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Modern contraceptive use among sexually active female adolescent: Trends and determinants insight from National Demographic and health survey

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Abstract

Background

The sexual and reproductive health of young people is a global priority. Access to sexual and reproductive health information and services will determine, the burden of adolescent pregnancies and unwanted pregnancies. Teenage pregnancy that has profound effects on the health and wellbeing of young women across their life course is a burning public health and a demographic challenge in Ethiopia. Contraceptive use allows girls to postpone motherhood and space births. However, little is known about the trends in contraceptive use and its determinant among girls aged 15 to 19 in Ethiopia. Therefore, this study was designed to identify factors associated with modern contraceptive methods use among sexually active adolescent girls in Ethiopia.

Methods

Four Ethiopian demographic and health survey data were used to examine trends of contraceptive methods use among sexually active adolescent girls. To identify factors associated with contraceptive use, the 2016 Ethiopian demographic and health survey data was used. The data was accessed from the demographic and health survey program data base and data for sexually active adolescent girls were extracted. Data analysis was done using SPSS version 21. Data were weighted for analysis. Descriptive analysis was used to describe independent variables of the study participants. And design effect was considered during analysis. Multivariable logistic regression model was used to identify factors associated with contraceptive use.

Results

Modern contraceptive use increased significantly from 5.9% in 2000 to 39.3% in 2016. The odds of contraceptive use were lower among female adolescent who had no education (AOR: .038; 95%CI: (.007 to 0.216), primary education (AOR: 0.112; 95%CI: 0.026 to 0.483). But the odds of contraceptive methods use were higher among adolescent living in rich wealth status AOR: 5.131; 95%CI: (1.795 to 14.669) and those told about family planning during their health facility visit (A0R: 3.700; 95%CI: 1.517 to 9.020)

Conclusion

Modern contraceptive use increased significantly among sexually active adolescent girls in Ethiopia. Wealth index, education, told about family planning during their health facility visit and partner occupation were factors associated with contraceptive use. Improving economic and educational status of young women may help improve contraceptive use in Ethiopia.

Introduction

Adolescents, individuals in the age range 15–19 years, who are central to sustainable development. This age group contributes up 16 per cent of the world's population and is one of the fastest growing cohorts. Adolescence is a critical phase in life for achieving human potential. It is a time of social and biological transition between childhood and adulthood that entails numerous milestones and opportunities, roles, and responsibilities (1–5). Given their demography, challenges during life transition and their importance in developmental goals, an explicit attention does not given to adolescent during millennium development goals(6)

Though, sustainable development goals recognized adolescents as a previously neglected group who must be addressed. In addition, the importance of adolescent's health was emphasized in the global strategy for women's, children's and adolescent's health(5, 7). Also, the 2016 lancet commission report on adolescent repeated the triple dividend of investing on adolescent. The investments will lead to high benefits that enable adolescents to become healthy adults who are equipped to contribute positive to societies (5, 8).

The sexual and reproductive health of young people is a global priority as the reproductive choices made by them have a massive impact on their health, schooling and employment. Access to sexual and reproductive health information and services will determine, the burden of adolescent pregnancies and unwanted pregnancies(3, 5, 9). In developing regions, about half of all pregnancies among girls aged 15–19 years are estimated to be unintended, and more than half of these unintended pregnancies result in abortion. Worldwide, about 15% unsafe abortions occur among girls under the age of 20 years annually. Early pregnancy and childbearing typically denote the end of formal education, and restricts opportunities for employment(10). Further, children born to adolescent girls are more likely to have low birth weight(11).

Available evidence suggests that, sexually active unmarried adolescents are not seeking to become pregnant, and married wish not to become pregnant at a young age or wish to delay a second pregnancy (12). All adolescents who want to prevent pregnancy are able to obtain and use modern contraceptives, that they are given their choice of a wide range of methods(13).

Despite having clear needs, adolescents and young adults often fail to access sexual and reproductive health care (5). Effective access and use of modern contraceptives can reduce a substantial number of adolescent girls experience the negative health consequences as a result of not using contraceptives (6).

In Ethiopia teen pregnancy is a burning public health and a demographic challenge. The proportion varies with geographical location, 15% in rural and 5% in urban. Teenage pregnancy has profound effects on the health and wellbeing of young women across the life course as a result, preventing teen pregnancies and fertility is among the priority issues of the Ethiopian Federal Ministry of Health. Reproductive choices among young women are especially important, as early childbearing can impair their health and limit their prospects for productive participation in society. Yet, unplanned pregnancies among adolescents happen despite the best of contraceptive intentions(6, 14).

Allowing girls to postpone motherhood, and space births, contraceptive use reduce unwanted pregnancies and the demand for abortion. However, little is known about the trends in modern contraceptive use and its correlates among girls aged 15 to 19 in Ethiopia. Understanding the contraceptive use status of such a large part of the population can provide meaningful evidence for health programming of the country. Hence, the objective of this further analysis is to examine trends and correlates of contraceptive use among sexually active adolescents to generate comprehensive evidence that will be useful to planners, policymakers, program managers, researchers, and all other stakeholders who are working to improve the health of adolescents in Ethiopia. Furthermore, it will assist in designing strategies and programs to better address coverage, quality, and equity issues at the country level as this paper sought to examine the trends of contraceptive using four Ethiopian DHS.

