

ORIGINAL ARTICLE**Teenage Pregnancy and Its Associated Factors among School Adolescents of Arba Minch Town, Southern Ethiopia**

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ABSTRACT

BACKGROUND: Teenage pregnancy has long been a worldwide social, economic and educational concern for the developed, developing and underdeveloped countries. Studies on adolescent sexuality and pregnancy are very limited in our country. Therefore, this study aims to assess the prevalence of teenage pregnancy and its associated factors among school adolescents of Arba Minch Town.

METHODS: Institution-based, cross-sectional study was conducted from 20-30 March 2014. Systematic sampling technique was used to select a total of 578 students from four schools of the town. Data were collected by trained data collectors using a pre-tested, self-administered structured questionnaire. Analysis was made using SPSS version 20.0 statistical packages. Multivariate logistic regression was used to identify the predictors of teenage pregnancy.

RESULTS: The prevalence of teenage pregnancy among school adolescents of Arba Minch Town was 7.7%. Being grade 11 student (AOR=4.6;95%CI:1.4,9.3), grade 12 students (AOR=5.8;95%CI:1.3,14.4), not knowing the exact time to take emergency contraceptives (AOR=3.3;95%CI:1.4,7.4), substance use (AOR=3.1;95%CI:1.1,8.8), living with either of biological parents (AOR=3.3;95%CI:1.1,8.7) and poor parent-daughter interaction (AOR=3.1;95%CI:1.1,8.7) were found to be significant predictors of teenage pregnancy.

CONCLUSIONS: This study revealed high level of teenage pregnancy among school adolescents of Arba Minch Town. A significant number of adolescent female students were at risk of facing the challenges of teenage pregnancy in the study area. School-based reproductive health education and strong parent-daughter relationships are recommended.

KEYWORDS: Adolescent, Teenage pregnancy, Risk factors, Arba Minch, School, Southern Ethiopia

INTRODUCTION

Adolescence is a transitional period from childhood to adulthood characterized by significant physiological, psychological and social changes. However, adolescent girls suffer from a disproportionate share of teenage pregnancy which is a universal public health problem that affects maternal and child health (1,2).

Adolescent pregnancy and childbearing is a global health and economic challenge nowadays. Globally, about 18 million adolescent girls between 15-19 years give birth each year (adolescent birth rate was 53 births per 1,000 women). Babies born to adolescent mothers account for 11% of all births worldwide; 95% of these occur in developing countries (3).

In sub-Saharan Africa, in the year 2013, 101 births per 1,000 were some of the highest rates of adolescent fertility in the world (4). Among 14.3 million adolescent girls who gave birth in 2008 worldwide, one of every three was from sub-Saharan Africa. More than 50% of adolescent girls give birth by the age of 20 in this region (5).

According to the EDHS 2016, 13% of women aged 15-19 years in Ethiopia began childbearing: 10% had a live birth, and 2% were pregnant with their first child at the time of interview. The proportion of women aged 15-19 years who began childbearing rose rapidly with age, from 2% among women aged 15 years to 28% among those aged 19 years (6).

Pregnancy at an early age is risky for the mother and the baby. Maternal conditions in adolescents cause 13% of all deaths and 23% of all Disability Adjusted Life Years (DALYs) (overall burden of disease due to pregnancy and childbirth among women of all ages). Moreover, babies born to adolescents also face a significantly higher risk of death compared to babies born to older women (7). Teenage pregnancy is the biggest killer of young girls worldwide; 1,000,000 teenage girls die or suffer serious injury, infection or disease due to pregnancy or childbirth every year (8). Adolescent girls aged 15 to 19 years are twice as likely to die from complications in pregnancy as are women in their twenties. The youngest girls are particularly at risk; the mortality rate for those under 15 is four times higher than for those in their 20s (9).

Teenage pregnancy also has significant long term social consequences for the adolescents, their children, their families and their communities; it led adolescents to less educational attainment and high school dropout, poor health and poverty. The children of teenage mothers are also more likely to

have lower school achievement and drop out of high school, have more health problems, are incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult (3,11-13).

