

Factors influencing Teenage Pregnancy among Girls attending Kampala International University Teaching Hospital, Bushenyi, Uganda

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ABSTRACT

Teenage pregnancy and subsequent childbirth to women less than 20 years of age continue to be a major global public health concern in both developed and developing countries, affecting more than 16 million girls and young women, or an estimated 11% of all births worldwide. This study determined the factors influencing teenage pregnancy among teenage girls aged 13–19 attending ANC at KIU-TH, Bushenyi District. A cross-sectional study design was employed for this study. Quantitative data was collected using structured interviews. Questionnaire tools were checked for their accuracy and data completeness, then the data was coded and entered into Epi Info version 7, then exported into SPSS version 22.0 for analysis. A binary logistic regression model was used to identify the determinant factors. A collinearity diagnostic test was conducted using tolerance to check for collinearity between independent variables and the interaction effect. Variables in the bivariable analysis having a p-value <0.2 were considered for the multivariate analysis to adjust the confounders. The strength and presence of a statistical association were assessed by the OR, p-value, and 95% confidence interval (95% CI). Variables with a p-value ≤0.05 were considered statistically significant determinants of teenage pregnancy. The Hosmer-Lemeshow goodness-of-fit test (p = 0.9289) was used to assess the fitness of the model. A total of 310 adolescents were included in the study, with a response rate of 100%. The majority (39.7%) were aged 16–17, and more than half (59.0%) were from rural areas. The proportion of teenage pregnancies among study participants was 19.0. In the multivariate logistic regression model, age, residence, parents' marital status, level of education, monthly income, substance abuse, history of use of contraceptives, age of first sexual contact, and awareness of safe sex were statistically significant. The study showed a high prevalence of teenage pregnancy. Age, residence, parents' marital status, level of education, monthly income, substance abuse, history of use of contraceptives, age of first sexual contact, and awareness of safe sex were found to have a statistically significant association.

Keywords: Teenage pregnancy, Childbirth, Girls, Marital status, Age.

INTRODUCTION

Teenage pregnancy and subsequent childbirth to women less than 20 years of age continue to be a major global public health concern in both developed and developing countries, affecting more than 16 million girls and young women, or an estimated 11% of all births worldwide [1, 2]. Approximately 95% of teenage pregnancies happen in developing countries, with 36.4 million young women becoming mothers before the age of 18 and 5.6 million having a live birth before the age of 15 in 2010. Teenage pregnancy is commonly associated with adverse psychosocial, socioeconomic, and health outcomes [3]. Estimates indicate that greater than 90% of teenage pregnancies occur in low- and middle-income countries [4]. Sub-Saharan Africa recorded the highest prevalence of teenage pregnancy in the world in 2013. Teenage births accounted for more than half of all births in this

region, an estimated 101 births per 1000 women aged 15 to 19. The prevalence of teenage pregnancy in sub-Saharan African countries was above 30%. This is almost twice the global average. Fourteen of the fifteen countries worldwide that had more than 30% of 20–24-year-olds giving birth before age 18 are in sub-Saharan Africa and include Niger, Mozambique, Malawi, Uganda, and Cameroon [5, 6]. The consequences of teenage pregnancy are numerous, encompassing obstetric health and economic and social problems. Firstly, teenage mothers are at higher risk of obstetric complications like obstetric fistulae, eclampsia, postpartum hemorrhage, sepsis, a fivefold increased risk of maternal mortality, and unsafe abortions [7, 8]. Additionally, disadvantageous prospects exist for teenage mothers, including lower educational attainment and school

