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Magnitude and Predictors of Early Sexual Debut among High and Preparatory School Students in Northern Ethiopia: A School-based Cross-sectional Study

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Abstract

Introduction: Risk-taking provides young people with a chance to test their skills and abilities and the opportunity for self-discovery. Some risks, such as early or unprotected sex, pregnancy, and abortion, can have harmful and long-lasting effects on a teen's health and well-being. Despite this, adolescent sexual health remains neglected, marginalized, and ignored in many countries. The purpose of this study was to assess the magnitude & factors associated with early sexual debut of high and preparatory school students in Shire-Endasellassie town, Tigray region, from March to June 2013.

Methods: A school-based cross-sectional study was conducted among 550 high and preparatory school students in Shire-Endasellassie town. Two-stage cluster sampling was used to select participating classes from preparatory and high schools. A self-administered, structured questionnaire was used to collect the data. It was pre-tested for clarity among 26 students in a nearby town. Eleven data collectors (12th grade graduates) and two supervisors (BSc nurses) facilitated the data collection. Data was entered, cleaned, and analyzed using SPSS Version 16. Frequency distributions and binary and multiple logistic regressions were done. OR and 95% confidence interval was computed.

Results: About 19% of the students (109/550, 95% CI: 15.46%, 21.96%) had early sexual debut. Income, access to pornography media, female gender, prior experience of discussing reproductive health topics, and having a boyfriend or girlfriend were significant predictors of early sexual debut.

Conclusion: There was relatively low prevalence of early sexual debut, but high prevalence of premarital sex. Female students should be targeted with messages. Access to pornographic media encourages students to start sexual intercourse earlier, so we recommend taking action to limit access to such media.

Keyword:

Early sexual debut; School; Students; Ethiopia

Introduction

"Sexual debut" is defined as the initiation of sexual practice. Today's generation of adolescents is the largest in history; nearly half of the global population is under 25 years of age [1]. Nonetheless, adolescent sexual health is an area of health care that remains neglected, marginalized, or ignored in many countries. Globally, over 100 million acts of sexual intercourse take place each day, resulting in around 1 million conceptions, about 50% of which are unplanned and about 25% of which are unwanted [2].

Sexual offenses perpetuated by adolescents have reportedly reached epidemic proportions [3]. The teen years are a time of rapid growth, exploration, and risk taking. But, some risks-such as early or unprotected sex-can have harmful and long-lasting effects on a teen's health and well-being [4,5]. In Ethiopia, early marriage is rampant according to EDHS 2011, even though the legal marriage age is 18. The median age for marriage and starting sexual activities in Ethiopia is 16.5 years [6], which among other detrimental effects also increases the vulnerability of young people for HIV [7].

Although not a completely hazard free period of life, the adolescent years are usually relatively healthy. However, nearly 70% of premature deaths among adults can be linked to behaviors that were initiated during adolescence [8,9]. Adolescents who engage in sexual activity outside of marriage face social stigmas. Worldwide more than 10% of the total fertility (TFR) is attributed to adolescent childbearing. In East Africa, adolescent childbearing contributes 13% of the TFR. Every year, at least 60,000 adolescent women die from health problems related to pregnancy and childbirth [10]. In many developing countries, parents rationalize or justify early marriage in order to preserve their daughter's virginity prior to the wedding date [11].

Despite the due attention given to women and children's health and youth development in Ethiopia's health policy, early sexual debut remains a common event among adolescents [6,12,13]. The Revised

Family Laws amended in 2000 protect young women's rights against forced marriage [14]. The Revised Penal code penalizes sexual violence and many of the traditional harmful practices [15]. Though these policies, laws, and strategies are well-defined and insightful, adolescents are still experiencing early sexual initiation, unwanted pregnancy, abortion, and other sexual problems.

Therefore, the aim of this study is: i) To determine the magnitude and features of early sexual debut and ii) To identify factors associated with early sexual debut among high school students in Northern Ethiopia.

Methods

Study area and period

The study was conducted in Shire-Endasellassie town, the administrative town of North West zone of Tigray Regional State. It lies 1084 kilometers away from the Addis Ababa, and 300 kilometers west of Mekelle, the capital city of Tigray Regional State. Its total population size is 46,382, out of which 21,329 were male and 25,053 were female (M: F ratio of 0.85). It has one zonal hospital and two health centers working providing health promotion, preventive and curative services, and youth friendly services.

