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Rural-Urban Contraceptive Use in Uganda: Evidence from UDHS 2011

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ABSTRACT Knowledge of the different types of contraception is universal, yet their use is generally low in countries that are predominantly rural. The aim of this paper is to ascertain whether the place of residence is a major factor in determining the use of contraceptives in Uganda. Data from the 2011 Uganda Demographic and Health Survey was used to examine the role of the place of residence in the use of contraceptives among women in Uganda. Factors such as education, status of women, and the desire for children by husbands play a significant role in determining rural-urban differences in the use of contraceptives in Uganda. Place of residence is therefore, an important factor in determining use of contraceptive, especially among rural women. Improving the level of education of rural women, their socio-economic status and educating husbands of the need to use contraceptives is necessary in increasing uptake in the use of contraceptive.

INTRODUCTION

Contraception, defined as methods or devices used to prevent pregnancy, is categorized into two types: modern and traditional methods. Modern methods include clinic and supply methods such as the pill, intrauterine device (IUD), condom and sterilization whereas traditional methods include periodic abstinence (rhythm), withdrawal and folk methods (Uganda Bureau of Statistics and ICF International 2012).

In 1995, the Ugandan government created its first national population policy with the aim, amongst others, to ensure that family planning services were accessible to people. Till date, the use of contraceptives is still very low, with the level of unmet need for both spacing and limiting childbirth as high as thirty-four percent (Lutalo et al. 2015; UBOS and ICF International 2012).

By 2010, the Ugandan government, under its Ministry of Finance (MOF), noted limited progress in the provision of family planning services countrywide and that Uganda's traditionally large family sizes are now becoming an impediment to the speed of economic growth and social and structural transformation (Population Reference Bureau 2013).

Unmet need was higher among rural, less educated and poor women than among women living in urban areas, they had at least secondary level of education or were better off economically, respectively (Lutalo et al. 2015; Uganda Bureau of Statistics and ICF International Inc. 2012). Given that Uganda is predominantly rural suggests that unwanted pregnancies and related maternal and child mortality will remain high. According to the World Health Organization (2012), satisfying the unmet need for family planning alone could cut the number of maternal deaths by almost a third. Previous increases in the use of contraceptives in Uganda were reported from 1995 to 2006 from 15.4 percent to 24.4 percent (Wablembo and Doctor 2013). This increase in the use of contraceptives may in part, be due to urbanization and improvements in the health of services. Therefore, there is a need to critically examine whether place of residence, which is normally associated with low levels of socio-economic development, is an important factor in determining the use of contraceptives among women of reproductive age.

Context

In general, total fertility rates are lower in urban than in rural areas with fertility levels even lower in cities where information was collected. On average, rural fertility stands at 6.4 births compared to 4.6 births for urban areas, a difference of 1.8, an indication that average fertility is thirty percent lower in urban than in the rural areas (Shapiro and Tambashe 2000). Regionally,

these differentials are greater in East than West Africa. These countries are at different levels of fertility transition, those with high fertility regimes showing higher declines in urban than in rural areas, while countries with lower fertility rates show fertility levels declining faster in rural than in urban areas.

While family planning has risen to relatively high levels in many areas in Asia, Latin America and the Caribbean, it remains relatively low in much of sub-Saharan Africa. 1 in 4 women of reproductive age in Africa uses a modern method of family planning with distinct variations in many countries of the region (Van Lith et al. 2013). Family planning has been proven to save and enhance the lives of women, children and families. It reduces the number of unintended, unwanted, and mistimed pregnancies, thereby contributing to the reduction of maternal and infant mortality (White et al. 2007; Cleland et al. 2012). They also help reduce unwanted pregnancies among HIV-positive women and also limit the number of infants born with HIV (White and Speizer 2007). In addition, promotion of family planning in countries with high birth rates has the potential to reduce poverty and hunger and avert thirty-two percent of all maternal deaths and nearly ten percent of childhood deaths. It could also contribute substantially to the empowerment of women, achievement of universal primary schooling and long-term environmental sustainability (Cleland et al. 2006). Yet, access to family planning services such as clinics or health centers in many parts of sub-Saharan Africa, is not possible given the low levels of socio-economic development, particularly in rural areas (Olalekan and Olunfunmilayo 2012).

Use of Contraceptives in Uganda

The population of Uganda has been growing rapidly over the years. Uganda's mid-year population estimates stood at 38.8 million, with an annual growth rate of 3.5 percent (Population Reference Bureau 2015). Across countries in sub-Saharan Africa, only Niger and Chad had higher annual growth rates of 3.8 and 3.6 percent, respectively (Population Reference Bureau 2013) compared to its neighbors (Kenya with 1.3 and Tanzania with 2.9 percent) (East African Community Secretariat 2012). The main reason for such a high population growth rate is the country's fertility rate, which stands at 6.2 births- one of the highest in the world (Lutalo et al. 2015; Population Reference Bureau 2015), resulting from the low usage of family planning methods. As a result of sustained high fertility, nearly half of the population of Uganda is under the age of 15 years (Population Secretariat 2010; Nalwadda et al. 2010; World Population Datasheet 2013). This will inevitably lead to high levels of child dependency and a built-in momentum for future growth. Over eighty percent of Uganda's population is rural (Uganda Bureau of Statistics and ICF International Inc. 2012; Population Reference Bureau 2015) and because of the non-existence of healthcare facilities, there is a significant bearing on access to family planning methods. Only twenty-one percent of rural married women compared to forty-three percent of their urban counterparts use modern contraceptive methods (Uganda Bureau of Statistics and ICF International Inc. 2012). Rural women have higher levels of unmet needs for family planning methods, and unmet needs for spacing and unmet needs for limiting (Khan et al. 2008; Kisaakye 2013), with only thirty-three percent of total demand for the use of contraceptive being satisfied. Interestingly, awareness of family planning methods is almost universal, with over ninety percent of people of reproductive age having some knowledge of at least one modern contraceptive method (Orach et al. 2015; Buyinza and Hisali 2014). Unfortunately, in Uganda, this awareness is yet to translate into utilization as the level of use of contraceptives, particularly modern methods, is still very low (Population Reference Bureau, 2015). Lack of access to family planning services and fear of side effects is often a barrier, especially in a country that is eighty-four percent rural (Population Reference Bureau 2015; Orach et al. 2015).

