

## **Adolescents' Intentions and Willingness for Contraceptive Use in Rural Ghana**

### **Introduction**

Adolescent females aged 15-19 account for over 14 million births each year, 91 percent of these in low and middle-income countries.<sup>1</sup> Six million adolescent pregnancies are unintended and occur in the context of low contraceptive prevalence.<sup>2-3</sup> Less than one third of currently married adolescent females in low and middle income countries who want to avoid pregnancy are using a modern method of contraception, and more than 60 percent would like to avoid or delay pregnancy but are not able to do so.<sup>4</sup> Less is known about unmarried adolescents. Sexual activity outside of marriage is increasing, but less than half of those who want to avoid pregnancy are using a modern method of contraception.<sup>4-6</sup>

Adolescence is the period between the ages of 10 and 19 years when young individuals transition into adulthood.<sup>7-8</sup> This period is subdivided by some writers into early (10 -14 years) and late (15-19 years) adolescence<sup>9-10</sup> whereas others refer to early (10 – 13 years), mid- (14 – 15 years) and late (16 – 19 years) adolescence.<sup>11</sup> Within the past one and half decades many efforts have been made to improve the availability and access to adolescent sexual and reproductive health (ASRH) services. Despite these efforts, adolescents still face a number of sexual and reproductive health (SRH) problems.<sup>12</sup> Globally, female adolescent (15 to 19) account for 14 million births annually.<sup>13</sup> These births put them at a high risk of death or lifelong complications, because they are still not well developed to start child bearing. The birth rates among females between 15 to 19 years in Africa is estimated at 143 per 1000, which is two times more than the world average of 653 (ref). Many have unwanted pregnancies some leading to abortion (ref). Because of the limited availability and high cost of abortion services, when these young people decide to abort a pregnancy they usually resort to unsafe methods (ref). These unsafe abortions

have been reported to be a major contributor to the high rates of morbidity and mortality among young females.<sup>14</sup>

According to the United Nations Population Fund (UNFPA), sub-Saharan Africa has the lowest demand (30%) and use (20%) of contraceptives among 15-19 year olds. They further comment that lack of access to family planning (FP) services and negative attitudes of health workers towards adolescent contraceptive use have contributed to high rates of pregnancies among adolescent.<sup>15</sup> As per the 2000 population census, adolescents constitute a fifth (21.9%) of the total population of 18.8 million people in Ghana.<sup>16</sup> The problems faced by adolescents in Ghana are not too different from their counterparts all over Africa. They include teenage pregnancies, low knowledge and usage of contraceptives, high fertility rates and high incidence of HIV. For example between 2008 and 2010 the HIV prevalence among young people (15 to 24 years old) in Ghana increased from 1.9% to 2.1%.<sup>17</sup>

According to the 2008 Ghana Demographic and Health Survey (GDHS) about 14% of all Ghanaian female adolescents have started child bearing, with only 8.0% of them using contraceptives.<sup>8</sup> In the Kintampo North and the South districts covered by the Kintampo Health and Demographic Surveillance System (KHDSS), adolescents make up a fifth (20.2%) of the population of 136,356 people, similar to the national figures.<sup>11</sup> This study sought to explore contraceptive use intentions and preferences among female adolescents in two predominantly rural districts in Ghana. The study also examined the factors associated with adolescents' willingness to use contraceptives in the study population as part of contributing evidence towards improving the health of adolescents and meeting MDG 5b which has been described as the most underachieved of all MDGs (ref).

## **Methods:**

### ***Study area***

The Kintampo North and South Districts covered by the KHDSS lie in the Brong Ahafo Region of Ghana. The two districts are largely rural with their capitals, Kintampo and Jema, increasingly assuming semi-urban characteristics.<sup>18</sup> The districts had an estimated population of about 143,287 as at December 2011.<sup>19</sup> A TFR of 4.7 was recorded in 2009.<sup>18</sup> As of 2009, the neonatal mortality rate was 32 per 1,000 live births and the infant mortality rate was approximately 52 deaths per 1,000 live births in the districts.<sup>18</sup> Average life expectancy at birth for both sexes is 60 years.<sup>18</sup> Antenatal attendances among pregnant women is high, with more than 95% attending at least once.<sup>19</sup> The KHDSS runs routine updates on the entire population every four months covering births, deaths and migrations. Also, other health modules are introduced in some of the update rounds. There are two public hospitals, three private clinics, three rural clinics, 12 health centres/clinics and 29 community-based health planning and services (CHPS) compounds. These facilities provide health service delivery to both urban communities and deprived rural poor.<sup>20</sup>

