

Demographic and socio-cultural factors influencing contraceptive uptake among women of reproductive age in Tamale Metropolis, Northern Region, Ghana

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SUMMARY

Background: This study assessed some demographic and socio-cultural factors that influence contraceptive uptake among reproductive-aged women in Tamale Metropolis of the Northern Region, Ghana

Design: This was a cross-sectional study conducted from February to March 2015

Setting: All three sub Metropolis in Tamale

Participants: All community members and women of reproductive age (15-49years)

Intervention: The study used cluster sampling to recruit women who were interviewed using a structured questionnaire. Nine focus group discussions (FGDs) were also held among community members who were purposively selected.

Main outcome measures: contraceptive uptake (use of contraceptive)

Results: The mean age of the women was 26 years. The prevalence of contraceptive uptake among reproductive-age women was 36.8% (165/448). Women with secondary school education [AOR=4.4(95%CI:1.6-12.4)], and those in homes where decisions on having children were made by both partners [AOR=2.1(95%CI:1.1-04.42)] were more likely to use contraceptives. Unemployed women [AOR=0.3(95%CI:0.1-0.8)], women whose husbands were unaware of their contraceptive use [AOR=0.4(95%CI:0.2-0.9)] and those having a culture or religion that frowns on contraceptive use [AOR=0.4(95%CI:0.2-0.8)] were less likely to use contraceptive among women in the Tamale Metropolis.

Conclusion: The study found a contraceptive prevalence rate (CPR) in Tamale Metropolis, Northern Ghana to be 36.8%. Education and living in a home where childbearing decisions are made together were identified as positive factors influencing contraceptive uptake.

Keywords: Contraceptive Uptake, Tamale Metropolis, Reproductive-aged women, socio cultural factors, Contraceptive prevalence

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INTRODUCTION

Contraceptive promotion and uptake have been noted to play a key role in maternal and child health.¹ In countries with high birth rates it has the potential of reducing poverty and hunger and averting 32% of all maternal deaths and nearly 10% of childhood deaths.¹ Contraceptive uptake also has a role in the reduction of Total Fertility Rates (TFR).² Global fertility rate has been declining steadily from 2.9 in 2010 to 2.8 in 2012, and 2.4 in 2017.³

This trend seems to show a direct relationship between the fertility rate and economic development. Thus, developed economies have lower fertility rates than developing economies.⁴

Many countries in the world including sub-Saharan African countries rely on birth control measures, especially the use of contraceptives as a means to reducing TFR.⁵ The government of Ghana in collaboration with Ghana Health Service, Marie Stopes International and other stakeholders involved in the provision of family planning services have put in various strategies and policies to increase uptake of contraceptives.

These are aimed at increasing contraceptive prevalence rate (CPR) and reduction in TFR.⁶ Despite the various policies and strategies such as education on mass media on contraception, measured by CPR is low especially in

Ghana (27%) and the Northern Region (11%) to be specific.⁷

A study in Uganda revealed that substantial proportion of the sampled women who wanted to avoid pregnancy either by postponing or stopping childbearing, were not using modern contraceptives referred to as unmet need.⁸ A complex interplay of demographic, social, cultural, and economic factors have been found to contribute to a woman's failure to use modern contraception.⁷ Various reasons have been attributed for this low uptake. In many parts of the world, women do not have the decision making power, physical mobility, or access to material resources to seek family planning services, their use of contraceptives is often strongly influenced by spousal or familial support of, or opposition to family planning.⁹

Women in developing countries face multifaceted and challenging factors to modern contraceptive use. Several studies prove that most women's knowledge and use of contraception is associated with socio-demographic, socio-cultural, socio economic, information and family planning factors.^{4,8,9,10} In Ghana the story is not different. A study on reproductive health decision making in Ghana also revealed that a number of factors such as age, education, wealth index, among others influence Ghanaian women's decisions on reproductive health issues.¹¹ This study was therefore designed to elicit information from reproductive aged women, opinion leaders and adolescence on factors that influence contraceptive uptake in the Tamale Metropolis.

METHODS

Study area and participants

The study was conducted in the Tamale Metropolis of the Northern Region. Tamale is one of the administrative districts of the Northern Region. The Metropolis has three (3) sub metros; Tamale Central, Tamale South and Tamale North sub metros. It has a population of 233,252 representing 9.4 percent of the region's population with females representing 50.3%.¹⁰ The Dagomba tribe which forms majority of the population take great pride in having more than one wife and many children as it is an index for measuring wealth. The TFR for the Metropolis is lower (2.8), than the Northern Regional Fertility rate of 6.8.¹⁰ Contraceptive services are provided by all the health facilities including Pharmacies, licensed chemical shops, and local drug sellers in the Metropolis.

