

Predisposing factors associated with teenage pregnancy in Lake Victoria Islands and Mountain districts of Uganda

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Abstract

Introduction There is a high teenage pregnancy rate in Lake Victoria Island and Mountain districts of Uganda. Teenage pregnancy leads to unsafe abortions, infant and maternal mortality, high rate of unemployment, and school drop-outs. This paper aims at establishing the factors influencing teenage pregnancy in Uganda Lake Victoria Island shoreline area and mountain districts. **Methods** The analysis focused on 405 girls aged 15–19 years, generated from the 2016 Uganda demographic and Health Survey. The chi-square test statistic was used to establish factors associated with teenage pregnancy. Unadjusted and adjusted binary logistic regression analysis were conducted on explanatory variables to establish the predictors of teenage pregnancy in the Lake Victoria Island districts and the mountain districts. Statistical significance was considered at 5% level. **Results** The findings show that teenage pregnancy rate was at 48% in the Lake Victoria Island districts and at 24% in the mountain districts. Predictors of teenage pregnancy include; aged 18 – 19 years (AOR=4.78, $p=0.000$, 95% CI 2.85 – 8.01), being in a female-headed household (AOR=0.46, $p=0.004$, 95% CI 0.25 – 0.85), being in a “working” occupation (AOR=2.22, $p=0.005$, 95% CI 1.28 – 3.85), belonging to the “rich” quintile (AOR=0.54, $p=0.03$, 95% CI 0.31 – 0.97) and knowledge of any family planning methods (AOR=18.37, $p=0.008$, 95% CI=2.17 – 155.5). **Conclusion** The factors associated with high teenage pregnancy in the Uganda Lake Victoria Island shoreline area and mountain districts include; age, sex of household head, occupation (not working), socio-economic status and knowledge of family planning methods. There is need for programs that promote contraceptive use among teenagers and household wealth creation projects, with special attention to dwellers in remote and hard-to-reach areas of the country.

Background

Teenage pregnancy is a major public health concern affecting more than 16 million girls and young women around the world[1]. Teenage pregnancy is associated with unsafe abortions, infant and maternal mortality, high rate of unemployment, and school drop-outs [2]. With increased awareness of the reproductive health consequences of teenage pregnancy, researchers and policy makers have concluded that teenage pregnancy and childbearing is a serious problem [3–6, 2, 7].

According to Worldatlas[8] sub-Saharan African countries have the highest teenage pregnancy rates in the world: with Niger leading with 203.6 births per 100,000 teenage women, followed by Mali (175.4) and Angola (166.7), while Uganda is ranked number 14 at 114.8. Early childbearing carries particular risks, including dropping out of school, abandoning babies and obtaining illegal abortion that may result into death. Lillian & Mumbango [2] revealed that teenage pregnancy and childbearing is a serious social problem that is linked to the spread of HIV/AIDS, sexual abuse, neglect, and abortions as well as infant and maternal mortality. Their results showed that teenage pregnancy was influenced by generation, region, highest educational level, socio-economic status and cultural factors. This finding is consistent with the studies conducted by other scholars [9–11].

Teenage pregnancy is associated with various socioeconomic outcomes. Studies indicate that teens who become pregnant also tend to miss out on education. For example, young people who become parents while in their teens are much more likely than their

classmates who postpone childbearing to have their education truncated[12]. Furthermore, the younger the parent at birth, the greater the educational setback. It is also likely that dropout rates will be high among girls who became pregnant during teenage.

Teenage mothers face psychosocial problems. Indeed, Kaye[13] found that young adolescents reported anxiety and loss of self-esteem when they conceived. They also indicated having difficulty in accessing financial, moral and material support from parents or partners and stigmatization by health workers when they sought care from health facilities. Despite all the challenges, teenage mothers hardly have appropriate maternity services particularly teenager-friendly antenatal services[14].

The low use of contraception has been associated with high fertility, which remains a public health concern that should be averted. In addition to the unwanted/ early/ teenage pregnancies, these young people are also at a high risk of HIV infection and infection from other STIs [15]. Researchers conclude that there is a need for an integrated approach to curb teenage pregnancy. Atuyambe et al [16] concluded that pregnant teenagers in Wakiso district lack basic needs like shelter, food and security. They also face relational problems with families, partners and the community. Several social factors such as religious beliefs, idleness and economic factors have been identified as factors contributing to early pregnancy [17–23].