The pill, injectable and condoms are the widely known methods but this has not translated into their increased use (Lutalo et al. 2015; Uganda Bureau of Statistics and ICF International Inc. 2012; Nalwadda et al. 2010). The attainment of higher education in Uganda has been viewed as a way of reducing fertility, especially among women, who, in the long run, seek better employment and are able to access better healthcare and access to contraception. Higher education translates into late marriages, better knowledge about the use of contraceptives and consequently, fewer children (Buyinza and Hisali 2014; Derose and Ezeh 2010; Wablembo and

Doctor 2013). In addition, living in urban areas with peers may also influence women to use contraceptives (DeRose and Ezeh 2010). Easy access to contraceptives as a result of more health centers, which can provide counseling, also highlight the differences in the use of contraceptives between urban and rural women (Anguzu et al. 2014; Palamuleni 2013).

Misconceptions and fears about the use of contraceptives are often attributed to the side effects, barriers to health services such as judgmental views from service providers, and lack of confidentiality (Lutalo et al. 2015; Mosha et al. 2013).

In order to assist in the revitalization of family planning in Uganda, the Population Secretariat of the Ministry of Finance, Planning and Economic Development and its partners carried out a set of regional workshops to advance the population and family planning agenda. This included the involvement of cultural, religious leaders and parliamentarians. The aim was to highlight the importance of population regulation by encouraging all stakeholders to encourage the population to limit childbirths. The objective of this study is to investigate whether the place of residence is a major factor in determining the use of contraceptives with particular focus on rural-urban differentials in Uganda.

METHODOLOGY

Study Area

The Uganda Demographic and Health Survey (DHS) Data of 2011 was used in this study. As a result of its high growth rate per annum of over three percent, it is estimated that by 2025, its population would reach 55.4 million and nearly double by 2050. As indicated, eighty-four percent of its population is rural, composed mainly small-scale farmers and people working in the informal sector. According to the Uganda Bureau of Statistics, the eastern region has the highest population followed by the central and western regions (Uganda Bureau of Statistics and ICF International Inc. 2012). Only twenty-seven percent of respondents in rural areas used one or more of the contraceptive methods compared to forty-six percent of urban respondents, with unmet needs also higher among rural women (37%) compared to their urban counterparts (23%).

Sampling Method

The survey included a representative sample of 8674 households, selected in two stages. 404 EAs were selected from a list of clusters sampled in the 2009-2010 Uganda National Household Survey (2010 UNHS). The matching of samples was done to link poverty data from the current study to the Household survey conducted in 2010. Secondly, systematically selected households generated from each cluster comprised the sample population together with a purposively selected number of households used in the 2010 National Housing survey.

Study Population

All women aged 15-49 years, who were either permanent residents of the households or visitors who slept in the household on the night before the survey were eligible for interviewees. Trained interviewers conducted the interviews with women who gave their consent and agreed to be interviewed. Questions on the history of their pregnancy, family planning and fertility preferences were asked to all the women who qualified to be interviewed. Information from the questionnaire provided data on demographics, socio-economic and cultural characteristics of users and non-users of contraceptives.

Variable Measures

Measurement of the Dependent Variables

In the original questionnaire designed for the survey, one of the items sought to find out what contraceptive method currently used by respondents. If a woman indicated that she was using any of the methods, she was coded 1 and code 0 was assigned to those who were not using any contraceptive method. Also, the second dependent variable was created in such a way that if a woman was using a modern method, she was coded 1 and code 0 if she was not currently using a modern method.

Information on socio-economic issues relating to fertility and reproductive health was requested from respondents as follows: age, education, place of residence, marital status, region, level of education of the partner, occupation, number of times respondent had given birth, number of children living, fertility preference,

wealth index, exposure to family planning via the media, whether they visited a health facility and family planning worker before using contraceptives and religion. These variables were explored to ascertain the link between the current use of contraceptives and socio-economic and reproductive characteristics of women aged 15-49 years. A direct question on the current use of contraceptives and the type was asked to determine whether women used a modern method or not. Some responses such as folkloric and traditional into modern methods were merged to form just two responses such as no method and modern method thus constituting the dependent variable.