Although adolescent pregnancy occurs among all racial, cultural and socioeconomic groups, some adolescents are more likely than others to become pregnant (4). Factors such as economic status, education, religion, place of residence, peer's and partners' behaviours, family and community attitudes, age, mass media, lack of reproductive health services and knowledge are contributing factors to the increase of unintended pregnancy among adolescents in Ethiopia (14).

The government of Ethiopia developed strategies to achieve four major objectives: increasing access to quality reproductive health services for adolescents, increase awareness and knowledge about reproductive health issues, strengthen multi-sectoral partnerships, and design and implement adolescent and youth reproductive health programs. However, teenage pregnancy remains high in the country (15).

Studies on adolescent sexuality and pregnancy are very limited in our country particularly in the South Region. Therefore, this study was conducted with the aim of assessing the magnitude and identifying associated factors of teenage pregnancy among school adolescents of Arba Minch Town in order to contribute to the prevention programs by providing up-to-date information for decision-making and program implementation.

METHODS AND MATERIALS

Study setting: The study was conducted from 20-30 March 2014 in Gammo Goffa Zone, Arba Minch Town, South Ethiopia. According to the latest national population projection based on the population and housing census, the total population of the town is about 103,965 people (16). The town has four sub-cities named: Secha, Abaya, Nechsar and Sikela. In the town, there are eight colleges (private and public), six high schools and two preparatory schools.

An institution-based, cross-sectional study design was employed among female students in the age range of between 15 and 19 years from the four schools in the town. The sample size for the study was calculated considering 8% prevalence of adolescent pregnancy (17), 95% certainty and 5% of margin of error between population and sample with non-response rate of 10%. Therefore, the total calculated sample size for this study was 578 students. There were 8 schools (2 preparatory and 6 high schools) in the town. After stratifying

schools into preparatory and high schools, one preparatory school and three high schools were selected randomly. Proportional numbers of students were assigned to each school and then the total number of 15-19 years old female students in each grade level was obtained from the school administration. A separate sampling frame was prepared for each grade level of each school. Then, the final participants were drawn from each grade level by systematic random sampling technique (1 in every 5 students) (Figure 1).

