Having a Say Matters: Influence of Decision-making Power on Contraceptive Use among Nigerian Women ages 35-49 years

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Introduction

Women ages 35 and older are often left out of the conversation on contraception for a variety of reasons including their waning fecundity, their age or perceived infertility, or the belief that they have sexual intercourse infrequently, and so are not at risk of pregnancy. Researchers have known for several decades that even though many of these women wish to avoid pregnancy, they are likely not to be using any contraceptive method, or, if using, opt for unreliable methods.[1] One of the reasons women have reported for their nonuse of contraception is that they engage in infrequent sex. This infrequency of sexual intercourse experienced by women at this stage of their lives has been said to be due to reduced interest, reduced libido, problems with vaginal dryness, existing comorbidities, among other factors. [2] It has led some older women to erroneously believe they are not at risk of pregnancy, and therefore do not need modern contraception. [1, 3] Women, as they approach menopause, often experience irregular periods for many years before their periods finally cease, and so do not have the monthly reminder of their fecundity, as do their younger counterparts. It is important that these women are protected against unplanned pregnancies, especially since older women have a greater risk of pregnancy-related morbidity and mortality when compared with their younger counterparts.[4]

There are a wide variety of factors that have been associated with contraceptive-related choices and decisions. One of these factors is a woman's decision-making power within the household. Women who have decision-making power within their households are more likely to use contraception than those who do not. There is a body of literature that suggests that women who are actively involved in domestic decision-making are able to control their fertility through the adoption of modern contraception. [5] While several researchers have examined the role of decision-making power in contraceptive use, this has been done across the full reproductive age spectrum. [6, 7] Most studies look at all women of reproductive age and do not provide effect estimates for older women separately, often including age as a continuous variable in their multivariable models, or lumping all women 35 years and older into a single category, despite the heterogeneity this introduces.

Modernization of many subcultures within Nigeria, like in other developing settings[8] allows women to receive higher education; actively engage in the labor force; marry at older ages; have their first birth at older ages; choose their own partners; and live apart from extended families. This has helped to reduce the control of kin over couples and their decisions, and has been associated with greater female decision-making power in some settings. [9, 10] Opportunities for education and employment for women in a community act as alternatives to marriage and serve to delay the age at first marriage and increase opportunities for women to become aware of, and therefore demand contraception. In such communities, women are believed to have more decision-making power regarding the adoption of

contraception. [11] Education has consistently been associated with contraceptive use among women ages 35 and older. [12-14] Education influences a woman's attitudes toward contraceptive use [15] and therefore her practice of contraception. The lack of knowledge and underutilization of contraception in women ages 35 and older has consequences, not only for the women, but also for their teenage children, sisters-in-law and other women who depend on them for contraceptive advice. [16, 17]

There is an impressive body of literature on contraceptive use, or the lack thereof in resource-constrained settings. Less attention has been paid, however, to women at the upper end of the reproductive age spectrum who have been described as a special [2] and overlooked [18] population. Women ages 35-49 represent 12.7% of the female population and 6.2% of the total Nigerian population.[19] Nigerian women ages 35 and older who are still menstruating are of special interest because they tend to be left out of existing family planning programs and services which currently target teenagers, women who attend antenatal and postnatal clinic, and men. Although data are available on these women through the Demographic and Health Survey report, no published study to date has addressed the role decision-making power may play in contraceptive use among Nigerian women ages 35 and older. This information will not only help us to better understand women's contraceptive experiences, as well as social and contextual factors that may influence their decisions or restrict their choice, but will also provide a basis to put forward policy and programmatic recommendations that will ensure the needs of this unique group of women are met.

This study will begin to address the gap in our understanding of how involvement in household decision-making can influence contraceptive use among older women by: (1) Describing the profile of women ages 35 and older who are current modern contraceptive users; (2) Comparing household decision-making power among modern contraceptive users and non-users; and (3) Examining the influence of women's decision-making power on current modern contraceptive use among Nigerian women ages 35 to 49 years. We hypothesized that women's decision-making power would be independently associated with current modern contraceptive use, even after adjusting for potential confounding factors.