### ***Study design***

The KHDSS conducted an ASRH survey from August 2011 to November 2011 which formed part of a larger SRH survey. The SRH survey was designed to allow for a reliable estimation of SRH behaviour, contraception, fertility preferences, and knowledge and prevalence of self-reported sexually transmitted infections (STIs) within the study population. Details of the sampling procedure for the SRH survey is published elsewhere.<sup>21</sup> Data for this manuscript was drawn from information gathered with the female SRH data collection tool. A sample of 1,440 females aged 10 to 19 was randomly selected from a resident female adolescent population of 16,795 within the KHDSS as of July 2011.

Background information including age, highest educational level attained, marital status and household assets of study subjects was from the KHDSS database. The household asset data was used to determine the household wealth quintile (i.e. using the Principal Component Analysis) to serve as a proxy for socio-economic status. The categories of the wealth quintile were most poor, more poor, poor, less poor and least poor.

A structured questionnaire consisting of close-ended questions was used in the course of the survey. The questionnaire enquired from respondents' whether they will use a contraceptive method to delay or avoid pregnancy at any time in the future. Respondents who responded 'yes' were further asked which contraceptive method they preferred to use. On the other hand, those who responded 'no' were further asked the main reason for not wanting to use a contraceptive method. In addition, respondents who gave their reason as not being married were further asked whether they would ever use a contraceptive method if they were married. Questionnaires were administered by trained fieldworkers, and interviews were conducted in privacy at the respondent's compound.

### ***Data Management and Analyses***

Field supervisors checked all the forms manually for completeness and consistency. Range and consistency checks were performed and the forms were double entered on computers using Microsoft visual FoxPro (version 9.0) Data Management Software. Discrepancies were resolved by reference to the original forms and field manual which was used for training the data collectors. Data analyses were performed using STATA version 11.2.<sup>22</sup> Socio-demographic characteristics of respondents that were categorical in nature were summarized as proportions while continuous variables were summarized as means based on the nature of the distribution. The outcome variable of interest in this study is the intention and/or willingness of adolescents to use contraceptives as well as adolescents preferred contraceptive and the main reasons for not

using contraceptives. Explanatory variables of interest were demographic and socio-economic factors of age, highest educational attainment, household wealth quintile, ethnicity, religion, current occupation, type of place of residence (rural/urban) and district of residence. Univariate and Multivariate logistic regression models were used to identify respondent characteristics that predicted willingness of adolescents to use contraceptives.

### ***Ethical review***

The Kintampo Health Research Centre Institutional Ethics Committee (KHRC IEC) approved the study ahead of its implementation. Participants who voluntarily signed or thumb printed an informed consent form after the study was explained to them were interviewed.

## **Results**

### ***Socio- Demographic Characteristics of Respondents***

The findings in this section were based on data captured in Table 1. A total of 1,421 female adolescents were included in this study. They were categorized into early (10 – 13 years), mid- (14 – 15 years) and late (16 – 19 years) adolescence. About one quarter (24.8%) of the respondents were aged 10-13 years. A little over a fifth (20.4%) of them was aged 14 to 15 years and more than half (54.8%) were between ages 16 to 19 years. Less than a fifth of the adolescents (15.6%) had no formal education, almost half of them (47.9%) had completed primary education, over a fifth (23.2%) had completed middle or junior high school and 13.3 percent had completed senior high school or tertiary education.

Adolescents who were single at the time of the survey formed a majority (86.4%), followed by those who were living together (12.1%) and those married were 1.5%. The Northern tribes

constituted half (49.8%) of the ethnic groups in the study population, followed by the Akan (22%), the Mo (12 percent) and other tribes (16.2%). Over half (55.2%) of the respondents belonged to the Christian faith while close to a third (27.7%) were Muslims and less than a fifth (17.1) were of other religion.

