	61(3.6)	163(7.5)	262(5.0)
North-west	42(3.1)	172(10.1)	307(14.1)	521(10.0)
South-east	208(15.3)	283(16.6)	411(18.9)	902(17.2)
South-south	302(22.2)	308(18.2)	300(13.8)	911(17.4)
South-west	589(43.3)	646(38.1)	691(31.8)	1926(36.8)
χ^2 *(p-value)*	104.15**	71.25**	77.32**	215.75**
Work status				
Not working	238(17.5)	289(17.0)	na	528(10.1)
Working	1122(82.5)	1408(83.0)	na	4705(89.9)

χ^2 *(p-value)*	44.37**	45.77***	na	90.71**
Number of living children				
1-4	1075(79.1)	1326(78.1)	1655(76.1)	4055(77.5)
5-8	278(20.4)	367(21.6)	509(23.4)	1153(22.1)
At least 8	7(0.5)	5(0.3)	12(0.5)	23(0.4)
χ^2 *(p-value)*	5.55*	12.86**	8.95**	26.06**
Exposure to mass media				
No	432(31.8)	134(7.9)	273(12.6)	840(16.0)
Yes	928(68.2)	1563(92.1)	1902(87.4)	4393(84.0)
χ^2 *(p-value)*	102.51**	191.77**	318.93**	574.45**
Autonomy				
No autonomy	374(27.5)	332(19.6)	536(24.6)	1242(23.7)
Has autonomy	986 (72.5)	1365(80.4)	1639(75.4)	3990(76.3)
χ^2 *(p-value)*	132.03**	479.75**	273.57**	804.09**

Table 3: Socio-demographics Characteristics and joint decision on contraceptive use

**variable work status was missing in the 2018 dataset

Multivariate Analysis

Table 4 presents the result of the binary logistic regression. In the year 2008, older age group 31-40 years (OR=1.26; 95% C.I=1.0-1.5), place of residence (OR=0.72; 95% C.I=0.6-0.9), region of residence: North-east (OR=0.23; 95% C.I=0.2-0.3), North-west (OR=0.17; 95% C.I=0.1-0.3), level of education: Primary (OR=1.73; 95% C.I=1.2-2.3), secondary (OR=2.17; 95% C.I=1.6-2.9) and tertiary education (OR=3.46; 95% C.I=2.4-5.1), religion: Islam (OR=0.71; 95% C.I=0.6-0.9), Household wealth: rich (OR=2.41; 95% C.I=1.7-3.5) and richest (OR=3.33; 95% C.I=2.2-5.0), Work status: working (OR=1.50; 95% C.I=1.2-1.9) and autonomy: has autonomy (OR=1.50; 95% C.I=1.3-1.8) all significantly predicted joint decision on contraceptive use among women and their partner.

For the year 2013, factors that were significantly associated with joint decision on contraceptive use include: older age group 31-40 years (OR=1.35; 95% C.I=1.1-1.6), region of residence: North-east (OR=0.41; 95% C.I=0.3-0.6), North-west (OR=0.42; C.I=0.3-0.6), level of education: primary (OR=2.30; 95% C.I=1.7-3.0), secondary (OR=3.48; 95% C.I=2.6-4.7) and tertiary education (OR=4.90; 95% C.I=3.4-7.0), religion: Islam (OR=0.67; 95% C.I=0.5-0.8), household wealth: poorer (OR=1.59; 95% C.I=1.0-2.5), middle (OR=2.44; 95% C.I=1.5-3.8), rich (OR=2.93; 95% C.I=1.8-4.7) and richest (OR=5.22; 95% C.I=3.2-8.5), media exposure: yes (OR=1.27; 95% C.I=1.0-1.6) and autonomy: has autonomy (OR=2.08, 95% C.I=1.8-2.5).