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dropout, resulting in lower income-earning potential and perpetuating poverty. Secondly, the children that teenagers bear experience higher levels of birth complications, poor health outcomes, and deprivation [9]. Therefore, curbing teenage pregnancy has become an urgent health and social matter, particularly in sub-Saharan Africa. To address the challenge of teenage pregnancy, national governments and non-governmental organizations (NGOs) have adopted various strategies that target adolescents. Numerous governments have also refined their policies since the 1994 International Conference on Population and Development (ICPD). This has mainly involved advocating for abstinence before marriage, keeping girls in school beyond primary school, preventing early marriage and coerced sex, as well as increasing the use of contraceptives as encouraged by the World Health Organization guidelines of 2011 on preventing early pregnancies. In East Africa, almost 10% of young women give birth by age. In particular, Uganda reports the highest proportion of women giving birth before the age of 20 (63%), and the highest total fertility rate (6.2) in East Africa compared to Tanzania (56%) and Kenya (47%) [10]. In all these countries, the teenage pregnancy rate was higher in rural than urban populations, especially in Uganda. These high teen pregnancy rates have health impacts. The leading causes of death and disability among Ugandan women aged 15 to 19 are complications of pregnancy, unsafe abortions, and childbirth. A total of 41% of teenage pregnancies are reported to be either mistimed or completely unwanted [11]. Uganda has one of the highest rates of teenage pregnancy in sub-Saharan Africa, estimated at about 25%. The Uganda national adolescent reproductive health policy (2004) pledges a commitment to advocate for the review of existing legal, medical, and social barriers to adolescents' access to information and health services. In addition to ensuring protection of the rights of adolescents to health, provision of legal and social protection against all forms of abuse and harmful traditional practices, promotion of gender equality, and provision of quality care for adolescent sexual and reproductive health (SRH) issues [12]. In spite of the implementation of available policies and other related laws, teenage pregnancies remain quite high in Uganda, especially in Bushenyi District. This study

METHODOLOGY

Study design

A cross sectional study design was employed for this study.

Area of Study

This study was conducted at Kampala International University Teaching Hospital in Ishaka-Bushenyi, Western Uganda amongst teenage pregnant girls

will therefore seek to investigate the socio-demographic and individual factors associated with teenage pregnancy among teenage pregnant mothers attending an antenatal clinic in Kampala International University Teaching Hospital, Bushenyi district, western Uganda. Every year, an estimated 21 million girls aged between 15 and 19 years and 2 million girls aged less than 15 years become pregnant in developing regions [4]. The teenage pregnancy rate is higher in Africa than in its surrounding continents, as it is a fact that of the 20 countries in the world having the highest teenage pregnancy rates, 18 are from Africa [4]. Uganda has one of the highest levels of teenage pregnancy, ranking 14th out of 54 countries in Africa, with 24% of adolescents in 2016 who were already mothers or pregnant with their first child [11]. According to the Uganda Demographic Health Survey (UDHS), one out of four (25%) of all girls, aged 15–19, have either a child or are pregnant, representing a 1% increase in teenage pregnancy rates over the previous 2011 survey [11]. Uganda's fertility rate stands at 5.9 children per woman, above the sub-Saharan average of 4.8. This high fertility rate is attributed to the low use of contraceptives; however, high levels of child marriage and early childbearing also play an important role, which remains a public health concern that should be averted [13]. According to UDHS in 2016, approximately 35% of girls drop out of school because of early marriage, and 23% do so because of teenage pregnancy. Early childbearing carries particular risks, including dropping out of school, abandoning babies, and obtaining illegal abortions that result in death [11]. The situation analysis of child poverty and deprivation in Uganda per 2014, according to UDHS, rates child marriage at 57%. Northern Uganda is at 59%, followed by western Uganda at 58%, east central at 52%, west Nile at 50%, central at 46%, south west at 37%, and Kampala at 21%. Despite the initiative by the government and non-governmental organizations to keep girls in school [11]. Data on the risk factors for teenage pregnancy in Uganda is scarce. Evidence of the prevalence and risk factors for teenage pregnancy is rare, particularly in the study area. Thus, this study determined the factors influencing teenage pregnancy among teenage girls aged 13–19 attending ANC at KIU-TH, Bushenyi District.

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operates specialist departments and clinics, including General Surgery, Orthopedics, Obstetrics and Gynecology, Medicine, Ophthalmology, ENT, Dental Surgery, Pediatric and Physiotherapy. The ANC unit at KIU – TH works in collaboration with

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the eMTCT clinic, ART clinic and immunization clinic. The ANC works 5 days in a week and has 4 midwives working there headed by a registered midwife.

Study population

The study population comprised of teenage girls aged 13 to 19 years attending Kampala International

University Teaching Hospital in Ishaka-Bushenyi, Western Uganda.

Inclusion criteria

- Pregnant teenage girls attending ANC at the ANC clinic of Kampala International University Teaching Hospital.
- The pregnant teenage girls that consented to take part in the study.

Exclusion criteria

- Non consent pregnant teenagers at the ANC clinic
- Teenage pregnant girls perceived not to be coherent.