Data And Method

Data for this study are from the four consecutive 2000, 2005, 2011 and 2016 Ethiopian Demographic and Health Surveys [EDHS] conducted in all regions of the country with representative samples. EDHS typically adopt a two-stage sample design. Each region was stratified into urban and rural areas, which yielded 21 sampling strata. Samples of Enumeration areas [EAs] were selected independently in each stratum in two stages. The first stage involves randomly selecting clusters, EAs. Two hundred two, 202 urban and 443 rural clusters were selected. At the second stage a systematic sample of households is drawn from a listing of households in each of the sampled clusters-28 households per each cluster were selected. All women age 15–49 and men age 15–59 who are the usual members of the selected households are eligible to be interviewed in the survey.

The EDHS questionnaire covers topics related to sexual and reproductive health, including marriage, pregnancy, fertility, family planning, sexual behavior, maternal health, and STIs and HIV/AIDS, and etc. The information about contraceptive use was collected from all non-pregnant, fecund reproductive age women using pretested questionnaire (www.measuredhs.com). All the four EDHS (2000, 2005, 2011 and 2016) data were used in this study to describe the trend of contraceptive use among female adolescent in Ethiopia.

The 2016 EDHS data are employed to analyze the determinants of contraceptive use by background characteristics. The 2016 survey comprising 15,683 women aged 15– 49 and 12,688 men aged 15– 59. Among total interviewed women, 6401 of them were youth; 15–19 girls account 3498(22.3%) while 20–24 age groups were 2903(18.5%). Data for sexually active adolescent girls were extracted from the data set. Of the total adolescent girls participated in the study, 518 them were sexually active in the last four weeks before data collection. The data set was requested from the Measure DHS program on April 1, 2019. An approval was then granted to download the data.

This report examines one of the important indicators for adolescent female, contraceptive use by sexually active adolescent, regardless of their marital status as denominator. Some of the selected independent variables include: age, educational status, religion, ethnicity, marital status, working currently, wealth

status, visiting of health facility, hearing about family planning information from radio, TV, newspaper, place of residence and region of residence, told of family planning at the health facility. Some of these study variables were re-coded to suit the purpose of the study while some were used as they are in the original data set. For instance, religious affiliation was re-coded into orthodox Christian, other Christian and Muslim. Wealth status was also recoded into poor, average and rich by combining “poorer” and “poor” for poor and “rich” and “richer” for rich. Highest educational level status was recoded into No education, Primary, and second /higher by combining secondary and higher.

The data were analyzed using SPSS version 21. Descriptive analysis was used to describe background characteristics of the study participants. Binary and multiple logistic regressions were employed to identify candidate variable and examine the determinants of sexually active adolescent contraceptive use respectively. Adjusted odds ratios with 95% confidence interval were presented for significant variables in the model in order to estimate the likelihood of contraceptive use among the various categories of female adolescents. Standard EDHS sample weights are applied in the data analysis to account for the unequal probability of selection in the sample and nonresponse. Therefore, all figures and tables in the report depict weighted numbers and percentages.

Operational definition

Adolescent

an individual in the age group 15–19

Sexually active

Those respondents who reported that they have had sexual intercourse, irrespective of their marital status in the last four weeks

Contraceptive use

Respondents who at the time of interview said they or their partner are using any contraceptive method to delay or avoid becoming pregnant. It was dichotomous denoting users and nonusers of contraceptive methods.

Current use of modern contraception: Current users of modern contraceptives include women who said that they or their partner are currently using any of the following modern methods of contraception: female sterilization, male sterilization, pill, injectable, intrauterine device, implant, condom, and emergency contraception at the time of survey.

Results

Socio demographic characteristics of the adolescents

This section describes the distribution of young, sexually active adolescent girls (N = 504) by their selected background characteristics by using 2016 EDHS data set. The mean age of the respondents was 17.73(± 1.124). The mean ages at first cohabitation and first sexual intercourse were 15.59 (± 1.734) and 15.63 (± 1.751) years respectively. Among sexually active adolescents in the study, about half, 225 (47.3%) of the cohabited at age 15 years and less

Three fifth (60.6%) of the sexually active adolescent girls were attained primary education. Most, 87.3% (440) of them were from rural residents, almost nine in ten [91.0%] of them were married, 125 (24.8%) of them were from poorer socioeconomic group, 211(41.9%) were Muslim by religion and 199 (39.5%) were Oromo by Ethnicity. More than three fourth (79.7%) of girls were not working at the time of the survey (Table 1)

Table 1
Distribution of sexually active female adolescents age 15–19 by their background characteristics, Ethiopia DHS 2016

