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Low Contraceptive Use among Young Females in Uganda: Does Birth History and Age at Birth have an Influence? Analysis of 2011 Demographic and Health Survey

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Abstract

Background: Globally adolescent fertility has been associated with increased risk to maternal and child health morbidity and mortality. The low use of contraception has been associated with high fertility levels, which is remains a public health concern that efforts have been raised to avert this. We examine the influence history of a previous birth and age at first birth would have on young women's use of contraception.

Methods: Using the 2011 Uganda Demographic and Health Survey data, we examine the predictors of contraceptive use on a sample of 3692 young females in Uganda. While controlling for education and age of respondents, logistic regression analyses were run to provide the net effect of the examined predictors on contraceptive use. The study variables included age of respondents, marital status, age at first birth, births in past five years, socioeconomic status, residence, region, education level, religion, occupation and whether the last child was wanted.

Results: The findings show that only 12% of the adolescents were using contraception at the time of the survey. The key predictors of contraceptive use among young women in Uganda were age at first birth, history of previous birth, current age, and place of residence, education and socioeconomic status. Respondents who had a birth in the 5 years prior to the survey had five times (OR = 5.0, 95% CI = 3.7-6.5) the odds of contraceptive use compared to those who had never had a birth. Further, adolescent females with at least a secondary education were more likely to use contraceptives (OR = 1.55, 95% CI = 1.2-2.0) than those with primary education. The odds of contraceptive use were least among adolescents from Northern region (OR = 0.39, 95% CI = 0.2-0.6) compared to those from central region of Uganda. Muslim adolescent females were more likely to use contraceptives compared to Catholics (OR = 1.59, 95% CI = 1.1-2.3).

Conclusion: There is great need to address issues that hinder young people from using contraception. Use of contraception and improving access to the services is highly recommended to avert some of the unplanned births among these females.

Keywords: Uganda; Adolescents; Contraception; Family planning; Females

Abbreviations: WHO: World Health Organization; TFR: Total fertility Rate; UDHS: Uganda Demographic and Health Survey; OR: Odds Ratio; CI: Confidence Interval; UBOS: Uganda Bureau of Statistics; ECA: Economic Commission for Africa

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Background

Uganda rates as one of the countries with the highest total fertility rates in the world (TFR = 6.2) and the median age at first sexual intercourse is 16.8 years, an age which is considered to be vulnerable to sexual and reproductive health challenges [1,2]. Other interesting statistics reveal that the median age at first marriage for females is 17.9 years while the female median age at first birth in Uganda is 19.1 years for adolescents aged 20-24. Globally, over 14 million adolescents give birth annually [3,4] and this is a worrisome concern for the policy makers, demographers, health specialists, social scientists as well as the public.

Available data for African countries through various years show that more than half of these countries have an adolescent birth rate higher than 100 per 1000 adolescent women, a figure which is higher in comparison to the rest of the world [4-6]. In Uganda, persistent high fertility levels have partly been attributed to high proportion of adolescents starting child bearing at an early age [7]. Adolescent fertility rates in Uganda are among the highest in the world, indicative of early sexual indulgence in absence of contraceptive use [2,3]. In the latter study it was found that 1 out of 4 female adolescents knew that they would conceive the first time they had sex.

Several studies define an adolescent differently. Much as the World Health Organization (WHO) defines it as a person between the ages of 15-19 years [8], other studies define an adolescent as a person aged between 15-24 years. Under the second definition, these adolescents are sub-divided into late adolescent (15-19 years) and young adult (20-24 years) [9]. However, irrespective of the age definition this target group is often faced with transitional changes that are biological, psychological and economic. These changes make coping mechanisms rather hard for especially the female adolescents resulting into unintended pregnancies and induced abortions, respectively with the associated consequences [3,9]. Adolescence stage is often the time when individuals begin to explore their sexuality and sexual relationships. This expression of sexual desire among the adolescents is influenced by several factors including family values, culture and religion among others [10,11].