The Nigerian Context

Nigeria is a large and very diverse country with a population of over 160 million and about 389 different ethnic groups. The major groups are Hausa, Igbo, and Yoruba, each having different dialects of their local tongues. Over 70% of the Nigerian population resides in rural areas, yet resources (trained personnel, infrastructure, public social amenities, allocation of funds, etc.) are largely concentrated in the urban areas. According to a nationally representative survey, 53.6% of Nigerians are Christians while 44.4% are Muslims.[20] The northern part of the country is largely Muslim while the southern part is largely Christian.

Adult female literacy, an important socioeconomic factor that influences contraceptive behavior was reported to be 53.7% on average in the 2008 DHS surveys, but disparities exist by age, residence, zone and wealth quintile.[20] Women who were younger, resided in urban areas and the southern part of the country, and who were wealthier had the highest literacy rates.[20] Total fertility rate was 5.7 children per

woman and slightly higher than the total wanted fertility rate of 5.3 children per woman. Total fertility rates were higher in rural (6.3) than urban areas (4.7) and in the north (North Central-5.4; North East-7.2; North West-7.3) than the south (South West-4.5; South South-4.7; South East-4.8).[20]

Contraceptive Use and Women's Decision-Making Power in Nigeria

Current modern contraceptive prevalence is 10.5% among Nigerian women 15-49 years, with the method mix consisting largely of the male condom, injectables and oral pill.[20] Current use of modern contraception exhibits a large north-south divide with prevalence being much higher in the south (South West-21.0%; South South-15.5%; South East-11.8%) than in the north (North Central-10.5%; North East-3.5%; North West-2.5%). Historically, prevalence of any contraceptive use has been low in Nigeria, and use of modern contraceptives even lower. The age disparities in contraceptive use have received very little attention. With the infiltration of westernization and the improvement in literacy levels, Nigerian women today are more likely than their mothers to remain sexually active after they have completed their families. However, most exposure to contraceptive messages in Nigeria takes place in the antenatal and postnatal clinics and hospitals which older women who have had all the children they desire have no reason to attend.

Nigeria remains a patriarchal society where men continue to dominate all spheres of women's lives, a cultural norm fiercely protected within traditional institutions.[21] Traditional gender roles which place men as the breadwinner and women as the subservient caretaker for the home and children are ubiquitous, even among some of the well-educated. As well described in the paper by Renne (1993) who studied gender ideology in a Yoruba community in southwest Nigeria, husbands are called by the Yoruba term "*baale*" which literally means "father of the house" and describes the concept of authority of the man in many Nigerian subcultures. This term encompasses the man's role as owner of the house and implicitly, his social, economic and religious leadership roles.[22] Many of these traditional male roles have been carried over into present day contemporary societies whereby men decide for their wives and families regarding who will receive health care and when, who will go to school and where, how many children and the timing, as well as if and when family planning will be used, or even considered. These gender norms expect women to fulfill their full domestic roles, even when they are in paid employment. This often serves as an impediment to women who aspire to pursue their careers and attain both management and decision making positions at the same pace as their male colleagues. The National Gender Policy notes that the rights of Nigerian women are undermined and undervalued, and this picture is complicated even further by the co-existence of three separate legal systems: statutory, religious and traditional.[21]

Studies among women in Northern Nigeria suggest that women, irrespective of their level of education, believe that their husbands must provide for all their needs and they, as women, are under no obligation to contribute to family expenses, even if they choose to work (see Izugbara & Ezeh, 2010).[23] Such strict gender roles often do not allow for reproductive discussions between partners, and in the absence of such healthy communication, there are no opportunities for negotiation of reproductive preferences,[10] thus sanctioning the man's traditional role as sole decision maker. Today, more women are completing tertiary education, the age difference between partners continues to narrow, more

women are joining the formal labor market where they are exposed to more liberal views, and women are slowly rising to important decision-making roles at the local, state and national levels. These factors appear to be ushering in a wave of change which in time may influence women's decision-making through a noticeable evolution of gender roles whereby women are better able to negotiate reproductive preferences that will suit their changing lifestyles.

