Disparities in utilization of sexual and reproductive health services among high school adolescents from youth friendly service implemented and non-implemented areas of South Ari district, South Omo zone, Southern Ethiopia: a comparative cross-sectional study.

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Abstract

**Background:** In recent years, much effort was made to improve access to sexual and reproductive health services (SRH) to adolescents and youths in Ethiopia particularly through establishment of youth friendly service (YFS) corners as part of the existing health care facilities. The existing evidences focused on the utilization of SRH services at YFS alone. There is a dearth of evidence which compares the SRH service use between the YFS implemented and non-implemented areas so that evidences can be drawn to suggest on the successes of the expansion of youth friendly corners.

**Methods:** A school-based comparative cross-sectional study with multistage cluster sampling method was employed. Self-administered questionnaire was used to collect data and the collected data were entered in to Epi data version 4.4.1 software and then exported to SPSS version 20 for analysis. $\chi^2$ test was used to see significant difference in magnitude of SRH service utilization between YFS implemented and non-implanted areas. The association between the SRH services utilization and the independent variables was examined using binary logistic regression. Finally, variables having p-value less than or equal to 0.05 in the multivariable logistic regression model were considered as statistically significant.

**Results:** There was a significant difference in the rate of SRH service utilization between YFS implemented (33.8%) and YFS non- implemented (9.9%) areas ($\chi^2=37.49$, $p<0.001$). Higher educational status of mothers (AOR=2.588, 95% CI: 1.220, 5.491), having open discussion with family (AOR=3.175, 95%CI: 1.624, 6.206), good knowledge (AOR= 4.511, 95% CI: 2.458, 8.278) and having positive attitude (AOR= 5.084, 95% CI: 2.764, 9.352) were positively associated with SRH services utilization.

**Conclusion:** Compared with high schools from YFS implemented areas, the magnitude of utilization of SRH services was significantly lower among students from high schools where health facilities had not yet implemented YFS. There is a need for more efforts to scale up SRH services in YFS non implemented areas among stakeholders at different hierarchies. Such interventions should target on improving open discussion at family level, knowledge and attitude on SRH issues and women education at large.

**Background**

The World Health Organization defines adolescence as the age group of 10-19 years old (1). Adolescence is characterized by significant physiological, psychological and social changes that put them for high risk of SRH problems (2, 3).

Young people from Sub-Saharan Africa countries are more at risk of SRH problems than those young people from around the world (4). The sub-Saharan Africa region remains the most affected region in the world with an estimated 22.5 million and 1.7 million people living with and having new infections with the human immune-deficiency virus (HIV) respectively (5). Furthermore, premarital sexual activity has the highest rate in sub-Saharan Africa; where more than half of girls aged 15–19 have sexual experience (5).

The concern for adolescent SRH services has been growing. This is mainly because they are vulnerable to health risks, especially those related to SRH (6,7). The most common adolescent problems related to
sexuality and reproductive health include HIV/AIDS, unwanted pregnancy, unsafe abortion, early marriage, teenage pregnancy and sexually transmitted infections (STIs) (7). In Ethiopia, the SRH of young people has become a major public health concern. Gender inequality, sexual coercion, early marriage, polygamy, female genital mutilation, unplanned pregnancies, closely spaced pregnancies, STIs, and HIV/AIDS are among the many SRH problems faced by adolescents and youth in the country (8, 9). Secondary school students are the most vulnerable group for SRH problems due to their inclination to be engaged in risky sexual behavior(10).

Despite the huge burden of sexual and reproductive health problems, adolescent sexual and reproductive service is also not sufficiently organized by qualified and dedicated staff, space/room and time. Majority of health facilities are also providing adolescent and youth sexual and reproductive health services as part of the routine health care with no particular focus to the services for adolescents and youths (11).

A good SRH is said to be present when one is able to have a safe and satisfying sex life, and is in a position to decide freely upon whether or not he/she want to reproduce, and at what time in one's life (12). YFS is a wide-ranging SRH services which particularly address specific needs, desires and vulnerabilities of youths, prosper for attraction and retention of youths in a continuum of care (13).

