

TEENAGE PREGNANCY IN RURAL ETHIOPIA : THE CASE OF JIMA ARJO DISTRICT, EAST WALLAGA, WESTERN ETHIOPIA

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ABSTRACT

BACKGROUND: Teenage pregnancy is a significant public health problem in developing nations such as Ethiopia, leading to numerous associated financial and health consequences.

Objective: To determine the magnitude and associated factors of teenage pregnancy among teenagers visiting public health facilities in Jima Arjo district, East Wallaga, Western Ethiopia.

METHODS: A facility-based cross-sectional study was conducted among 421 teenage females in Jima Arjo District from February 15 to May 30, 2022. Data were collected using a standardized questionnaire, cleaned, and analyzed using Epidata version 3.1. The level of significance of association was determined at a p-value <0.05.

RESULTS: In this study, the magnitude of teenage pregnancy was 17.1%. Being married, attending secondary school, lack of awareness of family planning, not living with parents, and having a sister with a history of teenage pregnancy were significantly associated with teenage pregnancy.

CONCLUSION AND RECOMMENDATION: This study found that the magnitude of teenage pregnancy was high. Given the above associated factors, it is recommended that key stakeholders work on the prevention of early marriage, raise awareness of family planning, and encourage women's education.

KEYWORDS: magnitude, associated factors, teenage pregnancy, Jima Arjo, East Wallaga

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INTRODUCTION

According to the World Health Organization (WHO), the terms “teenager” and “adolescent” are often used interchangeably. Pregnancy in a female between the ages of 10 and 19 is considered an “adolescent or teenage pregnancy.”¹ Around 1 in 6 individuals worldwide are between the ages of 10 and 19, with the majority of them living in sub-Saharan Africa and being vulnerable to teenage pregnancies.^{2,3}

Teenage pregnancy has emerged as a significant public health issue, particularly in Africa,³ where educational opportunities are scarce and poverty is pervasive.⁴ In developing regions, approximately 2 million girls under the age of 15 and 21 million girls between the ages of 15 and 19 become pregnant each year.⁵ In Africa and the East Africa sub-region, the prevalence of teen pregnancy was 18.8% and 21.5%, respectively.³ In Ethiopia, the 2016 Ethiopia Demographic Health Survey indicated that 13% of women between the ages of 15 and 19 had already given birth.⁶

Teenage pregnancy is linked to high maternal and child morbidity and mortality, impacting the socio-economic development of a country.^{3,7, 8} For this reason, various governmental and non-governmental organizations are working to prevent child marriage and thereby reduce teenage pregnancies.⁹ This is emphasized in Sustainable Development Goals (SDG), targets 3.1 and 3.7.¹⁰

Teenage pregnancy in sub-Saharan Africa is a multifaceted issue with various underlying causes, such as poverty, gender-based violence, substance abuse, limited access to contraceptives, cultural beliefs, attitudes and behaviors of healthcare professionals, high levels of illiteracy, and insufficient sexual and reproductive health (SRH) education.^{4, 11, 12, 13, 14}

While numerous national-level studies have been conducted on teenage pregnancy in Ethiopia, there has been a lack of specific research on teenage pregnancy in the Jima Arjo district of East Wallaga, Western Ethiopia. Therefore, this study aims to determine the prevalence of teenage pregnancy and

identify associated factors among teenage females who visit public health facilities in this area.

****METHODS****

****Study area and setting****

The study was conducted at public health facilities in the Jima Arjo district. Jima Arjo district is located in the East Wallaga zone, between the Nekemte town and Buno Bedele Zone. It is 378 km away from Addis Ababa and 48 km away from Nekemte town. The district has a total population of 127,312. The Arjo district has one primary hospital, six health centers, and 20 health posts. Additionally, there are 12 private health facilities. These health facilities provide various healthcare services to the community.

****Study period****

From February 15 to May 30, 2022

****Study Design****

A health facility-based cross-sectional study design was conducted.

****Source population****

All teenage females from 10 to 19 years old who visited public health facilities in the Jima Arjo district.

****Study population****

Teenage females from 10 to 19 years old who visited Jima Arjo public health facilities for different health services during the study period.

****Inclusion and exclusion criteria****

Study participants aged 10 to 19, residing in the area for over six months, were included. Critically ill individuals during data collection and those who were unwilling to participate in the study were excluded.

****Sample size determination****

The sample size was calculated using a single population proportion with the following assumptions: 95% confidence level, marginal error

of 4%, and prevalence of teenage pregnancy (35.4%) from the Farta Woreda study.¹⁵ After adding 10% for possible non-response, a total sample size of 421 was obtained.

****Study variables****

- ****Dependent variable:**** Teenage pregnancy
- ****Independent variables:**** Age, religion, residency, marital status, ethnicity, educational status, income, occupation, sexual education, family planning, age at marriage, age at first sexual intercourse, history of teenage pregnancy, parental communication on reproductive health.