There is one preparatory school called Shire-Endasellassie Preparatory School, with1,356 students (787 male, 569 female), and one high school, Shire-Endasellassie High School, with 3,050 students (1386 male,1664 female). Both schools had operating Anti-HIV/AIDS and first aid clubs, however, neither school had a clinic or any reproductive health services such as youth friendly services. This study was conducted in both schools from March 2013–June 2013.

Study design, population and sampling

A school based cross-sectional study was conducted in Shire-Endasellassie district from March-June 2013. The study population was all 4406 preparatory and high school students in Shire-Endasellassie town. The students were divided into 82 classes: grade 9 (34 classes), grade 10 (22 classes), grade 11 (10 classes), and grade 12 (16 classes).The sample size for the study was calculated using single population proportion formula assuming 62% prevalence of early sexual initiation (before the age of 18) based on the report of EDHS 2011 [6], with 95% CI and 5% marginal error. Two stage cluster sampling was used to select the study participants, factoring in a design effect of 1.5 and non-response rate of 10%. Each grade level (9 through 12) was seen as a cluster and the total sample size was selected proportionally to grade size. Using simple random sampling, a total of 11 of the 82 classes were selected. A total of 102 students from grade 10 and 153 students each from grade 9, 11, and 12 were selected. Ultimately, a total of 561 students were recruited for the study.

Data collection

A structured and pre-tested self-administered questionnaire was used to collect data from preparatory and high school students. The questionnaire included information about socio-demographic characteristics of students and their parents, reproductive issues, and experience of pregnancy, abortion, sexually transmitted diseases, violence, and other non-sexual experiences. The questionnaire contents were developed and refined based on peer reviewed journals. Eleven data collectors (grade 12 graduates) and two supervisors (BSc nurses) performed the data collection.

The structured questionnaire was first prepared in English, then translated into the local language (Tigrigna), and then re-translated back to English by two people to check for consistency of the questions. Pretest was done in 5% of the students in a nearby town to evaluate the content and feasibility of the questionnaire. Two BSc nurse supervisors were recruited and a two-day training was given to the eleven data collectors and supervisors about the study objectives, relevance of the study, confidentiality of information, respondent rights, informed consent, pre-testing, and interview techniques. Data completeness and accuracy were checked daily and addressed after deliberation of the investigators.

Data analysis, presentation and interpretation

Data were entered, cleaned, and analyzed using SPSS version 16. Percentages, frequency distributions, measures of central tendency and measures of dispersion were used for descriptive analysis. Univariate binary logistic regression was done to assess the crude significant relation of each variable with dependent variables. Finally, all variables which were significant in the univariate analysis were entered into a multivariate logistic regression model to control the effect of confounding. Stepwise backward logistic regression was used and odds ratios with 95% confidence intervals were calculated to quantify the association between independent and dependent variables.

Ethical considerations

Ethical clearance was obtained from institutional review board of Mekelle University. The offices of Tigray Region Health Bureau, Tigray Regional Educational Bureau and study area school directors were informed through formal letters from Mekelle University. Names or any personal identifiers were not recorded. Participants were clearly told about the study. They were given the chance to ask anything about the study and were free to decline participation.

Results

Socio-demographic characteristics of respondents and their parents

A total of 550 students participated in the study, for a response rate of 98%. The mean (± SD) age of students was 17.16 (± 1.57) years. 51% of the respondents were females. The majority of students were Orthodox (80.7%) in religion, Tigrian (97.8%) in ethnicity and urban residents (72.7%). The vast majority of students were single (97.6%) and 2.4% were married. Four hundred thirty seven (79%) respondents were living with both of their parents and 80% of students' parents were currently married. 163 (29%) students had a job in addition to attending school. The illiteracy rate of students' fathers was 24% and for mothers it was 39.8%. Table 1 shows the socio-demographic characteristics of students and their parents.