Sample size determination

The sample size was calculated using the formula Kish Leslie [14] as below;

$$n = z^2 p(1 - p) / e^2$$

Where n=Estimated minimum sample required.

P=Proportion of a characteristic in a sample (84.5% [15]). Z=1.96 (for 95% confidence interval)

e=Margin of error set at 5%

$$n = 1.96^2 \times 0.28(1 - 0.28) / 0.05^2$$

n=310 mothers

P=prevalence of teenage pregnancy in northern Uganda is 28%, According to a study done in Mbarara District.

Sampling technique

Convenience sampling was used by recruiting any willing pregnant teenager at the ANC clinic who met the inclusion criteria. This was done to achieve the

desired sample size within the limited time available for the study.

Data collection methods

Quantitative data was collected using structured interview. Interviewers read the questions exactly as they appeared on the survey questionnaire for the respondents. Interview questions were designed to

initially ask simple, more general and non-sensitive questions and transitioned to asking more sensitive questions later in the interview.

Statistical analysis

Questionnaire tools were checked for their accuracy and data completeness, then data was coded and entered into Epi info version 7, then exported into SPSS version 22.0 for analysis. Binary logistic regression model was used to identify the determinant factors. Collinearity diagnostic test was conducted using tolerance to check for Collinearity between independent variables and interaction effect. Variables in the bivariable analysis having a p value

<0.2 were considered for multivariate analysis to adjust the confounders. The strength and presence of statistical association was assessed by OR, p-value and 95% confidence interval (95% CI). Variables with a p value ≤ 0.05 was considered as statistically significant determinant factors of teenage pregnancy. Hosmer–Lemeshow goodness-of-fit test ($p = 0.9289$) was used to assess the fitness of the model.

Quality control

The questionnaire was pretested among willing pregnant teenage girls attending ANC at Kampala International University Teaching Hospital (KIU – TH) prior to the actual data collection and these was

not included in the main sample size. The collected data was checked immediately after finalizing the questionnaire for completeness and consistency of information collected.

Ethical considerations

Ethical approval was sought from Kampala international university western campus Faculty of clinical medicine and dentistry and an introduction letter was given after to seek permission for data

collection from KIU-TH administration. A written and verbal consent was sought from the respondents before they were recruited in the study.

RESULTS**Socio-demographic characteristics**

A total of 310 adolescents were included in the study with a response rate of 100%. The majority (39.7%) were aged 16-17 years and more than half (59.0%) were from rural areas. Two hundred ten

participants (67.7%) had parents who were married, 45.8% attained secondary education and more than half (62.3%) had an income of less than 100,000/= per month as illustrated in table 1.

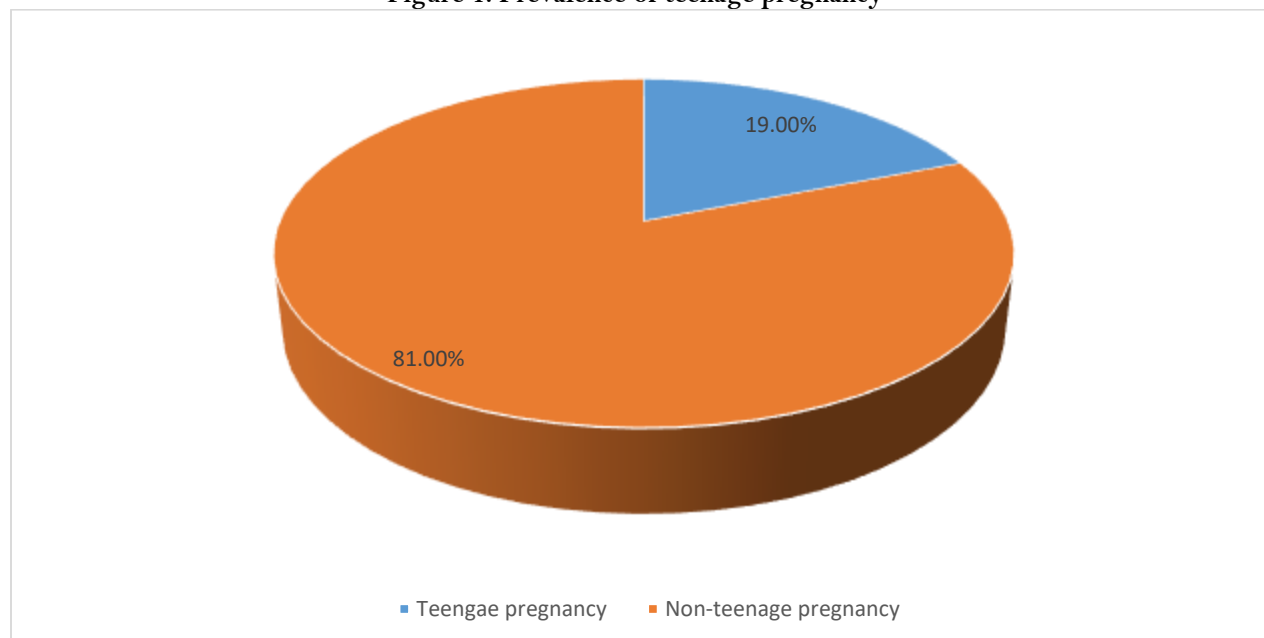
Table 1: Distribution of socio-demographic characteristics of the participants

