Research Article

Predictors of Adolescent Pregnancy among School Girls Aged 15-19 Years Attending Secondary School in Hoima District, Uganda

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Abstract

Introduction: Despite the numerous adolescent pregnancy prevention interventions implemented, Uganda has persistently had a high prevalence of adolescent pregnancy (25%) for the last ten years. This study sought to identify the predictors of adolescent pregnancy among adolescent girls aged 15-19 years in school.

Methods: A cross sectional study design was used. Data was collected from 988 girls aged 15-19 years attending secondary school from twenty secondary schools in August 2019 using a structured questionnaire. Descriptive statistics and inferential analysis was done using SPSS.

Results: The factors that that were associated with adolescent pregnancy at bivariate analysis were religion, school section (day scholar or boarding) category, ever been pregnant, ever had an abortion, sexual behavior and ever used family planning. At multivariate analysis, school section (day scholar or boarding) category and sexual behavior of the school girls were statistically significant. A higher proportion of the school girls in the boarding section got pregnant (3.6%) compared to girls who were day scholars (1%).

Conclusion: The adolescent school girls in the boarding section and those with risky sexual behavior had the highest likelihood of getting pregnant. School based interventions should be intensified to address the SRH needs of girls in school.

Keywords: Adolescent; Pregnancy; Sexual behavior; School-Based; School section

1. Introduction

Uganda's adolescent population has historically reduced from 34% [1] to 16% in 2016 [2] out of the estimated to be 42.8 million people in Uganda [3]. Statistics in Uganda indicate a high adolescent fertility rate (15-19 years) at 132 (92 urban and 145 rural) [3]. In spite of Uganda's generally high prevalence of adolescent pregnancy, the prevalence has been coming down gradually but steadily from 43% in 1995, 31% in 2001, 25% in 2006, 24% in 2011 and 25% in 2016 [4, 5, 6, 7, 8]. Uganda has had an adolescent pregnancy rate of 25% among girls 15 to 19 years for the last ten years [8] higher than the average prevalence of 19% and 11-16% in the developing and developed countries respectively [9, 10]. It is important to note that there is very limited data on adolescent pregnancy and associated factors among adolescents in school. The consequences of adolescent pregnancy include premature births, low birth weight of the newborn, high risks for medical complications such as obstructed labor, obstetric fistula, leakage of urine and/or faeces and mortality [11]. Adolescent girls account for 14% of the estimated 20 million unsafe abortions performed each year, which result in approximately 68,000 deaths. This an alarming public health problem globally and requires urgent multi-sectoral attention [11]. The Uganda Demographic Health Survey (UDHS) conducted in 2016 estimated the pregnancy related mortality ratio to be at 368 death per 100,000 live births and adolescents 15-19 years contributing 17% of all pregnancy related mortality rate in Uganda. Additionally, 15 out of every 1000 Ugandan women of reproductive age were treated for abortion complications that year [8].

The high adolescent pregnancy prevalence has often been attributed to early marriage, early initiation of sex and lack of access to reproductive health information and services, age of the adolescent girl, level of education, living arrangement, peer influence, unwanted sexual advances from adult men, lack of parental guidance, early sexual debut, early marriage and poverty in Africa [12, 13, 14, 15, 16]. However, adolescent pregnancies may occur as a result of: customs and traditions that lead to early marriage, adolescent sexual behavior which may also be influenced by alcohol and drugs, lack of education and information about reproductive sexual health, lack of access to tools that prevent pregnancies, peer pressure to engage in sexual activity, incorrect use of contraception, sexual abuse that leads to rape, poverty, exposure to abuse, violence, and family strife at home, low self-esteem and low educational ambitions or goals [11]. It is also important to note that adolescent pregnancy is not always as a result of a deliberate choice, often unintended pregnancy among the adolescent girls is a consequence of little or no access to Adolescent Sexual and Reproductive Health (ASRH) information and services [9]. Majority of adolescent girls who become pregnant are married and or pressured to have a child while for others, pregnancy often results from abusive, forced, or coerced sex [17]. The limited awareness on consequences of adolescent pregnancy, inaccessibility to ASRH services and social protection of the adolescent girls within the community increases the