Exclusion Criteria

The original sample size was 8674. It was reduced to 1653 for urban respondents and 3135 for rural respondents after the exclusion of the following set of women from the sample. Women who were breastfeeding, pregnant women, those who had attained menopause and women who could not provide information on the type of modern contraceptives used were excluded from the analysis. Furthermore, women who had never had sexual intercourse before and those who were not involved in the act a few weeks before the survey were excluded. The exclusion of these women was necessary because their inclusion could introduce elements of bias in the outcome of the paper. For instance, a pregnant married woman may not use contraceptives particularly to control fertility when she is already pregnant. This is also applicable to women declared in fecund due to the fact that they have attained menopause or have some gynecological problems.

Statistical Analysis

Data analysis was done in three stages using SPSS. In the first stage, a description of women was done by explanatory variables, which included socio-economic and reproductive health variables by place of residence. In the second stage, the Chi-square Pearson's test was used to ascertain any form of association between current use of contraceptives and their socio-economic and reproductive factors by place of residence. This was necessary to show if the results highlight similar traits of the use of contraceptives in relation to selected socio-economic and reproductive health factors as indicated in previous studies. The level of significance was set between $p<0.001$ to $p<0.05$. In the third stage, multivariate analysis was used to further explore the extent of association between current use of contraceptives and background, socio-economic and reproductive health characteristics. One model disaggregated by current use of any contraceptive method while the other model looked at background, socio-economic and reproductive health characteristics by current use of modern methods. Only variables, which were significantly associated with current type of contraceptive used at the bivariate analysis, were included in the model.

$$Current\ use\ of\ modern\ method = \begin{cases} 1 & Using\ modern\ methods \\ 0 & Not\ using\ any\ method \end{cases}$$

$$Current\ use\ of\ any\ contraceptive\ method = \begin{cases} 1 & Any\ methods \\ 0 & Otherwise \end{cases}$$

RESULTS

The data presented in Table 1 indicate that 39.3 and 56.7 percent of women in urban and rural areas of Uganda respectively, are not currently using any method of contraception. The proportion of women in urban areas currently using pills stands at 9.5 percent, with others being IUD (2.2%), injections (23.5%), and condom (9.7%). This proportion is higher than that of women in rural areas. However, the data also shows that the proportion of rural women currently using female sterilization is 5.7 percent and Implant/Norplant (4.6%). This is higher that the proportion for women in urban areas.

Table 1: Percentage distribution of the type of contraceptives in relation to place of residence

Method	*Urban*	*Rural*	*Total*
Not using	39.3(650)	56.7(778)	50.5(2418)
Pill	9.5(157)	3.0(94)	5.3(254)
IUD	2.2(36)	0.5(16)	1.1(53)
Injections	23.5(388)	20.5(643)	21.6(1034)
Condoms	9.7(160)	4.2(132)	6.2(297)
Female sterilization	3.3(55)	5.7(179)	4.8(229)
Male sterilization	0.1(2)	0.1(3)	0.1(5)
Periodic abstinence	4.7(77)	1.5(47)	2.7(129)
Withdrawal	4.6(76)	2.8(88)	3.4(163)
Others	1.0(17)	0.5(16)	0.6(29)
Implants	2.1(35)	4.6(144)	3.7(177)

Table 2a shows that the prevalence of current use of any modern contraceptive methods was higher among urban women aged 25-34 than those aged 15-24 and 35-49. For instance, 39.4 percent of women aged 25-34 are currently using modern contraceptive methods compared to 25 and 24.7 percent women aged 35-49 and 15-24, respectively. This pattern is similar to those currently using any contraceptive method albeit higher for all age groups. The use of any modern contraceptive methods was highest among women residents in Kampala and the least was found in the northern regions. The Table further shows most urban women with 3 to 4 children use a modern contraceptive method representing 47.6 and 39.5 percent respectively, followed by women with 5 or more children representing 43.5 and 37.1 percent, respectively. A similar pattern was also observed for the number of living children in terms of their behavior in the use of contraceptives where the use of a modern contraceptive method peaked among women with 3-4 living children ($p<0.01$).

Table 2b shows that there were also clear variations among ethnic groups regarding the use of contraceptives, which may reflect the regions where these ethnic groups are situated. The Basoga and Baganda (who are mainly in the central and Kampala regions) used a modern contraceptives compared to other ethnic groups. The level of education of the husband tended to influence the current use of a modern contraceptive method among urban respondents, while forty and 32.7 percent of husbands/partners of respondents who desired fewer children were currently using a modern contraceptive method. However, current use of any modern contraceptive methods is not significantly associated with the level of education of the husband.

Table 3 shows that the prevalence of the use of any modern contraceptive methods increases with increasing level of education. For current use of any method, the prevalence increased from 24.4 percent among women with no education through 42.9 percent for women with higher education. Interestingly, the results indicate no significant difference between current use of modern contraceptive methods and level of education. However, a slightly similar pattern is observed in the current use of modern methods and educational attainment. In terms of socioeconomic status of women, those in the middle to upper class are currently using modern contraceptive methods compared to the poor. For instance, forty-one percent of urban women in the middle class were currently using any form

Table 2a: Percentage distribution of use of any and modern contraceptive method according to background characteristics by urban respondents