Almost half (48.4%) of the respondents were minor or less than fifteen years. About a third of the respondents (32.4%) were not employed. 7.1% of respondents were farmers, labourers or domestics while close to 2.1% of them were self-employed in the areas of hair dressing, dressmaking, trading or artisanship and 0.1% were professionals such as teachers, accountants, nurses and so on. About two-thirds (63 percent) of the respondents were predominantly from the rural communities. About twenty three percent (22.5%) of respondents belonged to the least poor households on the wealth quintile scale, while a fifth (19.7%) belonged to the poor and 18.1% belong to the poorest households.

### ***Adolescents' Intention to Use Contraceptives in Future***

About four out of ten of the late adolescents said they intend to use contraceptives in future if they were married. For the early and mid adolescents, about one and two respectively out of ten said they intend to use contraceptives when they were married. About six out of ten of the early and mid compared to about four out of ten of the late adolescents said they do not intend to use contraceptives if they were married. More of the early adolescents (31.5%) compared to the mid (15.6%) and late (14.3%) adolescents said they do not know whether they would use contraceptives when they got married. More adolescents with no education compared to those with some education said they do not know whether they intend to use contraceptives (Table 2a). Also, more adolescents with northern ethnic background compared to other ethnic groups said

they do not know whether they intend to use contraceptives. Furthermore, more adolescents who were Muslims compared to other religions said they do not know whether they intend to use contraceptives. And more adolescents who reside in rural (22.6%) communities compared to those in urban (10.9%) said they do not know whether they intend to use contraceptives.

### ***Adolescents' Willingness to Use Contraceptives Currently***

Adolescents' willingness to use contraceptives as shown in Table 2b shows a similar pattern to their intention to use contraceptives in future shown in Table 2a. About six out of ten of the late adolescents (62.4%) said they were willing to use contraceptives to delay or avoid pregnancy compared to about five and four out of ten for the mid (51.2%) and early (38.8%) adolescents respectively. More adolescents with no education compared to those with some education said they were unsure. Also, more adolescents with northern ethnic background compared to other ethnic groups said they were unsure. And more adolescents who reside in rural communities compared to those in urban said they were unsure.

### ***Adolescents' Preferred Contraceptive Methods***

Injectables was the most popular preferred contraceptive method among adolescents (48.6%); this was followed by the pill (29.6%) with the least being foam or jelly (0.2%) as shown in Table 3a. However, the early adolescents equally liked the injectables and the pills, 43.4% apiece. On the other hand, 47.1% and 28.1% of the mid adolescents would prefer to use the injectables and the pills respectively while 50.1% and 26.9% of the late adolescents would prefer to use the injectables and the pills in that order.

### ***Adolescents' Reasons for Not Using Contraceptives***

The most commonly cited reason for not intending to use contraception was respondents' opposition to FP (31.5%) followed by a fear of side effects (25.8%) and reasons with the lowest score being cost, menopausal/ hysterectomy and lactational amenorrhea with 0.2% apiece. However, among the mid adolescents fear of side effects (36.5%) was higher than their opposition to FP (24.3%) as shown in Table 3b.

***Predictors of Adolescents' Willingness to Use Contraceptives*** Potential determinants of adolescents' willingness to use contraceptives methods were used in the univariate logistic regression model in Table 4. Age, level of education, religion, marital status and household wealth quintiles of the respondents were significantly associated with adolescents' willingness to use contraceptives. Late adolescents were significantly more willing to use contraceptives than early adolescents (OR=2.61, 95% CI: 2.01- 3.89;  $P<0.01$ ). Adolescents with Senior High School (SHS) and above were significantly more willing to use contraceptives than those with no education (OR=3.28, 95% CI: 2.17- 4.96,  $P<0.01$ ). Adolescents from the poorest households were significantly less willing to use contraceptives than those from the least poor households (OR=1.91, 95% CI: 1.36- 2.69;  $P<0.01$ ). Level of education remained the strongest independent predictor of adolescents' willingness to use contraceptives with the odds of contraceptive use of those with Senior High School (SHS) and above being more than two folds that among adolescents without any formal education. Also, age, marital status and household wealth quintiles were also significantly associated with contraception; however, those in relationships were less likely to use contraception as depicted in Table 4