Variables	Category	Frequency (n)	Percent
Age of students	Less than or equal to 18 years	436	79.3

	Greater than 18 years	114	20.7
Sex	Male	270	49.1
	Female	280	50.9
Ethnicity	Tigray	538	97.8
	Amhara and Oromo	12	2.2
Grade	Grade 9th	151	27.5
	Grade 10th	151	27.5
	Grade 11th	98	17.8
	Grade 12th	150	27.3
Residence	Rural	150	27.3
	Urban	400	72.7
Religion	Orthodox	444	80.7
	Muslim	94	17.1
	Catholic and Protestant	12	2.2
Educational status of father	Illiterate	132	24.0
	Grade 1-4	143	26.0
	Grade 5-8	100	18.2
	Grade 9-12	93	16.9
	Diploma & above	82	14.9
Educational status of mother	Illiterate	219	39.8
	Read & write Grade	103	18.7
	Grade 5-8	100	18.2
	Grade 9-12	64	11.6
	Diploma & above	64	11.6
Father's occupation	Farmer	194	35.3
	Employed	119	21.6
	Merchant	170	30.9
	Driver	21	3.8
	Daily laborer	32	5.8
	Do not have parents	14	2.5
Mother's occupation	Farmer	102	18.5
	Employed	79	14.4
	Merchant	89	16.2
	Daily laborer	9	1.6
	Housewife	254	46.2
	I do not have parents	12	2.2
	Others	5	.9
Parents current marital status	Currently married	455	82.7
	Divorced	58	10.5
	Widowed	37	6.7

Table1: Socio-demographic characteristics of Shire-Endasellassie high school & preparatory school students, Shire town, North West zone, Tigray Regional State, Ethiopia, from March-June 2013.

Violence, substance use, and pornographic media

From 280 female participants, 21 (7.5%) had been exposed to violence. There were 3 cases of physical violence, 11 cases of verbal violence (insults, undermining speech, etc.) and 7 cases of sexual violence. Of these, 10 did nothing after the violence, 5 told one or more family member, 4 went to the police, and 2 went to a health facility.

One hundred thirty two (24%) respondents had ever used any kind of mind-altering substance. Alcohol, used by 20% of the students, was the most commonly used substance followed by khat (2.7%) and cigarettes (1.3%). Of the substance users, 73 (55.0%) said that using substance increases their desire of sexual intercourse.

Two hundred four of the respondents (37.1%) had viewed pornographic materials. Among these 234 students, the most commonly viewed types of pornographic media were movies/film (65.2%), photos (17.9%) and magazines (16.9%).

Parents socio-demographic characteristics and relationship with children

The majority of participants (51.6%) reported that an "authoritarian" parenting style was used in their family (Figure 1).

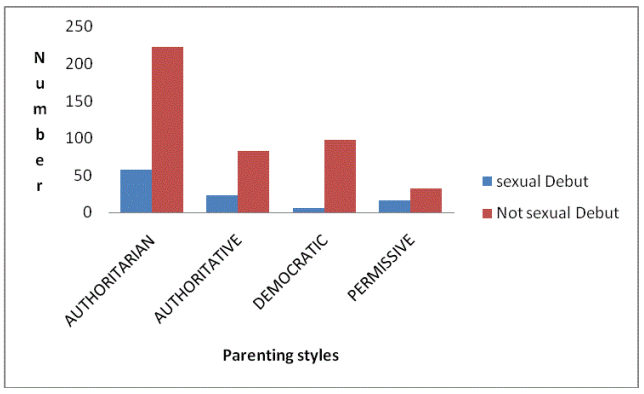

Figure 1: Parenting styles by experience of sexual debut among high school & preparatory school students in Shire-Endasellassie, North West zone, Tigray, Ethiopia, March-June 2013.

Sexual reproductive issues

About one in five (N=116, 21%, 95% CI: 17.83%-24.65%) of the participants ever had sexual intercourse with mean age of 16 + 0.8 years; of these, 84 (72.40%) of them had sexual intercourse in the past 12 months. Of the 84 who had sex in the last 12 months, only 31 (36.9%) used a condom, and 42 (50%) had multiple sexual partners. A substantial proportion of the study participants (N=109, 19.8%) had

practiced premarital sexual intercourse. About 3% of the participants reported having sexual intercourse with commercial sex workers and they all used condoms. Sixty-four (55.4%) of the participants had ever used family planning and about 33.0% of the students responded that health workers were their most common source of information about sexual and reproductive health issues (Table 2).

From the 116 students who had ever had sexual intercourse, the majority (N=102 18.55%: 95% CI: 15.46%, 21.96%) started early before 18 years of age. Four students had started having sex at age 14, 21 started at age 15, 47 started at age 16 and 30 students started sexual intercourse at age 17 years of age (Figure 2). Eleven of the 13 married students got married under the age of 18 years.