For the year 2018, significant predictors of joint decision on contraceptive use are: rural residence (OR=0.79; 95% C.I=0.7-0.9), region of residence: North-west (OR=0.76; 95% C.I=0.6-1.0), South-east (OR=0.67; C.I=0.5-0.8), and South-south (OR=0.56; 95% C.I=0.4-0.7), level of education: primary (OR=2.36; 95% C.I=1.9-2.9), secondary (OR=2.65; 95% C.I=2.1-3.1) and tertiary education (OR=3.54; 95% C.I=2.7-4.7), religion: Islam (OR=0.41; 95% C.I=0.3-0.5) and traditional (OR=0.23; 95% C.I=0.1-0.7), household wealth: middle (OR=1.63; 95% C.I=1.2-2.1), rich (OR=2.02; 95% C.I=1.5-2.7) and richest (OR=2.78; 95% C.I=2.0-3.8), media exposure: yes (OR=1.50; 95% C.I=1.2-1.8), autonomy: has autonomy (OR=1.82, 95% C.I=1.6-2.1) and fertility regime: high fertility (OR=1.08; 95% C.I=1.6-2.1). Factors associated with joint decision on contraceptive use in 2008, 2013 and 2018 were similar except for media exposure and fertility in 2008, residence in 2013 and age and fertility regime in 2018 that were not significant.

Regardless of the study period, older age group 31-40 years, age at first birth 30 years and older, rural residence, region of residence: north-east, north-west, south-south and south-west region, level of education: primary, secondary and tertiary, religion: Islam and traditional, household wealth: poorer, middle, rich and richest, media exposure: women exposed to mass media, work status: working women and autonomy: women with autonomy were all significantly associated with joint decision on contraceptives among women and their partner.

Outcome: Joint decision on contraceptive use	2008 (N=14,410)		2013 (N=16,804)		2018 (N=18,009)		Total (N=49,223)	
Variables	**OR**	**95% C.I**	**OR**	**95% C.I**	**OR**	**95% C.I**	**OR**	**95% C.I**
Age groups								
20 – 30 years	1.000		1.00		1.000		1.000	
31 – 40 years	1.26*	1.0-1.5	1.35**	1.1-1.6	1.12	1.0-1.3	1.23**	1.1-1.4
Age at first birth								
< 20 years	1.000		1.000		1.000		1.000	
20-29 years	0.94	0.8-1.1	0.93	0.8-1.1	0.89	0.8-1.0	0.92	0.8-1.0
30+ years	0.70	0.4-1.3	0.67	0.4-1.2	0.81	0.5-1.3	0.72*	0.5-1.0
Residence								
Urban	1.000		1.000		1.000		1.000	
Rural	0.72**	0.6-0.9	0.92	0.8-1.1	0.79**	0.7-0.9	0.80**	0.7-0.9
Region								
North-central	1.000		1.000		1.000		1.000	
North-east	0.23**	0.2-0.3	0.41**	0.3-0.6	1.00	0.8-1.2	0.58**	0.5-0.7
North-west	0.17**	0.1-0.3	0.42**	0.3-0.6	0.76*	0.6-1.0	0.48**	0.4-0.6
South-east	0.95	0.7-1.3	1.15	0.9-1.5	0.67**	0.5-0.8	0.89	0.8-1.0
South-South	0.92	0.7-1.2	0.79	0.6-1.0	0.56**	0.4-0.7	0.73**	0.6-0.8
South-west	1.22	1.0-1.5	1.21	1.0-1.5	1.13	0.9-1.4	1.18*	1.0-1.3
Education								