Variable		Frequency	Percent
Age category 15–17		161	32.0
18–19		342	68.0
Education	No education	136	28.4
	Primary	305	60.6
	Secondary and higher	56	11.0
Place of residence	Urban	64	12.7
	Rural	440	87.3
Marital status	Married	458	91.0
	Never married	23	4.5
	Divorced/separated	23	4.5
Wealth index	Poorest	125	24.8
	Poorer	105	20.9
	Middle	97	19.3
	Rich	95	18.7
	Richest	82	16.4
Religion	Muslim	211	41.9
	Orthodox Christian	201	39.9
	Other Christian	90	17.9
	Other	2	0.3
Ethnicity	Oromo	199	39.5
	Amhara	155	30.7
	Tigraie	34	6.8
	Sidama	22	4.4
	Somalie	17	3.3
	Walaita	12	2.4
	Gamo	10	1.9

Variable		Frequency	Percent
	Guragie	8	1.5
	Other	48	9.4
Respondent occupation	Not working	300	59.6
	Agriculture	102	20.3
	Sales	46	9.1
	Others	55	11
Currently working	No	402	79.7
	Yes	102	20.3
Husband Occupation	Not working	35	7.6
	Agriculture	301	65.8
	sales	33	7.2
	Professional/technician	16	3.4
	Others	74	16.1
Husband Education	No education	147	32
	Primary	220	48.1
	Secondary and higher	91	19.9

Exposure to Family planning information, knowledge about fertility and contraceptive method

Among sexually active adolescent girls, only 18.1, 13.4 and 4.2 percent of them reported that they had heard family planning messages on radio, watched on TV and read on newspaper/magazine respectively in the last few months before the survey. Family planning related text message on mobile had been received only by 1.1% girls in the last few months. More than three fourth (79.9%) girls reported that they were not visited by health workers in the last 12 months before the survey. Out of those who were visited by fieldworker, only 9.9% of fieldworker talked about family planning. In addition, among 211(42%) those visited health facility in the last 12months, only 77(15.3%) told about family planning.

The 2016 EDHS survey indicated that sexually active adolescent girls in Ethiopia had limited knowledge about fertile period. Only 15% correctly knew the ovulatory period and 18.8% do not knew a time when women can get pregnant. Almost all, 494(98%) of the sexually active adolescent girls knew about contraceptive methods. Regarding decision making about contraceptive use, in the majority, 133 (78.4%) of the cases decision on contraceptive was made jointly by respondent and husband (Table 2)

Table 2
Distribution of adolescents age 15–19 by their exposure to family planning information, knowledge about fertility and contraceptive method, Ethiopia DHS 2016

Variables		Frequency	Percent
Heard family planning message on radio on last few months	Yes	91	18.1
	No	413	81.9
Heard family planning messages on TV on last few months	Yes	68	86.6
	No	436	13.4
Read about family planning messages on newspaper/magazine last few months	Yes	21	4.2
	No	483	95.8
Received family planning text message on mobile phone	Yes	5	1.1
	No	498	98.9
Visited by field worker in the last 12 months	Yes	101	20.1
	No	402	79.9
Field worker talk about family planning	Yes	50	9.9
	No	51	10.2
Visited health facility in the last 12 months	Yes	211	42.0
	No	292	58.0
Told about family planning in the health facility	Yes	77	15.
	No	135	26.7
Knowledge of ovulatory period	During her period	37	7.3
	After period ended	148	29.4
	Middle of the cycle	76	15.0
	Before period begins	33	6.5
	At any time	116	23.0
	Do not know	95	18.8
Knowledge about any contraceptive method	Knows no method	7	1.3
	Knows only traditional method	4	0.7
	Knows modern method	494	98.0

Variables		Frequency	Percent
Number of living children	No child	308	61.1
	One child	173	34.4
	Two and more	22	4.5
Decision maker on contraceptive use	Mainly Respondent	34	19.7
	Mainly husband	3	1.9
	Joint decision	133	78.4

Trends In Contraceptive Use

Most national and international targets are based on modern methods, and there was a small proportion of traditional methods of contraception use among sexually active adolescent. As a result, this trend analysis was focused only on modern methods of contraception. Figure 1 below shows the percentage of sexually active adolescent girl age 15–19 who are currently using modern methods of contraception from 2000 to 2016. As shown in the figure the trend of modern contraceptive use among sexually active female adolescents increased from 5.9 percent in 2000 to 39.3 percent in 2016 indicating more than more than a 6-fold increases. The proportion of users of modern method has significantly increased by 8.7 percentage points during the survey period from 2000 to 2005. The use of modern contraceptive methods nearly doubled between 2005 and 2011. The proportion of adolescent age 15–19 years who have had uses modern contraception methods were continuously increased from 2005 to 2016, and more than 15 percentage points increment between 2011 and 2016. (Fig. 1)

Differentials in modern contraceptive use by background characteristics

Figure 2 shows the differentials in the proportion sexually active adolescent girls by selected background characteristics in 2016. The proportion of modern contraceptive use varies significantly with age, place of residence, educational attainment of respondent and partner, and household wealth status.

In all four surveys modern contraceptive use was more common in urban areas, among adolescents from highest wealth status and girls their husband had attended secondary and higher educational level. In 2005, 2011, and 2016, modern contraceptive use was higher among adolescent girls with more education (secondary and higher). However, percent of girls with secondary and higher educational level and using a modern method has significantly declined by 3 and 5 percentage points between 2005 and 2011, and 2011 and 2016 respectively. The lowest proportions of modern contraceptive users are among adolescent girls from poor household (24.3%) and adolescent in the age category of 15–17(25.9%) according to 2016 survey year (Fig. 2).

