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Original Article

Determinants of Contraceptive Use among Female Adolescents in the Nabdam District of Upper East Region, Ghana

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ABSTRACT

Introduction: Contraceptive use among female adolescents has been found to be associated with positive health outcomes such as reduction in unplanned pregnancies, reduced maternal and child mortalities. However, contraceptive use among female adolescents is still low in developing countries despite high fertility rates in young women. Therefore, this study sought to investigate the determinants of contraceptive use among female adolescents. **Methods:** A community-based cross sectional study was conducted among sexually active female adolescents. Using structured questionnaire, data were collected from a randomly sampled 324 adolescent girls aged 10-19 years. Data were analyzed using Stata version 13.1. Pearson Chi-Square and Fisher's Exact test were conducted at bivariate level and significant variables included in a single logistic model for regression. *P*-values of <0.05 at 95% confidence interval were considered significant. **Results:** Ninety-five percent of the participants showed some knowledge about contraceptives. However, the prevalence of contraceptive use was only 38.1%. The commonly used methods were injectable (56.8%) and condoms (39%). Reasons cited for non-use of contraceptives were; fear of side effects, lack of partner support among others. Age, marital status, parity, religion, partner/parent support, cost of contraceptive, peer influence and misconceptions were significantly associated with the use of contraceptives among female adolescents. **Conclusion:** The high level of knowledge about contraceptives did not translate into contraceptive uptake by female adolescents. There is the need for health professional to scale up health education on the benefits of contraceptives especially within the existing adolescent health clubs.
Key words: Adolescent girls, Family planning, Nabdam district, Teenage pregnancy, Ghana.

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INTRODUCTION

The global population of adolescents is currently at all time high and is projected to rise further high in the coming decades.[1] This projected increase will largely occur in low-income countries where there are high fertility rates among adolescents.[2] The global adolescent fertility rate has declined from 56 births per 1,000 female adolescents in the year 2000 to 45 in 2015 and currently 44 in 2018. However, the fertility rate among adolescent in Sub-Saharan African remains high at 101 births per 1,000 female adolescents in 2018.[3] Adolescence is a crucial period that comes with identity formation and usually characterized by risky behaviours including unprotected sexual acts; resulting to unplanned pregnancies.[4] Although noted for high adolescent pregnancies, Sub-Saharan Africa is also one of the regions with the lowest contraceptive use among adolescents. Among the 53 million women aged 15-19 years in Sub-Saharan African, 12.1 million (23%) needs contraception because they do not want a child for at least two years. Yet only 38% of the 12.1 million are currently using modern contraceptives with common methods being male condom, injectable and pills respectively.[5]

Generally, there has been an increase in contraceptive uptake in Ghana from 17% in 2008 to 22% in 2014, but that of the adolescent girls has not seen any improvement at all.[6] In Ghana, pregnancies among 15 to 19 years have slightly increased from 13% in 2008 to 14% in 2014. This may be due to the fact that the Ghanaian female adolescents have a high demand (69.3%) for contraceptives but very low contraceptive use (18.6%).[6] This situation is very worrying as it poses the tendencies for more occurrences of unplanned pregnancies among the Ghanaian adolescents. The Upper East Region has consistently led in adolescent pregnancies in Ghana with a marginal increase in three consecutive years; 2014 (15%), 2015 (15.3%) and 2016 (15.4%). Meanwhile, adolescent contraceptive use has been on the low side in the corresponding years; 2014 (14.8%), 2015 (16%) and 2016 (15.5%).[7] Although Nabdam district is one of the few districts in Ghana where clients can access family planning services under the National Health Insurance, the use of contraceptives among female adolescents is very low (26.7%); despite a high unmet need for adolescent contraceptives.[7] Unplanned adolescent pregnancy has devastating effects on the adolescent such as maternal mortality,[3] having low birth-weight and preterm babies as well as dropping out of school.[8] Therefore, preventing unplanned pregnancy is cru-

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cial in improving the adolescents' sexual and reproductive health as well as their economic and social well-being.[9]

Amidst several appeals to prioritize adolescents' family planning needs, an understanding of the current patterns of adolescent contraceptive use is crucial to achieving the universal access to sexual and reproductive health of adolescents.[10,11] High quality contraceptive services is essential to prevent unplanned pregnancies especially among adolescent girls.[12] In a survey of forty countries, contraceptive practices among adolescents was inconsistent; with more contraceptive failure and discontinuation among adolescent girls when compared with adult women. Most adolescent girls cited side effects as reasons for not using any method at all.[12-14] Other barriers to adolescents contraceptive use include misconceptions about contraceptives and lack of support from partners/parents.[10,15] Appropriate counseling, especially during initiation of contraceptive use or changing of methods is crucial to ensure consistent use of contraceptive.[16] This study sought to investigate the determinants of contraceptive use among adolescent girls in the Nabdam District of Upper East Region, Ghana.