risk of becoming pregnant [9]. In addition, sexuality of the girls has often been sighted as a key determinant for adolescent pregnancy with the incident increasing from 17.3 % in 2002 to 21.3 % in 2011 among girls who had ever had sex [18]. Whereas the Ugandan Ministry of Health has implemented several adolescent pregnancy prevention programs including the provision of SRH services at the community and health facility levels; and developed numerous policies to address the problem such as sexuality framework, adolescent SRH policy, the adolescents in school who have been reported to be sexually active (28%) are often vulnerable and left with limited access to comprehensive SRH services [19]. This may be a key contributing factor to the persistent adolescent pregnancy in the country. Additionally the factors associated with adolescent pregnancy among adolescent girl in school have not been widely studied across the globe and therefore remain grey in the prevention of adolescent pregnancy among adolescent girls in school. This study therefore sought to identify the factors that are associated with adolescent pregnancy among adolescent girls in secondary schools. This may go a long way in informing adolescent prevention programs for adolescents in school and consequently contribute to a reduction in the general prevalence of adolescent pregnancy in the country.

2. Methods and Materials

This study used a cross sectional design in Hoima District. In order to determine the predictors, data was collected from 988 girls aged 15-19 years in August 2019. The study took on the epistemological lens of positivism so as to identify the factors associated with adolescent pregnancy among adolescent girls attending selected secondary schools in Hoima District in Uganda [20].

The study participants were part of an ongoing RCT whose sample size had been calculated using Campbell and Walters [21] method. Formal consent was sought from girls aged 18 years and above while parent consent and assent was sought from the girls who were below 18 years.

Data was collected using structured questionnaire which had an item rated Content Validity Index of 86% and was also underwent face validity by two experts [22, 23]. In addition, the questionnaire had a Cronbach alpha of 0.807 which was considered to be good [21, 24]. Data was analyzed using SPSS Version 20 to generate descriptive and inferential statistics.

3. Results

57.2% were aged 15-16 years, 39.5% aged 17-18 years and 3.4% were aged 19 years and above. Majority 91.4% of the participants were Christians, 98.7% of the participants were Ugandans while 71.1% were in the boarding section of the school. Most of the participants were in senior three (55.7%) and senior two (32.3%) classes. 93.2% of the participants were in schools which had both day and boarding sections. Out of the 988 participants, 2.8% (28) were pregnant at the time of data collection as shown in Table 1. At bivariate level of analysis, the factors that were not significantly associated with adolescent pregnancy included age of the school girl and the person with whom the girls stays with as shown in Table 2.

3.1 Age of the school girl

There was no statistical significance association between age of the school girl (χ^2 = 3.332, p=0.189) and adolescent pregnancy. However, it is important to note that the girls aged 17-18 years had the highest pregnancy rate at 4.0%.

3.2 Person who stays with the girl

There was no strong statistical association between the person with whom the girl stays with (χ^2 = 7.324, p=0.062) and adolescent pregnancy. However, the girls who stayed with one parent had a higher pregnancy rate (4.3%) than the girls who stayed with both parents (2.6%).

3.3 Cost of SRH services

There was no statistical significance association between cost of SRH services (χ^2 = 9.510, p=0.050) and adolescent pregnancy. However, it is interesting to note that the girls who reported to have spent less than Ushs 3700 to receive SRH services had the highest pregnancy rate of 8.0%.

3.4 Religion of the school girl

The school girls who were Christians had a lower pregnancy rate (2.4%) compared to 7.1% among the school girls who were from other denominations (Muslims and others). The association between religion was statistically significant (χ^2 = 6.231, p<0.05).