Study Design

A cross sectional study to determine demographic and socio-cultural factors that influence contraception uptake was conducted using women in their reproductive age (15-49years) and men from all the three sub Metropolis

in Tamale from February to March 2015. Data was collected using quantitative and qualitative methods.

Study variables

The outcome variable was contraceptive uptake in the past 12 months. This was defined according to the Ghana Demographic and Health Survey procedure as females' reported use of contraceptive. Women were asked if they were doing anything to prevent pregnancy. This was verified by asking them to state what they were doing (type of contraceptive method they were using). Exposure variables were respondent age, education, residence, employment status, religion, marital status, household assets, knowledge on contraception, cultural/religious beliefs on contraception, partner support and involvement in contraceptive decisions and decisions on having children

Sample size and sampling procedure

Taking into consideration WIFA in the metropolis, an estimated sample size of 475 women was obtained using the modified cluster sampling method. The calculation was done using a prevalence of contraceptive use among married women in Ghana of 27%¹¹, at 95% confidence interval with 5% margin of error and a design effect of 1.25 and an approximately 10% non-response. Twenty five out of 544 Electoral Areas (EAs) in the Tamale Metropolis were selected for this study by the Ghana Statistical Service (GSS).

Selection of EAs done using the Random Number generation function in Microsoft Excel. The 25 EAs were stratified into urban and rural strata after selection. All respondents for both the quantitative and qualitative aspects of the study were selected from the 25 selected EAs. EAs are a community cluster in an urban area and a village or part of a village or a group of villages in the rural areas mapped out by the Ghana Statistical Service.

Quantitative survey

In each EA 19 households were selected using blind drawing from a bag giving a total of 475 households. An eligible woman was one who was between the ages 15-49 years, and had lived in the Metropolis for at least one year. From each selected household, all eligible members were listed and one eligible woman per household was randomly selected by balloting and interviewed after signing of a consent form.

Focus group discussions

For the qualitative component of this study, nine Focus Group Discussions (FGDs) were purposively conducted in nine EAs. FGDs made up of three (3) target groups (elderly women, adolescents and opinion leaders) were held to collect data. One focus group was done in each EA.

Selection of EAs for the FGDs was randomly done taking into consideration the rural urban classification of the EAs. Six urban and three rural EAs were randomly selected. EAs were randomly assigned the target groups. The composition of the nine focus group discussions were as follows:

Urban EAs

- Elderly women's FGD in two EAs
- Opinion leaders' FGD for only males in two EAs
- Adolescent FGD of both sexes in two EAs

Rural EAs

- Elderly women FGD in one EA
- Opinion leaders' FGD for only in one EA
- Adolescent FGD of both sexes in one EA

Data collection

Data was collected by trained research assistants through pre-tested structured questionnaires designed in accordance with the research objectives. Information on demographic characteristics including; respondent age, education, residence, employment status, religion, marital status, household assets, knowledge on contraception, cultural/religious beliefs on contraception, partner support and involvement in contraceptive decisions and decisions on having children were collected. To ensure confidentiality, interviews were conducted in a secluded area of the house away from other household members.

For the qualitative component of this study, one FGD was done in each of the nine selected EAs. Data from the FGDs was collected with an interview guide based on the following themes: knowledge on contraception, cultural influence on contraceptive use, partner involvement in contraception, partner involvement in child making decisions, availability and accessibility of contraceptives, choice of contraceptive service providers. The same interview guide was used for all three target groups. On average each FGD comprised of 10 participants and lasted for about 1 hour. One facilitator moderated the FGDs sessions while another person took notes. An audio recorder was used to record each of the discussion sessions.

Statistical analysis

STATA statistical software version 13 (StataCorp LLC, Texas) was used for statistical analysis for cleaning and analysis. Socio-economic status of household was determined using principal component analysis (PCA) [12]. Household assets such as television sets, motorbikes, type of housing etc, were among some of the household assets that were considered in the Principal Component Analysis (PCA) model.

Household assets were assigned values according to the Ghana DHS 2014 household assets scores (<https://www.dhsprogram.com/topics/wealth-index/Wealth-Index-Construction.cfm>).