## **Discussions**

Effective FP programs are associated with decreases in maternal mortality and morbidity, infant mortality and abortions, among adolescent women.<sup>23</sup> The goal of this study was to explore contraceptive use intentions and preferences among adolescents in Kintampo North and South Districts of Ghana. The study also examined the differences and determinants of adolescents' willingness to use contraceptive to delay or avoid pregnancy in order to inform potential future FP activities and contribute data towards meeting MDG 5b which has been described as the most underachieved of all MDGs. Intention to use FP is an important indicator of the potential demand for services.<sup>17</sup> However, the study found out that more than half of the adolescents who were not married do not intend to use contraceptives if they were married. Also, more than a third of the adolescents were not willing to use contraceptive to delay or avoid pregnancy. In the current study, older adolescents intend to use contraceptives if they were married or are willing to use contraceptive to delay or avoid pregnancy than their younger ones. These findings indicate there is a need to increase the level of FP messages and services to target groups, particularly the early and mid adolescents.

Of particular interest to programme managers is the preferred methods of non-users who reported that they intend to use a FP method in the future (ref). This information is useful in assessing the potential demand for specific methods of FP.<sup>17</sup> The most preferred contraceptive method among adolescents was the injectables, followed by the pill. This is in tandem with the findings of data from the 2008 Ghana Demographic and Health Survey where the contraceptive method most preferred for future use among currently married women was injectables (39 %), followed by the pill (21 %), and implants (10 %). This implies that the hormonal contraceptives were the most popular while the use of condoms and other barrier methods for FP was low, in

spite of the burden of STDs and HIV seropositivity in Ghana including the study area. Such a situation has profound implications for individuals, services, programmes and policies.

An understanding of the reasons non-users of contraception have for intending not to use a contraceptive method in the future, is crucial to identifying strategies to improve the access, acceptability, and quality of care of family planning services.<sup>17</sup> Data from the 2008 Ghana Demographic and Health Survey from the last 10-15 years also has found that side effect fears are the main reason that women who want to prevent pregnancy are not using modern contraceptive methods.<sup>17, 24</sup> Findings in the current study point to the fact that the most important reasons for adolescents' non intention to use contraceptives in the future is their opposition to FP and fear of side effects; these are method-related problems suggesting that the quality or approach to FP services to adolescents in the study area should be revised to meet their needs. Results from this analysis indicate that adolescents do not perceive availability, accessibility, or cost as major impediments to using contraception. Only 1.9% of adolescents who did not intend to use contraception reported 'knows no source' and only 0.2% reported 'cost too much' as their main reasons for not intending to use contraception in the future. Similarly, a study in Nigeria found that 35% of married women of reproductive age who were not using FP reported that they were not using contraception because they themselves or someone they knew had encountered a method-related problem or had fears associated with the use of contraception. In the same study, another 31% of the women reported that their husbands were opposed to FP.<sup>25</sup> However, this study reported only 0.6% for 'others opposed'(possibly because most of the adolescents were not in relationships).

Findings from Feldmen, (1997) and Havanon, Inger & Sibon (1993) indicate that some adolescents especially girls feel that a partner's use of condom suggest that they, the girls, are not

clean and that, are likened to commercial sex workers or engage in extra-relationship sexual activity.<sup>26-27</sup> Berglund (1997) stated that another barrier to contraceptive method use stems from the alienation that many adolescents face when they visit maternal or child health clinics or pharmaceutical shops which are primary sources of contraceptive methods to buy usually condoms. To Berglund, because of overt social disapproval of premarital sexual activity and the general lack of privacy at these places, many adolescents' feel that procuring contraceptives will make them subjects of ridicule and gossip. Some adolescents are likely to face other forms of negative attitudes from health personnel, an embarrassment most adolescents' may avoid.<sup>28</sup> The level of education plays an important role in the use of modern FP methods. It has been observed in Nigeria that contraceptive use was best predicted by level of education.<sup>29-30</sup> Similarly, studies elsewhere have shown that education has strong influence in the acceptance of modern FP methods.<sup>31-34</sup> With the univariate and multivariate analysis, the level of education was found to be the strongest predictor of adolescents' willingness to use contraceptive to delay or avoid pregnancy in this study, with the more educated adolescents being much more likely to use FP much more than the less educated.

### **Limitations to the study**

This was a cross-sectional study to access the situation on the ground to advise further action on FP care to adolescents. The cross-sectional design of the study prohibits inference of causality in any way. However, we plan to use the longitudinal design of the Kintampo HDSS to collect data in future. An adolescent might report using a condom or otherwise to receive praise or self-satisfaction. Social desirability compels participants to over-report (give certain desirable responses). Also, sexual issues are very sensitive and could limit free expression on some matters.