Background characteristics	*Any method*		*Modern method*		*Total women*
	Using	*÷²-value*	*Using*	*÷²-value*	
Total	37.3 (616)		31.7(524)		1653
Age		45.3**		40.6**	
15-24	28.0 (170)		24.7 (150)		608
25-34	45.4 (356)		39.4 (309)		785
35-49	34.6 (90)		25.0 (65)		260
Mean±S.D	*28.9±8.7*		*27.8±7.6*		
Region		16.94**		6.789*	
Kampala	46.1 (320)		36.7 (271)		851
Central	41.5 (119)		34.5 (99)		287
Eastern	32.6 (29)		30.3 (27)		89
North	28.7 (80)		26.2 (73)		279
West	37.6 (68)		31.8 (54)		147
Children Ever Born		47.01**		63.71**	
None	22.8 (105)		19.5 (90)		461
1-2	39.2 (197)		33.8 (170)		503
3-4	47.6 (166)		39.5 (138)		349
5+	43.5 (148)		37.1 (126)		340
Number of Living Children		61.34**		58.40**	
None	22.1 (108)		18.8 (92)		489
1-2	38.7 (211)		33.9 (185)		545
3-4	49.1 (173)		40.9 (144)		352
5+	46.4 (124)		38.6 (103)		267

Table 2b: Percentage distribution of use of any and modern contraceptive method according to background characteristics by urban respondents

Characteristics	*Using*	*χ^2-value*	*Using*	*χ^2-value*	*Total women*
Ethnicity		20.80***		18.30**	
Luganda	38.7(241)		32.0(199)		622
Batoro	39.0(128)		31.1(102)		328
Basoga	47.3(96)		43.3(88)		203
Ateso	28.9(28)		24.7(24)		97
Acholi	31.8(63)		28.3(56)		198
Others	29.3(60)		26.8(55)		205
HB' s Desire for Children		3.767		2.645	
Wants more	46.8(246)		38.2(201)		526
Wants fewer	40.0(182)		32.7(108)		330
Husband's Education		4.471		2.480	
No	32.1(34)		29.2(31)		106
Primary	40.4(134)		33.9(121)		324
Secondary	41.8(218)		34.5(184)		534
Higher	44.1(108)		37.3(83)		245
Respondent Refuses Sex	2.915		3.754		
No	37.0(30)	28.4(23)		81	
Yes	47.0(378)	16.3(317)		885	

*=p<0.05;**=p<0.01;*** =p<0.001

Table 3: Percentage distribution of use of any and modern contraceptive method according to socio-economic characteristics by urban respondents

Background characteristics	*Any method*		*Modern method*		*Total women*
	Using	*χ^2-value*	*Using*	*χ^2-value*	
Total	37.3(616)		31.7(524)		1653
Education		12.2**		3.8	
None	24.4(22)		23.3(21)		90
Primary	35.1(230)		31.1(204)		656
Secondary	38.9(244)		32.7(205)		627
Higher	42.9(120)		33.6(94)		280
Wealth Index		6.3*		2.9	
Poor	26.4(24)		24.4(19)		78
Middle	41.4(36)		36.8(32)		87
Rich	37.7(561)		31.8(473)		1488
Exposure to FP Media		8.3**		7.2**	
No exposure	33.5(246)		28.3(208)		735
Yes R/N/T	40.3(370)		37.5(316)		917
Visited by FP Worker in 12 Mths		8.6**		8.4*	
No	36.1(536)		30.6(454)		589
Yes	47.6(80)		41.7(70)		1064
Visited Health Facility in the Last 2 Mths	11.9***		10.7**		
No visit	31.7(187)		26.7(157)		
Visited FP discussed	40.3(429)		34.5(367)		
Marital Status		63.5***		38.6***	
Never in union	27.5(122)		23.6(105)		444
Currently in union	46.1(409)		38.3(340)		888
Formerly in union	26.5(85)		24.6(79)		321
Currently Working		10.6**		12.2***	
No	31.4(158)		25.6(129)		503
Yes	39.8(458)		34.3(395)		1150
Religion		18.6***		20.0**	
Catholic	37.8(228)		32.3(195)		603
Protestant	42.7(188)		36.6(161)		440
Muslim	37.2(127)		32.6(111)		341
Pentecostal	26.0(61)		20.0(47)		235
Others	35.3(12)		29.4(10)		34

*=p<0.05;**=p<0.01;*** =p<0.001

of contraception as against twenty-six percent among women ($p<0.05$). Exposure to family planning (FP) media was found to be significantly associated to current use of any modern contraceptive method and the prevalence increased with increasing level of exposure to FP media ($p<0.01$). As an example, 28.3 percent of urban women who had no exposure to FP on media in the past two months before the survey were using modern contraceptives compared with 37.5 percent of their counterparts who had exposure to FP from the media such as the radio, newspaper and television. The percentage of women currently using any modern contraceptive was significantly higher among women visited by FP workers in the past 12 months than those who did not get such visits. The Table further shows that the prevalence of current use of any modern contraceptive method was higher among currently working urban women as opposed to those who were not working. This prevalence rate was more significant among urban women using modern contraceptives than any other method ($p<0.01$).

Table 4a shows that current use of any modern contraceptive methods was higher among rural women aged 25-34, with 29.9 percent of women in this age group using a modern contraceptive method compared to just 12.8 percent of women aged 15-24 years. About twenty-five and twenty-two percent of rural women are currently using any modern contraceptive method, respectively. The Table shows that most rural women who were using a modern contraceptive method were in the Kampala, Central and Western regions of Uganda compared to the Northern regions. The current use of a modern method of contraception was found to be significantly associated with region ($p<0.001$ and $p<0.01$ respectively). The Table further shows that the prevalence of the use of contraceptives increased as women had more children (5 or more living children using modern contraceptive methods) compared to those with none.