Household assets with eigenvalue above one were then put together to generate the wealth score for each household. Based on the wealth scores, households were then put into four groups; poorer, poor, average and richer. Significant demographic and socio-cultural factors influencing contraceptive uptake were also determined using logistic regression models. Factors that were found to be significant in the simple logistic regression were placed in a multiple logistic regression model and age, education, employment, religion and socio-economic status adjusted for. The level of significance was set at $p < 0.05$. The results were presented as Odds Ratios (OR) and 95% Confidence Interval (CI).

Qualitative data collection was done in the local dialect (Dagbani) and then transcribed into English by two independent people. The translations were compared for consistency. Inconsistencies were discussed by the translators with a third person serving as a mediator. Qualitative narrative data in English was then transcribed with Microsoft Word and imported in a format that allows coding of the interview transcripts in Nvivo software, version 10. Thematic analysis was employed in analyzing the data. Information from transcripts were grouped under the various themes in the interview guide. The results were then presented in narratives and supported with illustrative quotes from respondents.

Ethical Consideration

The study was approved by the Ethical Review Committee of the Ghana Health Service with ID number GHS-ERC: 19/02/15 before commencement of the study. Permission was also sought from the Metropolitan Assembly and chiefs of communities that were involved in the study. Consent was also sought from all participants and they were assured of their privacy and confidentiality. For participants less than 18 years, consent was obtained from their parents/guardians before their participation. They were also made to give an assent before they were interviewed.

RESULTS

A total of 475 reproductive women between the ages of 15 to 49 years were interviewed and nine FGDs carried out. The mean age of respondents was 26 years. Majority (49.3%) of women were between the ages of 20-29 years. Most respondents (67.8%) were resident in urban communities, and about one-fifth (20.6%) had some formal employment.

About one quarter of participants (26.1%) had secondary or higher education, highest proportion of the respondents had primary education (39.2%) as their highest level. Most respondents were Muslims (88.8%). Regarding marital status, highest proportion of the respondents (60.8%) were married, while (3.8%) were co-habiting. (Table1)

Table 1 Socio-Demographic Characteristics of Respondents (n=475)

Characteristic	Frequencies (%)
Residence	
Urban	322 (67.8)
Rural	153 (32.2)
Age Categories	
15-19	83 (17.5)
20-29	234 (49.3)
30-39	116 (24.4)
40-49	42 (8.8)
Employment Status	
Employed (formal)	98 (20.6)
Student	105 (22.1)
Unemployed	102 (21.5)
Self employed	170 (35.8)
Education	
None	165 (34.7)
Primary	186 (39.2)
Senior High School	75 (15.8)
Tertiary	49 (10.3)
Religion	
Islam	422 (88.8)
Protestant	20 (4.2)
Charismatic	2 (0.4)
Catholic	18 (3.8)
Other Christian	7 (1.5)
Traditional	6 (1.3)
Marital status	
Single	150 (32.3)
Married	282 (60.8)
Co-habiting	18 (3.9)
Divorced	14 (3.0)
Polygyny	
Yes	119 (36.6)
No	206 (63.4)
Socio Economic Factors	
Poorer	40 (8.5)
Poor	205 (44.0)
Average	165 (35.3)
Rich	57 (12.2)

The prevalence of total contraceptive uptake in the study was 36.8%. Male condom was the most commonly used 46 (14.4%), closely followed by pill 41 (12.8%), injectable 39 (12.2%) and calendar 32 (10%). The use of long acting methods like the Intra Uterine Device (1.3%) and implants (2.2%) was found to be less prevalent among the study respondents as was lactational amenorrhoea method 5(1.6%).

Table 2 shows the prevalence and associations between sociodemographic characteristics of respondents and

contraceptive uptake using logistic regression models. About 6 out of every 10 of the respondents with a secondary education (60.8%) were on contraception compared with about 4 in every 10 of their counterparts with a post-secondary education (38.8%).

At bivariate level, results showed that women with secondary education were more likely take up contraceptives compared to those who had no education ($p < 0.001$), unemployed women were less likely to take up contraceptives compared to those who were formally employed ($p < 0.001$). Women from other religious denominations were more likely to take up contraceptives compared to Islamic women ($p < 0.05$).

In multiple logistic regression analysis women with secondary education had 4.4 times higher odds of contraceptive uptake compared to women with no education after adjusting for other variables including age and marital status [aOR= 4.4(95% CI 1.6-12.4)]. The odds of unemployed women using contraceptives was 0.3 compared to formally employed woman [aORs = 0.3 (95% CI 0.1-0.8)] respectively (Table 2).