The government of Uganda has taken several measures to address teenage pregnancy. Some of the policies and strategies include the National Strategy to end Child Marriage and Teenage pregnancy [17]. This strategy was introduced in 2017 with the aim of providing guidance on the design and implementation of programmes that contribute to eliminating child marriage and teenage pregnancy. Others include the National Adolescent Health Policy[24], and the National Policy Guidelines and Service Standards for Sexual and Reproductive Health and Rights[25]. In spite of government's efforts, teenage pregnancy rates remains high[26, 27]. Due to insufficient funding most government policies are not fully operationalized [28].

According to UBOS [26], one out of four (24.8%) girls aged 15–19 years have either a child or were pregnant at the time of the survey. Of the 15 regions considered in the 2016 Uganda Demographic and Health Survey, the percentage of women who had begun child bearing was lowest in Kampala (17%), followed by Kigezi (16%), Ankole (19%) and South Central (20%). The percentage was comparatively higher in North Central (30%), Busoga (21%), Bukedi (30%), Bugisu (28%), Teso (31%), Karamoja (24%), Lango (28%), Acholi (24%), West Nile (22%), Bunyoro (29%) and Tooro (30%). The highest percentage was among the women in Island districts where the level was as high as 48%. The percentage for both Island and Mountain districts was 31%, which is well above the national average (24.8%). This relatively high percentage generated research interest and need to investigate factors influencing teenage pregnancy in the two areas. The areas also have poor accessibility owing to steep terrain and sub-optimal water

transport network in the mountain and island districts respectively. These conditions make the areas hard-to-reach and could exacerbate difficulty in accessing pregnancy-related care. It is against this background that this study seeks to establish the factors influencing teenage pregnancy in Uganda Lake Victoria Island/shoreline area and mountain districts.

Methods

The manuscript uses secondary data extracted from the 2016 Uganda Demographic and Health Survey (UDHS) dataset[26]. The 2016 UDHS used a multistage cluster sampling, whereby at first stage, a random sample of enumeration areas (EA), which are primary sampling units, was chosen from the census sampling frame. From the selected EAs, households were systematically drawn. Respondents in the selected households were interviewed using structured questionnaires. The 2016 UDHS grouped the country into 15 sub regions, plus 3 special areas; (the Lake Victoria Island districts, the mountain districts and greater Kampala). The Lake Victoria Island districts and the mountain districts (Figure 1) have been selected for this study considering that they are remote and hard-to-reach areas as well as having high percentage of teenagers who have started childbearing in Uganda. The Islands and shoreline districts include: Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso while the mountains districts include Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong.

Figure 1 about here

Data for this study was extracted from the 2016 UDHS household and woman's questionnaires, resulting into a sample of 405 respondents. The women's questionnaire collects information from eligible women aged 15–49 years in each of the sampled households about their characteristics including; birth history, fertility, family planning and nutrition. The household questionnaire collects information on household characteristics such as assets, toilet facilities, type of dwelling and source of drinking water which are used to generate the household socio-economic "wealth" index using the relevant data reduction techniques.

The outcome variable was derived from the questions that asked respondents aged 15–19 years, their age at first birth or whether they were pregnant at the time of the Uganda Demographic and Health Survey. Teenage pregnancy was dichotomized as 1 for "Reported teenage pregnancy" and 0 for "No reported teenage pregnancy". The explanatory variables were current age in years, education level (None, Primary, Secondary or Higher), place of residence (urban or rural), sex of household head (male or female), marital status (never married, married, divorced or separated), occupation/employment (re-coded as working or not working). Others include social economic status (wealth index) and knowledge of any contraception method (Yes or No). The wealth index was computed using principal component analysis and coded into five quintiles: poorest, poorer, middle, richer and richest [26]. For this manuscript, wealth index was re-coded into poor (for poorest and poorer), middle, and rich (for richer and richest). Knowledge of any method was classified into modern, traditional and folkloric methods. Data analysis involved a

description of the background characteristics of the study respondents using frequency distributions. The chi-square test statistic was used at bivariate level to establish factors associated with teenage pregnancy in the Lake Victoria Island districts and the mountain districts (Table 1). And since the outcome variable was dichotomous, a binary (unadjusted and adjusted) logistic regression analysis was conducted on explanatory variables to establish the predictors of teenage pregnancy (Table 2). All the analyzed data were weighted using the UDHS sampling weights to account for the design effect and clustering. The predictors were determined at 5% level of significance.