	Model 1 OR	95% CI	Model 2 OR	95% CI	Model 3 OR	95% CI	Model 4 OR	95% CI
No formal education	1.000		1.000		1.00		1.000	
Primary	1.73**	1.2-2.3	2.30**	1.7-3.0	2.36**	1.9-2.9	2.14**	1.9-2.5
Secondary	2.17**	1.6-2.9	3.48**	2.6-4.7	2.65**	2.1-3.1	2.86**	2.4-3.3
Tertiary	3.46**	2.4-5.1	4.90**	3.4-7.0	3.54**	2.7-4.7	4.03**	3.3-4.9
Religion								
Christianity	1.000		1.000		1.000		1.000	
Islam	0.71**	0.6-0.9	0.67**	0.5-0.8	0.41**	0.3-0.5	0.58**	0.5-0.6
Traditional and others	1.20	0.7-2.2	0.65	0.3-1.3	0.23*	0.1-0.7	0.63*	0.4-0.9
Wealth quintile								
Poorest	1.000		1.000		1.000		1.000	
Poorer	1.18	0.8-1.7	1.59*	1.0-2.5	1.22	0.9-1.6	1.28*	1.0-1.6
Middle	1.41	1.0-2.1	2.44**	1.5-3.8	1.63**	1.2-2.1	1.74**	1.4-2.1
Rich	2.41**	1.7-3.5	2.93**	1.8-4.7	2.02**	1.5-2.7	2.25**	1.8-2.7
Richest	3.33**	2.2-5.0	5.22**	3.2-8.5	2.78**	2.0-3.8	3.40**	2.7-4.2
Media exposure								
No	1.000		1.000		1.000		1.000	
Yes	1.08	0.9-1.3	1.27*	1.0-1.6	1.50**	1.2-1.8	1.28**	1.1-1.4
Work status								
Not working	1.000		1.000		1.000		1.000	
Working	1.50**	1.2-1.9	1.20	1.0-1.5	****	****	1.53**	1.3-1.8
Autonomy								
No autonomy	1.000		1.000		1.000		1.000	
Has autonomy	1.50***	1.3-1.8	2.08**	1.8-2.5	1.82**	1.6-2.1	1.80**	1.6-2.0
Fertility regime								
Low (1-4 children)	1.000		1.000		1.000		1.000	
High (5+)	0.93	0.8-1.1	1.03	0.9-1.2	1.08**	1.6-2.1	1.01	0.9-1.1

Table 4: Binary logistic regression showing predictors of joint decision on contraceptive use.

*=statistically significant at 0.05, **=statistically significant at 0.001*

Discussion

This study has examined factors associated with decision to jointly decide contraceptive use among women and their partners using evidence from a repeated cross-sectional nationally representative data for the period 2008-2018. Our study found factors that consistently predicted joint decision on contraceptive use include place of residence, region of residence, level of education, religion, household wealth and autonomy. Women residing in rural area were less likely to jointly decide contraceptive use with their partner. This is likely because women in rural areas are more likely to attain low economic status such as level of education, thereby impacting on their level of autonomy and their decision-making power. In another study (Eshete & Adissu, 2017), the authors were of the opinion that higher contraceptive use among urban women might be attributed to the fact that they are better exposed to information about family planning. Also, in our present study, increasing level of education and being affiliated to Christian religion was associated with higher likelihood of joint decision on contraceptive use. This corroborated the findings of previous studies (Eshete & Adissu, 2017; Mutombo & Bakibinga, 2014; Nketiah-Amponsah et al., 2012). The positive effect of education can be explained in several ways. First, women who are well educated will no doubt be better informed and have accurate knowledge about contraceptives in addition to the benefits associated with its use relative to the uneducated women. Also, women who are still schooling are more likely to use contraceptive for the purpose of avoiding getting pregnant which can cause interference in their education. These findings, also aligns with an Ethiopian study (Eshete & Adissu, 2017). In the study, women with no formal education and affiliated with the Islam religion had lower odds of making joint decision on contraceptive use with their partners. The influence on religion on contraceptive use might be due to religious factors that tend to influence the acceptability of contraceptives among couples from different religious settings (Tiruneh et al., 2016).