Women who did not discuss contraception with their partners often were less likely to use contraceptives compared to women who often did ($p < 0.001$). In the multiple logistic regression analysis, the odds of contraceptive use among women who never discuss contraception with their partners was 0.2 times that among women who discussed contraception with their partners [aOR=0.2, (95% CI 0.1-0.4)]. (Table 3)

In qualitative analysis (FGDs), spousal approval emerged as an important factor in contraceptive uptake among women. Many of the male respondents, felt that a woman must seek approval from the husband before she can use contraceptives. Typical responses that emerged during FGDs were as follows:

“Women have no right to practice contraception without the knowledge of their husbands”-(Male, FGD, Opinion Leaders, Rural respondent).

I will sack my wife if she practice contraception without my knowledge such a woman can be a prostitute-”(Male, FGD, Opinion Leaders, Urban respondent).

“Mostly when the issue of contraception is discussed majority of women will want to see their husbands for a feedback before uptake only the bad wives will take a decision without their husband’s knowledge”-(Male, FGD, Opinion Leaders, Rural respondent).

The culture of not frowning on contraceptive use was also found to be significantly associated with contraceptive uptake.

Table 2 Socio-demographic factors associated with contraceptive uptake
Contraceptive Uptake

Indicators	Uptake (%)	No uptake (%)	cOR(95%CI)	p-value	aOR(95%CI)	p-value
Total	165(36.8)	283(63.2)				
Residence				0.10		
Urban	123(39.3)	190(60.7)	Ref			
Rural	42(31.1)	93(68.9)	0.7(0.5-1.1)			
Age categories				0.78		
15-19	25(32.9)	51(67.1)	Ref			
20-29	83(37.2)	140(62.8)	1.2(0.7-2.1)			
30-39	40(36.7)	69(63.3)	1.2(0.6-2.2)			
40-49	17(42.5)	23(57.5)	1.5(0.7-3.3)			
Education				<0.001		0.10
None	37(25.2)	110(74.8)	Ref			
Primary	64(36.0)	114(64.0)	1.7(1.1-2.7)		1.7(0.8-3.7)	
Senior High School	45(60.8)	29(39.2)	4.6(2.5-8.4)		4.4(1.6-12.4)	
Tertiary	19(38.8)	30(61.2)	1.9(0.9-3.7)		1.1(0.3-3.4)	
Employment Status				<0.001		0.20
Employed	31(36.9)	53(63.1)	Ref			
Student	47(46.1)	55(53.9)	1.5(0.8-2.6)		1.3(0.5-3.4)	
Unemployed	18(18.6)	79(81.4)	0.4(0.2-0.8)		0.3(0.1-0.8)	
Self-employed	69(41.8)	96(58.2)	1.2(0.7-2.1)		1.9(0.9-4.1)	
Marital Status				0.06		0.60
Married	91(34.3)	174(65.7)	Ref			
Single	64(44.8)	79(55.2)	1.5(1.1-2.3)		2.1(0.8-5.2)	
Co habiting	6(33.3)	12(66.7)	0.9(0.3-2.6)		2.4(0.5-10.8)	
Divorce	3(25.0)	9(75.0)	0.6(0.2-2.4)		1.0(0.1-7.2)	
Widowed	1(10.0)	9(90)	0.2(0.1-1.7)		0.3(0.1-7.1)	
Polygyny				0.67		
Yes	37(34.3)	71(65.7)	Ref			
No	72(36.7)	124(63)	1.1(0.7-1.8)			
Religion				0.01		0.28
Islam	135(34.0)	262(66.0)	Ref			
Protestant	9(50.0)	9(50)	1.9(0.8-5.0)		1.9(0.6-6.8)	
Charismatic	2(100)	0(0)	--	-	-	-
Catholic	11(61.1)	7(38.9)	3.0(1.2-8.0)		1.3(0.3-5.4)	
Other Christian	3(42.9)	4(57.1)	1.5(0.3-6.6)		2.6(0.3-21.8)	
Other/traditional	5(83.3)	1(16.7)	9.7(1.1-83.9)		0.9(0.5-13.8)	
Socio-economic status				0.48		
Poorer	9(27.3)	24(72.7)	Ref			
Poor	76(40.2)	113(59.8)	1.8(0.8-4.1)			
Average	60(36.8)	103(63.2)	1.6(0.7-3.6)			
Rich	19(33.3)	38(66.7)	1.3(0.5-3.4)			

cOR= crude odds ratio, aOR= adjusted odds ratio, employed= formal employment

Respondents whose cultures frowned on contraception use were 0.4 times less likely to use contraceptives [aOR=0.4, (95% CI, 0.2-0.8)] compared to women who agreed to the statement. Additionally, during the FGDs, religious constraints emerged as one of the factors affecting contraceptive use.