Methods

Data

This paper uses data from the 2008 Nigerian National Demographic and Health Survey (NDHS) -- a nationally representative survey of 33,385 women ages 15-49 and 15,486 men ages 15-59. The sample for the survey was selected from all six geo-political zones, including a proportional sample of both urban and rural dwellers of each of the 36 states and the Federal Capital Territory in the six geopolitical zones from June to October, 2008. Prior to actual data collection, a complete listing and mapping of households were carried out in each cluster between April and May, 2008. The 2006 Population and Housing Census of the Federal Republic of Nigeria served as the sampling frame. Using a stratified two-stage cluster design, 888 clusters (286 urban, 602 rural) were selected, providing a representative sample of 36,800 households. In the second stage, an average of 41 households were selected per cluster, using equal probability systematic sampling. All women ages 15-49 years in selected households who were permanent residents or visitors present in the households on the night before the survey were eligible to be interviewed. [20]

The survey included among other topics detailed information about fertility, nuptuality, sexual activity, fertility preferences, awareness and use of family planning methods. Data were collected using three questionnaires – the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. The instruments were pre-tested in six states and the questionnaires were amended based on the pre-test findings. Questionnaires were translated into the major local languages (Hausa, Igbo, Yoruba), and back-translated into English to ensure the original meaning was retained.

Response rates between urban and rural areas were not statistically significantly different. Within interviewed households, 34,596 women were eligible and successful interviews were conducted with 96.5% of women. Further details of the pretest activities, training of field staff and data collection procedures have been previously published. [20]

Sample

Women interviewed in the NDHS who were 35-49 years of age and currently married or living with a man were eligible to be included in the analysis, irrespective of current contraceptive use status. Women were excluded if they were pregnant or had not seen their menses (amenorrheic) for at least 6 consecutive months. For women who had not seen their menses for 6 months, they were retained in the sample if they were current contraceptive users or had not resumed their menses since their last

delivery, provided this was not more than 12 months before the interview. Women who reported that they would like to have a(nother) child within the 24 month period following the interview were also excluded. Of the 9831 women ages 35 and older, 4821 were eligible for the present analyses. Women were excluded because they were not currently married or living with a man (998; 10.2%); wanted another child within the next 2y (2,122; 21.6%); pregnant (588; 5.98%); had not seen their menses for 6 months (or since last birth if this was <12 months prior to the survey date; or were menopausal (768; 7.81%). According to the NDHS recode documentation, women were defined as being menopausal if they were not pregnant and not postpartum amenorrheic, were not currently using a contraceptive method, and had not experienced a menstrual period in the six months preceding the survey or reported that they were in menopause.

Variables

The outcome of interest was current use of any modern contraceptive method (sterilization, pill, intrauterine device, injectable, implant, condom, diaphragm, foam/jelly, emergency contraceptive), which was recoded as a dichotomous variable (currently using coded "1", not currently using a modern method/currently using a traditional/ folkloric method coded "0").

Women's decision-making power was the key independent variable and assessed based on women's responses to six separate questions: (1) "Who usually decides how the money you earn will be used?" (2) "Who usually decides how your husband's/partner's earnings will be used?" (3) "Who usually makes decisions about health care for yourself?" (4) "Who usually makes decisions about making major household purchases?" (5) "Who usually makes decisions about making purchases for daily household needs?" (6) "Who usually makes decisions about visits to your family or relatives?" For each of these questions, a woman was given five options: (1) respondent (2) husband/partner (3) respondent and husband/partner jointly (4) someone else (5) other. These variables were further re-categorized and coded in accordance with the research questions. For decisions regarding a woman's earnings or that of her husband/partner, the coding was as follows: "0" respondent/partner had no earnings "1" respondent/partner had earnings but respondent had no say in how they were spent "2" respondent had a say in how her/his earnings were spent. The other four variables were binary and coded "0" if the respondent had no say in the decision and "1" if she had a say. Having a say in a decision implied that the woman decided alone or jointly with her husband/partner. A household decision-making power score was calculated based on a woman's response to all of these questions using principal component analysis (PCA) which lends itself very well to data reduction in situations such as this (see Joliffe and Morgan, 1992). Since women's decision-making power is multi-dimensional in nature, PCA was employed to replace these six variables with a single new variable, while minimizing loss of information. Tertiles were constructed from the score variable to provide a measure of relative household decision-making power.

Other independent variables of interest in this analysis included those that were conceptually recognized to be associated with modern contraceptive use among this sub-population of women and potential confounders of the association between decision-making power and contraceptive use. (A) Individual factors: (1) Age was analyzed in 3-year age groups (35-37y; 38-40y; 41-43y; 44-46y; 47-49y).

