

# Association of Effective Spousal Family Planning Communication with Couples' Modern Contraceptive Use in Harar, Eastern Ethiopia

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**Background:** Spousal family planning communication plays an important role in making better reproductive health decisions and in increasing the use of modern contraceptive methods. The objective of the current study is to examine the association of spousal family planning communication in its broader context with current modern contraceptive use among couples.

**Methods:** A community based cross-sectional survey was conducted in twelve kebeles of Harar Urban Health and Demographic Surveillance System. A total of 2700 currently married couples of whose wives were in the reproductive age participated in the study. The selection of the study participants was made using simple random sampling and data were collected using an interviewer administered structured questionnaire and analyzed using Stata version 12.

**Results:** The level of current modern contraceptive use was 57.1% (95% CI: 0.53, 3.39). Effective spousal family planning communication was significantly associated with current modern contraceptive use even after controlling for socio-economic and demographic variables. Socio-economic and demographic variables such as religion of couples, number of couples' living children, household monthly income, couples' family planning approval and women's counseling about family planning by health workers were significantly associated with current modern contraceptive use.

**Conclusion:** Policies and programs aimed at increasing contraceptive prevalence should properly address the importance of spousal communication about family planning and integrate men into family planning programs to facilitate and enhance couples communication skills.

**Keywords:** effective communication, Poisson regression, Harar Urban HDSS, current contraceptive use

## Background

Spousal family planning communication plays an important role in making better reproductive health decisions, number of children, timing of births, understand advantage and disadvantage of family planning methods, choice of contraceptive methods, and increased contraceptive use.<sup>1,2</sup> Spousal communication about family planning also enables women to understand about their husbands' attitude towards family planning and hence encouraging contraceptive use. The importance of spousal communication is often emphasized in family planning programs and research. In some researchers' views, it is considered the first step in a rational fertility decision-making process.<sup>3</sup>

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Literatures have revealed that there is a positive association between spousal communication about family planning and couples contraceptive use.<sup>3–5</sup> Moreover, the extent and frequency of spousal communication between couples matters in the adoption of modern contraception.<sup>6–9</sup> Hence, the extent and frequency of communication among couples concerning fertility and family planning appears to be an important determinant and predictor variable of current use of family planning methods. Literature also indicated that a husband's approval of family planning methods and support is a good predictor of future practice and continued use of contraceptives by women.<sup>10</sup>

In Ethiopia, although the level of knowledge and approval of family planning methods is high,<sup>11–13</sup> the actual use of contraceptive methods is low. This highlights the importance of promoting family planning services by identifying the barriers to avert the adverse consequences incurred by Ethiopian women and children. There are many studies in Ethiopia which focused on identifying the socioeconomic, cultural and demographic factors that influence the use of modern contraceptive methods.<sup>14–16</sup> But the role of husband-wife communication on family planning, particularly the role of spousal family planning communication in its broader context, has been given little attention by family planning studies.

There are some studies which tried to assess the association between spousal family planning communication and couples' contraceptive adoption<sup>11,17,18</sup> and these studies revealed that spousal communication promotes contraceptive use. However, methodologically, these studies depended on the narrow definition of communication which takes spousal family planning discussion as the only measure of communication. Practically, however, effective spousal family planning communication should be measured using the broader definition involving the three dimensions of spousal family planning communication, i.e., discussion between husband and wife about family planning, agreement between partners regarding approval of family planning and fertility preferences and each spouse's perceptions of the attitudes of his or her partner<sup>19</sup> towards family planning to give a comprehensive picture of communication and relate it with contraceptive use. Moreover, studies that collect couple's data are rare in Ethiopia. Thus, the current study examines the association of spousal family planning communication in its broader context with current modern contraceptive use among couples using data collected from both husband and wife.

## Methods

### Study Setting

This study was conducted in Harar Urban Health and Demographic Surveillance System (Harar Urban HDSS) which is located in Harar town, Harari region, Eastern Ethiopia. Harar town is located at a distance of 510 km from Addis Ababa, the national capital and it is the capital city of the Harari region. The region is boarded with different districts of the Eastern Hararghe zone of Oromiya regional state and divided in to 36 kebeles (19 urban and 17 rural kebeles).<sup>20</sup> According to the 2013 population projection, the total population of the region for the year 2017 was estimated at 244,711 of which 49.5% were females and 55.7% were urban dwellers.<sup>21</sup>

Originally Harar Urban HDSS was established in Harar town to represent the Eastern part of Ethiopia and Harar town was selected among other towns in the Eastern part of Ethiopia due to the diversity of its population in ethnicity (there are around 50 ethnic groups in the town) and diversity in terms of religious affiliation of the population.<sup>22</sup> Moreover, 12 out of 19 kebeles (sub-districts, smallest administrative unit in Ethiopia) in the town are included in Harar Urban HDSS.

In 2013 the total population of Harar Urban HDSS was 30,055 (52.2% females and 47.8% males) and the sex ratio was 91.4%. Crude birth rate was 20.3 births per 1000 midyear population, general fertility rate was 64 births per 1000 women of reproductive age and total fertility rate was 1.9 births per woman in 2013.<sup>23</sup>

### Study Design

A community based cross sectional study was conducted in Harar Urban Health and Demographic Surveillance System from September 2018 to March 2019.

### Source and Study Population

The source and study populations for this study were all married couples of whose wives were in the reproductive age (15–49 years) and non-pregnant during the data collection period in Harar Urban HDSS.