The majority of the students (76.2%) had discussed reproductive health-related issues with their families; the most common topics of discussion were regarding boy- or girlfriends (45.1%), marriage (19.6%), STI/HIV/AIDS (15.3%), drugs and alcohol (14.1%), puberty and menstrual cycle (5.3%) and contraceptive methods to avoid unwanted pregnancy (0.7%). When asked about the legal marriage age in Ethiopia, only 331 (60.2%) answered correctly.

Students reported various reasons for deciding to start having sex. Among the 116 students who had experienced sexual intercourse, the most commonly reported reason for starting was falling in love with their partner (Figure 3).

Variables	Responses	Frequency	Percent
Have you ever had sexual Intercourse?	Yes	116	21.1
	No	434	78.9
How do you feel emotionally after sexual intercourse	Happy	31	26.7
	Unhappy	19	16.4
	Regret	13	11.2
	Ashamed	17	14.7
	Guilty	20	17.2
	Do not feel new	16	13.8
Number of life time sexual partners	One sexual partner	55	47.4
	Two sexual partner	39	33.6
	Three & above sexual partner	22	19.0
Sexual intercourse in the past 12 months	Yes	84	72.4
	No	32	27.6
Number of sexual partners in the past 12 months	One sexual partner	42	50
	Multiple sexual partner	42	50
Type of sexual partner in the last 12 months	Girl/boyfriend living together	42	50.0
	Girl/boyfriend not living together	12	14.3
	Causal	14	16.7
	Husband/wife	16	19.0
Ever had sexual intercourse with commercial sex worker	Yes	8	2.9
	No	262	97.1
Ever used FP	Yes	64	55.2
	No	52	44.8
Source of information on sexual and reproductive health	School	162	29.5
	Health workers	183	33.3
	Television	133	24.2

	Radio	72	13.0

Table 2: Reproductive issues of Shire-Endasellassie high school & preparatory school students, Shire town, North West zone, Tigray Regional state, Ethiopia, from March-June 2013.

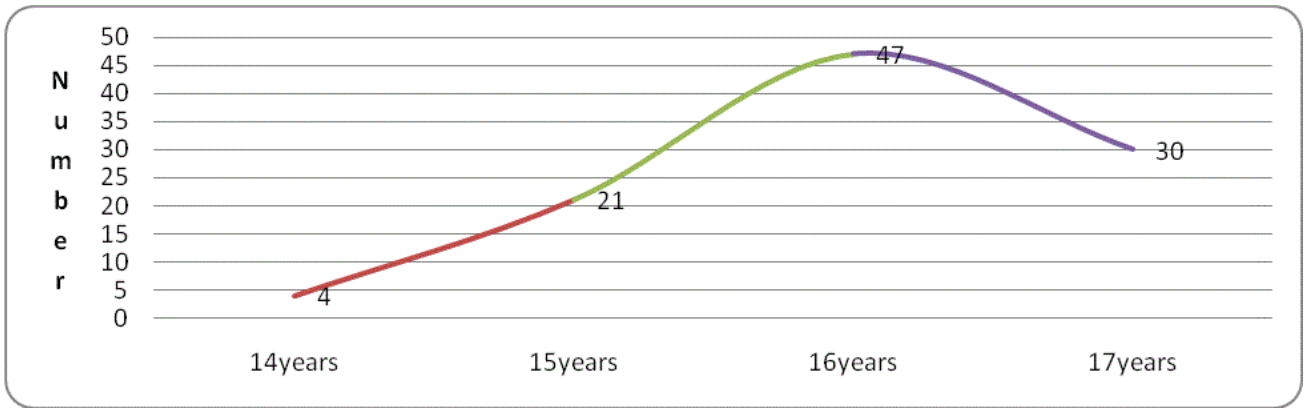

Figure 2: Age at Sexual Debut among high school & preparatory school students in Shire-Endasellassie, North West zone, Tigray, Ethiopia, March-June 2013.