(2) The total number of children ever born was categorized as “0-2 children”; “3-4 children”; “5-6 children”; and “7+ children”. (3) Polygyny was analyzed as a binary variable (polygynous household or not). (4) Educational level was categorized as “no formal”; “primary”; “secondary” and “tertiary”. (5) Religion was coded as “Catholic”; “Other Christian”; “Muslim”; “Others”. (B) Household factors: (1) Household wealth - The wealth index, a measure of relative economic well-being based on household assets was categorized as quintiles (lowest, second, middle, fourth, highest) from the wealth score. (2) Domicile - Place of residence was dichotomized into “urban” or “rural” since the profile of women and availability of services are known to differ in these two settings.

Data Analyses

Data were explored and frequencies and cross-tabulations generated to understand the patterns of distribution of the variables of interest. Simple and multivariate logistic regression models were constructed to examine the unadjusted and adjusted effects of women’s decision-making power on current modern contraceptive use among Nigerian women ages 35-49 years. The final model tested whether or not women’s decision-making power was independently associated with current modern contraceptive use among this subset of women. Post-estimation statistics showed that the model was a good fit for the data. To check for multicollinearity, variance inflation factors were generated and were less than 10 for all variables in the final model. Multivariate logistic analysis used weighted maximum likelihood estimation with an adjusted Wald test F statistic.

All analyses were conducted using STATA version 12 (College Station, TX, USA). The complex survey design was accounted for and correct standard errors derived by using Stata’s “svy” group of commands.

Results

The prevalence of use of any family planning method among women in our sample was 27.4% (modern-18.7%; traditional-7.1%; folkloric-1.6%). Of the women who were currently using a modern method, the method mix included injectables (6.0%); intrauterine device (IUD; 3.3%); oral pills (3.0%); male condom (2.9%); female sterilization (1.6%); norplant (0.1%); and others (1.8%). Traditional methods used were periodic abstinence (4.2%) and withdrawal (2.9%). Contraceptive use increased with education and declined with age. Modern contraceptive use was most frequent among other Christians, women with 3-4 children and those not in polygynous unions. Regarding household level variables, modern contraceptive use increased with wealth and was higher in urban than rural areas. The full socio-demographic profile of respondents can be found in Table 1.

Women who were current modern contraceptive users were more likely to be involved in household decision-making in all six domains examined, when compared with their counterparts who were not currently using contraception (see Table 2).

Multivariate logistic regression showed that women's decision-making power remained a statistically significant independent predictor of modern contraceptive use, even after adjusting for potential confounders (see Table 3). Women who had the most decision-making power had more than one and a half times the odds of reporting modern contraceptive use compared with women in the lowest tertile of decision-making [OR (95% CI): 1.70 (1.31, 2.21), p<0.0001]. Older women (ages 41-43; 44-46; 47-49) had lower odds of reporting current use of modern contraceptives when compared with younger women ages 35-37 years [OR (95% CI): 0.67 (0.50, 0.90); 0.73 (0.55, 0.98); 0.59 (0.43, 0.82) respectively]. Similarly, women in polygynous unions had lower odds of reporting current use of modern contraceptives when compared with women in monogamous unions [OR (95% CI): 0.80 (0.65, 0.98)]. Other Christians (non-Catholics) had a higher odds of modern contraceptive use compared with their Catholic counterparts [OR (95% CI): 1.84 (1.30, 2.60)]. Muslims and Traditionalists were no different from Catholics in terms of modern contraceptive use. Wealthier women had a higher odds of modern contraceptive use compared with their poorer counterparts [ORs (95% CI) for the middle, richer and richest women were respectively 2.06 (1.41, 3.01); 2.50 (1.67, 3.76); 3.47 (2.22, 5.44)]. Compared with women who had 0-2 children, women with more children had higher odds of modern contraceptive use [OR (95%CI) for women with 3-4, 5-6 and 7 or more children were respectively 2.35 (1.35, 4.07); 2.81 (1.64, 4.84); 2.22 (1.25, 3.93)].

Sensitivity analyses were done to assess the robustness of the findings. Specifically, the 79 women who reported being sterilized and women less than 40 years of age were removed from the analytic sample, and the regression models were re-run for each scenario. In the sensitivity analysis which excluded women less than 40 years, and in which women aged 40 were the reference group, all older women had a lower odds of reporting current modern contraceptive use. In both scenarios, the results followed the same pattern as the full sample; there were no differences in the directionality of estimates, and only minimal changes in the effect sizes.