The female respondents felt that every woman has been endowed with a number of children to bear by the Creator. Hence, the use of contraceptive to prevent pregnancy was perceived as an affront to God as this prevents the bearing of children.

“When you practice contraception and you don’t give birth to the required number of children, God has given you, on the judgment day, God will ask you where are the

rest of the children”-(Female, FGD, Women Group, Urban respondent).

“God has created every woman with the total number of children each will have on earth. Contraception can neither increase nor decrease it”- (Female, FGD, Women Group, Urban respondent).

To some respondents, the use of modern contraceptive methods was prohibited by the Quran. A Muslim respondent shared his view that the Quran only approves the use of natural contraceptive methods such as withdrawal

“I think we are not taking the word of God into consideration regarding this our discussion. The Quran has stated specifically how to space children through the method of withdrawal during sexual intercourse with

your wife if you are not ready for pregnancy. We have ignored the Quran and practicing contraception which is giving our women a lot of problems like infertility, irregular menses weight gain and even death in some cases. As we speak now a lot of women are struggling with complications from contraceptive use”-(Male, FGD, Opinion Leaders, Urban respondent).

In this study, one other cultural factor that influences contraceptive uptake identified was ancestral disapproval. Some respondents were of the view that ancestors did not approve the use of contraceptive, therefore people will desist from using contraceptive for fear of ancestral punishment.

“Our tradition does not permit the use of contraceptives. Our grandparents did not practice modern contraception. The number of children God has ordained them to give birth to was what they gave birth to”-(Female, FGD, Women Group Rural respondent).

Nonetheless, some respondents in this study believed that there were traditional ways of protecting oneself against pregnancy. One such methods was to use a ‘local’ preparation known as “Kaligitim”.

“If you have unprotected sex, there is a local emergency contraceptive called “kaligitim” that we purchase from traditional drug peddlers. It can be used in two ways, as an emergency contraceptive or when you miss your period”-(Female, FGD, Women Group, Urban respondent).

Another local contraceptive method which emerged in the FGDs was the use of beads. These beads are worn around the woman’s waist and are believed to protect the user from pregnancy.

“The beads are worn around the waist of unmarried women who want to avoid pregnancy and for women whose children are small. It also is worn around the waist of the child till the child is walking then it can be taken off (the mother) to get pregnant”-(Female, FGD, Adolescents, Rural respondents).

Child bearing decisions solely made by male partners were also found to be significantly associated with whether or not a woman chooses to use contraceptives. Respondents who made childbearing decisions together with their male partners were 2 times more likely to use contraceptives compared to their counterparts in homes where childbearing decisions are made solely by male partners [AOR=2.1(95%CI 1.1-4.2)].

Respondents whose male partners had no knowledge of their contraceptive use were 0.4 times [AOR=0.4, (95%,

0.2-0.9)] less likely to use contraceptives compared to respondents who agreed to the statement. Also, women whose male partners do not encourage them to use contraception were 0.3 times less likely to use contraceptives [COR=0.3(95% CI 0.2-0.4)] compared to respondents whose partners encouraged them (Table 3).

Side Effects of Contraception use

FGDs showed that some respondents believed that the use of modern contraceptives comes with many side effects

“We are afraid to practice contraception because of its side effects like infertility and weight gain. Even though health workers come to educate us on contraceptives and its advantages”-(Woman, FGD, Women Group, Rural Respondent).

“In some cases when you use some of the methods and stop you can still get pregnant but the pregnancy will not stay, it will get aborted as a results of the drug which is still in your system”-(Female, FGD, Adolescent, Urban Respondent).

DISCUSSION

We conducted a cross sectional study that employed both qualitative and quantitative approaches to examine demographic and socio-cultural factors influencing contraceptive uptake among reproductive aged women in the Tamale metropolis. Contraceptive prevalence was 36.8% amongst women of reproductive age in the Metropolis. This prevalence is higher than the regional prevalence of 11.2% and the national prevalence of 27% recorded by the 2014 Demographic and Health Survey.¹¹ This difference in prevalence could be due to the differences in population characteristics. Tamale Metropolis is largely urban over (80%) and there is evidence of higher contraceptive uptake among urban dwellers.¹¹ Prevalence of contraceptive uptake in the Tamale Metropolis in this study was higher among urban dwellers with almost 40% compared to rural dwellers (31%). This could be explained by the availability of contraceptives and higher literacy rates of women in urban areas.