Results

Characteristics of respondents

Table 1 shows the characteristics of the 405 respondents. Majority of the teenagers were below 18 years (66.0%) and about 17.1% had their first birth at less than 15 years. The percentage of teenagers with primary or no education (69.2%) more than doubled those with secondary or higher education. Majority of the teenagers (77.1%) were living in the rural areas, with their parents (47.5%), while one in three (33.4%) teenagers came from female-headed households, and were never married (77.2%).

Table 1 about here

There were only 20.2% of the teenagers in the richest wealth quintile. With regard to religious affiliation, 34.9% of the teenagers were Catholics, while 33.5% were Anglicans and the majorities were not using contraception (87.9%). Whereas 97.0% of the teenagers had knowledge of at least one family planning method.

Prevalence of teenage pregnancy

Table 1 also shows the association between the prevalence of teenage pregnancy and background characteristics of respondents in the Lake Victoria Island and Mountain districts. Teenage pregnancy was high among teens aged 18 years and above (44.8%) compared to those under 18 years ($p = 0.000$). Teenage pregnancy in Lake Victoria Island districts was twice (48.7%) that of Mountain districts (24.3%), as well as twice the national figure of 25%[26]. It is also indicated that teenage pregnancy was higher for teenagers in rural areas than urban ones, and the association was statistically significant ($p = 0.040$).

The prevalence of teenage pregnancy decreased with increasing education level, and the association was statistically significant ($p = 0.039$). Teenage pregnancy in male headed households (31.7%) was significantly higher ($p = 0.000$) than in female headed households (16.2%). Teenage pregnancy in married (91.2%) and ever married (84.1%) teens was significantly different ($p = 0.000$) from those who were never married (8.9%).

Teenage pregnancy is significantly associated with occupation of the teens ($p = 0.001$). The teenage pregnancy rate among the non-working teens was almost double (35.2%) that of their working

counterparts (18.3%). The results further indicate that teenage pregnancy decreased with increase in wealth index. In addition, there were statistically significant associations between knowledge of some family planning methods ($p = 0.000$) and teenage pregnancy.

Predictors of teenage pregnancy

Table 2 shows the predictors of teenage pregnancy. We used binary logistic regression analysis to establish the predictors of teenage pregnancy. The adjusted analysis results, after controlling for age and education level, indicate that older (18–19 years) teens were four times (AOR = 4.78, $p = 0.000$, 95% CI = 2.85–8.01) more likely to experience teenage pregnancy than the younger (15–17 years) teens. Table 2 further shows that teens from mountain districts had less odds of experiencing teenage pregnancy (AOR = 0.35, $p = 0.000$, 95% CI = 0.21–0.60) compared to those from Island districts.

Table 2 about here

Table 2 further shows that sex of household head was a predictor of teenage pregnancy. Teens from households headed by a female were less likely (AOR = 0.46, $p = 0.004$, 95% CI = 0.25–0.85) to experience teenage pregnancy than their counterparts from male headed households. Marital status was a statistically significant predictor of teenage pregnancy. Married (AOR = 50.4, $p = 0.000$, 95% CI = 19.23–132.20) or ever married (AOR = 52.6, $p = 0.000$, 95% CI = 7.81–357.1) teens and very high odds compared to the never married teens. Furthermore, in comparison with working teens, those who are not working were more likely (AOR = 2.22, $p = 0.005$, 95% CI = 1.28–3.85) to experience teenage pregnancy.