Several studies have concluded that allowing adolescents to have full access to contraceptives remains the best approach of ensuring a healthy reproductive living. Such approach is not to taken as a form of promoting promiscuity but rather a means of minimizing abortion, morbidity and mortality among the adolescents [12-14]. Higher education among adolescents facilitates acquisition of knowledge on particular methods as well as how to acquire these contraceptive products. Studies have shown that sex education among adolescents plays an important role in increasing knowledge and empowering young people, especially against unwanted pregnancy [12]. These studies have also revealed lack of capacity among adolescents to negotiate for safer sex especially from the old persons. Whereas most of the studies on contraceptives have been focusing on married women [6,13-15], this study focuses on all the female adolescents aged 15-24 years so as to understand some of the predictors to their use of contraception. The current study focuses on adolescents that are sexually active whether married or not. We also seek to establish the influence history of a previous birth and age first birth would have on utilization of contraceptives.

Recent studies have suggested that an increase in contraceptive availability as well as the alternatives brings about an increment in contraceptive use especially among the adolescents [6,10,16,17]. Overall, it is worthy to note the importance of understanding the predictors of contraceptive use among adolescents in Uganda so that friendly and workable programs are designed to scale up contraceptive utilization.

Although the literature reviewed has revealed that increasing adolescent's knowledge about contraceptives and access to contraceptives are very vital interventions in reducing early teenage pregnancies, other critical demographic and socio-economic factors play a vital role in determining the extent to which they decide whether or not to take steps to prevent pregnancies.

Methods

Data source

The paper is based on data from the 2011 Uganda Demographic and Health Survey (UDHS) which is a nationally representative sample of all households in Uganda. In this study, we used data of 3,676 enumerated females aged 15-24. Permission was sought from Macro DHS to carry out these analyses and data were obtained from their website. Authorization to use the data was obtained from MEASURE DHS by providing a brief description of the study through their website. Approval for UDHS data utilized for this study was obtained from the data originator, ICF Macro International U.S.A before the data was extracted from their web platform. At the point of data collection by the data originators, an informed consent was sought from all the study participants after detailed description of all the issues related to the study were passed across to the respondents. Eligible respondents who were unwilling to participate in the study were excluded from the survey. Consenting participants demonstrated their consent prior the commencement of the interview

The 2011 survey is part of the repeated demographic surveys that are conducted globally with an aim of getting socio demographic, maternal and child health indicators. The main variable of interest was contraceptive use, which was coded 0 for those who were not using a method of contraception and 1 otherwise. The dependent variable was generated from the question asked to participants whether they were using anything to avoid conception and if yes what kind of method were they using. The list of contraceptive 10 methods included: Pills, injectables, intrauterine devices (IUDs) male and female sterilization, Lactational Amenorrhoea (lAM), emergency contraception as well as the two known traditional methods which are withdrawal and rhythm/moon beads. The dependent variable (modern contraception) was categorized as binary outcome with 0 representing all those who had used no /traditional method while 1 for those who had used a modern method.

In this study the demographic and socioeconomic variables included: age of respondents, marital status, age at first birth,

births in past five years, wealth status, residence, region, education level, religion, occupation and whether the last child was wanted.

Data Analysis

Data analyses were carried three levels to explore the predictors of contraceptive use among adolescents in Uganda. First, descriptive statistics of demographic and socio-economic variables **(Table 1)** followed by, two level analysis at the multivariate stage using a logistic regression. Both unadjusted and adjusted logistic regression findings are presented in the analysis **(Table 2)** of same variables using the logistic regression. Specifically, the best-fit models were fit including all the variables while controlling for education and age.

The predictors were determined at $p < 0.05$ level of significance and link test was done for the fitted models. This was done using stata commands based on Hosmer and Lemeshow [18,19]. All the data used in these analyses were weighted to account for clustering and design effect. We used the Uganda Demographic and Health Survey (UDHS) sampling weights as presented in the UDHS data set. The statistical package used in the analyses was STATA 12.