****Sampling procedures****

The district has one primary hospital and six health centers. The total of 421 samples was distributed among these 7 health facilities proportionately to their estimated monthly patient volume using the proportion-to-population-size formula. After proportionally allocating the required sample size to each health facility, study participants were selected by a systematic random sampling method. The sample interval (k) for the study was determined by dividing the total number of teenagers served (N) in the month before data collection by the sample size (n). Accordingly, every third participant was interviewed during exit time in each health facility.

****Data collection tools and procedure****

Data were collected by 7 data collectors using interviewer-administered questionnaires, which were adapted from reviewed literature on teenage pregnancy.¹⁵⁻¹⁹ The study tool was validated. The questionnaire was first created in English and then translated into Afan Oromo by language experts. To ensure consistency of meaning, the Afan Oromo version was then translated back into English.

****Data analysis****

The data were entered into Epi-data window version 3.1 and then exported to SPSS Windows version 24 for further analysis. Both bivariable and multivariable logistic regression analyses were

conducted. We checked for violations of regression model assumptions by inspecting multicollinearity and variance inflation factors. Model goodness-of-fit was tested using the Hosmer-Lemeshow test. We considered a p-value of <0.05 and a 95% confidence level as indicative of statistical significance.

****Data quality assurance****

Data quality was ensured by pre-testing the questionnaire on 21 (5%) teenagers, who were later excluded from the actual study. Training was provided to data collectors and supervisors, and overall supervision was carried out by the investigators.

RESULTS

Socio-demographic characteristics of the study participants

Out of four hundred twenty-one teenagers, 416 were included in the study, making the response rate 98.8%. The average age of the study participants was 16.1 years. Three hundred and five (73.3%) participants lived in rural areas. The majority of the participants were from the Oromo ethnic group (87.5%), protestant Christians (50.5%), and attended primary-level education (50.2%). Two hundred ninety-nine (71.9%) participants were students, and 94 (22.2%) were housewives. One hundred forty-two (34.1%) of participants were ever married, with the mean age at first marriage being 17.1 years (Table 1).

Table 1: Socio-demographic characteristics of study participants visiting health facilities in Jima Arjo district, East wallaga, western Ethiopia, 2022

Socio demographic variables		Frequency	Percent
Age in years(mean age=16.1)	10 to 14	103	24.8
	15 to 17	131	31.5
	18 to 19	182	43.8
Residence	Urban	111	26.7
	Rural	305	73.3
Ethnicity	Oromo	364	87.5
	Amhara	52	12.5
Religion	Orthodox	158	38
	Protestant	210	50.5
	Muslim	48	11.5
Educational status	Cannot read and write	21	5.0
	Can read and write	28	6.7
	Primary education	209	50.2
	Secondary education	158	38.0
	Above secondary	0	0.0
Marital status	Single	274	65.9
	Married	142	34.1
Age at marriage(mean age=17.1) (n=142)	14 to 15	21	14.8
	16 to 17	54	38.0
	18 to 19	67	47.2
Occupational status	Student	299	71.9
	House wife	94	22.6
	Others*	23	5.5
Marital status of the parents	Live together	335	96.8
	Not live together	11	3.2

*Others(self- employer, house maid, merchant)

Reproductive health characteristics, teenage pregnancy and associated factors

A total of 360 individuals (86.5%) said that they had no discussion with their parents about reproductive health issues. Seventy-six percent of participants (close to three out of four) did not receive sexual education in school.Regarding the knowledge of study participants on family planning methods, 203 (48.8%) of them knew about family planning methods. All of them, 203 (100%), knew where to find them(Table 2).

Table 2: Reproductive health characteristics of study participants visiting health facilities in Jima Arjo district, East wallaga, western Ethiopia, 2022

Variables		Frequency	Percent
Communication with parents on reproductive health issues	No	360	86.5
	Yes	56	13.5
Sexual education at school	No	256	74.2
	Yes	89	25.8
Sexually active study participant	No	266	63.2
	Yes	155	36.8
Age at first sexual intercourse (in years)(n=155)	14 to 15	27	17.4
	16 to 17	70	45.2
	18 to 19	58	37.4
Knowledge about Family planning (n=416)	No	213	51.2
	Yes	203	48.8
Knowledge about where to get family planning methods (n=203)	No	0	0.0
	Yes	203	100
Family planning uptake (n=203)	No	97	47.8
	Yes	106	52.2
History of teenage pregnancy	No	345	82.9
	Yes	71	17.1
Age at first pregnancy(n=71)	14 to 16	31	43.7
	17 to 19	40	56.3
History of participant's sister with teenage pregnancy	No	370	88.9
	Yes	46	11.1

Out of 142 ever-married participants, 52.8% had married before the age of 18. Among study participants, 71 had their first pregnancy in the age range of 14 to 19 years, making the magnitude of teenage pregnancy 17.1%. Forty-six (11.1%) of the participant's sisters had a history of teenage pregnancy. Forty-six (11.1%) of the participant's sisters had a history of teenage pregnancy (Table 2). Using logistic regression analysis, a number of risk factors emerged as highly significant predictors of adolescent pregnancy when the coefficient was expressed as an adjusted OR in relation to the referent group (Table 3).