The findings from this study suggest that education and employment status play significant roles in the uptake of contraceptives in the Tamale Metropolis. Having formal education was directly related to contraceptive uptake and women with secondary education reported greater uptake of contraceptives (60.8%). Studies have shown that increase in education comes with a corresponding increase in knowledge and uptake of contraceptives.¹² Women with secondary education were four times more likely to use contraceptives compared to women with no formal education. An earlier study among southern Ghanaian women showed that educational status of a woman was the most significant predictor of contraceptive use.

Table 3 Socio- cultural factors associated with contraceptive uptake

Indicators	Contraceptive uptake					
	Uptake (%)	No uptake (%)	cOR(95% CI)	p-value	aOR(95%CI)	p-value
Discuss contraception with partner				<0.001		<0.001
Yes often	54(72.00)	21(28.00)	Ref			
occasionally	48(53.33)	42(46.67)	0.4(0.2-0.8)		0.5(0.2-1.2)	
Hardly	21(61.76)	13(38.24)	0.6(0.3-1.5)		0.8(0.3-2.8)	
Never	41(17.08)	199(82.92)	0.1(0.1-0.2)		0.2(0.1-0.4)	
Culture/Religion does not frown on contraception				0.01		0.11
Agree	64(39.75)	97(60.25)	Ref			
Neither	6(15.38)	33(84.62)	0.3(0.1-0.7)		0.3(0.1-1.1)	
Disagree	94(39.17)	146(60.83)	0.9(0.6-1.5)		0.4(0.2-0.8)	
People using contraception in this community are stigmatized				0.50		
Agree	27(35.6)	50(64.94)	Ref			
Neither	17(30.91)	38(69.09)	0.8(0.4-1.7)			
Disagree	121(38.66)	192(61.34)	1.2(1.7-1.9)			
Child bearing decisions are solely made by partner				0.01		0.03
Agree	41(25.95)	117(74.05)	Ref			
Neither	7(33.33)	14(66.67)	1.4(0.5-3.8)		5.1(0.7-36.2)	
Disagree	117(43.98)	149(56.02)	2.2(1.5-3.4)		2.1(1.1-4.2)	
My partner knows I use contraceptives				<0.001		0.03
Agree	131(50.97)	126(49.03)	Ref			
Neither	4(10.81)	33(89.19)	0.1(0.1-0.3)		0.9(0.1-44.9)	
Disagree	30(19.48)	124(80.52)	0.2 (0.1-0.4)		0.4(0.2-0.9)	
My partner encourages me to use contraceptives				<0.001		0.84
Agree	116(53.21)	102(46.79)	Ref			
Neither	3(8.11)	34(91.89)	0.1(0.1-0.3)		0.2(0.1-6.7)	
Disagree	46(23.83)	147(76.17)	0.3(0.2-0.4)		1.3(0.6-2.7)	
I will encourage my friends to use contraception				<0.001		0.92
Agree	150(42.37)	204(57.63)	Ref			
Neither	2(6.90)	27(93.10)	0.1(0.1-0.4)		0.5(0.6-4.4)	
Disagree	13(21.31)	48(78.69)	0.4(0.2-0.7)		0.9(0.4-2.7)	
In my opinion contraception should be encouraged by all				<0.001		<0.001
Agree	159(42.86)	212(57.14)	Ref			
Neither	4(12.50)	28(87.50)	0.2(0.1-0.5)		0.7(0.1-4.8)	
Disagree	2(4.76)	40(95.24)	0.1(0.1-0.3)		0.1(0.1-0.3)	

cOR= crude odds ratio, aOR= adjusted odds ratio

Women with no formal education had a 48% reduction in the odds of ever having used contraception and a 66% reduction in the odds of currently using contraception.¹³

The findings in our study are consistent with what was observed by Lakew *et al.* in a similar study in Ethiopia¹⁴ suggesting that women with higher education had a higher odds of using modern contraceptives. Similarly in another study conducted in five African countries the results showed that women with at least secondary school level education were more likely to use contraceptives than women with no education.¹⁵

Another socio-cultural factor that emerged as influencing contraceptive use was religious constraints. From our FDGs, it was clear that, some religious sectors prohibit the use of contraceptives among their followers. During the FDGs most Moslem respondents said that contraceptive use was forbidden and a violation of God's rules.