Results

Descriptive statistics of selected young females in Uganda

More than half of all the females were aged 15-19 years (55.7%) and most of these had their first births (72.1%) in the same age group. Among the respondents, 43 percent had ever given birth while of those 55.6% wanted the last child. Most of the young females lived in the rural areas (77.8%) and were never married (53.6%), with 28% in richest wealth quintile. In addition, educational background indicated that most of the young females had primary level education (60.3%), 60% were working and were living in the central region of Uganda (31.9%). Asked about their religious affiliation, 40.6% of the adolescents were Catholics, while 29% were Protestant and the majorities were not using contraception (87.9%).

Predictors of contraceptive use among young females

The unadjusted analysis results indicate that young females aged 20-24 years were 3 times more (OR = 3.8, 95% CI = 2.9-4.9) likely to use contraceptives than their counterparts 15 to 19 years. Similarly, young females whose age at first birth was below 15 years were more likely to use contraceptives (OR = 1.29, 95% CI = 1.0-2.3) than those whose age at first birth was in the ages 15-19 years. Respondents who had births in the last 5 years were five times (OR = 4.96, 95% CI = 3.7-6.5) more likely to use modern contraceptives than those who never had any births. With regard to place of residence, young females who lived in rural areas were less likely to use modern contraceptives (OR = 0.49, 95% CI = 0.4-0.6) than those who were never married. Also, young females in the richest wealth index were twice times more likely to use modern contraceptives (OR = 2.19, 95% CI = 1.3-3.5) than those who were from the poorest wealth index.

Table 1 Descriptive statistics of selected young females in Uganda.

Variable	Number	Percentage
Age		
15-19	2,048	55.7
20-24	1,629	44.3
Age at 1st birth		
15-19	1,160	72.1
Below 15	143	8.9
20-24	307	19.0
Births in last 5 years		
None	2,110	57.4
Births	1,567	42.6
Wanted last child		
Wanted	871	55.6
Later/no more	696	44.4
Place of residence		
Urban	812	22.1
Rural	2865	77.9
Marital Status		
Never	1,971	53.6
Married	1,705	46.4
Wealth index		
Poorest	582	15.8
Poorer	636	17.3
Middle	694	18.9
Richer	733	19.9
Richest	1,031	28.0
Educational level		
Primary	2,218	60.3
None	140	3.8
Sec+	1,318	35.9
Occupation		
Not Working	1,486	40.4
Working	2,190	59.6
Region		
Central	1,172	31.9
East	1,040	28.3
North	518	14.1
West	946	25.7
Religion		
Catholic	1,492	40.6
Protestant	1,082	29.4
Muslim	494	13.4
Other	609	16.6
Current contraceptive use		
None	3,230	87.9
Using	446	12.1
Knowledge of modern method		
No	177	4.8
Yes	3515	95

N = 3676

Table 2 Predictors of contraceptive use among young females in Uganda.