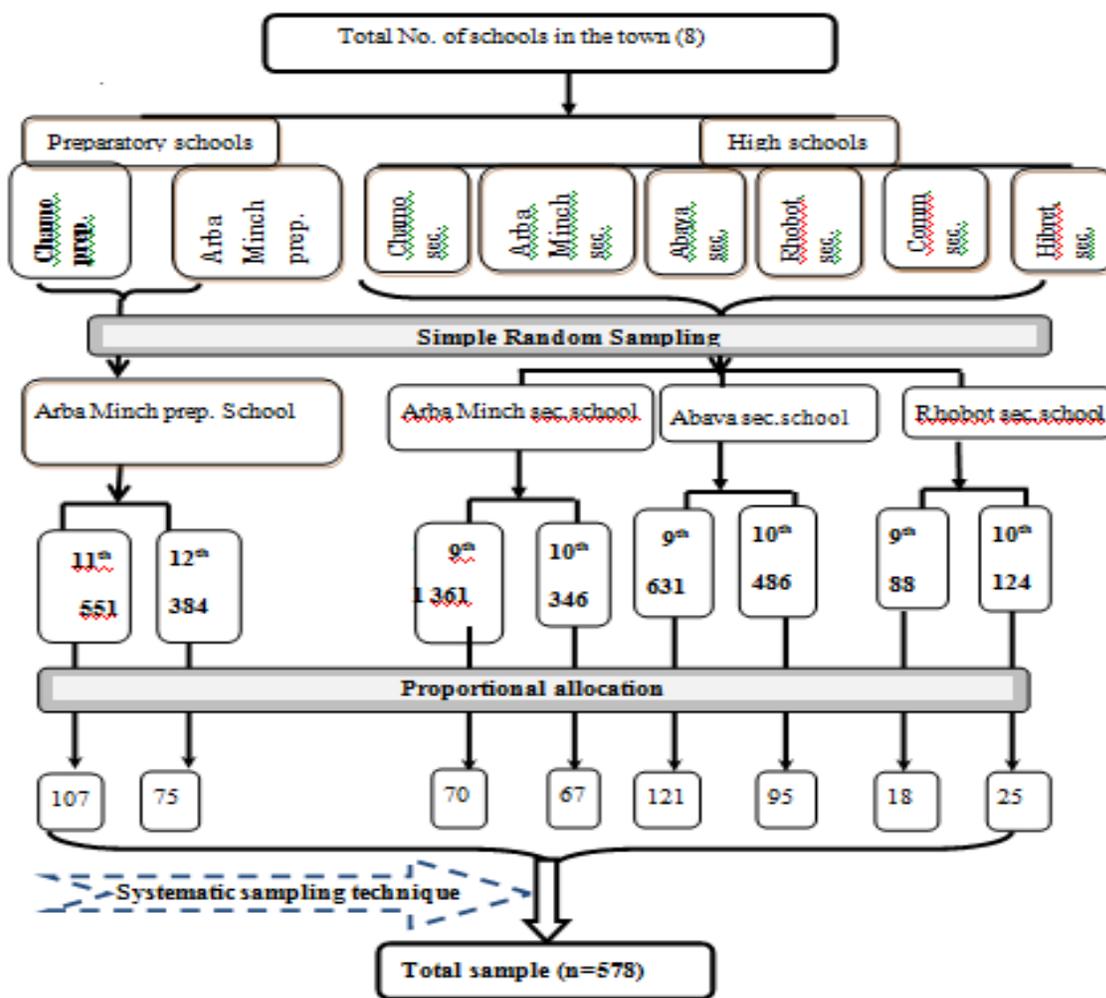


Figure 1: Schematic presentation of sampling procedure among schools in Arba Minch town, March 2014(n=578)

Data collection: Seven data collectors (all of them were college completed individuals working

in different institutions) and two supervisors were recruited for data collection and supervision

respectively. Training on the methods, objectives, and other technical aspects of the study were provided to the data collectors and supervisors. A pre-tested, structured, self-administered questionnaire was used to collect the data. The questionnaire was prepared in English and then translated into the local language (Amharic), and then back translated into English language for its consistency. For the translation and back translation purpose, we used two different individuals who speak both English and Amharic fluently.

In order to ensure the quality of the data, pretesting of the questionnaire was done in the same set-up having similar age group but not from a selected high school. Some unclear and difficult questions to understand by most of the students were corrected and rephrased accordingly during the pretest.

The sitting arrangement of the students was considered; each student took a single seat with sparse arrangement of chairs and desks. Then after, the copies of questionnaire were distributed among students after short orientation had been provided. The principal investigator and the supervisors closely supervised the data collection process.

Data analysis: Data were analysed using SPSS V-20 statistical software. Assumptions for logistic regression and multi-collinearity diagnostics were checked. Descriptive statistics was used and the results were displayed using tables. The outcome variable was dichotomized as 0 = no and 1 = yes. Binary logistic regression was carried out. Firstly, bivariate analysis was done to see the crude effect of each independent variable on the outcome variable. Only those variables with p-value < 0.25 were selected and entered into multivariate logistic regression analysis to identify the independent predictors. Adjusted odds ratio with its 95% confidence interval was used to identify factors independently associated with teenage pregnancy, and p-values < 0.05 were considered for statistical significance.

Ethical consideration: Ethical clearance was obtained from Jimma University Ethical Review

Committee. A formal letter was submitted to the Education office of the Gammo Goffa Zone and subsequently to high schools of Arba Minch Town where the study took place. Written permissions from the parents of the respondents were obtained a day before the time of data collection. Oral and written permissions from the schools and the respective study subjects were obtained.

Operational definitions

Ever pregnant: was measured by asking the respondent "Have you ever been pregnant?" which includes pregnancies that ended in live birth, still birth and abortion. Then, the response was categorized as 0 = no and 1 = yes.