### Sample Size and Sampling

The sample size was computed using Minitab version 17 statistical software. Including 10% for non-responses, the final sample resulted in 2874 couples. This sample was distributed among the 12 kebeles according to the proportion of currently married couples whose wives were in the reproductive age and non-pregnant at the survey. All the

12 kebeles of Harar Urban HDSS were included in the current study. The complete list of currently married couples whose wives were 15–49 years (reproductive age) and non-pregnant was taken from Harar Urban HDSS database and used as a sampling frame. Married couples were then randomly sampled from each kebele, based on a computer generated random number list using the allocated sample size.

## Data Collection

Data was collected using structured questionnaires. Separate questionnaires were administered for male and female respondents but with similar contents including socio-economic and demographic characteristics (age, duration of current marriage, ethnicity, religion, education, occupation, number of living children, desired number of children, household ownership of assets and household income), knowledge/attitude to family planning variables (knowledge of family planning methods, attitude towards family planning, attitude towards large family size and approval of family planning), couples' participation in family planning use decision and their exposure to family planning message through mass media such as radio, television, newspapers, posters, pamphlets, etc and through interpersonal communication with health personnel, friends, relatives, neighbors). And couples' family planning communication and their ever and current modern contraceptive use were also measured.

The survey instruments were adapted from a validated questionnaire and were considered valid and reliable.<sup>24</sup> Pre-test of questionnaires was done among one percent of the total sample in an area other than the study site, but with a similar set-up. The purpose of the pre-test was to ascertain problems with the data collection tool and make necessary corrections. Twelve male and twelve female data collectors participated in the study and were supervised by two field coordinators. Data collectors were recruited from the local community. The interview was conducted in a private location, each couple at a time (first woman and next man) but separately keeping interviewee privacy. The interview was conducted if both spouses agreed to participate in the study.

## Measurements

Spousal family planning communication was measured based on the question "Have you ever discussed about family planning with your husband/wife in the last 12 months?" Hence, the responses were coded as 1 if both

spouses agree they discussed or the husband alone reported ever discussed or the wife alone reported ever discussed and 0 if both spouses agree they never discussed.<sup>25</sup>

Effective spousal family planning communication was measured by taking three variables, i.e., spousal family planning discussion in the last 12 months prior to the survey date; couples' approval or disapproval of family planning and spouses' perceptions about their partner's approval of family planning and couple's fertility desires which were defined through their responses regarding the number of children that each spouse would choose to have for his or her entire reproductive life (ideal family size). Hence, effective communication about family planning among couples exists when couples discuss about family planning in the last 12 months prior to the survey date; when husband's perception to his wife's family planning approval matches with wife's response to family planning approval question and when wife's perception to her husband's family planning approval matches with husband's response to family planning approval question and when responses of couples' to their desired number of children concords.<sup>19</sup>

Current contraceptive use was measured based on the question "Are you currently using any modern contraceptive method to delay (or avoid) having children?"<sup>13</sup> Both husband and wife were asked this question. However, since the number of husbands who were current contraceptive users was negligible (only 60 men or 2.3% were current contraceptive users), the current analysis of the current contraceptive use depends only on women's response.

## Data Analysis

The data were double entered, validated and cleaned using EpiData Software, version 3.1. The data was analyzed using Stata version 12. Simple descriptive analysis was done to explore levels of contraceptive use. Bivariate analysis was used to investigate the association between socio-economic, demographic, knowledge/attitude to family planning and family planning communication variables and current contraceptive use.

Since logistic regression overestimates the effect measure when the outcome variable is common (greater than 10%),<sup>26</sup> we tried to apply log binomial to estimate relative risk. However, due to the problem of convergence with log binomial, we applied Poisson regression with robust variance for estimating prevalence ratio<sup>27</sup> and to identify predictors of the outcome variable. Moreover, Poisson regression with robust variance provides better results when the covariates of

interest are categorical.<sup>28</sup> It uses a log link function with a Poisson distribution to the data. The model can be written as:  $\log(\pi_i) = \beta_0 + \beta_1 x_{1i} + \dots + \beta_k x_{ki}$ .<sup>29</sup> Where  $\pi_i$  is the probability of experiencing the outcome of interest for subject  $i$ , and  $\beta_1 x_{1i} + \dots + \beta_k x_{ki}$  are predictor variables along with the regression coefficients. Statistical significance was considered at a  $p$ -value less than 0.05.

## Ethical Clearance

This study was conducted according to the principles of the Declaration of Helsinki. Ethical clearance was obtained from the Institutional Health Research Ethics Review Committee of College of Health and Medical Sciences, Haramaya University. To safeguard the autonomy of the study participants, objectives of the research were clearly communicated and an informed, voluntary, written and signed consent was obtained from the study participants prior to the data collection. To maintain anonymity and confidentiality, names of the study participants were not mentioned in the questionnaires. No person had access to the information collected from the study participants except the research team. Privacy of the study participants was maintained during the interview.

## Results

### Respondents' Characteristics

Of the 2874, 2700 couples were included in the study giving a response rate of 93.9%. The major reasons for non-response in this study were: some sampled couples (84 couples) refused to participate in the study and for some others the collected data were not complete (for 90 couples) and discarded from analysis. About 65.6% women belong to the age group 15 to 34 years with the mean age of 31.1 years and standard deviation of  $\pm 6.8$  years. On the other hand, 65.3% of men belong to the age group of 35 years and above with mean age of 37.9 years and standard deviation of  $\pm 8.7$  years. More than 50% of the couples were followers of Christianity in religion. About two-fifth of the study participants were Oromo preceded by Amhara ethnic group. More than 50% of the women were housewives while more than one-third of the husbands were government employees. More than 80% women and about 90% men were primary level and above educated, respectively. About 1423 (57.6%) couples had one to two children, 730 (29.5%) had three to four children and 318 (12.9%) had five or more children. In

terms of number of children desired, 1024 (38.2%) couples wanted one to four children, 647 (24%) five or more children, 962 (35.9%) had discordant desires and 50 (1.9%) other (Table 1).