Table 3: Factors associated with teenage pregnancy among study participants visiting health facilities in Jima Arjo district, East wallaga, western Ethiopia, 2022

Variables	Teenage pregnancy		OR and 95%CI		P. value
	No N (%)	Yes N (%)	COR	AOR	
Age					
10 to 14	101(29.3)	2(2.8)	1	1	
15 to 17	107(31.0)	24(33.8)	11.33(2.61-49.16)	1.45(0.2-10.9)	0.721
18 to 19	137(39.7)	45(63.8)	16.58(3.93-69.97)	3.9(0.5-31.8)	0.202
Residence					
Urban	108(31.3)	3(4.2)	1	1	
Rural	237(68.7)	68(95.8)	10.33(3.18-33.56)	2.99(0.66-13.65)	0.156
Educational level					
Cannot read and write	7(2.0)	14(19.7)	1	1	
Can read and write	12(3.5)	16(22.5)	0.67(0.21-2.16)	1.15(0.2-7.4)	0.882
Primary	178(51.6)	31(43.7)	0.08(0.03-0.23)	0.54(0.12-2.52)	0.432
Secondary	148(42.9)	10(14.1)	0.03(0.01-0.10)	0.18(0.031-0.98)	0.049*
Marital status					
Single	267(77.4)	7(9.9)	1	1	
Ever married	78(22.6)	64(90.1)	31.29(13.78-71.06)	12.4(2.58-59.3)	0.002*
Occupational status					
Student	277(80.3)	22(31.0)	1	1	
House wife	47(13.6)	47(66.2)	12.6(6.95-22.78)	0.46(0.15-1.46)	0.188
Others	21(6.1)	2(2.8)	1.19(0.26-5.45)	0.37(0.05-2.6)	0.318
Knowledge about family planning					
No	171(49.6)	42(59.2)	1.47(0.878-2.474)	10.3(3.3-32.0)	0.000*
Yes	174(50.4)	29(40.8)	1	1	
Marital status of parents					
Live together	335(96.8)		62(87.3)	1	1
Did not live together	11(3.2)	9(12.7)	4.4(1.75-11.0)	5.6(1.04-29.9)	0.045*
History of participant's sister with teenage pregnancy					
No	329(97.7)	41(57.7)	1	1	
Yes	16(4.6)	30(42.3)	15.0(7.56-29.94)	6.4(2.0-20.4)	0.002*

* significant

The results of this study revealed that married participants had a 12.4 times [AOR = 12.4, 95% CI: 2.58-59.3] higher risk of teenage pregnancies than unmarried respondents. Education level is the other factor that has a substantial correlation with teenage pregnancy. Participants who attended secondary education were 0.18 times less likely than participants who could not read or write to have a teenage pregnancy [AOR = 0.18, 95% CI: 0.03-0.98].

Teenage pregnancy was found to be significantly associated with family planning knowledge. It was discovered that participants who were unaware of family planning had a 10.3 higher

likelihood of becoming pregnant as teenagers than those who were aware of it [AOR = 10.3, 95% CI: 3.3-32.0]. Another element that revealed a significant connection was the marital status of the parents. Participants with separate households were 5.6 times [AOR = 5.6, 95% CI: 1.0-29.9] more likely to become pregnant as teenagers than those whose parents shared a home.

Having a sister with a history of teenage pregnancy has shown a significant association with teenage pregnancy. Participants whose sisters have a history of teenage pregnancies were 6.4 times more likely to have a teenage pregnancy [AOR = 6.4, 95% CI: 2.0-20.4] compared to their counterparts.

DISCUSSION

****This study**** investigated the magnitude of teenage pregnancy and its associated factors in the Jima Arjo district, West Oromia. The prevalence of teenage pregnancy in this study was 17.1%. Being married, having awareness of contraceptives, living with a single parent, better educational status, and having a sister with a history of teenage pregnancy were all found to be associated with teenage pregnancy.