Variable	Frequency (N=310)	Percentage (%)
Age(Years)		
13-15	69	22.3
16-17	123	39.7
18-19	118	38.1
Residence		
Urban	127	41.0
Rural	183	59.0
Parents' marital status		
Married	210	67.7
Single	100	32.3
Level of education		
No formal education	47	15.2
Primary	85	27.4
Secondary	142	45.8
Tertiary	36	11.6
Monthly income		
<100,000/=	193	62.3
100,000-300,000/=	96	31.0
>300,000/=	21	6.8

Prevalence of teenage pregnancy

The proportion of teenage pregnancy among study participants was 19.0% (59) (Figure 1).

Figure 1: Prevalence of teenage pregnancy

**Individual characteristics**

This study showed that majority (71.9%) had their menarche at 10-14years, only 10.3% were substance users and majority (79.4%) had never used contraceptives. The study further indicated that majority (80.6%) had no peer influence and only

14.8% had sex education with parents. Majority of the study participants who ever had their first sexual contact at the age of 15-17(56.3%), majority (80.3%) were from households headed by males and only 25.5% were aware of safe sex (Table 2).

Table 2: Individual characteristics

Variable	Frequency(N=310)	Percentage (%)
Age of menarche		
<9 years	16	5.2
10-14years	223	71.9
>14years	71	22.9
Substance abuse		
Yes	32	10.3
No	278	89.7
Ever used contraceptives		
Yes	64	20.6
No	246	79.4
Peer influence		
Yes	60	19.4
No	250	80.6
Sex education with parents		
Yes	46	14.8
No	264	85.2
Age of first sexual intercourse		
<15years	31	10.6
15-17years	165	56.3
18-19years	97	33.1
Gender of household head		
Male	249	80.3
Female	61	19.7
Aware of safe sex		
Yes	79	25.5
No	231	74.5
Physical punishment at home		
Yes	62	20.0
No	248	80.0

Bivariate analysis of socio-demographic factors associated with teenage pregnancy

Age, residence, parents' marital status, level of education and monthly income had p-values less than 0.2 and were fitted for multivariate analysis (Table 3)

Table 3: Bivariate analysis of socio-demographic factors associated with teenage pregnancy

Variable	N=310	Teenage pregnancy n(%)	COR(95% CI)	P-value
Age(Years)				
13-15	69	07(10.1)	Reference	
16-17	123	18(14.6)	3.46(2.04-6.82)	0.174
18-19	118	34(28.8)	5.06(2.50-9.74)	0.063
Residence				
Urban	127	19(15.0)	Reference	
Rural	183	40(21.9)	4.17(1.96-7.69)	0.025
Parents' marital status				
Married	210	33(15.7)	Reference	
Single	100	26(26.0)	6.94(2.31-9.10)	0.036
Level of education				
No formal education	47	17(36.2)	4.19(2.47-10.15)	0.005
Primary	85	23(27.1)	2.51(1.65-4.78)	0.031
Secondary	142	16(11.3)	1.84(1.32-3.59)	0.458
Tertiary	36	03(8.3)	Reference	
Monthly income				
<100,000/=	193	39(20.2)	3.40(2.43-7.35)	0.019
100,000-300,000/=	96	18(18.8)	1.67(1.02-4.16)	0.372
>300,000/=	21	02(9.5)	Reference	

Bivariate analysis of individual factors associated with teenage pregnancy

From table 4, substance abuse, history of contraceptive use, peer influence, sex education with parents, age of first sexual intercourse and awareness

of safe sex were significant at bivariate analysis and were therefore considered for multivariate logistic regression analysis.