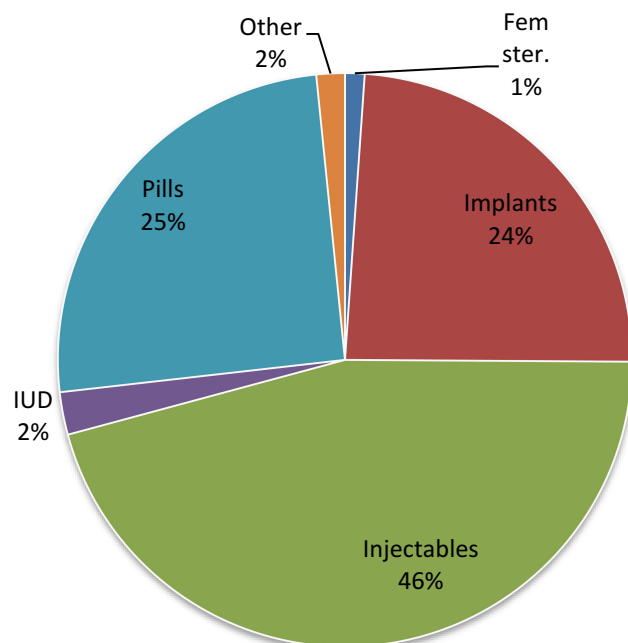
**Table 1** Socio-Economic and Demographic Characteristics of Couples, Harar, Eastern Ethiopia, 2019

Variables	Women	Percent	Men	Percent
	Frequency		Frequency	
<b>Age</b>	<b>(N=2699)</b>		<b>(N=2699)</b>	
15–24	453	16.8	86	3.2
25–34	1318	48.8	853	31.6
35+	928	34.4	1760	65.2
<b>Religion</b>	<b>(N=2695)</b>		<b>(N=2685)</b>	
Muslim	1167	43.3	1141	42.5
Christian	1520	56.4	1535	57.2
Other	8	0.3	9	0.3
<b>Ethnicity</b>	<b>(N=2691)</b>		<b>(N=2687)</b>	
Oromo	1087	40.4	1065	39.6
Amhara	962	35.8	894	33.3
Harari	60	2.2	76	2.8
Tigray	72	2.7	91	3.4
Gurage	299	11.1	302	11.2
Other	211	7.8	259	9.6
<b>Education</b>	<b>(N=2698)</b>		<b>(N=2698)</b>	
Illiterate	340	12.6	78	2.9
Primary	1083	40.1	917	34.0
Secondary and above	1176	43.6	1529	56.6
Other	99	3.7	176	6.5
<b>Occupation</b>	<b>(N=2700)</b>		<b>(N=2700)</b>	
House wife	1490	55.2	–	–
Gov't employee	493	18.3	942	34.9
Merchant/priv. employee	476	17.6	974	36.1
Daily laborer	–	–	445	16.5
Other	241	8.9	339	12.6

## The Use of Modern Contraceptive Methods by Couples

About 2325 (86.1%) women ever used modern contraceptive methods in the study area. About 1538 (57.1% 95% CI: 0.53,3.39) women were current contraceptive users. From those who were not current contraceptive users, 38.6% intended to use contraceptives in the future while the majority (56.1%) intended not to use in the future. The remaining 5.3% were undecided. Women who were currently using modern contraceptives were further asked to tell the type of contraceptives they used, 38.2% used implants, 37.4% used injectables, 0.9% used female sterilization and the remaining 23.5% used other methods. The level of covert contraceptive use among the study participants was 8.2%. Those women who ever used modern contraceptives were further asked about the type of modern contraceptive methods they ever used. Accordingly, the most commonly used contraceptive methods were injectables (46%) and pills (25%) together constituting 71% while female sterilization constitutes only one percent and other methods constitute 29% (Figure 1).

From a total of 2286 women who were asked about the purpose of their use of modern contraceptives, 87.3% reported for spacing birth, 4.4% for limiting birth and 8.3% for other purposes (such as to delay first birth, because of recommendations by physicians due to health problems, etc). The study participants were asked the question whether



**Figure 1** Distribution of women based on the type of contraceptive methods ever used, Harar, Eastern Ethiopia, 2019.

contraceptives have side effects or not<sup>30</sup> and from a total of 2681 women who responded to this question, 59.6% reported that contraceptives have side effects. These respondents were further asked to name these side effects. Thus, 21.3% reported that use of contraceptives causes headaches followed by it takes too much time to get pregnant after stopping using contraceptives (19.1%) (Table 2).

Of 2684 men who responded to ever use of contraceptives, 697 (26%) ever used contraceptives. These men were further asked to tell the type of contraceptives they used. Thus, 694 (99.6%) used male condom and 3 (0.4%) used male sterilization. Men were also asked about their current contraceptive use. Of 2646 men who responded to current contraceptive use, only 60 (2.3%) were current contraceptive users. These men were further asked to mention the type of contraceptives they used. Hence, 57 (95.0%) used male condom and 3 (5.0%) used male sterilization.