3.5 Category of school girl

There was a statistical association between the category of the school girl (χ^2 = 5.090, p<0.05) and adolescent pregnancy. There was a higher proportion of school girls who were in the boarding section (3.6%) of the school who got pregnant compared to girls who were day scholars (1%). Majority of the girls studied were in schools that had both day and boarding sections and the day scholars had higher pregnancy rates.

3.6 Sexual behavior of the school girls

There was a statistical association between the sexual behavior of the school girl (χ^2 = 13.781, p<0.05) and adolescent pregnancy. The proportion of adolescent pregnancy was higher among school girls with risky sexual behavior (9.9) compared to school girls with safe sexual behavior (2.3%).

3.7 Ever had an abortion

The proportion of adolescent pregnancy was higher among school girls who had ever had an abortion (44.4%) compared to girls who had never had an abortion (2.4%) in their life. The association was statistically significant (χ^2 = 57.300, p<0.05).

3.8 Ever been pregnant in life

The school girls who had ever been pregnant before the study had higher pregnancy rate (26.7%) compared to

school girls who had never been pregnant in their life (2.5%). There was statistically significant association between ever being pregnant (χ^2 = 31.531, p<0.05) and adolescent pregnancy.

3.9 Ever used family planning in life

The school girls who had ever used family planning methods before the study had higher pregnancy rate (5.3%) compared to school girls who had never used family planning methods in their life (2.4%). There was statistically significant association between ever using family planning (χ^2 = 3.886, p<0.05) and adolescent pregnancy. However, in this study, majority of the girls reported not to have used family planning methods in their life which is a likely contributory factor to adolescent pregnancy.

At multivariate level of analysis, the factors that were strongly associated with adolescent pregnancy at multivariate level of analysis (Table 3) were school section category of the school girl (day scholar or boarding section) (AOR= 4.093; 95% CI (1.156 – 14.497; p<0.05) and sexual behavior of the school girls (AOR= 3.021; 95% CI (1.008 - 9.053; p<0.05). The school girls who were in the boarding section had more likelihood of getting pregnant compared to school girls who were day scholars. There was a statistical association between the category of the school girl and adolescent pregnancy. There was a higher proportion of school girls who were in the boarding section (3.6%) of the school who got pregnant compared to girls who were day scholars (1%). Majority of the girls studied were in schools that had both day and boarding sections and the girls in the boarding section had higher pregnancy rates compared to the girls who were in the day section of the schools.

	No	(%)
Adolescent pregnancy		
Yes	28	2.8
No	960	97.2

Table 1: Status of adolescent pregnancy among school girls aged 15-19 years.

		Occurrence of adolescent pregnancy			
Socio-demographic factors		**Yes N (%)**	**No N (%)**	$\chi^2_{(df)}$	***P*-Value[a]**
Age in years	15-16	11(2.0)	542(98.0)	3.332	**0.189**
	17-18	16(4.0)	387(96.0)		
	19	1(2.9)	34(97.1)		
Religion	Christian	22(2.4)	885(97.6)	6.231	**0.013****
	Muslim and others	6(7.1)	78(92.9)		
School section category	Day scholar	3(1.0)	294(99.0)	5.090	0.024**
	Boarding	25(3.6)	669(96.4)		

Parental Characteristics					
Person who stays with girl	Both parents	13(2.6)	484(97.4)	7.324	0.062
	One of the parent	15(4.3)	330(95.7)		
	Relative	0(0)	39(100)		
	others	0(0)	110(100)		
Sexual activity related factors					
Sexual behaviour	Risky	7(9.9)	64(90.1)	13.781	0.000**
	safe	21(2.3)	899(97.7)		
Ever had abortion in life	Yes	4(44.4)	5(55.6)	57.300	0.000**
	No	24(2.4)	958(97.6)		
Ever been pregnant in life before study	Yes	4(26.7)	11(73.3)	31.531	0.000**
	No	24(2.5)	952(97.5)		
Ever used family planning	Yes	8(5.3)	144(94.7)	3.886	0.049**
	No	20(2.4)	819(97.6)		
Accessibility of SRH services					
SRH Cost T2	None	19(2.3)	804(97.7)	9.510	0.050
	Less than 3700	7(8.0)	80(92.0)		
	Btn 3700-18500	1(2.2)	44(97.8)		
	Above 19000	1(2.8)	35(97.2)		
	I don't know	8(2.4)	327(97.6)		