The adjusted analysis results also show that the socio-economic status of a teen was a predictor of teenage pregnancy. There were reduced odds of experiencing teenage pregnancy among teens with increasing wealth index. Teens who belonged to the rich quintile were less likely (AOR = 0.54, $p = 0.003$, 95% CI = 0.31–0.94) to experience teenage pregnancy than their counterparts belonging to the poor category. In addition, an unexpected finding is that teenagers with knowledge of some family planning methods were more likely (AOR = 18.37, $p = 0.008$, 95% CI = 2.17–155.5) to experience teenage pregnancy.

Discussion

The main objective of this study is to establish the factors associated with teenage pregnancy in the Uganda Lake Victoria Island shoreline and Mountain districts. Teenage pregnancy in the Uganda Lake Victoria Island shoreline districts was 48.3% and 24.3% in the Mountain districts [26]. Overall, teenage pregnancy in these special areas was 31.0%, which is well over the national figure of 24.8%. This finding is consistent with studies in other countries which show high teenage prevalence ranging from 20% to 50% [5, 29, 6, 2, 19, 22]. The continued involvement in sexual activities puts teenagers at a risk of HIV/AIDS. This could be explained by peer pressure influence or lack of Information Education and Communication (IEC) materials to promote safe sex.

Being an older teen (18–19 years) increased the odds of teenage pregnancy in comparison with being younger (15–17 years). This finding is in line with other studies[29, 30, 18] As teens get older, there is a likelihood of teens becoming more curious of their sexual and reproductive health changes, which leads to getting involved in sexual activities. Some studies have indicated that teens with inadequate sexual reproductive education are more likely to experience teenage pregnancy[3]. As expected, marital status was also a significant predictor of teenage pregnancy. Results suggest that married or ever married status increases the teen's likelihood of being pregnant or having borne a child. Teenagers who are or were in a marital relationship are exposed to reproductive health changes due to the marriage factor, as also observed by Rutaremwa [18].

Teens from female headed households were less likely to be exposed to teenage pregnancy compared to teens from male headed households. Girls tend to be much closer to female household heads than males household heads. Female household heads may easily discuss sexual reproductive health (SRH) issues with teenage girls than male household heads, a situation that would probably reduce the likelihood of early sexual relations and pregnancy. By contrast, the rapport between teenage girls and male household heads could be poorer and hence less discussion on SRH issues. The limited sexual reproductive health information could contribute to teens engaging in early sexual activities that lead to teenage pregnancy. However, Ellis et al [31] observed that greater exposure to father absence was strongly associated with elevated risk for early sexual activity and adolescent pregnancy.

Wealth status was a significant predictor of teenage pregnancy. Teens from rich households had reduced odds compared to those from the poor ones. Teens from rich households are perceived to have access to desired basic childhood necessities like education and knowledge about sexual health care. Availability of resources is an important factors towards access to health care services. In the same vein, in Nigeria, Amoran [19] observed that students are exposed to teenage pregnancy because of low socio-economic status of the households.

Results indicate that the odds of teenage pregnancy were higher among teens with knowledge of any family planning methods. This suggests that teens with knowledge of how to prevent unwanted pregnancy were more likely to experience teenage pregnancy than their counterparts without any knowledge of family planning methods. It implies that most teenagers were not using contraceptives to prevent unwanted pregnancy, as observed in other studies [10]. Yakubu et al[5] has observed that teens in sub-Saharan Africa are not empowered with comprehensive sexuality education on how to access and use contraceptives to prevent teenage pregnancy.

Conclusions

Increased age, sex of household head, occupation, socio-economic status and knowledge of family planning methods were found to be statistically significant predisposing factors of teenage pregnancy in Uganda Lake Victoria Island shoreline and mountain districts. There is need for programs that promote

contraceptive use among teenagers and household wealth creation projects, with special attention to dwellers in remote and hard-to-reach areas of the country.