Most respondents believed that, the Supreme Being "God" has endowed every woman with the number of children to reproduce. Hence, it was unreligious to use contraceptives to reduce the number of children one is 'destined' to reproduce.

Persons of the Islamic faith in this study generally believed that the Quran only permits natural methods of contraception. Both males, females, rural and urban respondents were unanimous on the need for any practicing Muslim not to use modern contraceptive as it will be an infraction on the Quran. This view is also the stand of Muslim fundamentalist who insist that any form of contraception violates God's intentions.¹⁶ Okech and others found religion as a significant determinant of contraceptive uptake.¹⁷ Contrary to this findings that religious constraints decrease the likelihood of contraceptive use among women, a study in Kassena-Nankana district of Ghana has showed that people who switch from traditional religion to Christianity or Islam were more likely

to use contraceptive than those that adhere to traditional religion.¹⁸ These findings suggest that in addressing barriers to contraceptive uptake among women in reproductive age, religious leaders should be targeted. Acceptance of the use of contraceptives by religious leaders will have positive impact on contraceptive uptake among their followers. It is therefore important for health workers to advocate the use of contraceptives and to extend their health educations to religious leaders. If such messages are embraced by the religious leaders it would assist in increasing contraceptive uptake. Behavioral change and communication messages must be designed to highlight the importance in contraceptives uptake. Again, existing opportunities such as innovative ways of educating religious leaders, opinion leaders and community members need to be adopted to teach people about the importance of contraceptive uptake.

We also found that the employment status of respondent played an important role in influencing contraceptive uptake. Our results showed that unemployed women were less likely to use contraceptives compared to employed women. This finding is consistent with what was observed in Tanzania where the highest use of contraceptives was reported among women in formal employment.¹⁹ Marital status, age, residence, and type of marriage did not seem to influence the decision to use contraception in this study. Findings are different from findings in a secondary analysis of the 2014 demographic and health data which reported that place of residence and marital status were the most important predictors of contraceptive use among sexually active adolescents.¹¹ Furthermore, another study in Southern Ghana found rural residents were less likely to use contraceptives compared to urban residents as well as married respondents compared to their unmarried peers.²⁰ Nonetheless, the study focused primarily on adolescents and not women in reproductive age.

Another factor that was associated with contraceptive uptake in our study was partner's approval. Women who never discussed contraception with their partners had only a 10% likelihood of using contraceptives. In focus group discussions it emerged that a woman must seek approval from her husband before she can use contraceptives, since it is believed that women who use contraceptives without their partners' knowledge are likely to engage in promiscuous behaviour and extramarital affairs. Earlier studies in southern Ghana and another in Kenya also reported that spousal approval was relevant in contraceptive uptake among women.^{17,20} Given the fact that spousal consent is essential, contraceptive related health promotion messages should target both males and females. Involving men in contraceptive related activities has the potential to increase contraceptive use among women in northern Ghana.

Limitation of the study

There was a probability of recall bias among participants since they were asked to tell their contraceptive practices over the last one year. To help them remember, we probed on the types of contraception, where, and when it was done.

CONCLUSION

The study found the prevalence of contraceptive uptake among women in reproductive age in the metropolis to be 36.8%. Education and living in a home where childbearing decisions are made together by both spouses were identified as positive factors influencing contraceptive uptake. Unemployment, male partner being unaware of contraceptive use and having a culture or religion that frowns on contraceptive use were identified as negative factors influencing contraceptive uptake.

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REFERENCES

1. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. *Lancet*. 2006; 18:368(9549):1810–27.
2. United Nations, Department of Economics and Social Affairs, Population Division. World Fertility Patterns 2015-Data Booklet (ST/ESA/SER.A/370). UN, New York. 2015. Available: <http://www.un.org/en/development/desa/population/publications/pdf/fertility/world-fertility-patterns-2015.pdf>. (Assessed 08 Sept 2015.)
3. World Bank Data. World Development Indicators Fertility, total (births per woman). World Bank. Washington, 2018. Available: <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN> (Assessed 21 Jul 2018).
4. Okech TC, Wawire NW, Mburu TK. Contraceptive Use among Women of Reproductive Age in Kenya's City Slums. *International Journal of Business and Social Science*. 2011;2(1):22–43.
5. World Bank. Ghana - Contraceptive prevalence. 2015. World Bank. Washington, 2015. Available: <http://data.worldbank.org/indicator/SP.DYN.CONU.ZS/countries?page=5>. (Assessed 14 Jan 2016.)
6. Singh S, Darroch J, Ashford L, Vlassoff M. Adding it up: the costs and benefits of investing in family planning and maternal and newborn health. UNFPA, New York. 2009.