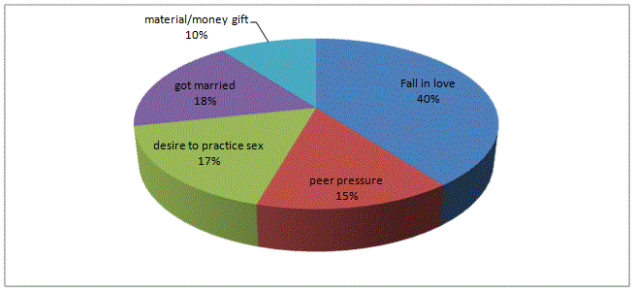

Figure 3: Reasons to start sexual intercourse among high school & preparatory school adolescents in Shire-Endasellassie, North West zone, Tigray, Ethiopia, March-June 2013.

Pregnancy, abortion, and sexually transmitted infections

From 116 the sexually active participants, 48 (41.4%) had experienced signs and symptoms of sexually transmitted infections (STI) including vaginal or urethral discharge (33.3%), burning sensation during urination (43.8%) and genital ulcer (22.9%).

Of the 280 female students, 76 (27%) of them had been sexually active, 19 (25%) had been pregnant, and 10 had experienced abortion.

Factors contributing to sexual debut

After applying binary and multivariate logistic regression, six variables were found to be independent predictors of sexual debut among students. Positive predictors of sexual debut included being female (AOR=7.2), having a paid job (AOR=4.64), viewing pornographic materials (AOR=4.537) and having a boy or girl friend (AOR=9.6). Discussing reproductive health topics (AOR=0.092) and higher maternal levels of education (AOR=0.15) were related with lower odds ratio of sexual debut (Table 3).

Variable	Category	Sexual Debut		COR (95% CI)		AOR (95% CI)	
		Yes	No				
Sex	Male	33	230	1		1	
	Female	69	204	2.357	(1.495-3.718)	7.25	(3.21-16.37) ***
Paid Job	Yes	50	105	3.013	(1.92-4.7)	4.64	(2.10-10.25) ***

	No	52	329	1		1	
Education of father	Illiterate	31	93	0.478-	(0.225-1.018)	1.390	(0.344-5.625)
	Read & write Grade	27	114	0.673-	(0.314-1.442)	1.692	(0.430-6.656)
	Grade 5-8	17	83	0.778-	(0.342-1.772)	3.034	(0.686-13.416)
	Grade 9-12	16	75	0.747-	(0.324-1.721)	2.228	(0.547-9.077)
	Diploma & above	11	69	1		1	
Education of mother	Illiterate	40	170	0.447	(0.180-1.11)	.219	(0.044-1.091)
	Read & write Grade	27	74	0.288	(0.112-0.746)	.153	(0.030-.771) **
	Grade 5-8	17	83	0.514	(0.191-1.383)	.243	0.044-1.325
	Grade 9-12	12	50	0.439	(0.153-1.255))	.150	0.027-.829**
	Diploma & above	6	57	1		1	
Discussion about sexual health	Yes	32	314	0.175	(0.109-.279)	0.092	(0.04-.206)***
	No	70	120	1		1	
Has viewed Pornography	Yes	71	121	5.925	(93.69-96.4)	4.537	(2.023-10.176)***
	No	31	313	1		1	
Had girlfriend or boyfriend	Yes	85	134	11.19	(6.40-19)	9.608	(3.924-23.5)***
	No	17	300	1		1	
Knows legal age of Marriage	Correct knowledge	38	284	0.314	(0.200-491)	0.355	(0.168-0.750 ***
	Incorrect knowledge	64	150	1		1	
Ever acquired STI	Yes	35	11	20.088	(9.731-41.4)	18,994	(5.977-60.358)**
	No	67	423	1		1	
Parenting style of family	Authoritarians	57	222	1.947	(1.000-3.79)	0.647	(0.198-2.115)
	Authoritative	23	83	1.804	(0.846-3.84)	0.524	(0.136-2.012)
	Democratic	6	97	8.083	(2.91-22.)	1.542	(0.32-7.394)
	Permissive	16	32	1		1	

Table 3: Logistic regression showing factors associated with early sexual debut among high & preparatory schools students of Shire-Endasellassie town, North West zone, Tigray Ethiopia 2013. COR- crude odds ratio AOR- Adjusted odds ratio.*** P.value less than 0.0001, ** P.value less than 0.05

Discussion

The prevalence of sexual debut was 21.1% and about 19% started before 18 years of age. Sex of the respondents, having a paid job, discussion of reproductive health topics, viewing pornographic materials, having boy or girl friend were significant predictors of sexual debut.