We were not able to interview males on all of the questions used in this study, which limit our study to only a female perspective. Future data collection would include male adolescents.

## **CONCLUSION**

There is a need to increase the level of FP messages and services to target adolescents to enhance the achievement of MDG 5b and improve their health and well being. Parents, guardians and teachers need to re-examine their roles in reproductive health education at home and school because the influence of family and school values could help improve adolescents' sexual behaviour.

## **Competing Interest**

The authors declare that they have no competing interest.

## **Acknowledgement**

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**Table 1: Socio-demographic and economic characteristics of respondents (N=1,421)**

Characteristics	Number	%
<i>Age of respondents</i>		
10-13	352	24.8
14-15	290	20.4
16-19	779	54.8
<i>Educational level</i>		
No education	221	15.6
Primary	680	47.9
Middle/JHS	331	23.2
SHS and above	189	13.3
<i>Ethnicity</i>		
Akan	312	22.0
Mo	171	12.0
Northern	707	49.8
Other	231	16.2
<i>Religion</i>		
Christian	785	55.2
Moslem	393	27.7
Other religion	107	7.5
Not known	136	9.6
<i>Occupation</i>		
Not employed	461	32.4
Employed	34	2.4
Farmer, labourer, domestic	101	7.1
Minor	688	48.4
Not known	137	9.7
<i>Marital status</i>		
Married	21	1.5
Living together	172	12.1
Single	1228	86.4
<i>Place of residence</i>		
Rural	906	63.8
Urban	515	36.2
<i>Household wealth quintiles</i>		
Most poor	258	18.1
More poor	260	18.3
Poor	280	19.7
Less poor	304	21.4
Least poor	319	22.5

**Table 2: Adolescents future contraceptive use intentions and willingness to use contraceptive to delay or avoid pregnancy by socio-demographic and economic characteristics**