The rate of teenage pregnancy varies widely across the world.³ This variation may be due to differences in the socio-demographic, cultural, sexual, and reproductive health factors of teenagers. In the current study, the prevalence of teenage pregnancy is comparable to a study conducted in rural Ethiopia (16.3%).²⁰ This similarity could be attributed to common socio-demographic factors, such as rural residence, as the majority of participants in both studies were from rural areas.²⁰ The rate of teenage pregnancy reported in the current study is higher than the 13% reported in the 2016 National EDHS report.⁶ This difference could be due to the fact that the EDHS study included all regions, both urban and rural, and used a larger sample size than the current study, which was limited to one rural district in the western Oromia Region. Additionally, the current finding is lower than the teen pregnancy rates reported in other studies conducted in different regions of Ethiopia, such as Assosa (20.4%),¹⁹ Farta Wereda (North West Ethiopia) (25.4%),¹⁵ Wogedi (North East Ethiopia) (28.5%),¹⁷ and Harar (East Ethiopia) (30.2%).¹⁸ This variation in rates could be attributed to differences in socio-demographic factors among the study areas.

Studies have found a positive link between marital status and teenage pregnancy. This aligns with similar research conducted in the Tigray region,²⁴ Harar,¹⁸ and Nigeria,²² which revealed that married study participants were more likely to experience teenage pregnancy compared to single participants. Marriage might lead teenagers to cut short their education, miss out on future economic opportunities, and diminish a woman's decision-making power. It also sparks greater interest and

concern in teenagers and their families about having a baby.^{21,23}

In the current study, better educational status and teenage pregnancy showed a negative association. Participants who attended secondary schools were less likely to become pregnant as teenagers than participants who could not read or write. This finding is in line with a study conducted in East Africa²⁵ and in rural Ethiopia,²⁰ where adolescent females who attended secondary school or higher experienced less teenage pregnancy than participants who had only primary education. This may be explained by the fact that education increases autonomy and decision-making power, leading to economic independence, which in turn may result in delaying marriage and reducing fertility.

Knowledge about family planning was found to have a significant association with teenage pregnancy. This finding is similar to that of the Farta Wereda¹⁵ and Wogedi studies.¹⁷ This could be attributed to the fact that knowledge and proper use of contraception can delay pregnancy until desired.

Parental marital status was another factor that showed a significant association. Participants whose families did not live together were more likely to experience teenage pregnancy compared to those whose parents lived together. This finding is consistent with those conducted in Wogedi¹⁷ and Harar.¹⁸ This is attributed to the reduced level of parental control and communication about sexual and reproductive issues among divorced parents compared to married ones. This leads to an increase in early sexual debut and risky sexual behaviors, which in turn exposes teenagers to the risks of teenage pregnancy.

The presence of a sister with a history of teenage pregnancy is significantly linked to teenage pregnancy. Participants with a sister who had been pregnant as a teenager were more likely to experience teenage pregnancy themselves compared to those without a sister who had a history of teenage pregnancy. This finding is similar to the study conducted in Harar.¹⁸ This similarity could

be due to the influence of family members on an individual's attitudes and values regarding teenage pregnancy. Families share social risks that can impact the likelihood of teenage pregnancy. Based on social learning and modeling theories, younger sisters are more likely to become pregnant if their older sisters were teenage mothers.

In this study, it is acknowledged that social desirability bias may impact responses to outcome and independent variable measurements. To mitigate this bias, interviews were exclusively conducted by experienced female data collectors in private settings, and culturally sensitive sexual terminology was employed.

CONCLUSIONS AND RECOMMENDATIONS**

The magnitude of teenage pregnancy in this study was high. Key stakeholders should work on the prevention of early marriage, raise awareness of family planning, and encourage women's education in the study area.

Abbreviations/Acronyms

AIDS: Acquired Immunodeficiency Syndrome;
ART: Anti-retroviral therapy;
EDHS: Ethiopia Demographic and Health Survey ;
EPI: Expanded Programme of Immunization;
HIV: Human Immunodeficiency Virus;
OPD: Out patient department;
SRH: sexual and reproductive health;
SDG: Sustainable Development Goals;
TB: tuberculosis;
WHO: World Health Organization,

DECLARATIONS

Declaration of conflicting interests

The authors have stated that there are no potential conflicts of interest related to the research, authorship, and/or publication of this article.

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Informed consent

Written informed consent was obtained from each

eligible study participant or their legally authorized representative, as approved by IRB number/WU/RD/547/2014.

Ethical approval

Ethical clearance was obtained from the Research Ethics Committee of the Institute of Health Sciences at Wollega University with reference number /WU/RD/547/2014. Then, a support letter was written to the study zones for the necessary support within different districts and facilities in the zone. No identifying information was included in the questionnaire to ensure privacy and confidentiality. All methods were conducted in accordance with the relevant guidelines and regulations.

Authors' contributions

ZM and **TT** were involved in Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing - original draft, and Writing - review & editing

ZM, **TT**, **FG**, **RO** and **GM** were involved in Conceptualization, Formal analysis, Investigation, Methodology, Resources, Software, Writing - original draft, and Writing - review & editing

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