Currently Used Modern Methods Mix

According to Ethiopian DHS of 2016, more than one in four (42.2%) of adolescent girls started sexual intercourse at and before age 15 and knowledge about contraceptive among sexually active adolescent girls is almost universal (98percent). However, the report showed that only 199 (39.6%) of adolescents who enter into a sexual relationship are currently using any form of contraceptive method. Also, among those who use contraceptives, a significant proportion 198 (39.3%) of them use modern contraceptive methods and more than one fourth, 147 (29.1%) of them were using injectable method. Injectable contraceptives have become very popular among young women and methods such as condoms and pills are less popular. Regarding long acting method, less than ten percent (6.8%) of them use implants/Norplant. (Fig. 3)

Figure 4 shows the different types of contraceptives among users of any modern method of contraception for 2000 and 2016. There is a slight change in the pattern of use over time. The trends in mix of currently used modern methods indicated promising improvement. The share of long acting reversible contraceptive method, Norplant/implants among sexually active adolescent girls has significantly increased by more than 6 percentage points between 2000 and 2016 and more than three times between 2011 and 2016 (from 1.9 to 6.3 percent). Regarding the observed shifts in the prevalence of short-term methods, the share of injectable methods of contraception has significantly increased by more than 25 percentage points from 2000 to 2016.

Factors Associated With Contraceptive Use Among Sexually Active Adolescents

In bivariable logistic regression eleven variables had significant relationship with female adolescent contraceptive use. These include respondent and partner educational and occupational status, currently working status, wealth status, visited by field worker in the last 12 months, told about Family planning at a health facility, place of residence, heard family planning messages on radio on the last few months, and heard family planning messages on TV on last few months. However, in the multivariable logistic regression there is no significant relationship between adolescent contraceptive use and type of place of residence, respondent occupation, heard family planning message on radio on last few months, heard family planning messages on TV on last few months and visit of health facility.

The odds of contraceptive use were nearly 96% (AOR: .038; 95%CI: (.007 to 0.216) and 89% (AOR: 0.112; 95%CI: 0.026 to 0.483) less likely among sexually active female adolescent who had no education and primary education respectively compared to their counterparts who had secondary or higher education. Adolescent living in rich wealth status were five times more likely use contraceptive as compared to adolescents in poor wealth status (AOR: 5.131; 95%CI: (1.795 to 14.669). The odds of contraceptive use were nearly 99% less likely among sexually active adolescent girls those their partner is working sales as compared to their counterparts (not working) (AOR:0.013; 95%CI: (0.000 to 0.335). The odds were 4 times

among respondents who had visited health facility and told about family planning compared to their counterparts who had not told about FP during their visit (A0R: 3.700; 95%CI: 1.517 to 9.020) (Table 3)

Table 3
Bivariate and multivariate logistic regression model showing predictors of contraceptive use among sexually active adolescents, 2016 EDHS

Variables and its category		COR [95% CI]	AOR [95% CI]
Adolescent age category	15–17	.408(.270,.616)	.510(.1961.330)
	18–19	1	
Place of residence	Urban	3.256(1.882, 5.632)	.555(.0793.904)
	Rural	1	1
Heard family planning on radio last few months	Yes	2.365(1.4913.750)	1.015(.3672.806)
	No	1	1
Heard family planning on TV last few months	Yes	3.323(1.9435.682)	.215(.0361.289)
	No	1	1
Told about FP at health facility	Yes	3.083(1.7215.523)	3.700(1.5179.020) *
	No	1	1
Husband Education	No education	.422(.247.722)	1.024(.2843.689)
	Primary	.445(.271.731)	.369(.1121.219)
	Secondary & higher	1	1
Wealth Index	Poor	1	1
	Average	1.886(1.135, 3.134)	.391(.118,1.295)
	Rich	4.701(3.070, 7.198)	5.131(1.79514.669) *
Respondent occupation	Not working		
	Agriculture	1.407(.8912.222)	1.841(.6325.359)
	Sales	2.730(1.4475.154)	2.599(.38717.455)
	Others (skilled, unskilled manual)	1.048(.5771.902)	.468(.0852.587)
Respondent education	No education	.206(.106.399)	.038(.007.216) *
	Primary	.369(.203.669)	.112(.026.483) *
	Secondary and above	1	1
Currently working	Yes	1.797(1.1602.784)	2.343(.5739.582)

* Significant value at 0.05

Variables and its category		COR [95% CI]	AOR [95% CI]
	No	1	1
Partner occupation	Not working	1	1
	Agriculture	2.539(1.0646.063)	.138(.0101.929)
	Sales	1.586(.5104.934)	. 013(.000.335) *
	Professionals/technician	3.125(.84511.564)	.200(.0066.919)
	others	4.424(1.77711.017)	.397(.0246.566)
* Significant value at 0.05			

Discussion

The risks of pregnancy are greater at young maternal ages. The association between poor contraceptive use and teenage pregnancy is supported by studies suggesting that contraceptive use can prevent unintended pregnancy and early childbearing and their consequences. (15–17). Ensuring access and choice to family planning to improve maternal and neonatal health is crucial.