Emergency contraceptives: As an emergency measure, women can take special pills to prevent pregnancy within three days after they have unprotected sexual intercourse.

Know the exact time to take emergency contraceptives: individuals who know the exact time of taking emergency contraceptives (within 72 hours after unprotected sexual intercourse)

Do not know the exact time to take emergency contraceptives: individuals who do not respond as per above.

Knowledge of fertile period in the menstrual cycle: Respondents were asked a 'yes-no' question, "Do you know the high risk days of your menstrual period to get pregnant?" and "when are those days in the menstrual period?". Then, the responses were categorized as 1= know (if she answers the letter of choice that contains the time 4 days before and after 14th day of her first menstrual cycle) and 2 = don't know (if otherwise).

Parent-daughter interaction: was measured by asking the following four questions:

1. Do your parents communicate with you on issues related to sexuality, love and friendship openly?
2. Do your either parents know about your love or sexual partner?
3. Do your parents follow you where and with whom you stay when you are out of home?

4. Do your parents like your love and sexual relationship with a boyfriend

The median score from the four questions was computed (i.e.; 1) and levelled as '1= poor interaction (if scored ≤ 1) and '2= good interaction (if scored >1).

RESULTS

A total of 560(96.9%) respondents with complete information were included in the analysis;

397(70.9%) were from urban settings. Two hundred and seventeen (38.8%) of the respondents were orthodox by religion, and Gamo was the major ethnic group accounting for 292(52.1%) of the total respondents. With regard to school type, 349(62.3%) of the respondents were high school students (grade 9 & 10) while the remaining, 211(37.7%), were preparatory school students (grade 11 and 12) (Table 1).

Table 1: Socio-economic characteristics and history of pregnancy among respondents in high school and preparatory schools of Arba Minch Town, March 2014(n=560).

Variables	School type			
	High school (349)		Preparatory(211)	
Age				
15-17	260	74.5	42	19.9
18-19	89	25.5	169	80.1
Religion				
Orthodox	137	39.3	80	37.9
Protestant	134	38.4	77	36.5
Muslim	67	19.2	41	19.4
Others	11	3.2	13	6.2
Ethnicity				
Gamo	196	56.2	98	46.4
Goffa	65	18.6	46	21.8
Wolita	44	12.6	26	12.3
Amhara	19	5.4	19	9.0
Others	25	7.2	22	10.4
Residence				
Urban	237	67.9	155	73.5
Rural	112	32.1	56	26.5
Marital status				
Single	334	95.7	164	77.7
Married	15	4.3	47	22.3
Ever been pregnant				
Yes	10	2.9	33	15.6
No	339	97.3	178	84.6

Fertility knowledge and pregnancy among sexually active school adolescents were assessed; from the total of 124 sexually active students, 43(34.7%) ever had history of pregnancy, and 47(37.9%) of them did not know the fertile days in their menstrual cycle. Seventy-eight (62.9%) of

them started sexual intercourse at age of 17 years and above. Regarding contraceptive use, 68(54.8%) of the respondents had ever used at least one kind of modern contraceptive. About 37(29.8%) of sexually active students reported that they used substance (Table 2).

Table 2: Fertility knowledge and pregnancy among sexually active school adolescents in Arba Minch town, March 2014(n=124)

Variables	Number	Percent
Ever been pregnant		
Yes	43	34.7
No	81	65.3
Know fertile period of the menstrual period		
Know correctly	77	62.1
Don't know	47	37.9
Age at first menses		
11-12 years	27	21.8
13-15 years	97	78.2
Age at first sex		
16 yrs and below	46	37.1
17 yrs and above	78	62.9
Knowledge of the exact time to take emergency contraceptives		
Yes	65	52.4
No	59	47.6
Ever use modern contraceptives		
Yes	68	54.8
No	56	45.2
Ever used emergency contraceptives		
Yes	69	55.6
No	55	44.4
Life time number of sexual partner		
One	101	81.5
More than one	23	18.5
Use alcohol/chat/cigarette		
Yes	37	29.8
No	87	70.2
Condom use at sex		
No	43	34.7
Sometimes	57	46.0
Every time during sex	24	19.3

We assessed the family and peer level characteristic of the respondents; about 165(29.5%) of them reported that their mothers completed secondary education. The majority, 366(65.4%), of the respondents lived with both of

their biological parents. Three hundred and twenty-eight (63.2%) of them reported that they had poor parent-daughter interaction concerning issues of sexuality, love and pregnancy (Table 3).