The study revealed that 19% of the students had experienced early sexual debut, defined as becoming sexually active before 18 years of age. This was less than a finding in Kenya where 36% of girls and 64% boys started sexual intercourse before 18 years of age [16]. It was also lower than the finding from EDHS 2011, which reported 62% prevalence of early sexual debut. This might be due to the fact that this study was conducted among students, who may have been exposed to information about sexual reproductive issues through the school system [6].

In this study the mean age at sexual debut was 16 years, similar to the finding of EDHS 2011 [10] and studies conducted in the United States, which reported mean age of 15.95 years [17]. Other studies conducted in Ethiopia reported similar ages: Gedeo (South Ethiopia) reported 16.7+2.8 (SD) years [18], Dessie (East Ethiopia) found 15.6 ± 1.7 (SD) years [19], Addis Abeba reported 16.7 ± 1.7 (SD) years [20], Welega (North east Ethiopia) found 16 ± 2.25 (SD) years [21]. A study in Kenya reported 17.5 years [22], and Malawi reported 17.7 [23].

In this study, 109 of the 116 sexually active students (94%) had started having sex before marriage. This was much higher than the finding in EDHS 2011, which was 12% [6]. This difference might be due to the difference in study participants; students might be highly prone to initiate sexual intercourse before marriage because of peer pressure, and they might live outside the control of their families.

The reasons for engaging in sex stated by students in this study were similar to a study done in Nekemt, Ethiopia [24]. This study found falling in love (39.7%) to be the most common reason, and similarly in Nekemt 33% of students reported falling in love. Maternal money or gifts and peer pressure were also reported in both studies in comparable magnitudes. In Nekemt, 30% of students stated that they desired to practice sex, while in this study only 17.2% gave this reason.

The odds of having a paid job were, 4.6 times higher among those who initiated early sexual debut compared those who did not. This was similar to study done in Welega, Eastern Ethiopia where receiving higher pocket money was an independent predictor of sexual activity [21]. Students may be using pocket money for viewing pornographic materials, drinking alcohol, and spending leisure time outside of the home.

Students who had educated mothers (completed grade 9-12) had 85% lower odds of sexual debut, which was similar with study done in Tanzania [25]. This could be because educated mothers are able to discuss everything frankly with their children.

The odds of viewing pornographic materials were 4.5 times higher among those who initiated early sexual intercourse than those who did not, which was in line with the finding in Dessie [19]. These materials could stimulate a physiological and psychological motive to experiment and could pressure the viewers to try sexual intercourse themselves.

Female students were more likely than male students to report sexual activity (AOR=7.2), consistent with research done in Welega, Ethiopia [19]. Female students may receive more attention from older men.

Discussion of reproductive issues at home delayed sexual intercourse by 92% (AOR=0.092_ compared to those who did not discuss such issues at home. This finding was similarly to a study conducted in Welega [19]. This could be because the discussion helped students to understand the potential risks of early sexual debut.

In this study residence, being urban on rural dweller, was not an independent predictor of early sexual debut among students; however studies conducted in Nekemt found resident was found to be independent predictor of early sexual debut [22].

Conclusions

Early sexual debut among students was low compared with estimates reported by other studies, however, the proportion of premarital sexual debut was high. Female gender, having an income source, access to pornographic materials, and having boy or girl friend increased the likelihood of students to be sexually active. Discussion about the reproductive issues with family and higher maternal education levels were protective factors of early sexual debut among preparatory and high school students.

We Recommend

To Parents

Discuss freely with children about sexual reproductive issues at home.

To community

Teach people not to practice forced sexual intercourse (rape)

Advocate legal prohibition of pornographic films

Teach the risks of showing pornographic films to children

To the schools

The schools should have youth friendly services and reproductive health issue clubs

To planners and decision makers

Disallow pornographic films

Author's Contributions

AA: AS: KA: had taken a principal role in the conception of ideas, developing methodologies, data collection, analyses and write up of the article. All authors read and approved the final manuscript.

Author 1 AA: Initiated the research, wrote the research proposal, conducted the research, did data entry and analysis and wrote the manuscript.

Author 2 KA: Involved in the write up of the proposal, data analysis, and write up of the manuscript.

Author 2 AS: Involved in the write up of the proposal, data analysis and write up of the manuscript.

Author 4 KB: participate in data collection, analysis and manuscript preparation

All authors read and approved the final manuscript.