MATERIALS AND METHODS

Study design and settings

A community cross sectional survey was conducted using quantitative methods. Face to face interviews were conducted with participants using structured questions. The questions were explained verbally in the local dialect (Nabit) for those who did not understand the English language. The study was conducted from April to July, 2019.

The Nabdam District was curved out of the then Talensi-Nabdam District in 2012 and currently forms part of the 15 districts in the Upper East Region of Ghana. The district is mainly rural and sparsely organized which makes it difficult for location and provision of healthcare services. According to the Ghana Health Service population projections for 2019, the total population is 39,798 made up of 19,847 males and 19,951 females. The adolescent population is 11,144 characterized by high prevalence of teenage pregnancies. The district has four health centers with only one privately practicing medical doctor. However, they are a number of clinics and several Community-based Health Planning and Service (CHPS) compounds serving the numerous communities.

Study population

The study was conducted among sexually active adolescent girls between 10-19 years. Non sexually active adolescents were excluded from the study.

Sample Size and Sampling procedures

Cochran's formulator was used to estimate the sample size with a contraceptive prevalence rate among female adolescents of 26.7%. This shown as below.

$$n = \frac{Z^2 p(1-p)}{m^2}$$

Where n= sample size

Z is reliability coefficient =1.96

p is prevalence =26.7

m is margin of error =0.05

$$n = \frac{1.96^2 * 0.267\ (1-0.267)}{0.05^2}$$

n=301

A 10% non-response rate was calculated to make 331 participants.

Five communities were randomly selected from each of the five sub districts. Then a computer generated number was used to randomly select the houses from the various communities according to their population proportion making up of 331 houses. This was done using the 2010 Population and Housing Census data. One eligible respondent was interviewed in each house and where there were more than one eligible respondent in a house, a simple random sampling method was used to select one respondent. Where there was no eligible respondent in a selected house, the next house was considered.

Measurement

The outcome variable was 'ever use of contraceptive method(s)' (binary) and the predictor variables included demographic variables, accessibility and socio-cultural variables.

Data Analysis

Simple proportions were used to describe categorical data at univariate level and presented in frequency and percentage distributions. At bivariate level, Pearson's Chi-Square and Fisher's exact test were used to determine the associations between the use of contraceptives and predictor variables. A relationship between the outcome and predictor variables that resulted in a critical *p*-value of less than 0.05 was interpreted as being significant. All the variables found to be significant at the bivariate level were included in a logistic regression model to determine their relationship with the outcome variable. The analysis was done using STATA version 13.1.

Ethical Approval

An approval was sought from Ghana Health Service through the Nabdam District Health Directorate. Further oral approvals were sought from the various community leaders. A written informed consent form was also obtained from all participants 18 years and above. For those below 18 years, consent was sought from their parents while they assented to participate in the study. Young graduate females were recruited to collect the data because of the sensitivity nature of the study.

RESULTS

Demographic characteristics

A total of 324 female adolescents participated in the study with a response rate of 97.9%. Among those who ever used contraceptives, 94.9% were aged 15-19 years compared to 5.1% in the 10-14 years group. More than half (61.9%) of those who ever used contraceptives were either married or cohabitating; 83.7% of those who never used contraceptives were single. Although majority of the participants were Christians, the use of contraceptives was more common with the Islamic and African Traditional religions (*p*-value, 0<0.001). All the variables except 'educational level' were significantly associated with female adolescent contraceptive use at bivariate level. (Table 1).

Knowledge and use of modern contraceptive among adolescent girls

Majority (95.1%) of the participants had heard of modern contraceptives. Although participants quoted multiple source of information, friends (58.1%) and health facility (52%) were the leading sources. Close to half (45.1%) knew at least three contraceptive methods and only 38.3% ever used modern contraceptives. Although participants had used multiple contraceptives, the commonly used methods were injectable (56.8%) and condoms (39%). Fear of side effects (59%) and lack of partner support (25.8%) were the most common reasons cited for non-use of contraception among adolescent girls. (Table 2).

Table 1: Demographic characteristics.