In 2009, to address the challenges faced by the youth, the international non-governmental organizations(NGOs) such as the USAID flagship family planning and maternal, newborn, and child health program, the Integrated Family Health Program (IFHP) and other local NGOs began to expand YFS in six regions of Ethiopia in collaboration with the ministry of health. The Southern Nations Nationalities and Peoples Region (SNNPR) was one among the six. In line with the country's policies and strategies, the YFS centers were built in university clinics, public health centers, and hospitals in the six regions of Ethiopia based on the recommendation from the regional health bureau and district health offices for the initial selection of the specific centers. During the selection, consideration of the vulnerability factors of the youth to various SRH problems, size of youth population in the area and existence of youth centers in the area for referral purpose were considered. The essence of the expansion was to create an environment that is tailored to age, sociocultural and economic contexts of youth and also to raise their awareness on SRH issues (11).

The services in the YFS range from provision of accurate and tailored information on a variety of SRH issues to provision of specific SRH services based on the needs of the youths. The SRH services are provided in the already existing health facilities by specially trained health care providers together with peer educators in a separate corner having a waiting and consultation spaces that are equipped with audiovisual materials and indoor games which put youths at ease while they visit the YFS sites. The service packages include: counseling and testing for HIV, other STIs and pregnancy; counseling for contraceptives, nutrition, and victims for sexual abuse and violence; offering full range of contraceptives, antenatal, post-natal and post abortion care; referral service for antiretroviral therapy, delivery and prevention of mother-to-child transmission of HIV, and promotion of condom. Youngsters access to YFS services in a convenient location and free of cost through the support of the peer educators who receive a 5
days training to assist youth clients by taking their cards from the triage to consultation room, provide health education to the youths and facilitate other activities in the YFS (14, 15,16).

Since YFS centers have been established in the country for about a decade period, studies focused on the utilization, perspectives and quality of sexual and reproductive health services in the YFS corners in the country (13,17, 18, 19, 20).

To date, to the best of our knowledge, no study addressed the comparative disparities in sexual and reproductive health service utilization in YFS implemented and non-implemented areas of the country in general and our study area in particular. Therefore, this study compares sexual and reproductive health service utilization among youths in the high schools (grades 9-12) of YFS implemented and non-implemented areas in one of the peripheral districts in Southern Ethiopia-Ari district of South Omo Zone to check whether a significant difference was there in the SRH service utilization and identify the factors which affect the SRH service use so that insights for intervention can be found for policy makers or programme planners.

**Methods And Materials**

**Study design**

A school-based comparative cross-sectional study was used to compare the extent of SRH services utilization among students from YFS implemented and non-implemented areas and to identify the associated factors among adolescent from 1-30, March 2019.

**Study Setting**

South Ari is one of the districts in South Omo Zone and it is located 735 Km away from Addis Ababa, the capital city of Ethiopia. There were a total of six high schools in the district; of which two are located in YFS implemented areas of the district.

**Participants**

The source populations of this study were all adolescents of age between 15-19 years who attended public high school in the year 2019. The study populations of the study were all adolescents of age between 15 - 19 years in selected public schools during data collection period. Multi-stage sampling technique was employed in order to select a representative sample of students. Four secondary schools (two from YFS sites and two non-YFS sites) were selected randomly out of the six secondary schools in the district. Samples were selected from the selected schools proportional to the respective number of students. The total sample was allocated to each grade (9 -12) proportional to their student size. From each grade, sections were selected randomly. Finally, the study participants were selected by using computer-generated random numbers based on their attendance list in their respective schools. On the day of data collection, the randomly selected students were told to remain in their classes.