From a total of 2688 women who responded to the question have you ever experienced opposition from your husband for trying to use family planning, 9.2% reported they experienced opposition, 89.1% never and 1.8% reported other. Price of contraceptives has a potential to impact on the contraceptive use of couples. The respondents were asked how much the contraceptive methods cost in their areas using the question "The last time you obtained the current method, how much did it cost you?". Accordingly, from a total of 1525 women who responded to this question, 86.3% reported that they got their's free of charge, 8.3% reported that it costs less than

**Table 2** Distribution of Couples by Side Effects of Using Family Planning, Harar, Eastern Ethiopia, 2019

Side Effects	Women (N=1597)		Men (N=1154)	
	Frequency	Percent	Frequency	Percent
Breakthrough bleeding	167	10.5	121	10.5
Disruption of menstrual cycle	150	9.4	60	5.2
Headaches	340	21.3	171	14.8
Taking time to get pregnant	305	19.1	372	32.2
Weight gain	224	14.0	209	18.1
Weight loss	171	10.7	87	7.5
Other	240	15.0	134	11.6



or equal to 10 Ethiopian Birr (or less than or equal to 0.29 US Dollar) and 4.9% reported it costs 11 Ethiopian Birr and above (or 0.31 US Dollar and above). The remaining 0.5% reported that they did not know the issue.

## Spousal Family Planning Communication and Couples' Approval of Family Planning

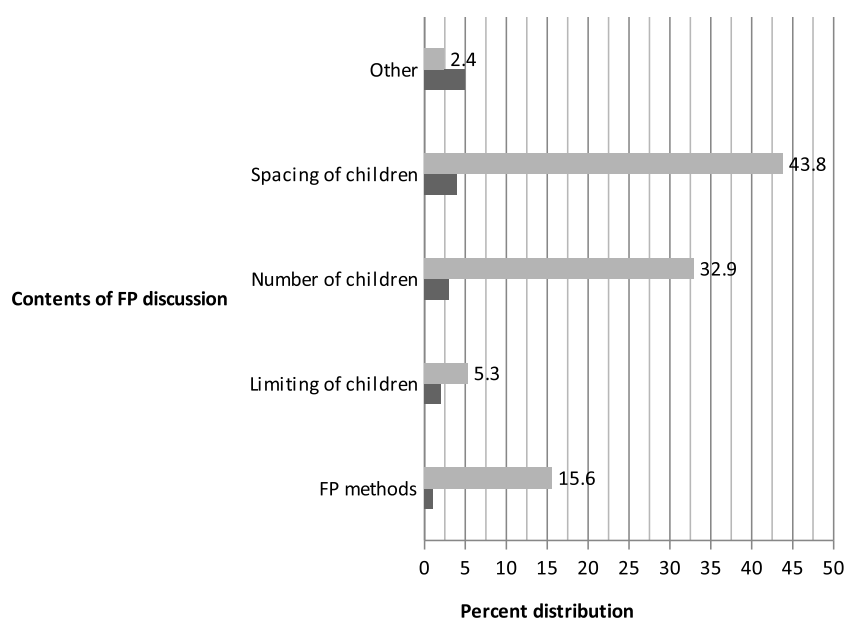
The level of spousal family planning communication in the study area was found to be very high. About 2212 (82%) women and 2275 (84.6%) men reported that they communicated about family planning in the last 12 months prior to the survey date. The level of spousal family planning communication was 89.6% (2420 couples) as reported by one or both spouses. However, the level of effective spousal family planning communication was found to be very low, i.e., 1010 (38%) couples had effective communication. Couples who reported communicating about family planning in the last year were further asked the contents they communicated. Of 2420 couples, 43.8% communicated about spacing of childbirth while 32.9% communicated about number of children they want to have in their lifetime (Figure 2).

The study participants were also asked about the frequency of their communication on family planning in the last 12 months prior to the survey date. Accordingly, of 2212 women, 18% communicated once or twice, 71.6% sometimes, 8.6% more often and 1.8% rarely. Similarly, of 2275 men, 18.3% communicated once or twice, 71.1% sometimes, 8.4%

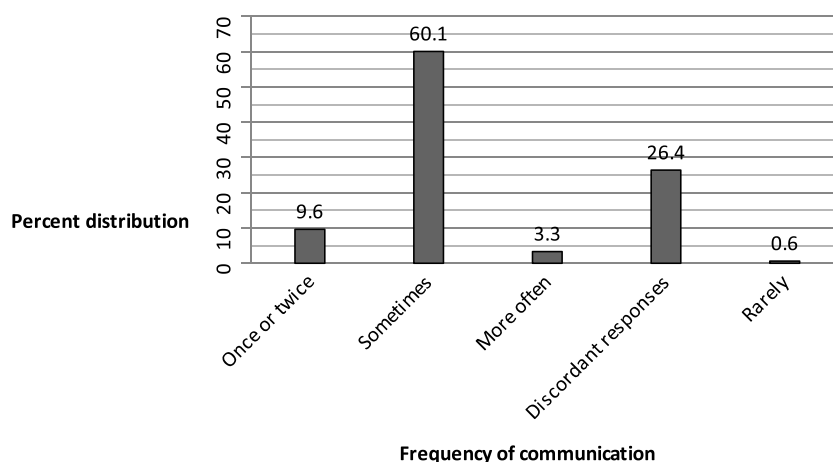
more often and 2.2% rarely. The combined response to frequency of spousal family planning communication indicates that about 1235 (60.1%) couples communicated only sometimes in the past 12 months prior to the survey date and 68 (3.3%) couples reported communicating frequently (Figure 3).

Of 2697 women, 82.6% perceived that their husbands approved the use of family planning. About 15.8% of women perceived that their husbands disapproved the use of family planning while 1.6% of women perceived that they did not know the stand of their husbands. Similarly, of 2694 men, 83.7% perceived that their wives approved the use of family planning. About 14% of men perceived that their wives disapproved the use of family planning while 2.3% of men did not know the stand of their wives. Of 2692 men, 80.7% approved the use of family planning and 18.3% disapproved the use of it while one percent were not sure. Likewise, of 2699 women, 87.2% approved the use of family planning, 12.1% disapproved the use of family planning while 0.7% were not sure.