Discussion

We assessed the relation of household decision-making on current modern contraceptive use among Nigerian women ages 35-49 years. While other researchers have also found that women's decision-making power is an important determinant of modern contraceptive use, [24] this study adds to the existing body of research by providing a focus on women ages 35 and older. Findings from this study reveal that having a say in household decisions does matter for older Nigerian women with regard to their use of modern contraception. The more decisions a woman is involved in, the greater the odds that she will also be using modern contraception. The results also suggest that a woman's involvement in household decision-making is important, no matter what the decision is. This suggests that our choice of statistical technique in representing the multidimensional nature of decision-making power is justified, since contraceptive users were more likely to have a say in each of the six decisions examined, when compared with their counterparts who were non-users.

Women's decision-making power has been conceptualized and measured by different researchers in many different ways, and there is still no consensus on how best to define and measure this construct. In addition, comparisons between studies are difficult because of the different ways researchers have defined similar, yet different terms such as "autonomy"; "empowerment"; "agency"; status"; "power"; etc. (See Malhotra et al., 2002 for a detailed discussion of the diversity and similarities in the existing literature on women's empowerment.)[25] A limit of this study is that the data are limited to decision-making power, so it is possible that other dimensions of empowerment may have different associations with modern contraceptive use.

While the cross-sectional nature of this study makes it difficult to assert the temporal ordering of events, it is only logical to think that women who were involved in household decision-making were very different from those who were not. Such "decision-makers" have probably developed a sense of self-agency over time, and have learned to assert themselves within their households so as to be able to make what may in this culture be considered a bold step-- the decision to use modern contraception. In the Nigerian setting, modern contraceptive use is low among all women of reproductive age, but even lower at the upper end of the spectrum. It is important to remember that these older women belong to a generation whose mothers were unlikely to have had access to modern contraception when they were young, and so they probably did not know about modern contraception in their teenage years.

Traditionally, the Nigerian culture stipulates abstinence at menopause, and as women draw nearer to this change of life, they may feel less and less inclined to use contraception since they perceive a reduction in their risk of pregnancy and need for contraception. While infrequent sex was one of the five main reasons women reported for their non-use of contraception, data from the same nationally representative survey showed that this is not the case for all women in this age range. Women ages 35 and older who were interviewed in the survey were just as sexually active as their younger counterparts, based on the proportion of women who reported sexual activity in the month preceding the survey.[20] However, a closer look at the data revealed that frequency of sexual intercourse and use of contraception reduced remarkably from about 45 years, in keeping with anecdotal reports that older women were less sexually active and thus less likely to perceive a need for modern contraception. Qualitative studies will be useful to further explore motivations for use and non-use among older Nigerian women.

Polygyny in Nigeria is widespread and culturally acceptable, bringing an interesting twist to discussions on modern contraception. There is often rivalry among women in polygynous unions, especially when the women are close in age. One of the reasons for this may be explained by the cultural belief that the wife with the most children is the most favored wife and receives the most attention and resources from the husband. Thus, many women continue to have children they want in their older reproductive years, with the hopes of attaining this coveted position as well as greater financial security in their marriage and old age.[23] In keeping with our findings, a study conducted in Mali [26] also reported a lower prevalence of contraceptive use among women in polygynous unions. The implications of this are far-reaching, because not only will contraception be a difficult sell to such women, it may be one that will keep them away from seeking healthcare services with skilled providers who would tell them the potential risks of having too many children, too close together, and too late in life. Involving the men in

delivering the message and providing contraceptive services at women's doorsteps have worked in some settings, and may help to improve the prevalence of contraceptive use among older Nigerian women.

The message that birth spacing is important for both the health of the mother and child is widespread, and appears to be widely accepted in Nigeria, irrespective of religious convictions. Limiting of births, however, is less acceptable to women and men for religious and social reasons. [27, 28] This may help to explain the reduced effect size of the odds of contraceptive use among women 47-49y and those with 7 or more children. The Catholic Church is generally believed to promote only natural family planning methods. Interestingly, the fifth most frequently reported barrier to contraceptive use reported by Nigerian women 35 years and older who were non-users was that their religion prohibited its use.[20] Nigerians are known to be very religious people, thus religious leaders have a very important role to play in providing their followership with accurate and up-to-date information on contraception which will enable them to make informed decisions, free of sentiments.