**Variables**
The dependent variable of this study was SRH services utilization. Independent variables were predisposing, enabling and need factors of health care utilization. The predisposing factors considered in the study were sex, age, income status, and place of living and marital status (or relationship condition), knowledge and attitude. The enabling factors were access to services, cost of the SRH services and perceived parental income status. The need factors include perceived need for SRHS, perceived personal health status, worries (concern) about health.

Measurement

Data collection tools and procedures

The data collection instrument was a self-administered questionnaire developed after reviewing previous publications from similar or related literatures. The questionnaire was prepared in English and translated to Amharic and back to English to check for consistency of meaning. Data was collected by four health workers having a diploma in the health discipline. Two supervisors having a bachelor degree in the health discipline were recruited for supervision of the data collection.

Data quality assurance

To assure the quality of data, training was provided for facilitators and supervisors that include a briefing on the general objective of the study, and detail discussion on the contents of the questionnaire. The overall activity of data collection was supervised and coordinated by the principal investigator. The collected data was reviewed and checked for completeness and consistency on-site in the schools by the supervisors and the investigators and before data entry by the research team. Pre-test was conducted in a high school at a nearby district on 5% of the sample size two weeks before commencement of the actual data collection and where appropriate, modification to wording and content of questions was made based on the results from the pretest.

Operational definitions

Adolescent: In this study adolescent stands for boys and girls between the ages of 15–19.

Utilization of sexual and reproductive health services: This was measured through the dichotomous response (yes or no) by asking whether a participant had utilized one or more of SRH service components within the last 12 months. The positive response was further validated with questions on the type of SRH services utilized. A positive (“yes”) response to any one of these services was regarded as service utilization(21).

Knowledge of SRH services: Adolescents who scored above the mean of questions assessing participants’ knowledge were labeled as having good knowledge and those scored below the mean were considered as having poor knowledge (1).

Attitude towards SRH services: Attitude was measured by 7 items each having three categories: disagree, neutral and agree. Then it was recoded in to agree and disagree by considering being neutral as
disagreement. Finally, adolescents who scored above the mean for attitude questions were regarded as having a “positive attitude” and those who scored a mean or below the mean on the questions assessing attitude were regarded as having a “negative attitude” (21).

**Bias**

Since the study was an institution-based, information contamination would be there. Therefore, data were collected at the same time from the selected high schools to control the information contamination.

**Sample size determination**

The sample size for this study was determined based on assumptions of a 50% prevalence of sexual and reproductive health service utilization (as there was no study on the same topic) among school adolescents in the high schools where youth friendly service was implemented (P2=percent of exposed having the outcome) and a difference of 20% between youth friendly service implemented and non-implemented areas (P1=30%), a 5% level of significance and 80% power and a ratio of unexposed to exposed equal to 1. With these considerations, a sample size of 208 was calculated. A design effect of two was considered as the sampling procedure had involved a multistage cluster sampling and an additional 10% was considered to compensate for possible non-response. Finally, a total sample of 458 was calculated as a sample size for the study.

**Statistical Methods**

Data were entered in to Epi data version 4.4.1 software and then exported to SPSS version 20 for analysis. Descriptive statistics were computed and summarized in tables and graphs with frequencies, mean, or standard deviations where appropriate. $\chi^2$ test was used to see significant difference in the magnitude of SRH service utilization between YFS implemented and non-implemented areas. The association between SRH service utilization and the independent variables was examined by binary logistic regression. Crude odds ratios were computed to determine the strength of association of the selected explanatory variables with the dependent variable in the initial bivariate logistic regression analysis. Variables which showed an association at a p-value $\leq 0.25$ in the bivariate logistic regressions were selected as a potential candidate for multivariable logistic regression analysis to control confounders in the regression models. Model fitness was checked using Hosmer and Lemeshow goodness of fitness test (P-value $\geq 0.05$). The association between SRH utilization and the associated factors were reported by odds ratio with its 95% CI and variables having p-value less than or equal to 0.05 in the multivariable logistic regression model were considered as statistically significant.