This paper examined the trend and correlates of contraceptive use among female adolescents aged 15 to 19 in Ethiopia, using national demographic and health survey. We found that the number of young women using contraception is increasing from time to time over the last decade and knowledge about contraceptive method among adolescents is almost universal in Ethiopia. However, more than three fifth of the sexually active female adolescents are still not using the contraceptive, which could put them in risks for teenage pregnancy, unintended birth, adverse birth outcomes and health outcomes. This figure was slight lower than the report on patterns and trends in adolescents' contraceptive use in developing countries, 42–68% of married and unmarried sexually active adolescent females in all the Latin American countries (except Guatemala and Haiti) and in Bangladesh, Indonesia, Kazakhstan and Turkey were currently using contraceptives. However, among the African countries, contraceptive prevalence was 20–35% except Namibia in which it reached at least 40%(18).

Similarly, only one third of adolescents use contraceptive from Zimbabwe (35%) and Malawi (33%)(16). Finding from the current study was slightly higher compared to figures from Nepal. In Nepal 23.1 % of married women age 15-19 currently uses any method of contraception, (14.5% modern contraceptive use and 8.6% traditional method(19)

There were significant variations in the use of modern contraception by demographic and socioeconomic characteristics of adolescent girls in Ethiopia. According to this study, there is significant inequality among sexually active adolescent regarding modern contraception use by their education, partner's occupation, wealth status and had been told information about family planning at health facility. Adolescents who have secondary and higher educational level, who had told about Family planning at

health facility, and who are in the highest wealth quintiles use significantly more modern contraception as compared to their peers who have not attended formal education, had not told about Family planning at the health facility, or who belong to the lowest wealth quintiles.

This study revealed that respondent education was an independent predictor for contraceptive use among sexually active female adolescent. This finding was similar with a study from Nigeria and Burkina Faso that stated that, prevalence of contraceptive use among adolescents with a secondary-level education or above was 5.9 and 2.4 times higher in Nigeria and Burkina Faso respectively than those who had completed only primary-level education(4). Similarly, the study conducted in Ghana identified education as a determinant for contraceptive use, the odds of contraceptive use were 7.39 and 11.53 times among female adolescents who had primary and secondary or higher education respectively compared to their counterparts who had no formal education [prevalence and correlates of(20). Educational status was also a significant predictor of contraceptive use in Bangladesh- low contraceptive use among illiterate female adolescents was reported (21). This may be due to the fact that educated women are more likely to appreciate the returns/dividend that contraceptives use has on their lives. Also educated women may have a plan to pursue highest career with in their education as a result they want to delay their childbearing time.

The likelihood of contraceptive use among the female adolescents increased significantly with the increase in their household economic status. As a result, female adolescents in the household with highest wealth index were more likely to use contraceptives than their poor counterparts. This finding was in line with DHS analysis from three African countries: Nigeria, Burkina Faso and Ethiopia, across all three countries, there is a significant equity gap in modern contraception use because of wealth index(4). Similarly, the analysis conducted using the 2016 Ethiopian demographic and health survey to identify factors associated with long acting and permanent contraceptive methods use showed that women in the richer wealth index were more likely use long acting and permanent contraceptive methods compared to those in poor wealth index(22). This may be for the reason that most of the small resources obtained from the petty jobs done by women and their spouses in poor households are diverted to take care of the family and less is shifted to the health of the mothers themselves. As a result, poor household preferred not to use the service as they encountered difficulties to cover direct and indirect costs incurred in seeking the services(23)

This study also identified that the occupation of husbands was determining the use of contraception. Sexually active adolescent women whose husbands' occupation is sales workers practice less contraception methods than those husbands are not working. The possible reason for this is that, if the husband has no work, the possibility of being at home is there as a result; during home to home visit health extension workers may inform him to support his wife for contraceptive use. This access to information from fieldworkers offers the opportunity to for the husband to influence his wife to use family planning. In another way round due to economic insecurity, husband did not work, women may motivate to use contraceptive to space or limit the birth because there are inadequate resources at home.

Further, those had been told about family planning during health facility visit was a significant predictor for contraceptive use. Contraceptive use among respondents who had told about family planning information was 3.7 times compared to their counterparts who had not told about family planning information at the health facility. The existing body of literature, considered in parallel with our own findings, strongly indicated that, adolescents' girls' access to family planning information via different sources increases use of modern contraceptive methods. For instance, study from Nigeria were found that hearing about family planning on mass media was associated with the use of modern contraceptives among these adolescents(24). In addition, Bangladesh it was highlighted that being frequently visited by Family planning worker resulted the more they respond favorably to their use of contraception(20). Access to information play a significant role in the use of contraception as it has the capacity to raise an individual's awareness, and influence their attitude. In addition, the information could guide people to make an informed decision to use the services. Our study has limitations, the data is from a cross-sectional survey and unable to establish any causal relationship between our outcome of interest (contraceptive use) and the covariates of interest.