Abbreviations

UDHS: Uganda Demographic Health Survey *STI*: Sexually Transmitted Infections

UBOS: Uganda Bureau of Statistics *EA*: Enumeration Area

AOR: Adjusted Odds Ratio *SRH*: Sexual Reproductive Health

IEC: Information Education and Communication *CI*: Confidence Interval

AIDS: Acquired Immune Deficiency Syndrome *HIV*: Human Immunodeficiency Virus

FP: Family Planning *ICF*: International Classification of Functioning Disability and Health

Declarations

Ethics and Consent to participate

Not applicable

Consent to publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

The study used data that is publicly available and may be requested from International Classification of Functioning, Disability, and Health (ICF) through

https://dhsprogram.com/data/dataset/Uganda_Standard-DHS_2016.cfm?flag = 0

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interpretation of data and in writing the manuscript.

Authors' contributions

RT participated in all aspects of preparation of this manuscript; conceived the study, selected data, conducted data analyses, reviewed the scientific content, and interpretation of findings, discussion, and conclusions. AN and JBA participated in the conceptualization, data analyses and literature review. CK, JM, AJB, and FM interpreted the results and participated in the drafting of the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1: Association between the prevalence of teenage pregnancy by background characteristics

Background characteristics	Number (%)	Reported teenage pregnancy	
		No	Yes
Age in years (n=405)		$\chi^2 = 47.8$ p=0.000	
15 – 17	268(66.0)	82.9	17.1
18 – 19	137(34.0)	55.2	44.8
Special areas (n=405)		$\chi^2 = 13.6$ p=0.000	
Lake Victoria Island shoreline districts	38 (9.3)	51.7	48.3
Mountain districts	367 (90.7)	75.7	24.3
Residence (n=405)		$\chi^2 = 6.43$ p=0.040	
Urban	93 (22.9)	82.3	17.7
Rural	312(77.1)	70.9	29.1
Education level (n=404)		$\chi^2 = 10.4$ p=0.039	
None	16(4.0)	66.2	33.8
Primary	264(65.2)	69.6	30.4
Secondary +	124(30.8)	82.2	17.8
Sex of household head (n=404)		$\chi^2 = 14.8$ p=0.000	
Male	269(66.6)	68.3	31.7
Female	135(33.4)	83.8	16.2
Marital status (n=405)		$\chi^2 = 294$ p=0.000	
Never married	312(77.2)	91.1	8.9
Married	81(20.0)	8.8	91.2
Ever married	12(2.8)	15.9	84.1
Occupation (n=404)		$\chi^2 = 19.9$ p=0.001	
Working	196(48.5)	81.7	18.3
Not working	208(51.5)	64.8	35.2
Wealth index (n=405)		$\chi^2 = 11.8$ p=0.016	
Poorest	132(32.6)	64.3	35.7
Middle	108(26.7)	76.0	24.0
Rich	165(40.6)	79.2	20.8
Knowledge of any one FP method (n=404)		$\chi^2 = 5.57$ p=0.000	
Knows FP methods	392(97.0)	72.6	27.4
Knows nothing	12(3.0)	98.3	1.7

Table 2: Multivariate logistic regression analysis showing predictors of teenage pregnancy

Background Characteristics	Unadjusted Analysis			Adjusted Analysis		
	Odds Ratio	95% CI	P values	Odds Ratio	95% CI	P values
Teenager's age						
15 – 17 years	1.00			1.00		
18 – 19 years	3.92**	2.31 – 6.64	0.000	4.78**	2.85 – 8.01	0.000
Special areas						
Island districts ^R	1.00			1.00		
Mountain districts	0.34**	0.20 – 0.59	0.000	0.35**	0.21 – 0.60	0.000
Residence						
Urban ^R	1.00			1.00		
Rural	1.91**	1.02 – 3.57	0.043	1.77	0.98 – 3.20	0.060
Education level						
None ^R	1.00			1.00		
Primary	0.86	0.30 – 2.42	0.767	1.17	0.24 – 5.71	0.840
Secondary +	0.41**	0.16 – 1.04	0.061	0.40	0.11 – 1.42	0.150
Sex of household head						
Male ^R	1.00			1.00		
Female	0.42**	0.25 – 0.70	0.000	0.46**	0.25 – 0.85	0.004
Marital status						
Never married ^R	1.00			1.00		
Married	65.70**	25.50 – 169.30	0.000	50.4**	19.23–132.2	0.000
Ever married	55.55**	8.81 – 350.70	0.000	52.6**	7.58 – 357.1	0.000
Occupation						
Working ^R	1.00			1.00		
Not working	2.43**	1.43 – 4.11	0.001	2.22**	1.28 – 3.85	0.005
Wealth Index						
Poor ^R	1.00			1.00		
Middle	0.57	0.31 – 1.00	0.065	0.62	0.35 – 1.09	0.090
Rich	0.47**	0.28 – 0.78	0.004	0.54**	0.31 – 0.94	0.003
Knowledge of any family planning method						
Knows nothing ^R	1.00			1.00		
Knows FP methods	21.91**	2.69 – 178.3	0.004	18.37**	2.17 – 155.5	0.008