Table 3: Family and peer level characteristics of respondents among school adolescents in Arba Minch Town, March 2014 (n=560)

Variables	Number	Percent
Educational status of the mother(n=559)		
No formal education	78	14.0
Primary education	163	29.2
Secondary education	165	29.5
College/university education	153	27.3
Occupation of the father(n=556)		
Gov't employee	168	30.2
Merchant	138	24.8
Farmer	106	19.1
Daily labourer	46	8.3
Other	98	17.6
Occupation of the mother(n=554)		
Housewife	185	33.6
Gov't employed	153	27.8
Merchant	131	23.2
Daily labourer	72	13.0
Other	13	2.4
Whom live with(n=560)		
Both biological parents	366	65.4
Either of biological parents	104	18.6
neither of biological parents	90	16.0
Parent-daughter interaction(n=519)		
Good interaction	191	36.8
Poor interaction	328	63.2
Occupation of the husband(n=62)		
Gov't employee	17	27.4
Merchant	18	29.0
Farmer	14	22.6
Daily labourer	13	21.0
Education status of the husband(n=62)		
No formal education	8	12.9
Primary education	17	27.4
Secondary education	24	38.7
College/university education	13	21.0

With regard to the prevalence of teenage pregnancy, 43(7.7%) of the respondents had history of pregnancy and only 12(27.9%) of those pregnancies were wanted. Multivariate logistic regression analysis was carried out. The overall significance of the model to predict the

probability of teenage pregnancy was checked [-2loglikelihood=196.2, model $X^2=94.1$, $df=25$] and the overall prediction of the model was 92.8%. Being 11th and 12th grade levels, substance use (alcohol/chat/cigarette), not knowing the exact time to take emergency contraceptives, living

with either of biological parents, living with neither of biological parents and poor parent-daughter interaction were found to be significant predictors of teenage pregnancy in this study. However, marital status, religious participation,

knowledge of fertile period of menstrual cycle and educational status of the respondents' mothers did not show significant associations with teenage pregnancy (Table 4).

Table 4: Bivariate and multivariate logistic regression analysis of factors affecting teenage pregnancy among school adolescents in Arba Minch Town, March 2014