Conclusion And Recommendation

There is an increment in trend of modern contraceptive use among sexually active female adolescents during the 2000 to 2016 EDHS. With nearly doubled between 2005 and 2011. Almost all of the girls know about modern contraceptives, but this high knowledge did not translate into its use as only two fifth uses it. Injectable was the most widely used contraceptive method. Respondent education, partner's occupation, wealth status and had been told information about family planning at health facility were significant determinants for contraceptive use.

As adolescent populations continue to grow, governments must develop more targeted strategies for improving socioeconomic and adolescents' education which might be contribute to enabling them to use contraceptive and prevents related complications. Considering the fact that contraceptive knowledge does not necessarily translate into usable, qualitative studies, are needed to understand why high knowledge levels are not associated with high usage patterns

Abbreviations

AOR: Adjusted odd Ratio, COR: Crude odd Ratio, DHS: Demographic and Health Surveys, EAs: Enumeration areas, EDHS: Ethiopian Demographic and Health Surveys , HIV/AIDS: Human immunodeficiency virus infection and acquired immune deficiency syndrome , IUCD: Intra-Uterine Contraceptive Device, SPSS: Statistical Package for the Social Sciences, STIs: Sexual transmitted infections , TV: Television

Declarations

Ethics approval and consent to participate:

Manuscript has adhered to the ethical standards .The data set was requested from the Measure DHS program. An approval was then granted to download the data.

Consent for publication:

Not applicable

Availability of data and materials:

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

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AK, SB, AK, YB, Protocol development, AK and SB data analysis and Manuscript preparation and all authors read and approved the final manuscript.

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Availability of data and materials: The raw data available at https://dhsprogram.com/publications/publication-fr328-dhs-final-reports.cfm

References

1. Report AC. World Population Monitoring. Adolescents and Youth. New York: A Concise Report United Nations; 2012.
2. Engelman R, Rosen JE, Wong S. 1.8 billion. 2014.
3. Institute of Medicine 2005. Growing Up Global: The Changing Transitions to Adulthood in Developing Countries. Washington, DC: The National Academies. Press. https://doi.org/10.17226/11174.

4. Hounton S, Barros AJD, Amouzou A, Shiferaw S, Maı A, Akinyemi A. Patterns and trends of contraceptive use among sexually active adolescents in Burkina Faso, Ethiopia, and Nigeria: evidence from cross-sectional studies. 2015;1(October):1–11.
5. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Nicholas B, et al. HHS Public Access. 2018;387(10036):2423–78.
6. Chandra-mouli V, Parameshwar PS, Parry M, Lane C, Hainsworth G, Wong S, et al. A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it. 2017;1–13.
7. Nations U. Transforming our world: the 2030 agenda for sustainable development. 2015.
8. Sheehan P, Sweeny K, Rasmussen B, Wils A, Friedman HS, Mahon J, et al. Health Policy Building the foundations for sustainable development : a case for global investment in the capabilities of adolescents. Lancet. 2017;6736(17).
9. World development report. Generation N. Next generation. 2007.
10. Darroch JE, Woog V, Bankole A, Ashford LS. ADDING IT UP : Costs and Benefits of Meeting the Contraceptive Needs of Adolescents. 2018;(May 2016).
11. Gibbs CM, Wendt A, Peters S, Hogue CJ. The Impact of Early Age at First Childbirth on Maternal and Infant Health. 2012;26:259–84.
12. Cleland J, Ali MM, Shah I. Trends in Protective Behaviour among Single vs. Married Young Women in Sub-Saharan Africa: The Big Picture. 2006;8080.
13. Biddlecom A, Riley T, Darroch JE, Sully E, Kantorová V. Future Scenarios of Adolescent Contraceptive Use, Cost and Impact in Developing Regions. 2018;(August).
14. Shelah S, Bloom MEASURE, Evaluation, Elly Arnof.Department of Maternal & Child Health. University of North Carolina at Chapel Hill. June 2011.
15. Santelli JS, Lindberg LD, Finer LB, Singh S. Explaining Recent Declines in Adolescent Pregnancy in the United States : The Contribution of Abstinence and Improved. Contraceptive Use. 2007;97(1):150–6.
16. Early IN. SEXUAL. AND REPRODUCTIVE HEALTH IN EARLY AND LATER ADOLESCENCE : DHS DATA ON YOUTH AGE 10–19 DHS COMPARATIVE. 2017;(August).
17. Potter J, Trussell J, Moreau C. Trends and determinants of reproductive health service use among young women in the USA †. 2009;24(12):3010–8.
18. Tsui AO, Trevitt JL, Blanc AK, Gates M. Patterns and Trends in Adolescents ' Contraceptive Use and Discontinuation in Developing. Countries Comparisons. 2009;35(2):63–71.
19. Further DHS, Reports A. Youth Health in Nepal: Levels, Trends, and Determinants. January 2019 (116).
20. Nyarko SH. Prevalence and correlates of contraceptive use among female adolescents in Ghana. 2015;4–9.