**Results**

**Socio-demographic characteristics**

A total of 426 participants (213 from YFS-implemented and 213 from non-implemented areas) were participated in the study yielding response rate of 93.0%. The mean age of the respondents was 16.48
(SD± 1.23). More than one-third of the study participants were grade nine students. About 58% of adolescents living in YFS implemented areas and 49% of adolescents living in YFS not implemented areas were residing in rural areas and majority of them were Ari by ethnicity. Regarding the educational background of the adolescents’ mothers, 190 (44.6%) of them were having no formal education in both YFS-implemented and non-implemented areas (Table 1).

Table 1: Socio-demographic characteristics of study participants in YFS-implemented and non-implemented areas in South Ari district, March 2019 (n=426).
| Variables | Category | YFS-implemented (n=213) | YFS non-implemented (n=213) | Total (n=426) |
|-----------|----------|------------------------|-----------------------------|---------------|
|           | Male     | 136(63.8)              | 133(62.4)                   | 269(63.1)     |
|           | Female   | 77(36.2)               | 80(37.6)                    | 157(73.7)     |
|           | 15-17    | 166(77.9)              | 173(81.2)                   | 339(79.6)     |
|           | 18-19    | 47(22.1)               | 40(18.8)                    | 87(20.4)      |
|           | Single   | 143(67.1)              | 168(78.9)                   | 311(73.0)     |
|           | Married  | 18(8.5)                | 13(6.1)                     | 31(7.3)       |
|           | Has boy/girlfriend | 45(21.1) | 30(14.1) | 75(17.6) |
|           | Others a | 45(21.1) | 2(0.9) | 9(2.1) |
|           | Grade 9  | 69(45.7%)              | 82(54.3%)                   | 151(35.4%)    |
|           | Grade 10 | 70(49.6%)              | 71(50.4%)                   | 141(33.1%)    |
|           | Grade 11 | 41(56.2%)              | 32(43.8%)                   | 73(17.1%)     |
|           | Grade 12 | 33(54.1%)              | 28(45.9%)                   | 61(14.3%)     |
|           | Orthodox | 52(24.4)               | 67(31.5)                    | 119(27.9)     |
|           | Protestant | 144(76.6) | 127(59.6) | 271(63.6) |
|           | Muslim   | 15(7.0)                | 4(1.9)                      | 6(1.4)        |
|           | Others b | 2(0.9)                 | 4(1.9)                      | 6(1.4)        |
| Gender | Rural | Urban | Overall |
|--------|-------|-------|---------|
| Male   | 123(57.7) | 104(48.8) | 227(53.2) |
| Female | 90(42.3)  | 109(51.2)  | 199(46.7)  |

| Residence | Rural | Urban | Overall |
|-----------|-------|-------|---------|
| Rural     | 146(68.5) | 132(62)  | 278(65.3) |
| Urban     | 33(15.5)   | 61(14.3)  | 94(21.7)   |
| Others    | 28(13.1)   | 24(11.3)  | 52(12.1)   |
| Goffa     | 18(8.5)    | 9(4.2)    | 27(6.3)    |
| Malle     | 5(2.3)     | 14(3.3)   | 19(4.4)    |
| Others c  | 16(7.5)    | 31        | 47(11.1)   |

| Living arrangement | Rural | Urban | Overall |
|--------------------|-------|-------|---------|
| Living with single parents | 51(23.9) | 70(32.9) | 121(28.4) |
| Living with both parents | 88(41.3) | 78(36.6) | 166(38.9) |
| Living alone | 4(1.9) | 7(3.3) | 11(2.6) |
| Living with boy/girlfriend | 5(2.3) | 3(1.4) | 8(1.9) |
| Living with husband/wife | 15(7.0) | 44(10.3) | 59(13.9) |
| Living with brothers/sisters | 23(10.8) | 48(11.3) | 71(16.6) |
| Living with grandparents | 27(12.7) | 13(6.1) | 40(9.3) |
| Living alone | 21(9.9) | 21(9.9) | 42(9.9) |

| Education | Rural | Urban | Overall |
|-----------|-------|-------|---------|
| No formal education | 65(48.9%) | 68(51.1%) | 133(31.2%) |
| Formal education | 81(44.0%) | 103(56.0%) | 184(43.2%) |
Sexual and reproductive health services utilization