In this our current study, higher household wealth was associated with greater odds of joint decision-making process on contraceptive use. This importance of this finding can be attributed to greater capacity to obtain modern contraceptives without the need to rely on their partner. Also, it is important to note that wealth index according to the DHS measures is an aggregate of family assets including television, radio, phone, cars among others all of which can positively contribute to the ability of the woman to access information among others (Currie, 2009). In this present study, where mass media and work status were significant, women exposed to mass media and working had higher odds of making joint decision on contraceptive use relative to their counterpart not exposed to mass media and not working. Similarly, women with autonomy also demonstrated higher likelihood of joint decision on contraceptive use. Previous studies (Eshete & Adissu, 2017; Mutombo & Bakibinga, 2014) have also reported positive association between joint decision and use of modern contraceptives. This suggests an increasing need for better spousal communication among couples on reproductive health and use of contraceptives.

Conclusion

The study concluded by recognizing the importance of socio-economic characteristic of women and autonomy as factors to be considered when designing policies and programmes targeting the promotion of joint decision on contraceptives among women and their partner, with the overall goal of promoting increased contraceptive prevalence rate. This implication of our findings is that any intervention seeking to promote joint contraceptive use among couples must take into consideration the socioeconomic, cultural, and religious barriers that adversely affect the ability of women to make informed decision on their reproductive health. Also, future family planning program should make concerted effort at ensuring that male partners are well considered when developing their programs and the need to promote spousal communication on issues related to use of contraceptives.

Strength and Imitations

Notwithstanding the importance of this study on policy, some limitations are worth noting. First, because this study made use of secondary data, the reliability of the findings will to a large extent be dependent on the quality of reporting during the survey. Also, the outcome variable talks about joint decision making. However, response for the male partner was obtained from the woman's perspective and might be subject to bias. Nevertheless, our study represents one of the few studies that have examined predictors of joint decision making using repeated cross sectional nationally representative data across three data points, thus making important contribution to literature.

Competing Interest: the authors declared no conflicting interest.

Funding: No funding was received for the study.

References

1. Abu Aragaw, K. (2015). Application of Logistic Regression in Determining the Factors Influencing the use of Modern Contraceptive among married women in Ethiopia. *American Journal of Theoretical and Applied Statistics*, 4(3), 156.

2. Adebowale, S. A., Adeoye, I. A., & Palamuleni, M. E. (2013). Contraceptive use among Nigerian women with no fertility intention: Interaction amid potential causative factors. *African Population Studies*, 27(2), 127.

3. Ahinkorah, B. O., Budu, E., Aboagye, R. G., Agbaglo, E., Arthur-Holmes, F., et al. (2021). Factors associated with modern contraceptive use among women with no fertility intention in sub-Saharan Africa: Evidence from cross-sectional surveys of 29 countries. *Contraception and Reproductive Medicine*, 6(1), 22.

4. Ahmed, M., & Seid, A. (2020). Association Between Exposure to Mass Media Family Planning Messages and Utilization of Modern Contraceptive Among Urban and Rural Youth Women in Ethiopia. *International Journal of Women's Health*, Volume 12, 719–729.

5. Asiimwe, J. B., Ndugga, P., Mushomi, J., & Manyenye Ntozi, J. P. (2014). Factors associated with modern contraceptive use among young and older women in Uganda; a comparative analysis. *BMC Public Health*, 14(1), 926.

6. Asresie, M. B., Fekadu, G. A., & Dagnew, G. W. (2020). Contraceptive use among women with no fertility intention in Ethiopia. *PLOS ONE*, 15(6), e0234474.

7. Blackstone, S. R., Nwaozuru, U., & Iwelunmor, J. (2017). Factors Influencing Contraceptive Use in Sub-Saharan Africa: A Systematic Review. *International Quarterly of Community Health Education*, 37(2), 79–91.

8. Bogale, B., Wondafrash, M., Tilahun, T., & Girma, E. (2011). Married women's decision-making power on modern contraceptive use in urban and rural southern Ethiopia. *BMC Public Health*, 11(1), 342.

9. Currie, J. (2009). Healthy, Wealthy, and Wise: Socioeconomic Status, Poor Health in Childhood, and Human Capital Development. *Journal of Economic Literature*, 47(1), 87–122.

