Modern contraceptives use and associated factors among adolescents and youth in Ethiopia

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Abstract

Background: Ethiopia's commitment to the global family planning 2020 partnership includes improving the health of adolescents and youth by increasing the modern contraceptive prevalence rate and reducing the unmet need for modern contraceptives among female 15-24 years. This study aims to assess trends and factors that determine uptake of modern contraceptives among adolescents and youth aged 15-24 years in Ethiopia.

Method: The analysis was conducted for 2,420 female adolescents and youth. The data were from the project annual population-based survey conducted in three rounds (2017-2019). The data was recorded in Pathfinder International's program monitoring database. Statistical stability of survey estimates across three years was ascertained using variance estimate and coefficient of variation, and plausible interpretation of the observed trends was made referring to other national surveys and program documents of the organization. All analyses were done using SPSS version 25. Descriptive statistics (graph and Table) were used to determine trends and current contraceptive use, and logistic regression models were used to determinants the associated factors of contraceptive use.

Results: Over the studied three-year period, modern contraceptive uptake improved by 11 percentage points. The short-acting contraceptives method accounted for a significant share of this increase (p-value< 0.05). Factors contributing to the widespread use of modern contraceptives were participants' educational status, discussion with HEWs/HDAs, and getting compassionate, respectful, friendly, and culturally acceptable care during pregnancy, labour and delivery, and postnatal period.

Conclusions: Modern contraceptive use among female adolescents and youth aged 15-24 years showed a remarkable increase between 2017 and 2019. This analysis provided practical evidence that aligning a program's monitoring system with national priorities can provide information to foster timely decision-making and generate scalable lessons. [*Ethiop. J. Health Dev.* 2021;35(SI-5):19-26]

Keywords: modern contraceptive, use of contraceptives, method mix, women, reproductive age, Ethiopia

Introduction

With an estimated population of 22.8 million young people aged 15 to 24 years, Ethiopia has one of the highest youth populations among Sub-Saharan Africa countries (1). Adolescent girls aged 15–19 make up almost one-quarter of the female population in Ethiopia, and account for 12% of all births (2). Almost half of the pregnancies among adolescents in Ethiopia are unintended, and 46% of those unintended pregnancies end in abortion (3). The concept of unmet need points to the gap between women's reproductive intentions to space and limit childbirth and their actual contraceptive use (4). The unmet need for modern family planning in Ethiopia among married women is 22%, and among unmarried sexually active women is 26%. However, it varies by region, level of education and residence with the highest unmet need in the Oromia region (29%), among rural residents (25%) and those with no education (25%) (5).

Ethiopia is particularly unique in being affected by its high young population and the practice of early marriage, although the country's revised Family Code sets the minimum age of marriage at 18 years for both sexes (6). The 2018 Performance Monitoring and Accountability (PMA) report, however, showed the age at first marriage remains below 18 at 17.3 years for rural girls and 20.1 years for urban girls, with the age at first birth at 19.9 years (7). Married girls and young women face intense social pressure to bear a child early in marriage. This exposes girls to associated maternal health complications including closely spaced pregnancies, complications during delivery, obstetric fistula, maternal mortality, unsafe abortions, and STIs (8). Complications relating to pregnancy and childbirth are among the leading causes of death worldwide for adolescent girls aged 15 to 19 years. Adolescent mothers face higher risks of eclampsia, puerperal endometritis, and systemic infections than women aged 20-24 years, and babies of adolescent mothers face higher risks of low birth weight, preterm delivery, and severe neonatal conditions (9).

Access to voluntary contraceptive services is particularly important among married youth in Ethiopia where 40% of young women aged 20–24 years were married by age 18 and 14% were married by age 15 (5); which makes them particularly vulnerable to maternal mortality and morbidity. Despite the rise in voluntary use of modern contraceptive methods among married young women aged 15- 19 in 2011, 2016, and 2019 (23%, 31.8% and 36.5%, respectively) and aged 20-24 in 2011, 2016, and 2019 (33.4%,38.5 and 50.2% respectively), the unmet need for FP among these groups remains high (1).

The Government of Ethiopia committed to improving the health status of Ethiopian adolescents and youth by increasing mCPR among those aged 15 -24 years, reducing the unmet need for modern FP (11). In line with this, progress has been made in increasing access to FP services using youth-friendly service outlets. Following this revitalized commitment, several changes were also observed including reorganizing the adolescent and youth health case team under the Maternal and Child Health-Nutrition (MCH-N) directorate as a separate case team.