R = Reference category

** significant coefficient at 5% level

Figures

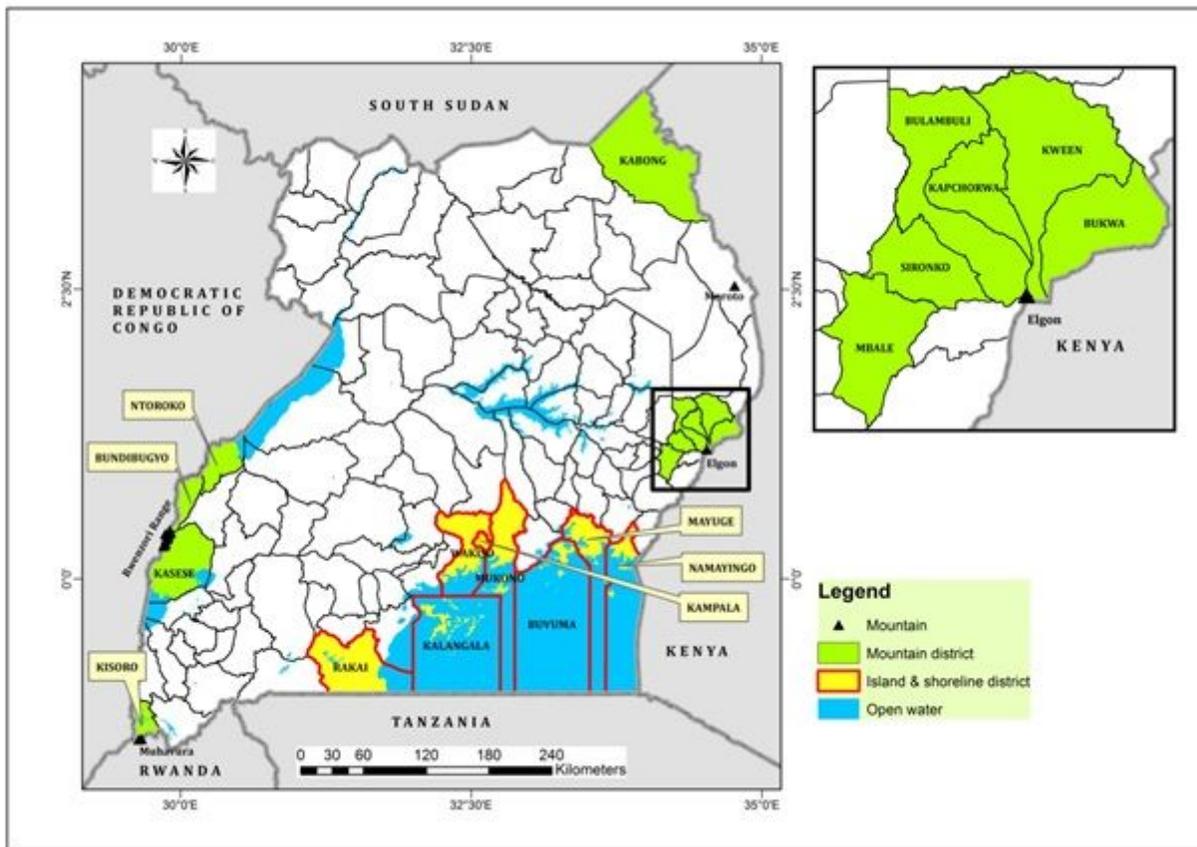


Figure 1

Figure 1: Study regions (Lake Victoria Island/Shoreline and Mountain Districts)