Socio-demographic and economic variable	a. Intention of adolescents to use contraceptives if they were married (N=223)			b. Willingness of adolescents to use contraceptive to delay or avoid pregnancy (N=1,395)		
	Yes (%)	No (%)	Not known (%)	Yes (%)	No (%)	Not known (%)
<i>Age-group</i>						
10 – 13	10 (13.7)	40 (54.8)	23 (31.5)	134 (38.8)	147 (42.6)	64 (18.6)
14 – 15	11 (24.4)	27 (60.0)	7 (15.6)	146 (51.2)	114 (40.0)	25 ( 8.8)
16 – 19	44 (41.9)	46 (43.8)	15 (14.3)	477 (62.4)	239 (31.2)	49 ( 6.4)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Educational level</i>						
No education	5 (10.6)	24 (51.1)	18 (38.3)	73 (34.0)	96 (44.6)	46 (21.4)
Primary	33 (29.5)	60 (53.6)	19 (16.9)	355 (52.8)	251 (37.4)	66 ( 9.8)
Middle/JHS	20 (51.3)	17 (43.6)	2 ( 5.1)	216 (65.9)	101 (30.8)	11 ( 3.4)
SHS and above	7 (28.0)	12 (48.0)	6 (24.0)	113 (62.8)	52 (28.9)	15 ( 8.3)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Ethnicity</i>						
Akan	14 (38.9)	19 (52.8)	3 ( 8.3)	185 (60.3)	105 (34.2)	17 ( 5.5)
Mo	6 (28.6)	12 (57.1)	3 (14.3)	101 (61.6)	48 (29.3)	15 ( 9.2)
Northern	33 (26.0)	61 (48.0)	33 (26.0)	340 (48.6)	268 (38.4)	91 (13.0)
Other	12 (30.8)	21 (53.9)	6 (15.3)	131 (58.2)	79 (35.1)	15 ( 6.7)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Religion</i>						
Christian	41 (36.3)	54 (47.8)	18 (15.9)	443 (57.4)	268 (34.7)	61 ( 7.9)
Moslem	16 (24.6)	31 (47.7)	18 (27.7)	195 (50.4)	268 (34.7)	61 ( 7.9)
Other religion	3 (18.8)	9 (56.2)	4 (25.0)	51 (48.6)	39 (37.1)	15 (14.3)
Not known	5 (17.2)	19 (65.5)	5 (17.2)	68 (52.3)	53 (40.8)	9 ( 6.9)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Occupation</i>						
Not employed	28 (40.0)	30 (42.9)	12 (17.1)	272 (59.5)	148 (32.4)	37 ( 8.1)
Employed	2 (40.0)	3 (60.0)	0 ( 0.0)	25 (75.7)	6 (18.2)	2 ( 6.1)
Farmer, labourer	5 (33.3)	7 (46.7)	3 (20.0)	56 (56.0)	37 (37.0)	7 ( 7.0)
Minor	25 (24.0)	54 (52.0)	25 (24.0)	335 (49.7)	256 (38.0)	83 (12.3)
Not known	5 (17.2)	19 (65.6)	5 (17.2)	69 (52.7)	53 (40.5)	9 ( 6.9)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Marital status</i>						
Married	-	-	-	13 (61.9)	7 (33.3)	1 ( 4.8)
Living together	5 (41.7)	5 (41.7)	2 (16.6)	125 (72.7)	41 (23.8)	6 ( 3.5)
Single	60 (28.4)	108 (51.2)	43 (20.4)	619 (51.5)	452 (37.6)	131 (10.9)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Place of residence</i>						
Rural	51 (28.8)	86 (48.6)	40 (22.6)	445 (49.7)	353 (39.4)	97 (10.9)
Urban	14 (30.4)	27 (58.7)	5 (10.9)	312 (62.4)	147 (29.4)	41 ( 8.2)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)
<i>Wealth quintiles</i>						
Most poor	12 (27.9)	23 (53.5)	8 (18.6)	123 (49.2)	98 (39.2)	29 (11.6)
More poor	12 (24.5)	26 (53.1)	11 (22.5)	119 (46.5)	106 (41.4)	31 (12.1)
Poor	8 (20.5)	19 (48.7)	12 (30.8)	151 (55.3)	94 (34.4)	28 (10.3)
Less poor	15 (30.6)	26 (53.1)	8 (16.3)	160 (53.0)	117 (38.7)	25 ( 8.3)
Least poor	18 (41.9)	19 (44.1)	6 (14.0)	204 (65.0)	85 (27.1)	25 ( 7.9)
Total	65 (29.1)	113 (50.7)	45 (20.2)	757 (54.3)	500 (35.8)	138 ( 9.9)



**Table 3: Adolescents preferred contraceptive methods and main reasons for not using contraceptive method by age-group**

a. Preferred contraceptive method (N = 663)	Age-group (%)			
	10 – 13	14 – 15	16 – 19	Total
Female sterilization	2 ( 2.0)	4 ( 3.3)	3 ( 0.7)	9 ( 1.4)
Male sterilization	3 ( 3.1)	9 ( 7.4)	38 ( 8.6)	50 ( 7.5)
Pill	43 ( 43.4)	34 ( 28.1)	119 ( 26.9)	196 ( 29.6)
IUD	0 ( 0.0)	1 ( 0.8)	6 ( 1.4)	7 ( 1.1)
Injectables	43 ( 43.4)	57 ( 47.1)	222 ( 50.1)	322 ( 48.6)
Implants	6 ( 6.1)	5 ( 4.1)	23 ( 5.2)	34 ( 5.1)
Male condom	0 ( 0.0)	4 ( 3.3)	23 ( 5.2)	27 ( 4.1)
Female condom	2 ( 2.0)	6 ( 5.0)	5 ( 1.1)	13 ( 2.0)
Diaphragm	0 ( 0.0)	1 ( 0.8)	3 ( 0.7)	4 ( 0.6)
Form/Jelly	0 ( 0.0)	0 ( 0.0)	1 ( 0.2)	1 ( 0.2)
Total	99 (100.0)	121 (100.0)	443 (100.0)	663 (100.0)
b. Main reasons for not using contraceptive method (N = 476)	Age-group (%)			
	10 – 13	14 – 15	16 – 19	Total
Not married	37 ( 26.6)	19 ( 17.8)	32 ( 13.9)	88 ( 18.5)
Not having sex	16 ( 11.5)	5 ( 5.6)	14 ( 6.1)	36 ( 7.6)
Infrequent sex	0 ( 0.0)	0 ( 0.0)	5 ( 2.2)	5 ( 1.1)
Menopausal/ Hysterecto	0 ( 0.0)	0 ( 0.0)	1 ( 0.4)	1 ( 0.2)
Lactational amenorrhea	0 ( 0.0)	0 ( 0.0)	1 ( 0.4)	1 ( 0.2)
Respondent opposed	40 ( 28.8)	26 ( 24.3)	84 ( 36.5)	150 ( 31.5)
Others opposed	0 ( 0.0)	1 ( 0.9)	2 ( 0.9)	3 ( 0.6)
Religious prohibition	3 ( 2.2)	2 ( 1.9)	3 ( 1.3)	8 ( 1.7)
Knows no method	20 ( 14.4)	11 ( 10.3)	9 ( 3.9)	40 ( 8.4)
Knows no source	4 ( 2.9)	2 ( 1.9)	3 ( 1.3)	9 ( 1.9)
Health concerns	0 ( 0.0)	0 ( 0.0)	4 ( 1.7)	4 ( 0.8)
Fear of side effects	18 ( 13.0)	39 ( 36.5)	66 ( 28.7)	123 ( 25.8)
Cost too much	0 ( 0.0)	0 ( 0.0)	1 ( 0.4)	1 ( 0.2)
Interferes with body	0 ( 0.0)	0 ( 0.0)	2 ( 0.9)	2 ( 0.4)
Other	1 ( 0.7)	1 ( 0.9)	3 ( 1.3)	5 ( 1.1)
Total	139 (100.0)	107 (100.0)	230 (100.0)	476 (100.0)