From 2577 women, 55.6% wanted the same number of children as their husbands, 15.2% wanted more, 18.2% wanted fewer and 11% did not know. In the same way, from 2689 men, 50.6% wanted the same number of children as their wives, 27% wanted more, 11.5% wanted fewer and 10.9% did not know. About 1830 (68.1%) women and 1219 (45.6%) men reported that they discussed about family planning with their friends/relatives/neighbors other than their partners in the last 12 months prior to the survey date.



**Figure 2** Distribution of couples based on the contents of FP communication, Harar, Eastern Ethiopia, 2019.



**Figure 3** Distribution of couples based on the frequency of FP communication, Harar, Eastern Ethiopia, 2019.

### Bivariate Analysis

Table 3 shows the association between current contraceptive use and the socio-economic and demographic characteristics of couples. The result showed that 60.6% couples aged less than 35 years were using contraceptives while 47.5% of couples from age group 35 years and above were using contraceptives ( $\chi^2 = 48.99$ ;  $P = 0.000$ ). Age at first marriage of both men ( $\chi^2 = 1.49$ ;  $P = 0.474$ ) and women ( $\chi^2 = 0.23$ ;  $P = 0.894$ ) and age difference between couples ( $\chi^2 = 1.95$ ;  $P = 0.376$ ) were not significantly associated with current modern contraceptive use. Duration of current marriage of couples was significantly associated with current modern contraceptive use ( $\chi^2 = 15.49$ ;  $P = 0.000$ ). Of couples who were followers of Christianity 63.4% were current contraceptive users while only 48.1% Muslims were current contraceptive users. Similarly, of couples who had one to two living children 59.5% were currently using modern contraceptive methods while 61.6% couples with three to four living children were current contraceptive users (Table 3).

More than sixty percent of couples who desired one to four children and a little less than fifty percent of couples who desired five and above children were current modern contraceptive users. Of couples who desired to have no more children 57.1%, from couples who desired to have another children 55.1%, and from couples in which either husband or wife desired to have no more children in the future 61.7% were current contraceptive users ( $\chi^2 = 15.01$ ;  $P = 0.002$ ). Of couples with house hold monthly income less than or equal to three thousand Ethiopian Birr, 61.2% were current contraceptive users while from couples with household monthly income of between three thousand and six thousand and

above six thousand, 51.1% and 51.9% were current contraceptive users ( $\chi^2 = 25.62$ ;  $P = 0.000$ ), respectively. From couples in the lowest wealth index, 55.4% were current contraceptive users while from the highest wealth index, 56.5% were current contraceptive users.

Of couples in which both approve family planning, 64.9% were current contraceptive users while from a category in which both disapprove family planning, only 5.9% were current contraceptive users ( $P < 0.05$ ). About 70% of women who were counseled about family planning by health workers were current contraceptive users while 51.2% of women who were not counseled about family planning were current contraceptive users. Similarly, 66.7% of men who were counseled about family planning by health workers were current contraceptive users while 54.8% of men who were not counseled about family planning were current contraceptive users. The proportion of men visited by health extension workers was only 23% (619 out of 2694) while this proportion was 52.3% (1408 out of 2691) for women in the last 12 months prior to the survey date (Table 4).

About 63.6% of couples who discussed family planning with friends/relatives and 46.6% who did not discuss were using modern contraceptive methods. Of couples who reported the final decision to use family planning methods is made by husband and jointly by husband and wife, 43.3% and 58.3% were current contraceptive users, respectively. Couple's exposure to family planning messages in the last six months on TV ( $\chi^2 = 24.65$ ;  $P = 0.000$ ), in newspaper ( $\chi^2 = 6.32$ ;  $P = 0.042$ ), in pamphlets ( $\chi^2 = 30.43$ ;  $P = 0.000$ ), and community events ( $\chi^2 = 22.76$ ;  $P = 0.000$ ) were significantly associated

**Table 3** Current Contraceptive Use by Socio-Economic and Demographic Characteristics of Husbands, Wives and Couples, Harar, Eastern Ethiopia, 2019

Variables	Current Contraceptive Use		Chi-Square	P-value
	Yes (%)	No (%)		
Age of couples				
Both <35 years	531 (60.6)	345 (39.4)	48.99	0.000
Both 35+ years	412 (47.5)	456 (52.5)		
Husband 35+ years and wife <35 years	594 (62.6)	355 (37.4)		
Religion of couples				
Both Muslim	517 (48.1)	557 (51.9)	59.60	0.000
Both Christian	919 (63.4)	530 (36.6)		
Other	92 (60.5)	60 (39.5)		
Education of couples				
Both illiterate	25 (69.4)	11 (30.6)	6.72	0.152
Both primary (1–8)	271 (56.7)	207 (43.3)		
Both secondary+	478 (54.8)	394 (45.2)		
Either of them educated	749 (58.6)	528 (41.4)		
Both other	14 (46.7)	16 (53.3)		
Occupation of women				
Merchant/priv. emp	270 (56.8)	205 (43.2)	4.64	0.200
Gov't emp	261 (52.9)	232 (47.1)		
Housewife	864 (58.1)	622 (41.9)		
Other	143 (59.3)	98 (40.7)		

(Continued)

**Table 3** (Continued).

Variables	Current Contraceptive Use		Chi-Square	P-value
	Yes (%)	No (%)		
Occupation of men				
Merchant/priv. emp	589 (60.6)	383 (39.4)	9.98	0.019
Gov't emp	517 (54.9)	424 (45.1)		
Daily laborer	255 (57.6)	188 (42.4)		
Other	177 (52.2)	162 (47.8)		
Number of living children				
1–2 children	846 (59.5)	575 (40.5)	11.40	0.003
3–4 children	449 (61.6)	280 (38.4)		
5+ children	161 (50.6)	157 (49.4)		
Desired number of children				
Both want 1–4 children	653 (63.8)	370 (36.2)	48.86	0.000
Both want 5+ children	302 (46.8)	344 (53.2)		
Discordant desires	549 (57.2)	410 (42.8)		
Other	24 (48.0)	26 (52.0)		
Number of children husband wants compared to his wife				
Same	775 (87.1)	583 (42.9)	9.86	0.020
More	400 (55.2)	325 (44.8)		
Fewer	201 (64.8)	109 (35.2)		
Do not know	157 (54.0)	134 (46.0)		