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The USAID Transform: Primary Health Care Activity supports the ministry of health (MOH) to provide integrated FP and MNCH services and improve the quality of reproductive health (RH) services in public sector health facilities in six regions (12). The program is active in more than 400 woredas (districts) in these regions. The Activity is working to increase access and use of family planning services with full method choices and options to women and girls.

The Activity is one of the major contributors to the government's approach of scaling up Youth Friendly Services (YFS) reaching more than 400 health centers establishing YFS by the end of 2020. There are insufficient program-based studies showing the trend of uptake of contraceptives among adolescents and youth. The aim of this study was to see the trend and current uptake of modern contraceptives among adolescents and youth aged 15-24 in USAID Transform: Primary Health Care Activity implementation areas from 2017 to 2019 and to identify factors which affect the current uptake of modern family planning use among adolescents and youth.

Methods

Study design and setting:

A multistage interrupted cross-sectional study design was employed in USAID 'Transform: Primary Health Care's' implementation regions (Amhara, Tigray, Oromia and SNNP®[1]). This study is part of the effort to support the Ethiopian governments in attaining the health transformation agendas and contributing to preventing child and maternal deaths. Initially, the interventions started in 300 (in 2017) rural woredas/districts and over time expanded to 400 rural woredas (in 2019), and the study setting was in these 400 rural woredas.

Study participants, sample, and sampling:

The study participants were adolescent and youth girls aged 15-24 years. For FP service utilization, sexually active girls who were not pregnant at the time of data collection were eligible to participate. The primary purpose of the follow-up visit was to observe annual project performance during the implementation and monitor the progress towards project objectives, which national routine information in the intervention areas would not indicate (13,14).

Follow-up visits were undertaken at woreda/district, health facility, and household levels in the project implementation regions. A sampling frame was prepared by listing woreda health offices (WorHOs) under each implementation region, health centers under each WorHO, and health posts under each health center. Once a health post was randomly selected for the follow-up visit, the kebele (village) associated with the selected health post was chosen for the next stage of sampling. From each selected kebele, five households were selected using a random-walk technique. If there was more than one eligible respondent in a household, simple random sampling was used to select one eligible respondent. Similar approaches were used every year during the follow up visits. The monitoring data used for this analysis was accessed from pathfinder international's annual follow up visit database from 2017 to 2019. There were records of 2,574 adolescent and youth girls who participated in the three rounds of the follow up visits.

Data collection process

At the beginning of the intervention (2017), the project team developed a standardized and structured questionnaire, adapting some of the questions from previous studies to collect data from households for the purpose of routine and random follow up visits (13). This analysis used data collected during the random follow-up visits for the past three years. Data collection was conducted annually between October to December. Data were collected by regional staff after getting two days training to use the follow up questionnaire and were responsible for data collection in their respective catchment areas. During visits to households for data collection, data collectors apart from forwarding the questions to the respondents, made specific observations about the availability of health-service-related materials in households using the observation guide/checklist.

To measure contraceptive use, adolescent and youth girls were asked, "Are you or your husband or partner doing anything now to keep from getting pregnant?" Respondents who answered "yes" were asked, "What kind of contraceptives are you or your husband or partner using now to keep from getting pregnant?" This question included the following specific contraceptive methods: - oral contraceptive pills (OCPs), lactational amenorrhea method (LAM), tubal ligation, intrauterine contraceptive device (IUCD), injectables, implants, condoms, diaphragm, and emergency contraception, "not having sex (abstinence)," and "other." Respondents answering "other" were given the opportunity to respond; when possible, some responses were recoded into existing method options or were recoded as new method options. Contraception use was further grouped into three categories: long-acting contraceptives (LARCs-implants and IUCDs); short-acting contraceptives (injectables, condom and OCPs); and no method. Girls who reported not having sex were coded as not using contraception.

Data management

The collected data were electronically transferred from the tablets to the database prepared for this study on the web-based district health information system (DHIS2) (version 2) and stored at the country office in Addis Ababa. To ensure data quality, training was provided to the data collectors on the data collection tools used; close supervision during the data collection was done; and before analysis, data cleaning was done whereby outliers were identified and checked with the source data. There were records of 2,574 adolescent and youth girls who participated in the three rounds of follow up

[1] ®*During the time of data collection, Sidama and South-west region was part of SNNP and in this study, the term "SNNP" is used to refer three regions (Sidama, SNNP, South-west)".*

visit. For this analysis, adolescent and youth girls who reported being pregnant, with missing data on status of contraceptive use, and who reported on status of contraceptive use but did not respond to the follow-up question about types of contraceptives used were excluded. A final sample of 2,420 non-pregnant adolescent and youth girls who have used or not used contraceptive methods was analyzed.