Primary source, 2019

Table 2: Bivariate results for the Factors associated with adolescent pregnancy among school girls 15-19 years in Hoima District.

Variable		**Occurrence of adolescent pregnancy**				
		Yes **N (%)**	**No** **N (%)**	**Regression Coefficients**	**AOR (95%CI)**	***P-*Value[a]**
Socio-demographic factors						
Religion	Muslim and others	6(7.1)	78(92.9)	0.952	2.591 (0.912 – 7.362)	0.074
	Christian	22(2.4)	885(97.6)		1	
School section category	Boarding	25(3.6)	669(96.4)	1.409	4.093 (1.156 – 14.497)	0.029**
	Day scholar	3(1.0)	294(99.0)		1	
Sexuality related factors						
Sexual behavior	Risky	7(9.9)	64(90.1)	1,106	3.021 (1.008 -9.053)	0.048**

	safe	21(2.3)	899(97.7)		1	
Ever had abortion in life	Yes	4(44.4)	5(55.6)	-2.979	0.051 (0.001 – 4.621)	0.195
	No	24(2.4)	958(97.6)		1	
Ever been pregnant in life before study	Yes	4(26.7)	11(73.3)	0.005	1.005 (0.011 – 95.968)	0.998
	No	24(2.5)	952(97.5)		1	
Ever used family planning	Yes	8(5.3)	144(94.7)	0.227	1.255 (0.415 – 3.794)	0.688
	No	20(2.4)	819(97.6)		1	
	Reference category is 'No' representing the girls who did not get pregnant.					
	[a] Comparison between girls who got pregnant and girls who did not get pregnant					

**Significant at 5%. Data source: Primary data, 2019

Table 3: Multivariate Logistics results for the factors influencing adolescent pregnancy among school girls aged 15-19 years in Hoima District.

4. Discussion

The factors that were found to be statistically insignificant with adolescent pregnancy among school girls included; age of the school girl, the person who stays with the girls and cost of the SRH services. However, it is important to note that the girls aged 17-18 years had the highest pregnancy rate at 4.0%. The findings of this study agree with a study in USA who found that pregnancy occurred commonly among older adolescent girls than younger ones in older girls than in younger girls [25]. In this study the young girls 15-16 years had the lowest pregnancy rate of 2.0%. In addition, the girls who stayed with one parent had a higher pregnancy rate (4.3%) than the girls who stayed with both parents (2.6%). The findings agree with results from a study in Johannesburg that also found out that girls who were not raised by both parents had higher odds of becoming pregnant in [26]. Similarly, broken marriages have been found to be a major determinant for adolescent pregnancy in eastern Uganda and that disrupted family structure was a major determinant for adolescent pregnancy European Union countries [27, 28]. Interestingly, the findings of this study show that the girls who reported to have spent less than Ushs 3700 to receive SRH services had the highest pregnancy rate of 8.0%. However, a study [14] conducted in Sub Saharan Africa showed that high cost of SRH services especially contraceptives was a key determinant for adolescent pregnancy. This is not the case in this study because girls who actually paid little or no money for SRH services actually had the highest pregnancy rates although the association was not significant. The factors that were found to be statistically significant with adolescent pregnancy among school girls were;

4.1 Religion of the school girl

The school girls who were Christians had a lower pregnancy rate (2.4%) compared to 7.1% among the school girls who were from other denominations (Muslims and others). A study conducted in the USA found out that increased

religiosity was a strong predictor for a higher teen birth rate (r = 0.73; p < 0.0005), these findings from the US may be an indicator for the assumed strong faith that Christians exhibit especially in terms of the strong campaign against abortions which is exhibited in this study [29].