(Continued)



**Table 3** (Continued).

Variables	Current Contraceptive Use		Chi-Square	P-value
	Yes (%)	No (%)		
Number of children woman wants compared to her husband				
Same	829 (58.0)	599 (42.0)	5.24	0.155
More	227 (58.2)	163 (41.8)		
Fewer	269 (57.4)	200 (42.6)		
Do not know	145 (50.9)	140 (49.1)		
Wealth index				
Lowest	283 (55.4)	228 (44.6)	10.96	0.027
Second	313 (58.1)	226 (41.9)		
Middle	308 (63.0)	181 (37.0)		
Fourth	273 (53.2)	240 (46.8)		
Highest	290 (56.5)	223 (43.5)		

with current modern contraceptive use. On the other hand, couples exposure to family planning message in the last six months on radio ( $\chi^2 = 0.37$ ;  $P = 0.831$ ) was not significantly associated with current modern contraceptive use. Of those couples who agree to the large family size ideal, 49.4% were current contraceptive users while from those who disagree, 68.7% were current contraceptive users. Of those couples where either husband or wife agree to the large family size ideal, 58.3% were current contraceptive users ( $\chi^2 = 56.93$ ;  $P = 0.000$ ) (Table 4).

About 59.2% of couples who had communication about family planning in the last 12 months prior to the survey date were contraceptive users while only 39.2% of non-communicators were current contraceptive users. Similarly, 64% of couples who had effective communication were current contraceptive users while 53% of couples who had non-effective communication were current contraceptive users.

**Table 4** Current Contraceptive Use by Knowledge and Attitude Towards Family Planning of Couples, Harar, Eastern Ethiopia, 2019

Variables	Current Contraceptive Use		Chi-Square	P-value
	Yes (%)	No (%)		
Number of FP methods couples know				
Both know <5 methods	147 (52.9)	131 (47.1)	5.17	0.160
Both know 5+ methods	1061 (58.6)	751 (41.4)		
Husband< 5 and wife 5+ methods	182 (55.1)	148 (44.9)		
Husband 5+ and wife <5 methods	123 (53.7)	106 (46.3)		
Couples' approval of family planning				
Both approve	1299 (64.9)	702 (35.1)	268.0	0.000
Both disapprove	10 (5.9)	159 (94.1)		
Either approve	226 (43.8)	290 (56.2)		
Family planning counseling by health workers of women				
Yes	613 (70.0)	263 (30.0)	71.50	0.000
No	563 (51.2)	537 (48.8)		
Family planning counseling by health workers of men				
Yes	196 (66.7)	98 (33.3)	12.35	0.000
No	428 (54.8)	353 (45.2)		
Couples family planning communication				
Yes	1429 (59.2)	986 (40.8)	38.73	0.000
No	104 (39.2)	161 (60.8)		
Type of couples family planning communication				
Effective communication	644 (64.0)	363 (36.0)	30.40	0.000

(Continued)

**Table 4** (Continued).

Variables	Current Contraceptive Use		Chi-Square	P-value
	Yes (%)	No (%)		
Non-effective communication	873 (53.0)	773 (47.0)		
<b>Frequency of spousal family planning communication</b>				
More often	41 (61.2)	26 (38.8)	25.25	0.000
Once/twice	96 (45.7)	114 (54.3)		
Sometimes	789 (63.9)	445 (36.1)		
Discordant responses	325 (60.2)	215 (39.8)		
<b>Couples FP discussion with friends/relatives/neighbors</b>				
Both discussed	626 (63.6)	358 (36.4)	44.84	0.000
Both not discussed	287 (46.6)	329 (53.4)		
Either of them discussed	604 (57.1)	453 (42.9)		
<b>Final decision to use family planning methods</b>				
Husband	74 (43.3)	97 (56.7)	18.97	0.000
Wife	515 (57.9)	374 (42.1)		
Joint (husband and wife)	944 (58.3)	676 (41.7)		
Other	2 (22.2)	7 (77.8)		

About 61.2% of frequent communicators, 45.7% of couples who communicated once or twice, 63.9% who communicated sometimes and 60.2% of couples who reported discordant responses were current modern contraceptive users (Table 4).

We fitted three models. The first model assesses the association between effective spousal family planning communication, socio-economic and demographic variables and current modern contraceptive use. The second model assesses the association between family planning

communication, attitude and exposure to family planning messages and current modern contraceptive use. The third model assesses the association between socio-economic, demographic and family planning communication, attitude and exposure to the family planning message and current modern contraceptive use by taking variables significant at P-value less than 0.1 from the two models (Table 5).

### Multivariable Analysis

In the final model of multivariable analysis: effective spousal family planning communication (OR = 1.1; 95% CI: 1.02, 1.21), age of couples, religion of couples (OR = 1.2; 95% CI: 1.10, 1.35), number of living children (OR = 1.2; 95% CI: 1.10, 1.31), household monthly income, couples approval of FP use (OR = 4.7; 95% CI: 2.19, 10.01), women's FP counseling by health workers (OR = 1.2; 95% CI: 1.09, 1.29), frequency of couples' FP communication and couples' exposure to FP message in newspapers were found significantly associated with modern contraceptive use of women (Table 5).