Variables	Ever used modern contraception		*P*-value
	Yes (%)	No (%)	
Age			**<0.001***
10-14 years	6 (5.1)	40 (21.1)	
15-19 years	112 (94.9)	150 (78.9)	
Marital status			**<0.001***
Single	45 (38.1)	159 (83.7)	
Married	54 (45.8)	23 (12.1)	
Cohabitating	19 (16.1)	8 (4.2)	
Parity			**<0.001***
Nulliparous	37 (31.4)	152 (80.0)	
Primiparous	61 (51.7)	32 (16.8)	
Multiparous	20 (16.9)	6 (3.2)	
Religion			**<0.001***
Christianity	90 (76.3)	170 (89.5)	
Islamic	20 (16.9)	13 (6.8)	
African Traditional	8 (6.8)	7 (3.7)	
Educational level			**0.329***
No formal education	9 (7.6))	13 (6.8)	
Basis education	73 (61.9)	124 (65.3)	
Secondary education	34 (28.8)	53 (27.9)	
Tertiary education	2 (1.7)	-	
Who do you stay with?			**<0.001***
Parents	43 (36.4)	138 (72.6)	
Partner	66 (56.0)	38 (20.0)	
Guardian	3 (2.5)	14 (7.4)	
Alone	6 (5.1)	-	
Partner/parent support for modern contraception			**<0.001**
Yes	76 (67.9)	34 (17.9)	
No	36 (32.1)	156 (82.1)	

Source: authors' construct. ***Fisher's Exact test**

Table 2: Knowledge and use of modern contraceptive among adolescent girls.

Variable	Frequency (%)
Have you heard of modern contraceptives?	
Yes	308 (95.1)
No	16 (4.9)
Sources of information (multiple responses)	
Media	73 (23.7)
Family members	76 (24.7)
Friends	179 (58.1)
Health facility	160 (52.0)
Which type of contraceptive do you know?	
Knows 1 or 2 methods	142 (46.1)
Knows at least 3 methods	139 (45.1)
Don't know any method	27 (8.8)
Where can one get contraceptives from?	
Health facility	295 (95.8)
Medicine shop	8 (2.6)
Don't know	5 (1.6)
Have you ever used any contraceptive method?	
Yes	118 (38.3)
No	190 (61.7)
Which types have you ever used? (multiple responses)	
Pills	22 (18.6)
Implants	21 (17.8)
Injectable	67 (56.8)
Condom	46 (39.0)
Do you currently use contraceptive?	
Yes	89 (75.4)
No	29 (24.6)
Have you experienced any side effects?	
Yes	57 (48.3)
No	61 (51.7)
Why have you never used contraceptives before?	
Fear of side effects	112 (59.0)
Partner does not support its use	49 (25.8)
Others	29 (15.2)

Source: authors' construct.

Accessibility and socio-cultural factors

A little above one-fourth (30.5%) of those who ever used contraceptives thought the cost of contraception is high compared with 69.5% who said it is not high. About 72.9% and 88.9% respectively of both users of contraceptives and non-users said they are no religious or socio-cultural taboos prohibiting adolescent girls from using contraceptives. More than half of both users of contraceptives (87.3%) and non-users (52.1%) said if they were encouraged by their friends to practice contraception, they would do so. (Table 3).

Table 3: Accessibility and socio-cultural factors.

	Ever used modern contraception		
Variables	**Yes (%)**	**No (%)**	***P*-value**
Area modern contraceptives readily available in this area?			**0.44***
Yes	113 (95.8)	185 (97.4)	
No	5 (4.2)	5 (2.6)	
Do you think the cost of modern contraceptives are high?			**<0.001**
Yes	36 (30.5)	22 (11.6)	
No	82 (69.5)	168 (88.4)	
What is the attitude of health staff towards providing contraceptives to adolescents?			**0.350***
Friendly	105 (89.0)	162 (85.3)	
Unfriendly	13 (11.0)	28 (14.7)	
Are there cultural or religious taboos to contraceptive use among adolescent girls?			**<0.001**
Yes	32 (27.1)	21 (11.1)	
No	86 (72.9)	169 (88.9)	
Will you use a contraceptive during sex if you friend encourage you to do so?			**<0.001***
Yes	103 (87.3)	99 (52.1)	
No	15 (12.7)	91 (47.9)	
Will the support of your guardians on issues relating sexual and reproductive health influence your decision to use contraceptives?			**0.243**
Yes	81 (68.60	118 (62.1)	
No	37 (31.4)	72 (37.9)	
Do you think use of contraceptives among adolescent girls leads them to promiscuity?			**0.006**
Yes	43 (36.4)	100 (52.6)	
No	75 (63.6)	90 (47.4)	
Does the use of contraceptives by adolescent girls make them become barren?			**<0.001**
Yes	27 (22.9)	82 (43.2)	
No	91 (77.1)	108 (56.8)	