4.2 Category of school girl

There was a higher proportion of school girls who were in the boarding section (3.6%) of the school who got pregnant compared to girls who were day scholars (1%). Majority of the girls studied were in schools that had both day and boarding sections and the day scholars had higher pregnancy rates, this finding however do not agree with results from a survey report on re-entry of school girls into school after pregnancy in Uganda that showed that Day scholars are also known to be more at risk of becoming pregnant than those in boarding schools [30].

4.3 Sexual behavior of the school girls

The proportion of adolescent pregnancy was higher among school girls with risky sexual behavior (9.9) compared to school girls with safe sexual behavior (2.3%). The findings are similar to those in Cameroon that found out in a cross sectional study that sexual activity was a key factor associated with adolescent pregnancy among girls [31].

4.4 Ever had an abortion

The proportion of adolescent pregnancy was higher among school girls who had ever had an abortion (44.4%) compared to girls who had never had an abortion (2.4%) in their life. A similar study found that teenage girls who had aborted had experienced more subsequent pregnancies than girls who had carried their pregnancy to term hence given birth after one year of the occurrence of the pregnancy [32]. This is consistent with this study that found that girls who aborted had a higher likelihood of getting pregnant again compared to those who had never aborted in their life.

4.5 Ever been pregnant in life

The school girls who had ever been pregnant before the study had higher pregnancy rate (26.7%) compared to school girls who had never been pregnant in their life (2.5%). Donatus *et al* [31] also found out that girls who a pregnancy at an early age had had a higher likelihood of getting pregnant.

4.6 Ever used family planning in life

The school girls who had ever used family planning methods before the study had higher pregnancy rate (5.3%) compared to school girls who had never used family planning methods in their life (2.4%). However, in this study, majority of the girls reported not to have used family planning methods in their life which is a likely contributory factor to adolescent pregnancy and is in line with Donatus *et al* [31] who found out that low contraceptive use was a significant risk factor associated with adolescent pregnancy in Cameroon. However, in another study, low knowledge and use of contraceptive methods was a key determinant for pregnancy [33]. But the study did not

evaluate the accuracy and consistence of the family methods used among the girls who reported to have ever used family planning.

At multivariate level of analysis, the factors that were strongly associated with adolescent pregnancy were school section category of the school girl (day scholar or boarding section) and sexual behavior of the school girls. The school girls who were in the boarding section had more likelihood of getting pregnant compared to school girls who were day scholars. There was a higher proportion of school girls who were in the boarding section (3.6%) of the school who got pregnant compared to girls who were day scholars (1%). This finding however do not agree with results from a survey report on re-entry of school girls into school after pregnancy in Uganda that showed that Day scholars are also known to be more at risk of becoming pregnant than those in boarding schools [30]. In this study girls in the boarding section are actually more at risk of getting pregnant than girls in the day section. The findings of this study agree with Jonas et al [18] who found out that pregnancy among girls who ever had sex increased from 17.3 % (95 % CI: 0.16–0.19) in 2002 to 21.3 % (95 % CI: 0.19–0.23) in 2011 in South Africa. Clearly there is a strong association between sexual behavior and adolescent pregnancy. It is therefore paramount that major efforts are geared towards attaining safe sexual practices among adolescent girls in school

In conclusion, school section category and sexual behavior of the school girl were associated with adolescent pregnancy among school girls 15 to 19 years old in school. There is therefore need to focus interventions targeting SRH needs of the school girls especially those between 17 and 18 years, girls in the boarding section and those with risky sexual behavior in order to improve service utilization and prevent adolescent pregnancy in Hoima District.

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Conflicts of Interest

The authors declare no conflict of interest.

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