Table 4: Bivariate analysis of individual factors associated with teenage pregnancy

Variable	N=310	Teenage pregnancy n(%)	COR(95% CI)	P-value
Age of menarche				
<9 years	16	06(37.5)	3.08(1.37-9.25)	0.530
10-14years	223	42(18.8)	1.53(0.64-2.79)	0.814
>14years	71	11(15.5)	Reference	
Substance abuse				
Yes	32	14(43.8)	5.83(2.07-10.30)	0.117
No	278	45(16.2)	Reference	
Ever used contraceptives				
Yes	64	09(14.1)	Reference	
No	246	50(20.3)	6.40(4.13-14.53)	0.052
Peer influence				
Yes	60	17(28.3)	1.92(0.58-3.66)	0.137
No	250	42(16.8)	Reference	
Sex education with parents				
Yes	46	05(10.9)	Reference	
No	264	54(20.5)	3.57(1.00-5.96)	0.019
Age of first sexual intercourse				
<15years	31	10(32.3)	2.15(1.20-5.49)	0.075
15-17years	165	37(22.4)	0.85(0.41-2.18)	0.438
18-19years	97	12(12.4)	Reference	
Gender of household head				
Male	249	36(14.5)	Reference	
Female	61	23(37.7)	1.64(0.87-3.55)	0.642
Aware of safe sex				
Yes	79	13(16.5)	Reference	
No	231	46(19.9)	4.52(1.75-8.34)	0.016
Physical punishment at home				
Yes	62	08(12.9)	Reference	
No	248	51(20.6)	1.41(0.68-2.60)	0.286

Multivariate analysis of factors associated with teenage pregnancy

In the multivariate logistic regression model, age, residence, parents' marital status, level of education, monthly income, substance abuse, history of use of

contraceptives, age of first sexual contact and awareness of safe sex were statistically significant (Table 5).

Table 5: Multivariate analysis of factors associated with teenage pregnancy

Variable	N=310	Teenage pregnancy n(%)	AOR(95% CI)	P-value
Age(Years)				
13-15	69	07(10.1)	Reference	
16-17	123	18(14.6)	1.70(1.30-4.21)	0.032
18-19	118	34(28.8)	3.28(1.85-7.40)	0.001
Residence				
Urban	127	19(15.0)	Reference	
Rural	183	40(21.9)	2.63(1.22-5.50)	0.012
Parents' marital status				
Married	210	33(15.7)	Reference	
Single	100	26(26.0)	4.37(1.63-7.20)	0.025
Level of education				
No formal education	47	17(36.2)	3.06(1.59-9.04)	0.006
Primary	85	23(27.1)	1.76(1.24-3.67)	0.042
Secondary	142	16(11.3)	0.92(1.01-2.48)	0.069
Tertiary	36	03(8.3)	Reference	
Monthly income				
<100,000/=	193	39(20.2)	2.41(1.82-6.15)	0.023
100,000-300,000/=	96	18(18.8)	1.25(0.71-3.54)	0.037
>300,000/=	21	02(9.5)	Reference	
Substance abuse				
Yes	32	14(43.8)	4.19(1.30-8.46)	0.008
No	278	45(16.2)	Reference	
Ever used contraceptives				
Yes	64	09(14.1)	Reference	
No	246	50(20.3)	4.53(2.05-11.20)	0.003
Peer influence				
Yes	60	17(28.3)	0.64(0.27-3.10)	0.094
No	250	42(16.8)	Reference	
Sex education with parents				
Yes	46	05(10.9)	Reference	
No	264	54(20.5)	2.08(0.64-5.14)	0.056
Age of first sexual intercourse				
<15years	31	10(32.3)	1.38(0.91-3.57)	0.026
15-17years	165	37(22.4)	0.52(0.23-1.80)	0.042
18-19years	97	12(12.4)	Reference	
Aware of safe sex				
Yes	79	13(16.5)	Reference	
No	231	46(19.9)	3.60(0.69-5.93)	0.007