	Unadjusted analysis			Adjusted analysis		
Variable	**OR**	**CI**	**p-values**	**OR**	**CI**	**p-values**
Age						
15-19 RC	1.00			1.00		
20-24	3.84	2.9-4.9	0.000**	1.38	0.9-1.9	0.051
Age at First Birth						
15-19 RC	1.00			1.00		
Below 15	1.29	1.0-2.3	0.020**	1.69	1.1-2.6	0.013**
20-24	1.10	0.9-1.7	0.121	0.90	0.6-1.3	0.544
Births in last 5 years						
None RC	1.00			1.00		
Births	4.96	3.7-6.5	0.000**	2.95	1.1-7.3	0.019**
Place of residence						
Urban RC	1.00			1.00		
Rural	0.49	0.39-0.63	0.000**	0.49	0.3-0.7	0.000**
Marital Status						
Never RC	1.00			1.00		
Married	3.13	2.4-4.1	0.000**	0.96	0.6-1.4	0.832
Wealth index						
Poorest RC	1.00			1.00		
Poorer	1.17	0.7-1.9	0.560	1.37	0.8-2.2	0.192
Middle	1.56	0.9-2.5	0.076	1.55	0.9-2.5	0.071
Richer	1.42	0.8-2.3	0.171	1.86	1.1-3.1	0.014**
Richest	2.19	1.3-3.5	0.001**	1.38	0.7-2.4	0.266
Educational level						
Primary RC	1.00			1.00		
None	0.78	0.3-1.6	0.500	0.51	0.2-0.9	0.039**
Sec+	1.55	1.2-2.0	0.001**	1.35	1.0-1.8	0.048**
Occupation						
Not Working RC	1.00			1.00		
Working	1.36	1.0-1.8	0.018**	1.05	0.7-1.4	0.727
Region						
Central RC	1.00			1.00		
East	0.65	0.4-0.9	0.009**	0.84	0.5-1.2	0.361
North	0.39	0.2-0.6	0.000**	0.69	0.4-1.0	0.079
West	0.64	0.4-0.9	0.006**	1.12	0.7-1.6	0.571
Religion						
Catholic RC	1.00			.	.	.
Protestant	1.03	0.7-1.4	0.862	.	.	.
Muslim	1.59	1.1-2.3	0.010**	.	.	.
Other	0.89	0.6-1.3	0.572			
Wanted last child						
Wanted RC	1.00	.	.	.	.	.
Later/no more	1.37	1.0-1.8	0.023**	.	.	.

RC = Reference category; **= Significant coefficient ($p < 0.05$)

Young females with secondary and above education were twice more likely to use modern contraceptives (OR = 1.55, 95% CI = 1.2-2.0) than those with primary education. There were less odds of using contraception among young females from Eastern (OR = 0.65, 95% CI = 0.4-0.9), Northern (OR = 0.39, 95% CI = 0.2-0.6) and Western (OR = 0.64, 95% CI = 0.4-0.9) region respectively compared to those from central region. Concerning religious affiliation, Muslim females were twice (OR = 1.59, 95% CI = 1.1-2.3) more likely to use contraception than the Catholics. Those who wanted last birth later or no more were had higher odds (OR = 1.37, 95% CI = 1.0-1.8) of using modern contraception than their counterparts who had wanted the last child.

The adjusted analysis, controlling for education and age of respondents, females whose age at first birth was below 15

years, were more likely to use contraception (OR = 1.69, 95% CI = 0.6-1.3) compared to those had children aged 15-19 years. Furthermore, young females who had births in the last 5 years were three times (OR = 2.95, 95% CI = 1.1-7.3) more likely to use contraception than those had no births. Also, young females who lived in rural areas had reduced chance of using contraception (OR = 0.49, 95% CI = 0.3-0.7) compared to those living in urban areas. Young females in richer wealth index were more likely (OR = 1.86, 95% CI = 1.1-1.3) to use contraception than those in the poorest wealth index. Lastly, there were reduced odds of using contraception among females with no education (OR = 0.51, 95% CI = 0.2-0.9) while those with secondary education had increased odds of using contraception (OR = 1.35, 95% CI = 1.0-1.8) compared to those with primary education.

Discussion

In this study of predictors of contraceptive use among young women in Uganda, we found age at first birth, history of previous birth, age of women, place of residence, education and wealth status had significant influence. Our findings suggest that history of a previous birth in five years prior to the demographic survey had a significant influence on the use of contraception. The increased likelihood of use was seemingly important among those who had previously given birth. Similarly those young women who had given birth below age 15 had increased chances of using contraception. This is indicative of the behavioural change amongst the adolescents, which unfortunately comes in later after they have had a birth, this the existence of high birth rates among the young people in Uganda was observed in an earlier study [7], as well as the low use of contraception among young people [1,13]. As the world focuses on increasing contraception to all vulnerable groups, this study shows an eminent need to target adolescent mothers. It appears the young people irregularly use contraception and only remember to have them after they have had a birth as demonstrated in the high fertility rates among adolescents [3,5]. Although this indicative of future fertility plans of spacing births, it is possible that these young women could have had unplanned pregnancies prior. The issue of unwanted pregnancy resonates with the persistent high fertility rates that are a problem in developing countries including Uganda [3,4,8,10]. It is not surprising that Uganda's fertility remains high at 6.2 that perhaps births be averted if some of the young people use contraception to avoid the unplanned pregnancies [1].