21. Hossain ME, Hoq MN. Determinants of Contraception Use among Female Adolescents in Bangladesh Determinants of Contraception Use among Female Adolescents in Bangladesh. 2012;(September).
22. Fekadu GA, Omigbodun AO, Roberts OA, Yalew AW. Factors associated with long acting and permanent contraceptive methods use in Ethiopia. 2019;3:1–11.
23. Nakirijja DS. iMedPub Journals Socio-economic Determinants of Access to and Utilization of Contraception among Rural Women in Uganda : The Case of Wakiso District Background of the Research. 2018;1–20.
24. contraceptive use among female adolescents in rural Nigeria : Does exposure to family planning messages matter ? A cross-sectional study [version 2 ; peer review : 1 approved]
Chima V, Alawode OA, Peter S, Kibira S. contraceptive use among female adolescents in rural Nigeria : Does exposure to family planning messages matter ? A cross-sectional study [version 2 ; peer review : 1 approved] Gates Open Research This article is included in the International. 2019;1–13.

Figures

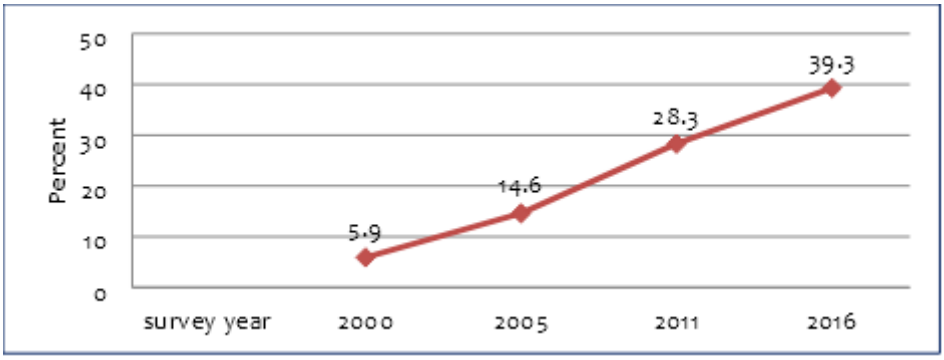

Figure 1

Trends in use of modern contraceptives among sexually active adolescent, Ethiopia DHS 2000-2016