Sexual and reproductive health services utilization in YFS-implemented and non-implemented areas were 33.8% [95% CI (28.2-40.4)] and 9.9% [95% CI (6, 14)] respectively. The magnitude of utilization of SRH services has significant difference between YFS-implemented and non-implemented areas ($\chi^2 = 37.49$, p-value < 0.001). The most common service utilized by adolescents was Information, Education and Communication (80.6%) followed by condom provision (57%) and voluntary counseling and testing for HIV (33.3%). The reasons forwarded by the participants not to utilize SRH services were lack of privacy in health facilities, unfavorable health professional attitude, embarrassment and perceived inadequate medical equipment (Figure 1).

Knowledge and attitude of participants about SRH services

Out of the study participants 53.35% had not been aware of at least one of the SRH services provided in the YFSs. A total of 275 (64.6%) of the adolescents had poor knowledge about SRH services (Table 2).

Table 2: Knowledge of the study participants related to SRH service in YFS-implemented and non-implemented areas in South Ari district, March 2019 (n=426).

| Education & Training | YFS-implemented | Non-implemented | p-value |
|----------------------|-----------------|-----------------|---------|
| No formal education  | 94 (49.5%)      | 66 (45.8%)      |         |
| Primary education    | 53 (57.6%)      | 39 (42.4%)      |         |
| Secondary education  | 96 (50.5%)      | 78 (54.2%)      | 0.001   |
| Education and above  | 190 (44.6%)     | 144 (33.8%)     |         |
|                      |                 |                 |         |

Others a: separated, divorced; others b: Catholic, Adventist; Others c: Wolayta, Oromo, Konso
### Variables

| Variables Respondent’ knew about: | Yes Frequency (%) | No Frequency (%) |
|-----------------------------------|-------------------|------------------|
| At least one SRH service          | 199 (46.7%)       | 227 (53.3%)      |
| Information, education and        | 162 (38.0%)       | 264 (62.0%)      |
| communication related to SRH issues |                   |                  |
| Family Planning services          | 181 (42.5%)       | 245 (57.5%)      |
| Pregnancy testing and care        | 26 (6.1%)         | 400 (93.9%)      |
| Treatment of Sexually transmitted | 21 (4.9%)         | 405 (95.1%)      |
| Infections                        |                   |                  |
| VCT for HIV                       | 150 (35.2%)       | 276 (64.8%)      |
| Condom provision service          | 164 (38.5%)       | 262 (61.5%)      |
| Cervical cancer screening         | 36 (8.5%)         | 390 (01.5%)      |
| Teenage pregnancy can lead to     |                   |                  |
| maternal and infant death         | 240 (56.3%)       | 186 (43.7%)      |
| Unwanted pregnancy can be         |                   |                  |
| prevented by using condoms        | 334 (78.4%)       | 92 (21.6%)       |
| Reproductive tract infections can  |                   |                  |
| be caused by unprotected sex      | 63 (14.8%)        | 363 (85.2%)      |
| Sexually transmitted diseases can  |                   |                  |
| be acquired by unprotected sexual intercourse | 359 (84.3%) | 67 (15.7%) |
| HIV/AIDS can be prevented by      |                   |                  |
| avoiding unprotected sexual       | 347 (81.5%)       | 79 (18.5%)       |
| contact.                          |                   |                  |

Among 426 participants, 83.3 % (355/426) agreed that using condom is a sign of not trusting your partner. Eleven percent (71/426) of the participants agreed that a boy/girl should have sex before he/she gets married and 31.2% (133/426) of the participants agreed that discussing condom or other contraceptive methods with young people promotes Promiscuity. Sixty one percent (260/426) of the participants believed that risk of AIDS can be reduced by VCT services. Fifty two percent (223/426) of the participants preferred to visit health facilities to get SRH services. Fifty three (227/426) of the participants agreed that
there is no problem if service provider of SRH services is either young or adult and 49.1 % (209/426) of the participants agreed that there is no problem if service provider of SRH services can be male or female. The computed overall attitude of adolescent towards SRH services showed that 295 (69.2%) of them had positive attitude whereas the remaining had negative attitude. About 19% of adolescents reported that their culture prohibits them from the utilization of SRH services.