Table 4b further shows that the level of education of the husband also had an influence on current use of contraceptives. Husbands with higher levels of education use modern contraceptive methods more than those with low levels of education. Respondents who indicated that they could refuse to have sex with their partners were currently using modern contraceptive methods compared to those who said they could not. Current use of a modern contraceptive method was found to be significantly associated with the husband's desire for children and education ($p<0.01$).

Table 4a: Percentage distribution of use of any and modern contraceptive method according to background characteristics by rural respondents

Background characteristics	*Any method*		*Modern method*		*Total women*
	Using	*χ^2-value*	*Using*	*χ^2-value*	
Total	24.7(774)		22.2(554)		3135
Age		110.2***		100.5***	
15-24	13.9(117)		12.8(108)		844
25-34	33.0(466)		29.9(422)		1411
35-49	26.7(191)		18.2(160)		880
Mean±S.D	32.2 ±9.9		31.1 ±9.8		
Region		102.7***		73.7***	
Kampala	34.2(115)		31.2(105)		336
Central	29.8(111)		25.6(173)		675
East	26.9(111)		24.3(100)		412
North	12.6(112)		12.4(110)		887
West	28.5(235)		24.5(202)		825
Children Ever Born		97.4**		79.6***	
None	11.0(56)		10(51)		508
1-2	17.7(101)		16.1(92)		572
3-4	30.7(176)		27.0(155)		574
5+	29.8(441)		26.5(392)		1481
Number of Living Children		115.1***		94.9**	
None	10.4(57)		9.5(52)		548
1-2	18.4 (121)		16.6(109)		656
3-4	29.2(203)		26.0(181)		695
5+	31.8(393)		28.2(348)		1236

Table 4b: Percentage distribution of use of any and modern contraceptive method according to background characteristics by rural respondents

Characteristics	*Using*	*χ^2-value*	*Using*	*χ^2-value*	*Total women*
Ethnicity		104.1***		71.8***	
Luganda	36.2(161)		31.6(138)		445
Batoro	29.0(138)		24.9(201)		808
Basoga	31.0(138)		27.9(124)		445
Ateso	14.2(63)		12.9(57)		443
Acholi	21.3(87)		19.6(80)		408
Others	15.5(91)		15.4(90)		586
HB's Desire for Children		24.8**		21.2**	
More	28.4(340)		24.5(293)		1197
Fewer	19.1(179)		16.3(153)		938
Husband's Education		59.4**		53.8**	
No	14.1(65)		12.4(57)		460
Primary	24.9(386)		22.0(340)		1548
Secondary	31.9(184)		29.4(174)		592
Higher	37.7(72)		32.5(62)		191
Respondent Refuses Sex		5.3**		3.5*	
No	22.4(83)		20.3(75)		370
Yes	28.3(528)		24.8(460)		1856

* =p<0.05;** =p<0.01;*** =p<0.001

Table 5 shows that the prevalence of current use of any modern contraceptive methods was higher among rural women with higher levels of education. This is supported by the fact that there were significant differences between levels of education of rural women and the use of any modern contraceptive methods (p<0.001). The results show that thirty-six percent of rich rural women are currently using modern contraceptive methods compared to 13.6 percent of poor rural women. Rural women who visited a health facility where family planning was discussed are currently using more modern contraceptive methods compared to those who had never visited a health facility before. The results show significant associations between those who visited a health facility and those who did not and the current use of a modern contraceptive method (p<0.001). The prevalence of current use of modern contraceptive methods was higher among rural women who were currently in union compared to those who were, either never in a union, or formerly in a union. Most rural women who belonged to other religious denominations were currently using modern contraceptive methods than other religious groups. Among the known religions, rural protestant women were currently using modern contraceptive methods compared to rural catholic women who had the lowest prevalence of current use of a modern contraceptive method. Current use of any modern contraceptive method was significantly associated with religion (p<0.001)

Results of logistic regression of current use of any contraceptive methods and demographic, socio-economic characteristics are presented in Tables 6a and 6b. The Tables show that the identified predictors of any contraceptive method among rural and urban women are age, exposure to media to family planning, marital status, visiting a health facility and wealth quintile. For instance, the likelihood of rural and urban older women aged 35-49 currently using any contraceptive method was 2.3(C.I=1.6-3.4, p<0.01) and 2.2(C.I=1.7-2.8; p<0.01) higher compared to rural and urban women aged 15-24 years.

The results in Table 6b further show that level of education, number of living children and husband's desire for more children were common predictors among rural and urban women. In addition, urban women currently working were 1.5(C.I=1.1-2.2; p<0.05) more likely to use any contraceptives. Rural women who had husbands/partners with higher levels of education were 2.9 (C.I=1.5-3.4) more likely to use any contraceptive method. Urban and rural women whose husbands desired fewer children were 1.3(C.I=0.9-1.7) and 1.5(C.I= 1.3-1.9) more likely to use any contraceptive method.