### Discussion

This study demonstrated that little higher than one-third of couples had effective communication about family planning. Younger age and affiliation of couples to Christianity, number of children couples had, household monthly income, couples FP approval, women's counseling about FP by HW, couples' frequency of FP communication and couples' exposure to FP message in newspapers were significantly associated with current modern contraceptive use.

Research suggests that spousal family planning communication positively influences contraceptive use and increases shared decision-making.<sup>10</sup> The significant association found between spousal family planning communication and current modern contraceptive use among women in the current study is comparable with findings in Akwa Ibom state of Nigeria and a study in Bangladesh in which couples who had favorable spousal communication were more likely to be contraceptive users compared to couples who had unfavorable communication.<sup>2,31</sup> Similarly, in a study conducted in Hossana town, Southern Ethiopia, couples who had communication about family planning were found to be more likely to use contraceptives compared to their counterparts.<sup>11</sup> However, the current finding is different from the finding in a study in Nigeria in which spousal family planning communication is not associated with couples' contraceptive use.<sup>32</sup>

**Table 5** Poisson Regression Coefficients of Contraceptive Use by Selected Socio-Economic and Demographic and Family Planning Communication and Attitude Variables, Harar, Eastern Ethiopia, 2019

Variables	Model 1	Model 2	Model 3
	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)
<b>Spousal FP communication</b>			
Effective communication	1.19 (1.10,1.28)*		1.11 (1.02,1.21)*
Non-effective communication(RC)			
<b>Age of couples</b>			
Both <35 years (RC)			
Both 35+ years	0.68 (0.61,0.77)*		0.84 (0.73,0.96)*
Husband 35+ and wife <35 yrs	0.96 (0.88,1.04)		0.99 (0.90,1.08)
<b>Duration of current marriage</b>			
<5 years (RC)			
5–10 years	1.12 (1.01,1.24)*		1.05 (0.94,1.17)
11+ years	1.00 (0.89,1.13)		0.94 (0.83,1.08)
<b>Religion of couples</b>			
Both Muslim (RC)			
Both Christian	1.41 (1.28,1.55)*		1.22 (1.09,1.35)*
Other	1.16 (1.00,1.36)		1.18 (0.99,1.41)
<b>Education of couples</b>			
Both illiterate (RC)			
Both primary (1–8 grade)	0.84 (0.65,1.09)		
Secondary and above	0.77 (0.59,1.01)		
Either of them educated	0.85 (0.66,1.09)		
Other	0.77 (0.49,1.21)		
<b>Occupation of women</b>			
House wife (RC)			
Merchant/priv. employee	1.01 (0.92,1.12)		
Government employee	0.97 (0.87,1.07)		
Other	1.01 (0.89,1.15)		
<b>Occupation of men</b>			
Merchant/priv. employee (RC)			
Government employee	0.99 (0.91,1.08)		
Daily laborer	0.98 (0.88,1.08)		
Other	0.88 (0.78,1.00)		

(Continued)

**Table 5** (Continued).

Variables	Model 1	Model 2	Model 3
	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)
<b>Number of living children</b>			
1–2 children (RC)			
3–4 children	1.20 (1.10,1.30)*		1.20 (1.10,1.31)*
5+ children	1.09 (0.95,1.26)		1.09 (0.93,1.27)
<b>Couples' desired number of children</b>			
Both want 1–4 children (RC)			
Both want 5+ children	0.88 (0.78,0.99)*		0.94 (0.82,1.08)
Discordant desires	0.98 (0.90,1.06)		0.99 (0.91,1.09)
Other	0.62 (0.39,0.98)**		0.60 (0.35,1.03)
<b>Future fertility desire</b>			
Both want to have another child (RC)			
Both want no more/none	1.10 (0.97,1.26)		
Discordant desires	1.06 (0.96,1.16)		
Other	1.25 (1.03,1.51)		
<b>Number of children wife wants compared to her husband</b>			
Do not know (RC)			
Fewer	1.07 (0.93,1.23)		
More	1.04 (0.90,1.20)		
Same	1.11 (0.98,1.26)		
<b>Number of children husband wants compared to his wife</b>			
Do not know (RC)			
Fewer	1.10 (0.95,1.27)		
More	1.01 (0.89,1.14)		
Same	0.98 (0.86,1.11)		
<b>Household monthly income</b>			
≤3000 birr (RC)			
3001–6000 birr	0.87 (0.80,0.95)*		0.85 (0.77,0.93)*
6001+ birr	0.95 (0.85,1.07)		0.89 (0.78,1.01)
<b>Wealth index</b>			
Poorest (RC)			
Poorer	0.99 (0.88,1.10)		
Middle	1.06 (0.95,1.18)		

(Continued)

Table 5 (Continued).

Variables	Model 1	Model 2	Model 3
	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)
Richer	0.93 (0.82,1.05)		
Richest	0.96 (0.85,1.09)		
<b>Number of family planning methods couples know</b>			
Both know <5 methods (RC)			
Both know 5+ methods		0.80 (0.66,0.96)	
Husband knows <5 methods and wife 5+ methods		0.93 (0.74,1.16)	
Husband knows 5+ methods and wife knows <5 methods		0.90 (0.70,1.17)	
<b>Couples' approval of FP use</b>			
Both disapprove (RC)			
Both approve		10.22 (2.59,40.29)*	4.68 (2.19,10.01)*
Either of them approve		6.69 (1.68,26.73)*	3.05 (1.40,6.64)*
<b>Women's FP counseling by health workers</b>			
Counseled		1.22 (1.08,1.38)*	1.19 (1.09,1.29)*
Not counseled (RC)			
<b>Men's FP counseling by health workers</b>			
Counseled		0.98 (0.86,1.11)	
Not counseled (RC)			
<b>Frequency of couples' FP communication</b>			
Once or twice (RC)			
More often		1.38 (0.96,1.99)**	1.21 (0.93,1.58)
Sometimes		1.20 (0.96,1.51)**	1.22 (1.03,1.44)*
Discordant responses		1.19 (0.93,1.50)**	1.22 (1.02,1.45)*
<b>Couples' FP communication with friends/neighbors</b>			
Both reported no communication (RC)			
Both reported communication		1.02 (0.83,1.24)	
Either reported communication		1.01 (0.83,1.23)	
<b>Final decision to use family planning methods</b>			
Husband's (RC)			
Wife's		1.57 (1.06,2.33)*	1.05 (0.85,1.28)
Joint		1.57 (1.06,2.31)*	1.03 (0.84,1.25)
Other		1.02 (0.19,5.40)	0.80 (0.14,4.59)