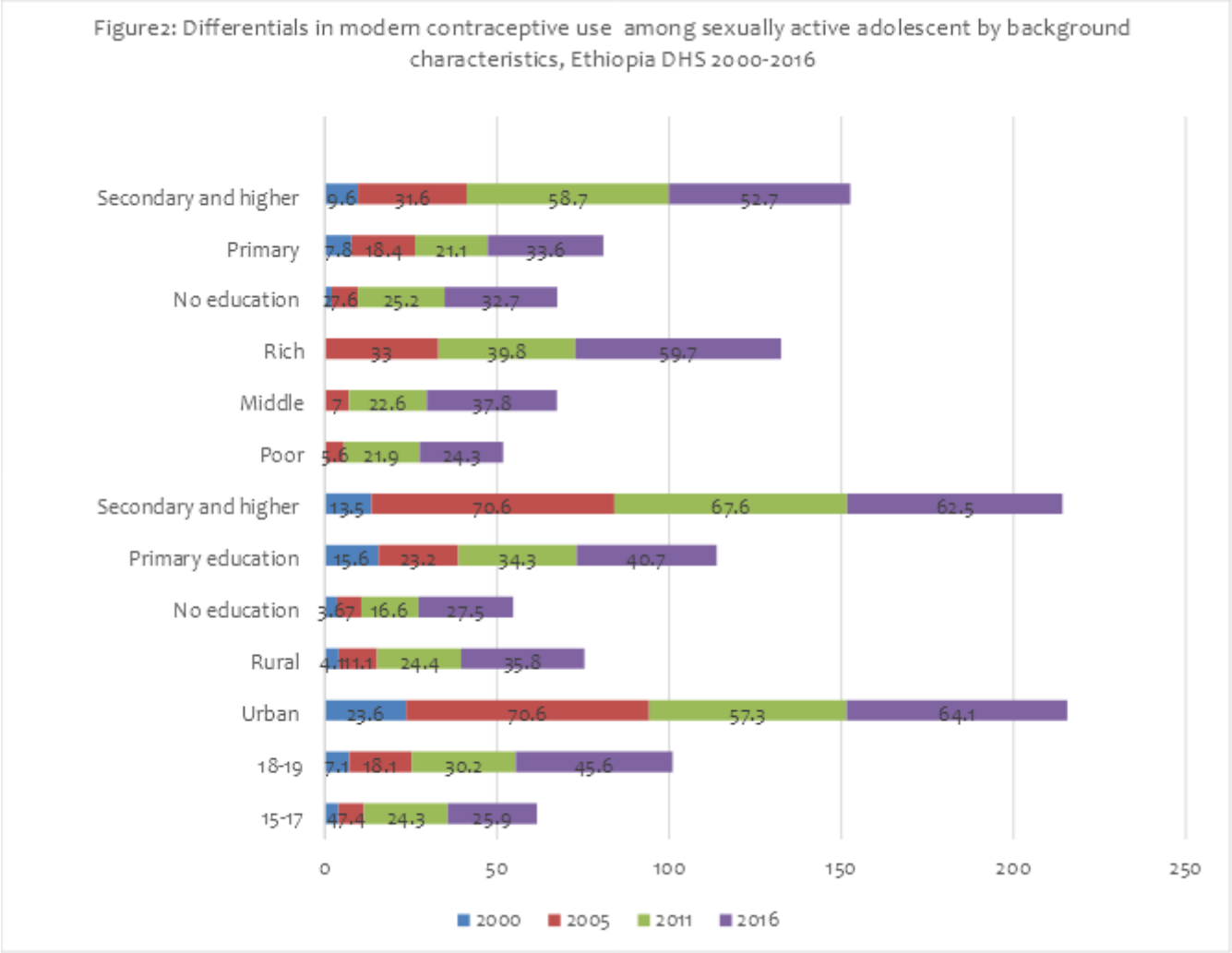

Figure 2

Differentials in modern contraceptive use among sexually active adolescent by background characteristics, Ethiopia DHS 2000-2016

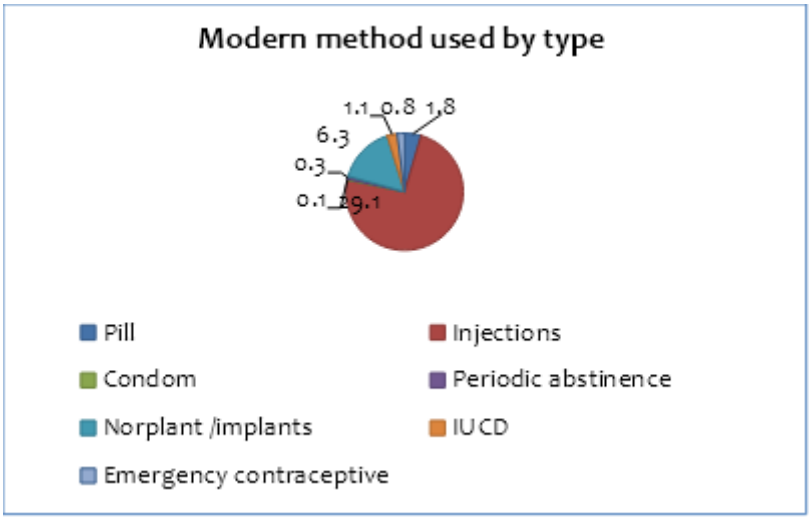

Figure 3

Percent distribution of methods of contraception currently used by sexually active girls' age 15- 19, Ethiopia DHS 2016

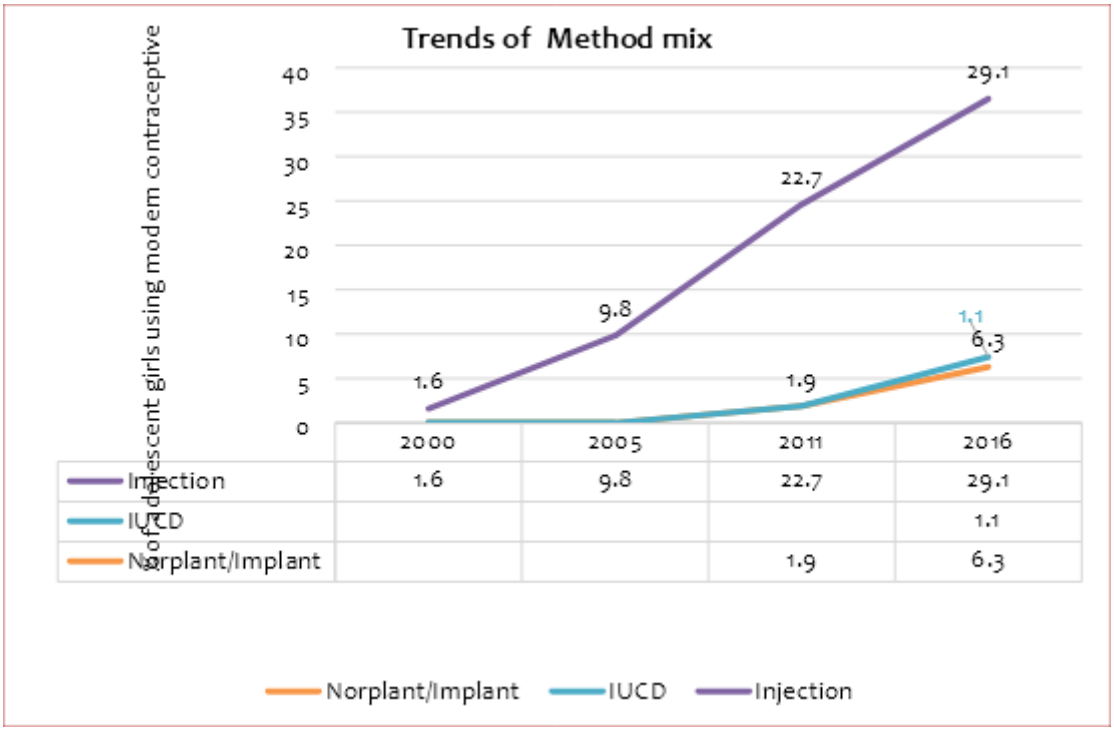

Figure 4

Trends in method mix contraceptive use among sexually active adolescent, Ethiopia DHS 2000-2016