Competing Interests

The authors have no any competing interests regarding this article.

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References

1. CDC (2012) Monitoring your teens activities & families should know. National center for HIV|AIDS, viral hepatitis, STD, and TB prevention, division of adolescent & school health.
2. James E, Rosen (2010) Position paper on main streaming adolescent pregnancy in efforts to make pregnancy safer, WHO Geneva, Switzerland.
3. Linda H Bearinger, Renee E Sieving, Jane Ferguson, Vinit Sharma, (2007) Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. Lancet 369: 1220-1231.
4. Nair MK, Leena ML, Paul MK, Pillai HV, Babu G, et al. (2012) Attitude of parents and teachers towards adolescent reproductive and sexual health education. Indian J Pediatr 79 Suppl 1: S60-63.
5. Nair MK, Leena ML, George B, Sunitha RM, Prasanna GL, et al. (2012) A panchayat level primary-care approach for adolescent services. Indian J Pediatr 79 Suppl 1: S6-10.
6. Central Statistical Authority (CSA) and ORC Macro (2011) Ethiopia Demographic and Health Survey, Addis Ababa, Ethiopia: CSA and ORC Macro, USA.
7. Federal Democratic Republic of Ethiopia (1998) Policy on HIV/AIDS of the Federal Democratic Republic of Ethiopia. Addis Ababa.
8. Bearinger LH, Sieving RE, Ferguson J, Sharma V (2007) Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. Lancet 369: 1220-1231.
9. Patton GC, Coffey C, Sawyer SM, Viner RM, Haller DM, et al. (2009) Global patterns of mortality in young people: a systematic analysis of population health data. Lancet 374: 881-892.
10. UNFBA (1998) Adolescent reproductive health making difference outlook. Adolescent reproductive 16:3.
11. Naomi N Wekwete (2007) Adolescent Pregnancy Challenges In The Era Of HIV and Aids: A Case Study Of A Selected Rural Area In Zimbabwe, African Books Collective.
12. Government of Ethiopia (1993) The health policy of the Transitional Government of Ethiopia. Addis Ababa.
13. Federal Democratic Republic of Ethiopia (2004) Ministry of Youth, Sports and Culture National Youth Policy, Addis Ababa Ethiopia.
14. The Revised family code (2000) Federal Democratic Republic of Ethiopia, Revised family law, Addis Ababa Ethiopia.
15. Federal Democratic Republic of Ethiopia (2005) Penal Code Addis Ababa Ethiopia.
16. Dominiqin Meeker (1993) Sexual initiation in sub-Saharan Africa, Macro international Inc. Colombia, Maryland USA , DHS Working Papers, 5: 2-3.
17. HIV/AIDS and sexual health education on young people's sexual behavior (1997) A comprehensive literature review, commissioned by the Department of Policy, Strategy, and Research of UNAIDS, the Joint United Nations Program me on HIV/AIDS.
18. Zelalem Fekadu (2009) Casual sex-debuts among female adolescents in Addis Ababa, Addis Ababa University Ethiopia.
19. Fekadu M (2008) Median Age and Determinants of Sexual Initiation among youths in north east Ethiopia, Addis Ababa University.
20. Mulugeta Alemayehu (2006) Assessment of the Prevalence of Premarital Sex and Unprotected Sexual Practice among Gedeo Zone High School Students, SNNP, Ethiopia,
21. Oljira L, Berhane Y, Worku A (2012) Pre-marital sexual debut and its associated factors among in-school adolescents in Eastern Ethiopia. BMC Public Health 12: 375.
22. Okigbo CC, Speizer IS (2015) Determinants of Sexual Activity and Pregnancy among Unmarried Young Women in Urban Kenya: A Cross-Sectional Study. PLoS One 10: e0129286.
23. Glynn JR, Kayuni N, Floyd S, Banda E, Francis-Chizororo M, et al. (2010) Age at menarche, schooling, and sexual debut in northern Malawi. PLoS One 5: e15334.
24. Assefa Seme, Dessalegn Wirtu (2008) Premarital Sexual Practice among School Adolescents in Nekemte Town, East Wollega, Ethiop J Health Dev 22: 2.
25. Mmbaga EJ1, Leonard F, Leyna GH (2012) Incidence and predictors of adolescent's early sexual debut after three decades of HIV interventions in Tanzania: a time to debut analysis. PLoS One 7: e41700.