Source: authors' construct. ***Fisher's Exact test**

Factors associated female adolescent contraceptive use

After adjusting for other variables, the odds of using modern contraceptives was about five times higher among married adolescent girls compared to those who were single [aOR=5.50, 95% CI: 1.46-20.63, *p*-value=0.011] and that of cohabitating was eight times compared to the single adolescents [aOR=8.20, 95% CI: 2.30-2921, *p*-value=0.001]. Primiparity increased one's odds of using contraceptives by more than four times [aOR=4.31, 95% CI: 1.67-11.08, *p*-value=0.002] and more than seven times [aOR=7.28, 95% CI: 1.27-41.51, *p*-value=0.025] for those who have given birth twice compared to those who have never given birth. The participants who did not associate barrenness to the use of contraceptives were more than twice likely to use contraceptives compared to those who associated it with barrenness [aOR=2.87, 95% CI: 1.12-7.30, *p*-value=0.027]. (Table 4).

DISCUSSION

This survey assessed the knowledge and use of contraceptives among female adolescents. It also examined factors that enhance female adolescent contraceptive use.

Knowledge and use of contraceptives

The study revealed that 95.1% of the participants had heard of contraceptives. This finding is supported by other previous studies in Ghana where at least 90% of the participants had heard of contraceptives.[17,18] However, this finding differs from those found in India where only 51% of school going adolescent girls had heard of contraceptives.[19] The reason for this disparity could be attributed to religious and cultural differences contributing to such knowledge awareness gap. Knowledge of at least one contraceptive method was 91.2%. However, only 45.1% of them knew at least three methods of contraception. Agyemang *et al.*[18] reported similar findings where about 89% of the participants knew at least one method and only 25% and 31% respectively could mention other methods such pills and injectable. Most of the participants (58.1%) got information regarding contraceptives from friends, health facilities (52%), family members (24.7%) and media (23.7%). The media has always been found to be the main source of information regarding contraceptives in Ghana. However, this study was conducted in a rural area where access to information from the media is highly limited. Most of the participants (98.4%) knew where to access contraceptives.

In this study, 38.3% of the participants had ever used contraceptives and of this number, 75.4% were currently using contraceptive methods while

Table 4: Multivariate analysis.

variable	Crude OR (95% CI)	*P*-value	Adjusted OR (95% CI)	*P*-value
Age		<0.001		
10-14 years	1.00		1.00	
15-19 years	4.97 (1.99-12.43)		2.25 (0.55-9.18)	0.258
Marital status		<0.001		
Single	1.00		1.00	
Married	8.29 (4.28-16.06)		5.50 (1.46-20.63)	0.011
Cohabitating	8.39 (3.24-21.71)		8.20 (2.30-29.21)	0.001
Parity		<0.001		
Nulliparous	1.00		1.00	
Primiparous	7.83 (4.17-14.67)		4.32 (1.68-11.14)	0.002
Multiparous	13.69 (4.62-40.52)		7.28 (1.27-41.51)	0.025
Religion		<0.007		
Christianity	1.00		1.00	
Islamic	2.90 (1.36-6.18)		5.70 (1.69-19.18)	0.005
African Traditional	2.15 (0.75-6.18)		2.14 (0.35-12.82)	0.403
Who do you stay with?		<0.001		
Parents	1.00		1.00	
Partner	5.57 (3.14-9.88)		0.75 (0.23-2.42)	0.639
Guardian	0.68 (0.18-2.51)		0.85 (0.11-6.29)	0.875
Alone	-		-	
Partner/parent support for modern contraception		<0.001		
Yes	1.00		1.00	
No	0.10 (0.05-0.19)		0.19 (0.08-0.42)	<0.001
Do you think the cost of modern contraceptives are high?		<0.001		
Yes	1.00		1.00	
No	0.29 (0.16-0.54)		0.12 (0.04-0.32)	<0.001
Are there cultural or religious taboos to contraceptive use among adolescent girls?		<0.001		
Yes	1.00		1.00	
No	0.33 (0.17-0.62)		0.21 (0.07-0.58)	0.003
Will you use a contraceptive during sex if you friend encourage you to do so?		<0.001		
Yes	1.00		1.00	
No	0.15 (0.08-0.30)		0.31 (0.11-0.87)	0.027
Do you think use of contraceptives among adolescent girls leads them to promiscuity?		0.005		
Yes	1.00		1.00	
No	1.93 (1.20-3.12)		1.31 (0.59-2.93)	0.499
Does the use of contraceptives by adolescent girls make them become barren?		<0.001		
Yes	1.00		1.00	
No	**2.55 (1.50-4.34)**		2.87 (1.12-7.30)	0.027

Source: authors' construct.