Statistical analysis

The data analysis focused on the overall pattern of change in modern contraceptive use over time and determinants for the observed trend. This analysis employed descriptive (table/graph) and trend analysis of contraceptive use, and method mix, and logistic regression for determinants of modern contraceptive use. The stored data from the web based DHIS2 were downloaded and exported to SPSS version 25.0 for further analysis. The proportional difference was used to determine whether there was a statistically significant difference in the proportion of adolescent and youth girls who used contraceptives from year to year [6,15]. Statistical significance was determined with cut-off values set at $p<0.05$ with 95% confidence interval (CI). To determine the contributing factors for change, an analysis using logistic regression focusing on 2019 follow-up data was used to explore more actual and real contributing factors and consider more implementation woredas (400 woredas).

Ethical consideration

Pathfinder International obtained ethical clearance from Ethiopia Ministry of Health to implement the project through monitoring the progress of the project. This survey conducted during random follow-up visits was part of the program monitoring activities. The data collection was approved by USAID Transform: Primary Health Care Activity. During follow up visit, each data visitor explained to each study participant the objectives of the study, the voluntary nature of participation in the study, participants had the right to withdraw from the study at any time, and that they had the right not to answer any question they did not want to answer. During follow up visit, the interviewer read aloud a statement to get consent from the respondents and they provided a verbal consent. For study participants whose ages were less than 18 years, the verbal consent was obtained from the parents or care giver. Therefore, this report did not require ethical clearance by the human-subject research ethics review board. Detailed information on the method and ethical issues was published (13,14).

Results

Of the 2,420 non-pregnant adolescent and youth girls aged 15-24 included in the analysis, 1,476 (61%) received modern contraceptive services within the three-year period. The variance analysis showed that, the variation and its estimation of the data were stable across the three years, and their coefficient of variation is less than 30%; hence, trend analysis across the years is logical (Table 1).

Table 1. **Modern contraceptive use by adolescent and youth girls aged 15-24 from follow-up visits 2017-2019 in Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples regions**

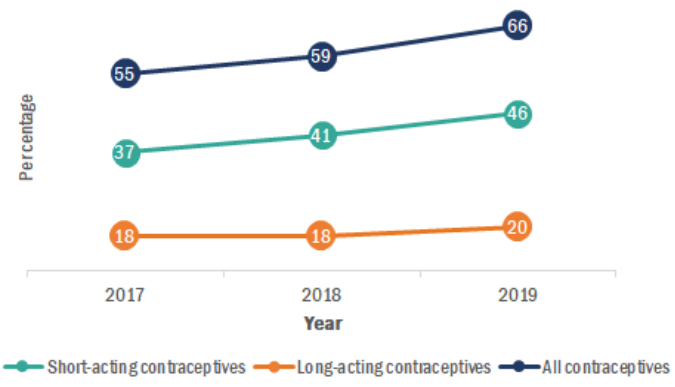
Year	Number of adolescent and youth girls	Contraceptive Use mean	Standard Error (SE)	Coefficient of variation (CV) %
2017	578	0.55	0.021	3.8
2018	869	0.59	0.017	2.9
2019	973	0.663	0.015	2.3

The average age of the respondents was 21 years (mean=21.27, standard deviations (SDs)= ±1.84), and approximately 86% of the respondents were in the 20-24- age category of all the respondents, 54% had some level of education (complete 1st & 2nd cycle education), of which 17% had completed their secondary and higher education. Thirty four percent of respondents have a family health guide, which is used to access information about family planning. Almost all respondents were married (98%). At the time of the study, 42% of the respondents were enrolled in a community-based health insurance scheme. Thirty percent of the study participants had discussion experience with Health Extension Workers or Health Development Armies (HEWs/ HDAs) about Adolescents and Youth health issues including family planning information. Most of the respondents (78%) reported that they received husband or partner support in using family planning (Table 2).