Results of logistic regression of current use of modern contraceptive methods and demo-

Table 5: Percentage distribution of use of any and modern contraceptive method according to socio-economic characteristics by rural respondents

Background characteristics	*Any method*		*Modern method*		*Total*
	Using	*χ^2-value*	*Using*	*χ^2-value*	*women*
Total	24.7(774)		22.2(690)		3135
Education		97.5***		82.3***	
None	13.3(91)		11.7(80)		683
Primary	25.1(477)		22.5(429)		190
Secondary	36.8(168)		32.2(147)		445
Higher	41.3(38)		37.0(34)		692
Wealth Index		161.4***		126.0***	
Poor	14.8(216)		13.6(198)		1461
Middle	27.9(184)		25.0(165)		659
Rich	36.8(374)		32.2(34)		1015
Exposure to FP Media		28.4***		31.9***	
No exposure	19.7(248)		16.9(213)		1259
Yes R/N/T	28.1(526)		25.5(477)		1844
Visited by FP Worker in the 12 Mths		0.5		0.8	
No	24.9(707)		22.1(628)		2842
Yes	23.1(67)		21.4(62)		290
Visited Health Facility in the Last 2_Mths		31.1***		31.2***	
No visit	18.9(207)		16.4(180)		1098
Visit FP discussed	27.9(567)		25.1(510)		2035
Marital Status		28.2***		18.2**	
Never in union	18.2(62)		16.7(57)		381
Currently in union	27.3(608)		24(535)		2227
Formerly in union	18.3(104)		17.3(98)		567
Currently Working		9.4**		3.8*	
No	20.5(153)		9.4(145)		747
Yes	26.0(621)		1 22.8(545)		2387
Religion		16.6***		13.4***	
Catholic	21.5(302)		31.8(28)		1405
Protestant	28.2(255)		19.3(271)		903
Muslim	25.1(90)		25.0(226)		359
Pentecostal	26.1(99)		21.4(77)		380
Others	24.2(92)		27.3(24)		88

*=p<0.05;**=p<0.01;*** =p<0.001

graphic socio-economic characteristics are presented in Tables 7a and 7b. The identified predictors of modern contraceptive methods among rural and urban women are age, marital status and visiting a health facility. Currently married urban and rural women were 0.4(C.I=0.3-0.6; p<0.05) and 0.5(C.I=0.3-0.8; p<0.05) less likely to currently use modern contraceptive methods. Similarly, formally married urban and rural women were less likely to use modern contraceptive methods. However, this was only significant for rural women (0R=0.6; C.I=0.4-0.9, p<0.05).

In addition to Table 7a, Table 7b shows that variables such as children ever born, number of living children and currently working were the main predictors of modern use of contraceptives and urban and rural women. Current use of modern contraceptive methods increased consistently with the increasing number of children ever born and the number of living children for both urban and rural women. Conversely, rural women in the highest wealth quintile were 1.7(C.I=1.6-2.9; p<0.05) more likely to currently use a modern contraceptive method as against poor rural women. In terms of the ethnicity group, urban women who belonged to Iteso were 0.5 (C.I=0.3-0.7; p<0.05) less likely to currently using modern contraceptive methods.

DISCUSSION

Research from recent surveys reveal that the use of contraceptives has not risen significantly from twenty-four percent to thirty percent between 2006 and 2011 and thus has serious implications on a country's population growth

Table 6a: Binary logistic regression of any contraceptive method by demographic and socio-economic characteristics

Characteristics	*Urban*	*Rural*
	OR(95% CI)	*OR(95% CI)*
Age		
15-24	1	1
25-34	2.1* (1. 3- 3.4)	1.8* (1.2 - 2.6)
35-49	2.4* (1.6 - 3.4)	2.2* (1.8 - 2.8)
Region		
Kampala	1	1
Central	0.7 (0.4 - 1.1)	1.1 (0.7 - 1.5)
East	0.7 (0.4 - 1.2)	0.9 (0.6 - 1.3)
North	0.5 (0.2 - 1.0)	1.3 (0.8 - 2.0)
Western	0.5* (0.3-0.9)	0.6 (0.4 - 1.0)
Media Exposure to FP(R/N/T)		
No	1	1
Yes	1.8* (1.6 - 2.9)	(1.7** (1.5 -2.8)
Marital Status		
Never	1	1
Currently in union	0.6* (0.4 - 0.9)	0.9 (0.6 - 1.3)
Formally in union	0.5** (0.4 - 0.8)	0.6** (0.4-0.9)
Visited Health Facility		
No	1	1
Yes	1.6** (1.2 - 2.3)	1.7** (1.6 - 3.9)
Wealth Index		
Poor	1	1
Middle	0.8 (0.4 - 1.5)	1.4* (1.3 - 2.5)
Rich	2.0* (1.2 - 3.4)	1.7** (1.5 - 3.9)
Visted FP Worker		
No	1	
Yes	1.6*(0.9 - 2.8)	

*=p<0.05;**=p<0.01; *** =p<0.001. Adjusted odds-ratios used

(Nalwadda et al. 2010; Creanga et al. 2011; Kibira et al. 2014). About twenty percent of Uganda's poorest and least educated married women use modern contraceptives, compared to the forty percent of the wealthiest and most educated women (Guttmacher Institute 2013). Most of the forty percent of women could be living in urban areas where contraceptives are easily accessible and where cultural norms are less of a factor. The use of modern contraceptives by married women has increased significantly in recent years, nearly doubling (from 14% to 26%) between 2000 and 2011 (Guttmacher Institute 2013). However, this is too low to address or mitigate the high rates of unwanted pregnancies leading to high population growth rates (Khan et al. 2008; Uganda Bureau of Statistics and ICF International 2012; Wablembo and Doctor 2013). Compared to its neighbors, forty-six and forty-five percent of Kenyan and Rwandan married women use modern contraceptives (KNBS Kenya 2010; NISR 2012).