DISCUSSION

The prevalence of teenage pregnancy

This study found that the prevalence of teenage pregnancy was 19.0%. This finding is higher than the average reported to be 18.8% in Africa [16]. The

study finding is also higher than the 12.8% reported by a study in Ethiopia [17]. However, the finding is lower than the 22.1% reported by a study in Sierra

Leone [18]. The result of this study is lower than the 54.6% reported by a review in East Africa [19]. This study indicated a drop in the prevalence of teenage pregnancy from 21% reported in Eastern Uganda [20]. The free universal primary and secondary education programs throughout the nation have enhanced access to education, which has led to an improvement in literacy levels. One element that is known to encourage the use of sexual and reproductive health care is improved literacy [11].

Socio-demographic factors associated with teenage pregnancy

The study found that the odds of teenage pregnancy were higher among older teenagers compared to their counterparts. This is consistent with a study in Sierra Leone [18]. This is further supported by a systematic review in Africa, which showed that the likelihood of a first adolescent pregnancy increased with age [22]. Additionally, this finding is in line with a review in East Africa, which found higher odds of teenage pregnancy among older teenagers [19]. This could happen as a result of youth being exposed to more sex as they get older and having a higher likelihood of getting married and having children [23]. Additionally, older teenagers have the opportunity to live independently and away from their parents, which can cause them to engage in dangerous sexual behavior. A lower income level was significantly associated with teenage pregnancy in this study. This is inconsistent with a study in Sierra Leone, which reported no association [18]. This finding is consistent with a review in East Africa [19]. Adolescent girls with low- incomes are probably not able to afford the direct and indirect costs associated with getting access to contraceptive treatments [17]. Adolescent girls with economic difficulties are more likely to become pregnant as teenagers since research has shown that income is related to access to contraceptive services and understanding of these services. The current study revealed that low educational attainment was a risk factor for teenage

Individual factors associated with teenage pregnancy

In this study, teenagers with no history of contraceptive use had higher odds of becoming pregnant. This is in contrast to the findings of a review in East Africa, which revealed that adolescent girls who used contraceptives were at a higher risk of teenage pregnancy [19]. However, the finding is consistent with a study in Ethiopia that revealed that, compared to individuals who took contraceptives,

Age, residence, parents' marital status, level of education, monthly income, substance abuse, history of use of contraceptives, age of first sexual contact,

RECOMMENDATION

It is recommended to increase teenage access to contraceptive services by paying particular emphasis

Studies from throughout the continent demonstrate that Uganda is not the only country where the prevalence of teenage pregnancies has decreased; progress has also been made in Tanzania, Ethiopia, and other sub-Saharan African nations [21]. Major national and global initiatives, such as the promotion of modern contraceptive methods in this age group to avoid unintended births, are largely responsible for the reported decrease in the frequency of teenage pregnancy in these countries [22]

pregnancy. This is in line with a study in East Africa that indicated that adolescent girls who had secondary and higher education had a lower chance of teenage pregnancy [19]. This could be explained by the fact that education promotes economic independence, autonomy, and decision-making ability, which delays marriage and lowers fertility [24]. The present study observed higher odds of teenage pregnancy among those who were rural residents compared to their counterparts. This is in line with a study conducted in eastern Uganda [20]. This implies that the availability of sexual and reproductive services is impacted by access to social services like health care and education being restricted or non-existent. Girls who live in rural locations may find it more difficult to receive sexual and reproductive health information because of their limited access to mass media (such as television, radio, and social media) [22]. Teenagers from single parents were 4.37 times more likely to be pregnant compared to those from married parents, which is in line with a study in Ethiopia [17]. This is because single parents communicate less about sexual and reproductive concerns than married parents, and they have less parental control over their children. Adolescents from single parents are more likely to engage in hazardous sexual behaviors and more early sexual encounters, which increases their chance of becoming pregnant as teenagers.

those who did not utilize them had a nearly eleven-fold higher chance of becoming pregnant [17]. Consistent with this study, a study indicated that early initiation of sexual intercourse is a risk factor for teenage pregnancy [19]. This may be because women who initiate sex early have less information, attitude, practice, and understanding regarding safe sex and the use of modern contraceptives [25].

and awareness of safe sex were found to have a statistically significant association.

to early marriages, policies that provide teenage mothers a second chance by encouraging them to

return to school after giving birth should be supported.

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