- Available: https://www.guttmacher.org/sites/default/files/report_pdf/AddingItUp2009.pdf. (Assessed 21 Jun 2015)
7. Mboane R and Bhatta MP. Influence of a husband's healthcare decision making role on a woman's intention to use contraceptives among Mozambican women. *Reproductive Health*. 2015;12:36
 8. Susan Babirye Kayongo. Uptake of modern contraception among youths (15-24) at community level in Busia District, Uganda. [MPhil Dissertation] Makerere University; 2013.
Available:
[http://www.musphcdc.ac.ug/files/pdf/Uptake%20of%20modern%20contraception%20among%20youths%20\(15-24\)%20at%20community%20level%20in%20Busia%20district,%20Uganda%20by%20suza%20babirye.pdf](http://www.musphcdc.ac.ug/files/pdf/Uptake%20of%20modern%20contraception%20among%20youths%20(15-24)%20at%20community%20level%20in%20Busia%20district,%20Uganda%20by%20suza%20babirye.pdf). (Assessed 21 Jun 2015).
 9. Mohammed A, Woldeyohannes D, Feleke A, Megabiaw B. Determinants of modern contraceptive utilization among married women of reproductive age group in North Shoa Zone, Amhara Region, Ethiopia. *Reprod Health*. 2014; 11:13.
 10. Ghana Statistical Service (GSS). 2010 population and housing Census; District analytical report, Tamale Metropolis. GSS, Accra. 2014. Available: http://www.statsghana.gov.gh/docfiles/2010_District_Report/Northern/Tamale_Metropolitan.pdf. (Assessed 21 Jun 2015).
 11. Ghana Statistical Service (GSS), Ghana Health Service (GHS) and ICF Macro. Ghana Demographic and Health Survey, 2014. ICF Macro, Rockville, Maryland. 2015.
Available at:
<http://www.statsghana.gov.gh/docfiles/publications/2014%20GDHS%20%20Report.pdf> (Assessed 07 Dec 2015)
 12. Rahman MM, Kabir M. Knowledge of adolescents on contraception and dynamics of its use. *Heal Popul Perspect Issues*. 2005;28(4):164–77.
 13. Adanu RMK, Seffah JD, Hill AG, Darko R, Duda RB, Anarfi JK. Contraceptive use by women in Accra, Ghana: results from the 2003 Accra Women's Health Survey. *Afr J Reprod Health*. 2009;13(1):123–33.
 14. Lakew Y, Reda A A, Tamene H, Benedict S, Deribe K. Geographical variation and factors influencing modern contraceptive use among married women in Ethiopia: evidence from a national population based survey. *Reprod Health*. 2013;10(1):52.
 15. Stephenson R, Baschieri A, Clements S, Hennink M, Madise N. Contextual influences on modern contraceptive use in sub-Saharan Africa. *Am J Public Health*. 2007;97(7):1233–40.
 16. Srikanthan A, Reid RL. Women's health Religious and Cultural Influences on Contraception. *J. Obstet Gynaecol Can*. 2008;30(2):129–37.
 17. Doctor HV, Phillips JF, Sakeah E. The influence of changes in women's religious affiliation on contraceptive use and fertility among the Kassena-Nankana of Northern Ghana. *Stud Fam Plann*. 2009;40(2):113–22.
 18. Michael EJ. Use of Contraceptive Methods among Women in Stable Marital relations attending health facility in Kahama District, Shinyaga Region Tanzania. [MPH Dissertation]. Muhimbili University of Health and Allied Sciences; 2012. Available: http://ihi.eprints.org/1733/1/Esabella_Job_Michael.pdf 2012. (Accessed 21 Jun 2015)
 19. Marrone G, Abdul-Rahman L, De Coninck Z, Johansson A. Predictors of contraceptive use among female adolescents in Ghana. *Afr J Reprod Health*. 2014;18(1):102–9.
 20. Adongo PB, Tapsoba P, Phillips JF, Tabong PT-N, Stone A, Kuffour E, et al. The role of community-based health planning and services strategy in involving males in the provision of family planning services: a qualitative study in Southern Ghana. *Reprod Health*. 2013;10(1):36.