Irrespective of place of residence, this study revealed that most women who currently used any modern contraceptive methods were in the 25-34 year age bracket. This is also the age group in which most women have at least had on average of one or two children and would like to either space or limit the number of children. This finding is in line with results from previous studies, which showed that the use of contraceptives among women usually peak at age 24-30 years before declining (Orach et al. 2015; Assimwe et al. 2014; Kibira et al. 2014). This may be due to the fact that most women in this age group may have had their desired number of children and wish to start either limiting or spacing (Oketch et al. 2011; Bauer et al. 2007) and the result of the current study is not an exemption. It is also possible that these women are very conversant with where to obtain contraceptives and what contraceptive method works for them.

This paper revealed that a higher prevalence of currently using any modern contraceptive method was found among women with higher levels of education than those with less and lower levels of education. The finding is consistent with the results of the study conducted in Nige-

Table 6b: Binary logistic regression of any contraceptive methods by demographic and socio-economic characteristics

Characteristics	*Urban*	*Rural*
	OR(95% CI)	*OR(95% CI)*
Level of Education		
No	1	1
Primary	2.1*(1.6 - 3.4)	2.2* (1.7 - 3.4)
Secondary	4.1*(2.5 - 5.8)	3.1** (2.3 - 4.8)
Higher	5.1*(3.1 - 7.5)	3.7**(1.5 - 5.3)
Children Ever Born		
None	1	1
1-2"	1.2(0.9 - 3.5)	1.7(0.5 - 2.9)
3-4'	1.6*(1.1 - 2.1)	1.1(0.6 - 2.3)
5+	1.7*(0.9-3.2)	1.5*(1.0 - 2.2)
Number of Living Children		
None	1	1
1-2"	1.6*(1.3 -3-3)	1.2(0.9 - 2.8)
3-4'	2.4*(2.1 -3.8)	1.5* (1.1 - 2.6)
5+	3.8*(2.3 -4.3)	2.4*(1.8 - 3.5)
Currently Working		
No	1	1
Yes	1.5*(1.1 - 2.3)	1.1(0.8 - 1.7)
Ethnicity		
Baganda	1	1
Batoro	1.1(0.7 -1.9)	1.2(0.8 - 2.1)
Basoga	1.0(0.6 - 1.80	0.9 (0.5-1.6)
Ateso	0.5*(0.4 - 0.7)	1.0(0.6 - 1.7)
Acholi	0.8(0.5 - 1.5)	0.6*(0.4 - 0.9)
Others	0.9(0.6 - 1.6)	0.7(0.5 - 1.2)
Husband's Desire		
Wants more	1	1
Wants less	1.3*(0.9 - 1.7)	1.5*(1.2 - 1.9)
Husband's Education		
No		1
Primary		1.3*(1.2 - 1.5)
Secondary		1.6*(1.4 - 2.8)
Higher		2.9*(1.5 - 3.4)

*=p<0.05;**=p<0.01; *** =p<0.001. Adjusted odds-ratios used

ria and Ghana where a similar pattern was reported (Nyarko 2015; Ushie et al. 2011). The reason for this finding could be attributed to the influence of education on other real life processes. For instance, it increases knowledge on the implication of large family sizes and empowers them regarding the choice of the use of contraceptives (Achana et al. 2015; Gurmu and Mturi 2013; Stephenson et al. 2007). With every increased level of schooling, the chances of early births are diminished and further reinforce a change in attitude for the need of a large family size (Raooly et al. 2015; Assimwe et al. 2014). This is in addition to the fact that women with higher levels of education may know where to access contraceptives, the types of contraception available and suitable for them.

As a means of disseminating family planning information to the population, media outlets such as newspapers, the radio and television are used either on a daily basis or periodically in Uganda. This study has shown that the likelihood of using any contraceptive method was higher among rural and urban women exposed to a media outlet than counterparts without any exposure. This outcome is supported by previous studies that there is a positive association between media exposure and the use of contraceptives (Nyarko 2015; Mosiur et al. 2008). Exposure to media enables women to understand the various family planning methods, reduce myths and misconceptions and their use (Teferra et al. 2015; Stephenson et al. 2007). However, it is important that the content of the messages on family planning be easily understood to have any significant impact on fertility decline.

The results clearly suggest that urban and rural women who visited health facilities in the

Table 7: Binary logistic regression of the use of modern contraceptives according to demographic and socio-economic characteristics

Characteristics	*Urban*	*Rural*
	OR(95% CI)	*OR(95% CI)*
Age		
15-24	1	1
25-34	1.5(0.9 - 2.4)	1.4(0.8 - 2.0)
35-49	1.8***(1.2 - 2.5)	2.0***(1.6 - 2.5)
Region		
Kampala	1	1
Central	0.8(0.5- 1.1)	1.4(1.0 - 1.8)
East	0.9(0.6 - 1.3)	1.0(0.8 - 1.3)
North	0.7(0.4 - 1.3)	0.9(0.7 - 1.3)
Western	0.6*(0.3 - 0.9)	0.4**(0.3 - 0.5)
Media Exposure to FP(R/N/T)		
No	1	1
Yes	1.7(0.6 - 2.8)	1.4**(1.1 - 3.8)
Marital Status		
Never	1	1
Currently in a union	0.4*(0.3 - 0.6)	0.5*(0.3 - 0.8)
Formally in a union	0.6(0.4 - 1.2)	0.6*(0.4 - 0.9)
Visited Health Facility		
No	1	1
Yes	1.6**(1.2 - 2.8)	1.7**(1.6 - 2.9)
Wealth Index		
Poor		1
Middle		1.5*(1.4 - 2.6)
Rich		1.8*(1.6 - 2.9)
Visited FP Worker		
No	1	
Yes	0.6(0.4 - 0.8)	