Variables	Ever pregnant(N=560)		COR(95%CI)	AOR(95%CI)
	Yes (%)	No (%)		
Grade level				
9 th	8(4.0%)	193(96.0%)	1	1
10 th	9(5.0%)	171(95.0%)	1.2(0.47,3.36)	1.4(0.81,1.42)
11 th	16(15.2%)	89(84.8%)	4.3 (1.8, 10.5)	4.6(1.4, 9.3)*
12 th	10(13.5%)	64(86.5%)	3.8(1.4, 10.0)	5.8(1.3, 14.1)*
Age group(yrs)				
15-17	14(4.6%)	288(95.4%)	1	1
18-19	29(11.2%)	229(88.8%)	2.6 (1.4, 5.1)	1.1(0.37, 2.71)
Marital status				
Single	31(6.3%)	467(93.7%)	1	1
Ever married	12(17.4%)	50(82.6%)	3.6 (1.7, 7.5)	1.5(0.55, 3.96)
Religious participation				
Strong	13(5.1%)	241(94.9%)	1	1
Weak	18(7.5%)	221(92.5%)	1.5(0.7,3.1)	1.2(0.61,1.31)
No	12(17.9%)	55(82.1%)	4.1(1.8, 9.3)	2.21(0.71, 6.85)
Know fertile period in menses				
Yes	29(11.5%)	224(88.5%)	1	1
No	14(4.6%)	293(95.4%)	0.3 (0.2, 0.6)	0.56(0.25, 1.27)
Use alcohol/khat/cigarette				
Yes	21(19.4%)	87(80.6%)	4.7 (2.5, 9.0)	3.1 (1.1, 8.8)*
No	22(4.9%)	430(95.1%)	1	1
Knowledge of the exact time to take emergency contraceptives				
Yes	19(5.9%)	302(94.1%)	1	1
No	24(10.0%)	215(90.0%)	1.8(1.0, 3.3)	3.3 (1.4, 7.4)*
Educational status of the mother				
No formal education	10(12.8%)	68(87.2%)	3.6 (1.3,10.3)	1.9(0.55, 6.74)
Primary education	18(11.0%)	145(89.0%)	3.0(1.2,7.9)	1.3(0.28, 6.07)
Secondary education	9(5.5%)	156(94.5%)	1.4(0.8,1.3)	1.3(0.45,4.51)
College/university	6(3.9%)	147(96.1%)	1	1
Living arrangement				
Both biological parents	17(4.6%)	349(95.4%)	1	1
Either of bio. Parents	12(11.5%)	92(88.5%)	2.7(1.2, 5.8)	3.3(1.2, 9.5)*
Neither of bio. Parents	14(15.6%)	76(84.4%)	3.8(1.8, 8.0)	3.1 (1.1, 8.7)*
Parent-daughter interaction				
Good	8(4.2%)	183(95.8%)	1	1
Poor	33(10.1%)	295(89.9%)	2.6(1.2, 5.7)	3.7 (1.3, 10.2)*

*Significant at P <0.05

DISCUSSION

Teenage pregnancy is one of the most unfavourable and usually unplanned outcomes of adolescents' sexual activity. Teens are initiated to engage in unprotected sex early in life so that they are exposed to young parenthood. Many teens that become pregnant have to leave school; this has a long-term implication for them as individual, their family and their community. The prevalence of sexual activity in this study was 124 (22.1%). This finding is consistent with studies conducted among school adolescents of two towns of Ethiopia: Gondar (23.5%) and Nekemt (21.5%). However, slightly lower than the findings from Ethiopian Demographic and Health Survey (EDHS 2011) report and a study conducted among school adolescents of Ilorin, Nigeria. The findings in these studies were 24.2% and 28.2% respectively (20-21). The discrepancy may be due to methodological variations: EDHS included adolescents in the community whereas this study focused only on high school adolescents. Furthermore, Socio-cultural difference is there with the case of Ilorin, Nigeria. Although the Ethiopian government has been working on sexual and reproductive health issues with especial focus on the youth (including teenagers) in schools and community at large, the current study has shown that a high number of school teenagers were practicing sexual intercourse and are still at risk of teenage pregnancy.

The overall prevalence of teenage pregnancy in this study was 43(7.7%). This finding is comparable with the finding from EDHS 2011 report of Southern Ethiopia Region which was 7.9% (20).

The prevalence of teenage pregnancy among sexually active students in this study was 34.7%. This finding is comparable to the national figure reported by EDHS in which 34% of women were either mothers or pregnant with their first child by the age of 19 (20). The finding in the current study is also in line with the finding in Nigeria where 31.6% of adolescents who ever had sex experienced teenage pregnancy. However, it is much higher than the study conducted in the same country in Ilorin, Central Nigeria, among high

school adolescents in which case only 5.7% of those sexually active female students had experienced teenage pregnancy (21). These variations may be due to the difference in age range of study populations as the study in Nigeria included adolescents of 10-19 years old whereas this study included those in the age range of 15-19 years (the probability of being pregnant is higher in the late adolescence stage than in early adolescence stage).