Table 2: **Background characteristics of respondents from Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples regions**

Variables	2017 to 2019 N (%)	2019 N (%)
Age (Years)		
15-19	370 (14.4)	143 (13.9)
20-24	2204 (85.6)	888 (86.1)
Educational status		
Not educated	431 (23.6)	206 (21.7)
Primary (Grade 1-4)	332 (18.2)	164 (17.3)
Primary (Grade 5-8) and above	1062 (58.2)	580 (61.1)
Marital status		
Currently married	2511 (97.7)	1010 (98.2)
Not Currently married	57 (2.2)	18 (1.8)
Having Family Health Guide		
Yes	863(33.7)	404(39)
No	1695(65.9)	619(61)
Enrolled in Community Based Health Insurance scheme	817 (41.8)	404 (39.)
Yes	1136 (58.2)	627 (60.8)
No		
HEWs/ HDAs discuss about Adolescents and youth health issues	767(30.0)	368(35.8)
Yes	1793 (70.0)	661(64.2)
No		
Women usually make their own decisions about health care	2256 (87.9)	930(90.6)
Yes	310(12.1)	97(9.4)
No		
Husband/partner support in using family planning	1994(79.6)	875(85.4)
Yes	511(20.4)	149(14.6)
No		

The proportion of adolescent and youth girls who received modern contraceptives increased steadily every year since 2017. The proportion of contraceptive use increased by 11 percentage points from 55% in 2017 to 66% in 2019 (Fig1). The pooled average increment per year during this project period was 5.5 percentage points. Overall, there was a significant change in contraceptive users over the three-year period with p-value < 0.0001 (95% CI, 9.5-19.3%). Out of the 1,476 contraceptive users during the three years period, 964 girls (65%) received injectables and 413 (28%) received Implanon. The two-percentage points increase in LARC use, from 18% in 2017 to 20% in 2019, was progressive but not statistically significant with p <0.139. Short-acting contraceptive (SAC) use increased from 37% in 2017 to 46% in 2019. Overall use of short-acting contraceptives also continuously increased over the three-year period. The proportion of contraceptive use among age group improve across the year, however, age 20-24 years had the highest users than 15-19 years adolescent and youth respondents (Fig 1).



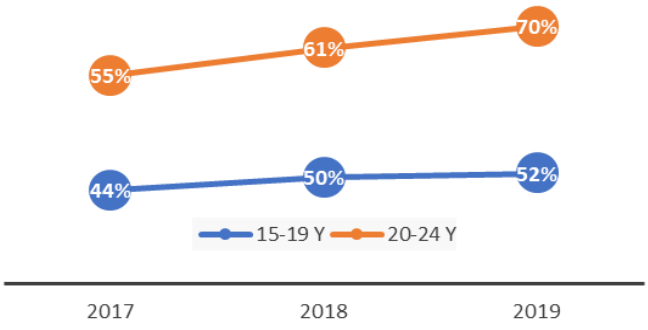


Figure 1: **Trends of modern CPR among adolescent and youth aged 15 to 24 years in Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples regions**

The proportion of injectable contraceptive users was consistently increased throughout the three-year period which increased from 34 to 44%. Implant use improved uniformly and not significantly, from 15% in 2017 to 19% in 2019 with a p-value< 0.703 (Fig 2).

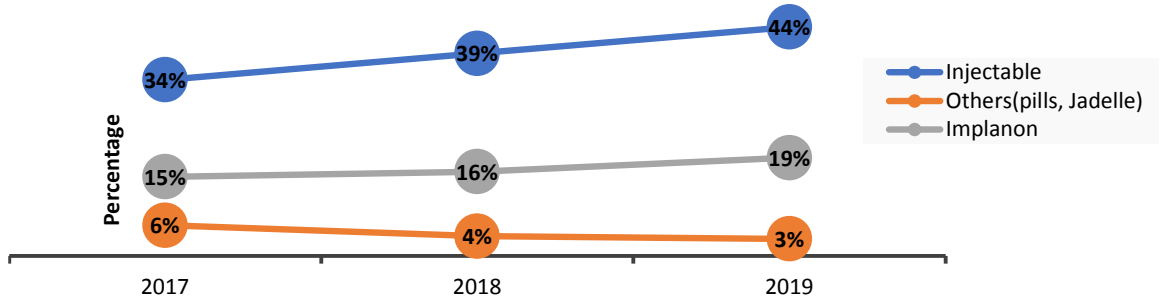


Figure 2: **Trends in contraceptive method mix among adolescent and youth aged 15 -24 years in Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples regions**