*=p<0.05;**=p<0.01; *** =p<0.001. Adjusted odds-ratios used

past few months where family planning was discussed, used more modern contraceptive methods than their counterparts who did not. This corroborates the finding from studies, which highlight a link between visiting a health facility and the uptake of family planning methods (Nyarko 2015; Kavanaugh and Anderson 2013; Gurmu and Mturi 2013; Kidayi et al. 2015). Visiting a health facility may have profound impact on the attitudes of women towards the use of contraceptives as it helps demystify misconceptions about family planning methods through either information sought from or provided by the health worker (Teferra et al. 2015).

The results further suggest that women with more children are more likely to currently use a modern method compared to those with few or no children. Similar findings have been reported highlighting a link between children ever born and the use of modern contraceptives whereby women with children used contraception compared to those with no children (Lutalo et al. 2015; Rasooly et al. 2015; Palamuleni 2013) but was contrary to findings obtained in Ghana where women with more children ever born were less likely to use contraceptives (Nonvignon and Nonvignon 2014). It is postulated that those who are not using contraceptives are young and still want to have children in the future. But this depends on their accessibility, given that Uganda is predominantly rural with poor or limited healthcare facilities in rural areas.

In addition to the above socio-economic variables, the multivariate analysis has shown key variations in the current use of any modern contraceptive methods by place of residence. For instance, among rural women, higher education, socio-economic status and exposure to media on issues of family planning were important explanatory variables of current use of modern contraceptive methods. With urban women, working status and visiting a family planning worker were other predictors of current use of any contraceptive method.

CONCLUSION

The results of this study have shown that place of residence is an important factor in determining the use of contraceptives among wom-

Table 7b: Binary logistic regression of the use of modern contraceptives according to demographic and socio-economic characteristics

Characteristics	*Urban*	*Rural*
	OR(95% CI)	*OR(95% CI)*
Level of Education		
No		1
Primary		1.3**(1.2 - 2.5)
Secondary		1.5*(1.3 - 3.5)
Higher		2.9*(1.5 - 3.5)
Children Ever Born		
None	1	1
1-2"	1.2*(1.1 - 3.2)	1.1*(1.0 - 2.1)
3-4'	1.5*(1.4 - 3.5)	1.2*(1.1 - 3.3)
5+	2.3*(1.7 - 4.3)	1.4*(1.2 - 4.0)
Number of Living Children		
None	1	1
1-2"	1.2**(1.0 - 2.1)	1.0*(0.9 - 2.2)
3-4'	2.5**(1.3 - 4.0)	2.2**(1.1 - 3.5)
5+	3.2**(1.0 - 4.4)	3.5**(1.3 - 3.7)
Currently Working		
No	1	1
Yes	1.8*(1.3 - 2.6)	1.2*(0.9 - 3.2)
Ethnicity		
Baganda	1	1
Batoro	1.1(0.6 - 0.8)	1.1(0.6 - 1.8)
Basoga	0.9(0.5 -1.6)	0.8 (0.5-1.4)
Ateso	0.5*(0.3 - 0.7)	0.9(0.6 - 1.6)
Acholi	0.8(0.4 - 1.5)	0.5*(0.4 - 0.8)
Others	0.9(0.6 - 1.6)	0.7(0.5 - 1.2)
Husband's Education		
No		1
Primary		1.3*(1.2 - 2.4)
Secondary		1.5*(1.4 - 2.7)
Higher		2.8*(1.5 - 3.2)

*=p<0.05;**=p<0.01; ***=p<0.001. Adjusted odds-ratios used

en of reproductive age. Socio-economic and demographic factors such as age, children ever born, number of living children, education level and visit to a health facility are important determinants in the current use of any modern contraceptive method. In addition, education, socio-economic status, exposure to media on issues of family planning and husband's desire for more children and education were important determinants of the current use of any modern contraceptives among rural women. The level of education of the husband was an important factor for current use of modern contraceptive methods among rural women.

RECOMMENDATIONS

Considering the fact that Uganda is predominantly rural, policy formulations must take into consideration the importance of these predictors that impact rural fertility. For instance, encouraging women to further their education, greater exposure to media on issues of family planning and encouraging husbands to limit the number of children by their involvement in family planning initiatives. Furthermore, the findings of this paper suggest that there is a need to understand the variability of the use of contraceptives, between rural and urban areas, which must be taken into consideration when formulating family planning policies.

LIMITATIONS

The first limitation of this paper is the nature of some of the data collected. It was usually affected by social desirability biases, making respondents to provide responses, which they thought should be expected. An important variable that could help in determining women's autonomy such as reason for not using a method was opposition from the husband. This had

missing values and thus could not be part of the analysis. Some variables, especially of qualitative nature such as attitudes and perceptions regarding use of contraceptives in the community and by partners were not collected by the DHS. Therefore, some of the results observed might be limited on the account of the shortage of some important variables.

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