This study has many strengths. The data were nationally representative and were collected and entered by a well-trained and experienced team. The focus on an often forgotten subgroup of women, ages 35 years and older adds a new and neglected dimension to a well-researched topic. In our analysis, the use of PCA enabled us to reduce the number of variables in our model, and yet minimize loss of information. It is possible that the present estimate of the influence of women's decision-making power is an underestimate of the true effect since other researchers have shown that women tend to under-report their household decision-making role in the household, relative to their husbands'. [29] The cross-sectional nature of the data is a limitation, and we cannot assert that having decision-making power causes a woman to use contraception. While it is possible to consider a reversal of the directionality of the research question, from theoretical and practical viewpoints, having decision-making power is more likely to precede the choice to use contraception now. To buttress this point, sensitivity analysis which excluded women who had been sterilized gave very similar findings as when they were in the sample. The use of secondary data was also a limitation of these analyses in the sense that we were unable to include women who were not currently living with a man in our analysis due to the skip patterns in the data collection instruments which excluded them from the decision-making questions. In addition, while potentially an important covariate, fertility desires were not included in the regression model because the responses given across the series of questions leave women potentially misclassified.

This study has focused specifically on women ages 35 – 49 years, and the findings are only generalizable to women of this age in Nigeria and similar settings. Although the choice of the age "35" is arbitrary, it is in recognition and appreciation of the difference between social age, which is concerned with the different roles a person takes along their lifecycle [30, 31] and chronological age, the number of years lived. The socially constructed nature of age tends to vary across context and time in history. [31] While some women at a chronological age of 35 have what may seem like an older social age because they started childbearing early, others want more children at this age and are yet to attain their desired family size. Women ages 35 and older often think they do not need contraception even though they are sexually active, have a regular sexual partner, have not attained menopause and do not desire a pregnancy.

However, all women, irrespective of age, who are sexually active, do not desire a pregnancy, are not sterilized and have not attained menopause need contraception.

Women's decision-making power within their households enables them to make more personal decisions regarding their reproductive health, such as the use of modern contraception. This suggests that when women are encouraged to be involved in the decision-making process with their partners, they become empowered to make other decisions about their reproductive health, including the use of modern contraceptives. Gender equality needs to become well engrained in the Nigerian culture, so that men will always treat their partners' opinion as important, especially when it comes to decision-making. Religious leaders can be trained to provide religiously and culturally appropriate messages that will encourage the involvement of women in decision-making. Health care providers and opinion leaders such as priests, clergy men and imams (Muslim clerics) need to disseminate clear messages that will help women, and their partners understand that older women may still be fertile and need to use contraception if they are not prepared for the risks associated with pregnancy in women at the upper end of the reproductive spectrum. Finally, family planning providers need to tweak their message to help women understand from the very beginning that even though their contraceptive needs will change over time, they will continue to require modern contraception to prevent pregnancy until they attain menopause, if they remain sexually active.

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Table 1: Socio-demographic Profile of Nigerian Women by Current Modern Contraceptive Use Status

		Users	Non-users
Variables	**n**	**%**	**%**
Total		**839 (18.72)**	**3988 (81.28)**
Age group (years)**			
35-37y	1,280	21.3	78.7
38-40y	1,426	20.0	80.0
41-43y	643	18.7	81.3
44-46y	891	16.1	83.9
47-49y	587	13.9	86.2
Educational level***			
No formal education	2,248	6.7	93.3
Primary	1,247	22.2	77.8
Secondary	938	30.0	70.0
Higher	394	37.7	62.3
Religion***			
Catholic	487	18.1	81.9
Other Christian	1,930	29.3	70.7
Islam	2,284	9.6	90.4
Traditionalist	126	14.7	85.3
Polygynous union***			
No	2,917	23.1	76.9
Yes	1,910	11.5	88.6
Children ever born***			
0-2 children	208	10.9	89.1
3-4 children	849	27.1	72.9
5-6 children	1,367	24.9	75.1
7+ children	2,403	12.2	87.8
Wealth quintile***			
Poorest	1,022	5.8	94.2
Poorer	986	7.8	92.2
Middle	936	15.9	84.1
Richer	915	23.5	76.5
Richest	968	34.7	65.3
Domicile***			
Urban	1556	27.7	72.3
Rural	3271	13.6	86.4