The enabling factors of participants

Among adolescents participated in this study, 20 % and 59.4% of them had experienced open discussion with their families and with their peers on matters related to SRH issues respectively. From the total participants, 33.3%, 59.4% and 7.3 % of them reported their family economic status as poor, average and rich respectively.

The need factors of participants

Out of the respondents, 26.8%, 54.2%, 17.4% and 1.6% perceived their health condition as very good, good, fair and ill respectively. Concerning worry about their own current health status (previous 12 months), 12%, 79.3%, and 8.7% were not concerned, having some degree of concern and extremely concerned respectively.

Factors associated with utilization of the SRH services

In multivariable binary logistic regression final model, living in YFS implemented areas, mother’s educational status, discussion of SRH issues with family, knowledge and attitude remained significantly associated with utilization of SRH services.

The odds of utilizing SRH service among adolescents who lived in YFS implemented areas was four times higher than their counterparts (AOR =4.076, 95%CI: 2.150, 7.727). A part from this, the odds of utilizing SRH services among adolescents whose mother’s educational status was secondary education and above was 2.58 times higher than those whose mothers were having no formal education (AOR=2.588, 95 % CI: 1.220, 5.491). The odds of utilizing SRH service among adolescents who discussed SRH issue with their families was three times higher than that of their counterparts (AOR=3.175, 95%CI: 1.624, 6.206). The odds of utilizing SRH services among adolescents who had good knowledge was 4.5 times higher than those who had poor knowledge (AOR= 4.511, 95% CI: 2.458, 8.278). Similarly, the odds of utilizing SRH services among adolescents who had positive attitude was five times higher than those who had negative attitude (AOR= 5.084, 95% CI:2.764, 9.352) (Table 3).

Table 3: Multivariable logistic regression analysis to identify associated factor of SRH service utilization in South Ari district, March 2019 (n=426).
| Variables                                  | Category                        | utilization of SRH services | COR [95% C.I] | AOR [95% C.I] | P-value |
|-------------------------------------------|---------------------------------|----------------------------|--------------|--------------|---------|
| YFS implementation status                 | YFS non-implemented             | 192(90.1%)                 | 1            | 1            |         |
|                                           | YFS implemented                 | 141(66.2%)                 | 4.66[2.74,7.95] | 4.076 [2.150, 7.727] | .001    |
| Grade of education                        | Grade 9                         | 125(82.8%)                 | 1            | 1            |         |
|                                           | Grade 10                        | 101(71.6%)                 | 1.94[1.089,3.3] | 2.217 [1.070,4.591] | 0.032    |
|                                           | Grade 11                        | 55(75.3%)                  | 1.57[0.79,3.10] | 1.807 [.737,4.428] | 0.19    |
|                                           | Grade 12                        | 52(85.2%)                  | 0.83[0.365,1.89] | .918 [.329, 2.565] | 0.87    |
| Mother's educational status               | No formal education             | 166(87.4%)                 | 1            | 1            | 0.028   |
|                                           | Primary education               | 109(75.7%)                 | 2.22[1.25,3.93] | 2.069 [1.021,4.191] | 0.04    |
|                                           | secondary education and above   | 58(63.0%)                  | 4.05[2.22,7.40] | 2.588 [1.220, 5.491] | 0.01    |
| Discussion on SRH issue with family members | Yes                            | 42(48.8%)                  | 6.22[3.69,10.46] | 3.175 [1.624, 6.206] | 0.00    |
|                                           | No                              | 291(85.6%)                 | 1            | 1            |         |
| Perceived                                 | Very good                       | 84(73.7%)                  | 1            | 1            | 0.093   |
Discussion

This study aimed to compare differences in SRH utilization among high school adolescents from youth friendly service implemented and non-implemented areas, and the study identified factors for SRH service utilization.