10. Delbiso, T. D. (2013). Gender power relations in reproductive decision-making: The case of Gamo migrants in Addis Ababa, Ethiopia. *African Population Studies*, 27(2), 118.

11. Eshete, A., & Adissu, Y. (2017). Women's Joint Decision on Contraceptive Use in Gedeo Zone, Southern Ethiopia: A Community Based Comparative Cross-Sectional Study. *International Journal of Family Medicine*, 2017, 1–9.

12. Geremew, A. B., & Gelagay, A. A. (2018). Modern contraceptive use and associated factors among married women in Finote Selam town Northwest Ethiopia: A community based cross-sectional study. *Women's Midlife Health*, 4(1), 13.

13. Hameed, W., Azmat, S. K., Ali, M., Sheikh, M. I., Abbas, G., et al. (2014). Women's empowerment and contraceptive use: The role of independent versus couples' decision-making, from a lower middle income country perspective. 9(8), 1–9.

14. Jacobs, J., Marino, M., Edelman, A., Jensen, J., & Darney, B. (2017). Mass media exposure and modern contraceptive use among married West African adolescents. The European *Journal of Contraception & Reproductive Health Care*, 22(6), 439–449.

15. Lasong, J., Zhang, Y., Gebremedhin, S. A., Opoku, S., Abaidoo, C. S., et al. (2020). Determinants of modern contraceptive use among married women of reproductive age: A cross-sectional study in rural Zambia. *BMJ Open*, 10(3), e030980.

16. Mutombo, N., & Bakibinga, P. (2014). The effect of joint contraceptive decisions on the use of Injectables, Long-Acting and Permanent Methods (ILAPMs) among married female (15–49) contraceptive users in Zambia: A cross-sectional study. *Reproductive Health*, 11(1), 51.

17. NBS and UNICEF. (2022). National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). August, 2022. Multiple Indicator Cluster Survey 2021, Survey Findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund.

18. Nketiah-Amponsah, E., Ampaw, S., & Twumasi Baffour, P. (2022). Socioeconomic determinants of use and choice of modern contraceptive methods in Ghana. *Tropical Medicine and Health*, 50(1), 33.

19. Nketiah-Amponsah, E., Arthur, E., & Aaron, A. (2012). Correlates of contraceptive use among Ghanaian women of reproductive age (15-49 years). 16(3), 155–170.

20. NPC and ICF International. (2019). Nigeria Demographic and Health Survey (NDHS) 2018 [homepage on the Internet]. Abuja: NPC and ICF International.

21. Prata, N., Tavrow, P., & Upadhyay, U. (2017). Women's empowerment related to pregnancy and childbirth: Introduction to special issue. *BMC Pregnancy and Childbirth*, 17(S2), 352.

22. Tiruneh, F. N., Chuang, K.-Y., Ntenda, P. A. M., & Chuang, Y.-C. (2016). Factors associated with contraceptive use and intention to use contraceptives among married women in Ethiopia. *Women & Health*, 56(1), 1–22.

23. UNDESA. (2020). United Nations Department of Economic and Social Affairs, Population Division. World Fertility and Family Planning: Highlights (ST/ESA/SER.A/440). United Nations.

24. Upadhyay, U. D., & Karasek, D. (2012). Women's Empowerment and Ideal Family Size: An Examination of DHS Empowerment Measures in Sub-Saharan Africa. *International Perspectives on Sexual and Reproductive Health*, 38(02), 078–089.

Ready to submit your research? Choose ClinicSearch and benefit from:

➤ fast, convenient online submission

➤ rigorous peer review by experienced research in your field

➤ rapid publication on acceptance

➤ authors retain copyrights

➤ unique DOI for all articles

➤ immediate, unrestricted online access

At ClinicSearch, research is always in progress.

Learn more https://clinicsearchonline.org/journals/international-journal-of- biomed-research