***p≤0.001; **p≤0.01; *p≤0.05

Table 2: Comparison of Nigerian Women's Involvement in Household Decision-making between Current Modern Contraceptive Users and Non-users

Items	Users % (95% CI)	Non-users % (95% CI)
Her earnings*		
No income	9.37 (7.25, 11.49)	19.17 (17.56, 20.77)
Not involved in decision	20.71 (17.42, 24.00)	23.80 (21.87, 25.74)
Involved	69.91 (66.28, 73.55)	57.03 (54.72, 59.34)
His earnings		
No/unknown income	2.01 (0.98, 3.04)	2.00 (1.47, 2.53)
Not involved in decision	52.16 (48.19, 56.13)	67.87 (65.79, 69.96)
Involved	45.83 (41.85, 49.81)	30.12 (28.09, 32.15)
Her healthcare		
Not involved in decision	27.60 (24.32, 30.89)	50.61 (48.45, 52.78)
Involved	72.40 (69.11, 75.68)	49.39 (47.22, 51.55)
Major purchases		
Not involved in decision	37.14 (33.70, 40.58)	57.46 (55.36, 59.56)
Involved	62.86 (59.42, 66.30)	42.54 (40.44, 44.64)
Daily purchases		
Not involved in decision	20.88 (17.92, 23.84)	43.38 (41.18, 45.58)
Involved	79.12 (76.16, 82.08)	56.62 (54.42, 58.82)
Visiting friends & family		
Not involved in decision	20.07 (17.24, 22.90)	39.18 (36.79, 41.57)
Involved	79.93 (77.10, 82.76)	60.82 (58.43, 63.21)
Statistics for decision-making power scale		
n	839	3988
Mean (SD) of scale	2.33 (0.75)	1.93 (0.82)
T statistic; p value	-13.02; p<0.0001	

*Chi square for trend: 63.61; p<0.0001

Table 3: Odds Ratios and 95%CI of Current Modern Contraceptive Use among Nigerian Women (35-49y)

	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
Decision-making power		
Lowest tertile	1.00	1.00
Middle tertile	2.48 (1.94, 3.16)***	1.33 (1.02, 1.73)*
Highest tertile	3.70 (2.93, 4.67)***	1.70 (1.31, 2.21)***
Age group (years)		
35-37y	1.00	1.00
38-40y	0.92 (0.74, 1.15)	0.95 (0.75, 1.20)
41-43y	0.78 (0.59, 1.02)	0.67 (0.50, 0.90)**
44-46y	0.70 (0.53, 0.90)**	0.73 (0.55, 0.98)*
47-49y	0.58 (0.43, 0.79)**	0.59 (0.43, 0.82)**
Educational level		
No formal education	1.00	1.00
Primary	3.33 (2.56, 4.34)***	1.85 (1.38, 2.47)***
Secondary	4.88 (3.67, 6.48)***	1.86 (1.30, 2.64)**
Higher	6.58 (4.74, 9.13)***	2.37 (1.59, 3.54)***
Religion		
Catholic	1.00	1.00
Other Christian	1.85 (1.35, 2.53)***	1.84 (1.30, 2.60)**
Islam	0.61 (0.43, 0.87)**	1.05 (0.70, 1.57)
Traditionalist	0.91 (0.46, 1.78)	1.64 (0.80, 3.38)
Polygynous union		
No	1.00	1.00
Yes	0.49 (0.40, 0.59)***	0.80 (0.65, 0.98)*
Children ever born		
0-2 children	1.00	1.00
3-4 children	2.61 (1.52, 4.49)**	2.35 (1.35, 4.07)*
5-6 children	2.44 (1.43, 4.15)**	2.81 (1.64, 4.84)***
7+ children	1.19 (0.68, 2.07)	2.22 (1.25, 3.93)*
Wealth quintile		
Poorest	1.00	1.00
Poorer	1.36 (0.93, 1.99)	1.14 (0.79, 1.66)
Middle	2.84 (1.95, 4.14)***	2.06 (1.41, 3.01)***
Richer	4.23 (2.89, 6.18)***	2.50 (1.67, 3.76)***
Richest	7.19 (5.02, 10.28)***	3.47 (2.22, 5.44)***
Domicile		
Urban	1.00	1.00
Rural	0.46 (0.38, 0.55)***	0.87 (0.69, 1.11)

***p<0.0001; **p≤0.001; *p<0.05