Our study showed a lower utilization of SRH services among students from high schools where health facilities had not yet implemented YFS compared with health facilities which implemented YFS. This can be justified as having access to various SRH services in an environment that is tailored to their age and the sociocultural and economic contexts of adolescent increases the utilization of the services (11). Furthermore, adolescents living in YFS implemented areas have higher probability of getting information regarding SRH services and health professional working in YFS centers may have brought change in norms of the community living around YFS centers (23). The finding highlights a need of scale up of the existing YFS sites to non-implemented sites and SRH services should be promoted to all adolescents and youths, so links between information and services should be strengthened. In this study 33.3 % of adolescents
utilized voluntary counseling and testing service. This is lower than the findings of studies conducted in different corners of Ethiopia, Hadiya Zone, 68.9% (7), Woreta town, 50.6% (10), Nekemte town 59.2% (21) and Gondar town 72.2% (22). This difference might be, unlike our study setting, HIV/AIDS counseling and testing was routinely available in the mentioned study areas. Our study setting is one of the remote areas in Ethiopia where access to HIV/AIDS testing procedures was less common. The result of this study showed that majority of the respondents had not utilized SRH services because of different reasons. Lack of privacy was the most commonly cited reasons not to use SRH services. Health professional attitude, embarrassment and perceived inadequate medical equipment were also the reasons listed by the participants. This finding was consistent with the findings of the study conducted in East Gojjam, Nekemte, and Tanzania (6, 21, 24). Mostly, they feared that their parents would find out their visit to the clinic. This implies that there is a need of tackling the barriers by dealing with health professionals, community leaders and with adolescent themselves. Due emphasis should be given to increase the capacity of health care providers to deliver services without imposing their own and socially endorsed moral frameworks on adolescent sexual behavior. In addition, there is a need to address the cultural, religious and traditional value systems that prevent health professionals from providing good quality and comprehensive SRH services to the adolescents.

The current study showed that mother’s secondary and higher educational status affected adolescents’ decision to utilize SRH services positively. This finding is in agreement with a study which was conducted in Asgede-Tsimbla district, East Gojam and Gondar (1, 6, and 22). This can be explained by higher level educated mothers are expected to be more open to discuss sexual and reproductive health issues with their children. They are also more flexible to deal with problems encountered by their children regarding SRH services utilization. This could be also explained as with advancement of educational level; mothers are more likely to exchange SRH messages. In contrary, the studies conducted in Debre Berhan town and Woreta town showed no association between maternal education and adolescents’ sexual and reproductive health services utilization (5, 10). The variation can be emanated from cultural differences and religious beliefs towards SRH services used by adolescents. Moreover, this study showed that adolescents’ having good knowledge were more likely to utilize SRH services than their counterparts. This finding is consistent with the studies conducted in East Gojam, Harar town, Lao PDR and North Shewa zone (6, 13, 25, and 26). This can be justified as adolescents with good knowledge had adequate information regarding the consequences of SRH problems. It is better to use YFS sites as a learning center for adolescents because lack of knowledge makes them vulnerable to unsafe reproductive health behavior and inappropriate choices. Some of these choices may have undesirable effects on their reproductive health in the future. These wrong choices can lead to unplanned pregnancy, STI infection, HIV/AIDS and other sexual and reproductive health problems. The effects of these wrong choices are manifold with some capable of lasting for a lifetime. These potential human resource and future leaders end up as school dropouts. Additionally, these have social and economic implications for their households and the nation as a whole.