**Table 4: Univariate and Multivariate Logistic Regression of adolescents who are willing to use contraceptive to delay or avoid pregnancy by socio-demographic and economic characteristics**

Characteristics	n (%)	Crude OR	95% CI	P value	Adjusted OR	95% CI	P value
<i>Age of respondents</i>							
10-13	134 (38.8)	1			1		
14-15	146 (51.2)	1.65	(1.20, 2.27)	<0.001	1.30	(0.93, 1.83)	0.128*
16-19	477 (62.4)	2.61	(2.01, 3.89)		1.73	(1.28, 2.34)	<0.001*
<i>Educational level</i>							
No education	355 (52.8)	1			1		
Primary	216 (65.9)	2.18	(1.58, 3.00)		1.83	(1.30, 2.57)	0.001*
Middle/JHS	113 (62.8)	3.75	(2.61, 5.39)	<0.001	2.27	(1.51, 3.43)	<0.001*
SHS and above	73 (34.0)	3.28	(2.17, 4.96)		2.31	(1.48, 3.60)	<0.001*
<i>Religion</i>							
Christian	443 (57.4)	1			1		
Moslem	195 (50.4)	0.75	(0.59, 0.96)	0.069	0.84	(0.63, 4.41)	0.183**
Other religion	51 (48.6)	0.70	(0.47, 1.05)		0.79	(0.52, 1.21)	0.283**
Not known	68 (52.3)	0.81	(0.56, 1.18)		0.90	(0.61, 1.33)	0.595**
<i>Marital status</i>							
Married	13 (61.9)	1			1		
Living together	125 (72.7)	1.64	(0.64, 4.20)	<0.001	1.66	(0.63, 4.41)	0.306*
Single	619 (51.5)	0.65	(0.27, 1.59)		0.84	(0.33, 2.11)	0.706*
<i>Household wealth quintiles</i>							
Most poor	123 (49.2)	1			1		
More poor	119 (46.5)	0.90	(0.63, 1.27)	0.001	0.89	(0.62, 1.28)	0.534*
Poor	151 (55.3)	1.28	(0.91, 1.80)		1.24	(0.87, 1.77)	0.242*
Less poor	160 (53.0)	1.16	(0.83, 1.63)		1.09	(0.77, 1.55)	0.613*
Least poor	204 (65.0)	1.91	(1.36, 2.69)		1.72	(1.20, 2.45)	0.003*

OR: Odds ratio CI: Confidence Interval

(%): proportion of adolescent in each sub-group who are willing to use contraceptive to delay or avoid pregnancy

\*Likelihood ratio p-value <0.001 \*\* Likelihood ratio p-value = 0.482

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