24.6% were not using any methods. Agyemang *et al.*[18] in Ghana reported 67% contraceptive use among adolescents while Tejineh *et al.*[20] in Ethiopia also reported 61%. While the two previous studies were conducted in urban areas where there are generally an enlighten population, the current study was conducted in rural area. However, the current finding agrees with the Guttmacher Institute report of the global figure of 38% contraceptive use among adolescents.[5]

Participants of this study reported multiple use of contraceptive methods. The commonly used methods were injectable, condom and pills respectively. This finding is corroborated by most previous studies where the commonly used contraceptives among adolescents were condoms, pills and injectable.[5,17,18] However, the most used contraceptive among adolescents in the current study was injectable unlike the condom that has been reported by previous studies. The possible explanation for this difference is that, unlike the current study that considered only female adolescents, previous studies included adolescent boys and girls and the use of condoms is high among boys.

About a half (48.3%) of those who used contraceptives reported experiencing some side effects. Meanwhile reasons cited for not using contraceptives in this study were; fear of contraceptive side effects and lack of partner support. Other reasons cited also include infrequent sex, not being married, desire for pregnancy and still breastfeeding. These findings are aligned with several previous studies.[5,10,12-15]

Factors associated with female adolescent contraceptive use

Marital status was significantly associated with the use of contraceptives. Contraceptive use was more likely among adolescents who were married or living together than those who were not married. This is in line with the recent Ghana Demographic and Health Survey that also found the use contraceptives to be more common with married adolescent girls compared to the unmarried.[6] More married female adolescents may likely use contraceptives because they may be more capable to afford contraceptives than the unmarried due to partner support.

Parity was also found to be a determinant for contraceptive use. In this study, adolescents with one or two children were more than four times likely to use contraceptives compared to those without any child. This finding contradicts the one found by Aviisah *et al.*[21] where the use of contraceptive was lower among women with less than three children but higher among women with four or more children. The latter conducted the study among women in reproductive age while the current study was conducted among only adolescents. This is possibly accounting for the disparity in the results.

Although most of the participants admitted that religion is not a barrier to contraceptive use, religious affiliation of participants at bivariate and multivariate level was significantly associated with contraceptives use. Contraceptives use was higher with the Muslims compared to the Christians. Previous studies in Ghana reported higher contraceptive use among Christians than Muslims.[21] The current study was conducted in an area where majority of the Christians are Catholics and the Catholic Church is known to have opposing views on modern contraceptive use. Partner/parent support was also significantly related to contraceptive use. The odds for contraceptives use among adolescent girls was high for those whose partners/parents supported it compared to those who did not support it. This agrees with several previous studies.[5,21,22]

Cost of contraceptives was found to be a determining factor for use of contraceptives. Although prices of contraceptives commodities have been heavily subsidized, folks in the rural settings are still unable to afford them. Peer influence is also statistically significant to female adolescent contraceptive use at both bivariate and multivariate levels. It was revealed in this study that adolescent girls were more likely to use contraceptives when encouraged by their counterparts. This underscores the need to effectively utilize the adolescent clubs since this could be the best medium to influence the use of contraceptives among the adolescents. Socio-cultural misconceptions on the use of modern contraception have also been significantly associated with the adolescent contraceptive use. According to the current study, girls who thought contraceptive use does not lead to barrenness were more likely to utilize contraceptives compared with those who thought contraception leads to barrenness.

Age also had some associations with contraceptive use. Girls 15-19 years were almost five times likely to practice contraception compared to 10-14 years. This is consistent with the findings by Mekonnen *et al.*[23] where age of women influenced their use of contraceptives. Age however was not significant at multivariate level. Educational level of participants and attitude of health staff were insignificant at bivariate level.

Limitation of the study

This study lacks qualitative data to augment the findings and secondly, the sensitive nature of the questions had the potential of making the adolescents uncomfortable and this could have influenced their responses. However, this limitation was addressed by recruiting young female graduates who maintained high standards of confidentiality and professionalism.

CONCLUSION

This study demonstrated that female adolescents had an appreciable knowledge regarding contraceptives. However, contraceptive use was very low. Main reasons cited for non-use of contraceptives were; fear of side effects and lack of partner support. The determinants of contraceptive use among female adolescents included; age, marital status, parity, religion, partner/parent support, cost of contraceptives, cultural or religious taboos, peer influence and misconception such contraceptive use leads to barrenness. There is the need for healthcare professionals to focus attention on adolescent clubs in order to bring into play peer influence on contraceptive use.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

CHPS: Community-based Health Planning and Services; **SDG:** Sustainable Development Goals; **UNFPA:** United Nations Population Fund.

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