Moreover, this study showed that adolescents who ever discussed on SRH issues with their families were more likely to utilize SRH services than adolescents who never ever discuss on SRH issues with anyone.
This finding is analogous with other studies elsewhere, which reported ever discussion on SRH issues was an independent predictor for SRH service utilization and showed adolescents who ever discussed on SRH issues with family were more likely to utilize SRH services than adolescents who did not discuss the issue with anyone else (1, 5, 27). Communicating SRH issues with parents is very crucial for adolescents so as to advance their awareness of SRH issues. Discussion of SRH issues with family members (especially if the family members have good knowledge on reproductive health problems and reproductive health services) increases adolescents’ feeling of self-trust and there by urges their SRH seeking behavior. This implies, adolescents who discuss SRH issues with family would have a better knowledge and awareness about SRH services and thus would be motivated to use the services (28). In contrary, finding of this study is not supported by the study conducted in North Shewa which reported that adolescents who never discussed on VCT services were significantly more likely to use the service than adolescents who has discussed (26). This difference can be justified by adolescents who have information and have discussed SRH services with different individuals may not think they need SRH service because they perceive a low risk, which shows there is a gap in continuity of discussion, communication, and information to bring behavioral change.

The current study assured that adolescents with favorable attitude towards SRH services were more likely to utilize SRH service as compared to their counterparts. This could be explained by the fact that having of positive feeling derives initiation to seek SRH services. The finding is supported by the study conducted in Lao PDR (25) which reported that the prevailing negative cultural attitudes as the main barrier for Lao youths to access SRH services.

Limitation of the study

As this study was cross-sectional, the factors do not establish temporal relationship; therefore, inference of causation is not possible. Social desirability bias may have resulted in underreporting of SRH service utilization. Recall bias may also affect responses about events in some of the questions. Moreover, the quantitative study did not allow for probing into certain variables like cultural issues and perception which needs further qualitative description.

Conclusion And Recommendations

There was a significant difference in the rate of SRH service utilization between YFS implemented and YFS not implemented areas. The magnitude of utilization of SRH services was low among students from high schools where health facilities had not yet implemented YFS compared with health facilities which implemented YFS. Higher level mothers’ educational status, open discussion with family, having good knowledge and positive attitude were significant predictors of SRH service utilization. There is a need of more efforts to scale up SRH services in YFS non implemented areas among stakeholders at different hierarchies. In addition, it is better to promote open discussion with adolescents at family level, and emphasis should be given for women education. Furthermore, wide-range awareness creation strategies should be used to address poor knowledge and negative attitude.
Abbreviations

AIDS  Acquired Immune Deficiency Syndrome
SRH  Sexual and reproductive health
YFS  Youth-Friendly Services

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from Ethical review committee of Arba Minch University, College of Health Science. Permission letter was also obtained from South Ari district health office and was presented to all participants. Written consent and assent were obtained from the study participants and their parents/guardians (for those under 18 years of age) after they were informed about the study objectives and reading the information sheet. All participants were also informed that they could withhold or withdraw from participation at any time, without any negative consequences. The Interviews were conducted in private class room. Confidentiality and privacy of the study were maintained during data collection, analysis, and reporting.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

Questionnaire attached as supporting information.

(DOC.)

Competing interests

The authors declare that they have no competing interests.

Funding

Arba Minch University covered cost for data collection and supervision. The funder has no role in study design, data analysis and manuscript preparation

Authors Contributions
BH, MS and TF wrote the proposal, participated in data collection, analyzed the data, and drafted the first manuscript. MG and EA participated in data analysis, interpretation and revised subsequent drafts of the research. All authors read and approved the final manuscript.

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Figures

![Bar chart showing reasons for not using SRH services in South Ari district, South Omo zone, March 2019.](Questionnaire.pdf)

**Figure 1**

Students’ reasons for not using SRH services in South Ari district, South Omo zone, March 2019.

**Supplementary Files**

This is a list of supplementary files associated with this preprint. Click to download.

- Questionnaire.pdf