Limited studies have reported the influence of birth history on contraceptive use particularly in sub Saharan African. According to a study on the adolescent childbearing in Nicaragua, correct use of modern contraceptive use was positively associated with having ever given birth. Young females who had given birth were 4.5 times more likely to be practicing contraception than those who had not [20]. On the contrary, a study in the Kenyan slums on contraceptive did not show this association with previous births implying that young females who had given birth were unlikely to use contraceptives than those who had not given birth [21,22]. The desire for giving birth could be attributed to cultural perceptions that more children signified a source of wealth or would bring about the birth of an heir.

As expected, place of residence was significantly associated with contraceptive use. Women in the rural areas where unlikely to use any method of contraception to delay, space or limit their births. This could be due to their lack knowledge and access to family planning services and methods. Similar results have been found by UBOS, WHO, Cheung et al., Asiimwe et al. [1,8 12,14] women residing in rural areas not using contraception. This is a pertinent issue particularly in Uganda where over eighty percent of the population resides in rural areas. This implies that a bigger population of young women in Uganda who are in their reproductive years may be lacking adequate family planning services, which exposes them to the risk of unplanned pregnancies. Elsewhere, rural urban differentials have been registered in contraceptive use among different populations by some researchers [1,12,16]. It is also possible that these young women residing in rural areas have social cultural beliefs and myths associated with use of contraception. Therefore such fears and myths could be a hindrance to use of contraception [11-13].

The findings reveal further that education was a significant predictor of contraceptive use. The females who had secondary or higher education had an increased likelihood of using contraception contrary to those with no education. As expected the influence of education on reproductive health indicators is of great importance to monitor birth outcomes and health status of women [1,5,12,15]. The influence of education on women could be explained in terms of empowerment as these women are likely to have knowledge about the existing family planning services. It is possible that they could also be employed there have access to the required family planning commodities.

Relatedly, wealth status had an influence on women's use of contraception. The females in the richer wealth quintile had increased odds of using contraception compared to the poorest. Undoubtedly, availability of resources is important in health care. In that the wealthy are likely to have access to the desired services as well as want to limit the number of children to have given the costs accrued in raising children. Some could perhaps know the opportunity cost of having children as well as working to raise a small manageable family [9,15,16].

Study Limitations

Because this study relied on cross sectional data, it cannot be without limitations. The study did not address all health system related factors that affect adolescent contraceptive use. Clearly, one would be interested in finding out also if the adolescents have held discussions with the health workers particularly on contraceptive use among others. In addition there are some other socio-cultural factors which are known to impact on contraceptive use that were not addressed in this manuscript. Despite these limitations, we used reliable data and appropriate methods hence the findings reflect accurately on predictors of adolescent contraceptive use in Uganda.

Conclusions

The findings of this study highlight the influence of history of a previous birth, age first birth and residence as key predictors of contraceptive use among young people in Uganda. There

is great need to address issues that could be a hindrance to use of contraception especially among young people. Use of contraception and improving access to the services is highly recommended to avert some of the unplanned births among these females.

Competing Interests

The authors declare that they have no competing interests.

Author's contributions

AK participated in all aspects of preparation of this MS, conceived the study, selected data, conducted data analyses, reviewed the scientific content, and interpretation of findings, discussion, and conclusions. GH participated in the conceptualization, data analyses and literature review. GR participated in conceptualization, interpretation of findings and review of scientific content. All authors read and approved the final manuscript.

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