Factors affecting modern contraceptive use of adolescent and youth (2019 data)

Of the eight variables selected as factors of modern contraceptive use and considered in the bivariate analysis, four had a significant association (p<0.05) with modern contraceptive use and do not have a multicollinearity effect in a multivariable logistic regression model. With the expectation of educational status, all other predictors of contraceptive use (age group, discussion with health extension workers (HEWs)/ health development army (HDAs) about adolescents and youth health issues; women's decision-making power, and getting compassionate, respectful, friendly, and culturally acceptable care during pregnancy, labour and delivery, and postnatal period) had significant association with modern contraceptive use. Youths (aged 20-24) are more likely to use modern contraceptives than adolescents (aged 15-19) (AOR=1.82, 95% CI: 1.82, 2.78). Respondents who have had a discussion experience with HEWs/HDAs about adolescent and youth health issues had a significant association (p<0.05) with modern contraceptive use in multivariable analysis. Adolescents and youth who had experienced with making their own health decisions were three times more likely to uses modern contraceptives (AOR=3.2; 95% CI: 1.85-5.35) as compared to respondents who had no power to decide about their own health (Table 3).

Table 3: **Factors affecting modern contraceptive use of adolescent and youth (2019 data) in Amhara, Oromia, Tigray and Southern Nations, Nationalities and Peoples regions**

Factors	Currently using modern FP method		COR (95% CI)	AOR (95% CI)
	Yes (%)	No (%)		
Age in year (n=973)				
15-19	70 (52.2)	64 (47.8)	1	1
20-24	575(68.5)	264(31.5)	1.99[1.37,2.88]	1.82 **[1.82, 2.78]** *
Educational status(n=918)				
Not educated	110(55.8)	87(44.2)	1	1
Primary (Grade 1-4)	103(65.6)	54(34.4)	1.51[0.98, 2.33]	1.35 [0.81 ,2.26]
Primary (Grade 5-8) & above	397(69.6)	167 (30.4)	1.81[1.25, 2.62]	**1.56 [1.02 ,2.40]** *
Marital status (n=973)				
Currently married	638(66.6)	318(33.4)	2.24[0.86, 5.88]	
Not Currently married	8(47.1)	9(52.9)	1	
Having Family Health Guide (n=965)				
Yes	277(72.7)	104(27.3)	1.61[1.22,2.13]	1.39 [1.00 ,1.95]
No	364(62.3)	220(37.7)	1	1
Enrolled in Community Based Health Insurance scheme (n=830)				
Yes	261(67.4)	126(32.6)	1.07 [0.80, 1.43]	
No	292(65.9)	151(34.1)		
HEWs/ HDAs discuss about Adolescents and youth health issues during their visit (n=971)				
Yes	261(75.4)	85(24.6)	1.94[1.45, 2.60]	**1.84 [1.29, 2.63]** *
No	383(61.3)	242(38.7)	1	1
Women usually make decisions about their own health care(n=969)				
Yes	615(70.0)	263(30)	5.26[3.29 ,8.40]	**3.15 [1.86, 5.35]** *

No	28(30.8)	63 (69.2)	1	1
Received CRC care during pregnancy, labor and delivery, and postnatal period (n=744)				
Yes	400(68.4)	185(31.6)	1.98[1.38 ,2.83]	**1.69 [1.16, 2.48]** *
No	83(52.2)	76(47.8)	1	1

Discussion

This study revealed that the uptake of modern contraceptive methods among adolescents and youth in the project implementation regions has been increasing with a significant change over the three years period and the study highlighted factors that determine modern contraceptive use. This could be linked with the significant attention and prioritization given to improving access to and use of modern contraceptives among adolescents and youth in line with the country's commitment to FP2020 and the strategic direction designed as part of the Adolescent and Youth Health Strategy 2016-2020 (16). The positive change in uptake of modern contraceptives among the study group is also the result of the overall efforts of the government to increase access to FP services in rural areas where most of the population resides (17). This is also related to the increasing availability of youth friendly sexual and reproductive health service packages integrated into the public health facilities which has increased access to information and services to adolescents and youth (18).