Regarding the factors contributing to teenage pregnancy, students from grades 11 and 12 were more likely to become pregnant compared to the students from grades 9 and 10. This finding is comparable with studies conducted in USA and Nekemt, Ethiopia, among school adolescents. In these studies, the prevalence of teenage pregnancy was generally increasing with increasing grade level (grades 9-12) (19,22). Other studies reported the inverse relationship between educational attainment and teenage pregnancy rate-the more years of schooling, the fewer early pregnancies (7,23,24). However, the finding from this study contradicts this-adolescents in higher grade levels, 11th and 12th, were significantly more likely to experience pregnancy than those in grades 9 and 10. This might be due to the longer stay at school, the higher exposure and probability of getting sexual relation among higher grade level students than lower grade students.

Substance is a gateway for risky sexual behaviours among adolescents which results in teenage pregnancy with consequent health and social implications. Because it constitutes a deviation from conventional behaviour, it is regarded as problem behaviour (25). Adolescents who used substance (alcohol/chat/cigarette) were more likely to experience teenage pregnancy compared to those who did not use. This finding is supported by the finding from a systematic review from the European Union Countries and a study conducted in South Africa which revealed that substance use was significantly associated with teenage pregnancy (26-27). This could be attributed to substance use or being under the influence of substance may influence the adolescent students to unrealistically appraise the situation and also impair their verbal as well as

physical resistance against unprotected sexual intercourse. Hence, the risk of teenage pregnancy is high.

The fact that having knowledge of the exact time when to take contraceptives prevents unwanted pregnancy is strongly supported by the finding from this study. The probability of experiencing pregnancy among those who know the exact time of emergency contraceptives was about 6%, but it was 10% for those who do not know. The odds of being pregnant was about three times much higher among adolescents who do not know the exact time when to take emergency contraceptives than among their counterparts. According to the report by WHO, lack of knowledge about sex and family planning and lack of skills to put that knowledge into practice put adolescents at risk of pregnancy (7).

In this study, the risk of teenage pregnancy among adolescents who were living with either of biological parents and neither of their biological parents was higher as compared to those who were living with both biological parents. This result is in line with studies conducted among adolescents in Mechakal District, Ethiopia, a study from USA and a WHO report which showed that living with both biological parents has a protective effect on the occurrence of teenage pregnancy (17, 28-29). The reason could be that teens that live with biological parents are guided and get support and follow-up from their families so that they are under fence of protection that minimizes their chance of exposure to sexual experiences. Moreover, biological parents are highly responsible for their children's adoption of safer behaviours.

Parents play a critical role in the growth, development and sexual socialization of their children. Parental involvement through parent-child sexual communication presents education about sex and reproductive health to young people. Moreover, it promotes adolescents' self-esteem, transfer of sexual values, beliefs, information and expectations to their children with the aim of influencing sexual behaviours, attitudes and decision-making of their children to

prevent risky behaviours and teenage pregnancy (30-33).

In this study, adolescents who were living in poor parent-daughter interaction conditions regarding issues of sexuality, love and pregnancy were 3.7 times more likely to experience pregnancy compared to those who lived under good parent-daughter interaction conditions. This finding is supported by a study in conducted British Columbia which reported that parent-daughter interaction concerning sexuality and reproductive health was significantly associated with teenage pregnancy (34). The possible explanation could be that female students who have good parent-daughter interaction may get good opportunity to have free discussion about sexuality and reproductive health issues thereby transfer of life skill is possible to protect themselves from teenage pregnancy.

Our study has limitations. From the very nature of the study, it assesses personal and sensitive issues related to sexual behaviours which might have caused underreporting of teenage pregnancy experiences. Thus, the findings of this study should be interpreted within these limitations.

In conclusion, the prevalence of teenage pregnancy among school adolescents is high to cause reproductive health and socio-economic challenges to adolescents in the study area. Being 11th and 12th grade student, substance use, not knowing the exact time to take emergency contraceptives, living arrangement and poor parent-daughter interaction were found to be significant predictors of teenage pregnancy. Special emphasis particularly in the areas of parent-daughter communication on the issues of sexuality and reproductive health, benefits of contraceptive use, and risk of substance use (alcohol, chat and cigarette smoking) are recommended.

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