The trend in uptake of modern contraceptive seen in this study was significantly higher than the increasing trend observed from 2000 to 2016 based on different studies conducted in sub-Saharan African countries comparing DHS data (including Ethiopia) (19,20). The trend in uptake of modern contraceptive by age improved from 2017-2019 years among adolescents and youth participates. The finding of this study supported by other similar evidenced documented (9,10). However, compared to age categories, adolescents and youth who were aged 15-19 years less likely to use modern contraceptive than 20-24 years. The findings comparable with a study conducted in Ghana and Ethiopia in which increasing age was significantly associated with increased uptake of FP (6,10,21). In this study adolescents and youth who had above secondary level of primary education had higher uptake of modern contraceptive than those lower level of education. And pervious study conducted in Zambia found older adolescent girls and those with higher levels of education were significantly more likely to use contraception compared to younger girls and those with lower levels of education (22). This could be explained by with the increasing age of women they are more likely to pursue their responsibility and have their own decisions about their health, in addition to increasing exposure to FP information as they mature.

Respondents who had a discussion experience with HEWs/HDA about adolescent and youth health issues had a significant association with increased contraceptive use. This is associated with increased sharing of information by HEWs/HDA on contraceptives, when to use and on where and how to access them. The study finding also aligns well with findings from Ghana where adolescents who are aware of their menstrual cycle or have visited a health facility for FP or other purposes are more likely to use contraceptive methods (21). Knowledge of the ovulatory cycle also had a significant relationship with female adolescents' use of contraceptives. Female adolescents who knew their ovulatory cycle were more likely to use any contraceptive compared to their counterparts who did not know (21). This repeats Khan et al. (23) finding that female adolescents who were visited by FP field workers were about two times more likely to use contraceptives than their counterparts who were not visited by FP field workers. This implies that visits to health facilities or being visited by health personnel, HEWs/HDAs members increases contraceptives use among female adolescents and youth.

Adolescents and youth who have experience with making their own health decision were three times more likely to uses contraceptives compared to respondents who had no power to decide about their own health. The finding is like other studies, which showed that adolescents who had the capacity to make reproductive health decisions, and good communication and negotiation ability with the husband were more likely to use contraceptives compared to those who do not (24-27). This might be the effect of power balance between wives and husbands/partners; however, newly married adolescent girls might hesitate or refrain from talking to her husband about contraceptive use which limits inter-spousal communication, this in turn negatively affects adolescent and youth girls' decision-making autonomy to receive contraceptive services.

The study found that, compassionate, respectful, friendly, and culturally acceptable care during pregnancy, labor and delivery, and the postnatal period had a significant association with contraceptive use. This finding shows that, as the quality of care improves, and services become patient cantered, the client's ability to decide about and use contraceptives following maternity care increases. Similar findings were observed, when clients perceived themselves as being treated well, having received quality services, having a good relationship with health care providers and being familiar with the health care system, they tend to continue contraceptives use after delivery (28-31). The positive effects of maternity services on contraceptive uptake might be explained by the counselling sessions and promotional efforts made during each visit.

Strength and Limitation of the study

This analysis highlights important findings to support evidence about use of modern contraceptive among adolescents and youth in Ethiopia and its associated factors, but the study was not without limitations. Unfortunately, almost all study participants (98%) were married adolescent and youth, because random follow up visit was taken one woman per household who is usually the elder/head of the household, this probably influence the high contraceptive use in general and the

effect of secondary data analysis. Furthermore, strong conclusions could not be drawn with respect to the causes of changes of modern contraceptive use because of the interrupted cross-sectional design of the survey; causality could not be established. In addition, the prevalence figures in this analysis are higher than in other community-based analyses, because this analysis focused only on project-intervention areas, while other data consider non-project areas, and it lacked a comparison group (from a non-project area).

Conclusions

Modern contraceptive use among adolescent and youth aged 15-24 years showed a remarkable increase between 2017 and 2019 in areas where the USAID Transform: Primary Health Care activity was implemented. Use of modern contraceptive was influenced by multiple opportunities for discussion with HEWs/HDAs about adolescent and youth FP. The underlying contributing factors for overall use of modern contraceptive are age, educational status and getting compassionate, respectful, friendly, and culturally acceptable care during pregnancy, labour and delivery, and postnatal period had significant association with contraceptive use. This might be due to integration of FP into other primary health care services, which improved service availability and readiness as well as method choice in the activity's intervention areas. The Adolescent and Youth family planning use indicate that increase family planning investment is necessary to meet demand for contraceptive methods and improve reproductive health status of adolescent and youth population.

Declaration

Competing interests:

The authors declare they have no competing interests.

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