(Continued)



**Table 5** (Continued).

Variables	Model 1	Model 2	Model 3
	aPR (95% CI)	aPR (95% CI)	aPR (95% CI)
<b>Exposure to FP message on TV</b>			
Both unexposed (RC)			
Both exposed		1.73 (0.95,3.15)**	1.24 (0.91,1.68)
Either exposed		1.78 (0.95,3.24)**	1.16 (0.84,1.59)
<b>Exposure to FP message in Newspaper</b>			
Both unexposed (RC)			
Both exposed		0.63 (0.47,0.86)*	0.81 (0.67,0.99)*
Either exposed		1.01 (0.90,1.14)	1.02 (0.92,1.11)
<b>Exposure to FP message in Pamphlets</b>			
Both unexposed (RC)			
Both exposed		1.12 (0.94,1.34)	
Either exposed		0.98 (0.83,1.15)	
<b>Exposure to FP message at community events</b>			
Both unexposed (RC)			
Both exposed		0.86 (0.73,1.01)**	1.00 (0.89,1.13)
Either exposed		0.81 (0.71,0.93)*	0.96 (0.88,1.06)
<b>Couples' attitude towards large family size</b>			
Both agree (RC)			
Both disagree		1.21 (1.05,1.39)*	1.05 (0.94,1.17)
Either of them agree		1.16 (1.02,1.32)*	1.01 (0.92,1.12)

Notes: \*Significant at  $P < 0.05$ ; \*\*Significant at  $P < 0.1$ .

Abbreviations: RC, reference category; aPR, adjusted prevalence ratio.

The prevalence ratio of current modern contraceptive use was higher among couples who had frequent communication (aPR = 1.2; 95% CI: 0.93, 1.58) and among couples who communicated sometimes (aPR = 1.2; 95% CI: 1.03, 1.44) compared to their counterparts who communicated once or twice. This finding is comparable with reports from Hartmann et al in Malawi,<sup>10</sup> Matungulu et al in Lubumbashi, Democratic Republic of Congo,<sup>33</sup> and in Prata et al in Luanda, Angola<sup>34</sup> in which couples who frequently communicated about family planning were more likely to be current modern contraceptive users.

Spousal family planning communication has been found to be a significant predictor of contraceptive use in many studies.<sup>2,11,17,31</sup> However, these studies defined communication in different ways. Some studies used all three dimensions of effective spousal family planning communication.<sup>19</sup> Other studies have used discussion as the only measure of communication between husband and wife.<sup>2,12,17</sup> Another difference between our analysis and previous research is that some other studies have defined spousal family planning communication more broadly. For example, Asa et al<sup>31</sup> measured family planning communication among Nigerian couples using 30 items and creating a single composite variable.

The prevalence of current modern contraceptive use among reproductive age women, i.e., 57.1% (95% CI, 0.53, 3.39) in our study is lower compared to the world average in 2019 in which 76% of currently married reproductive age women used modern contraceptive methods.<sup>35</sup> This finding is higher than average for Africa in 2017 in which 32% of currently married reproductive age women used modern contraceptive methods.<sup>36</sup> However, this finding is comparable with the national level average (50%) of current modern contraceptive use among currently married reproductive age women in urban areas of Ethiopia.<sup>13</sup> The current finding is higher than the finding in Dembia District of northwest Ethiopia in which 31.7% of currently married reproductive age women used modern contraceptives.<sup>15</sup> This difference could be due to a study in Dembia District including study participants from rural areas.

The current study reveals that the most frequently used modern contraceptive method was implants (38.2%) followed by injectables (37.4%). This finding is comparable with the findings by Yimer and Modiba<sup>37</sup> in which 51% of women used implants. However, the current finding is different from the findings in other studies<sup>11,13,38,39</sup> in which injectables were the commonly used methods. This is indicating that women in Ethiopia are shifting from short-acting to long-acting family planning methods. However, the use of permanent family planning methods such as female and male sterilizations are very limited. The most commonly used modern contraceptive method among men was the condom. However, current use of male family planning methods (2.3%) was very limited. This finding is lower compared to findings by Kassa et al<sup>40</sup> in Debremarkos town in which 8.4% of men were current contraceptive users and to the finding by Shawano and Kura<sup>41</sup> in which 7.2% of men were found to be current contraceptive users.

Decreased current modern contraceptive use among older women (aPR = 0.84; 95% CI: 0.73, 0.96) in our study is consistent with findings in Habyarimana and Ramroop in Rwanda<sup>42</sup> and Alemayehu et al in Dabate Health and Demographic Surveillance System Site, northwest Ethiopia<sup>16</sup> in which older age women were less likely to be current modern contraceptive users compared to their counterparts. Duration of current marriage was found to be significantly associated with current contraceptive use. Couples who stayed five to ten years in their current marriage were found 1.1 times more likely to be current

contraceptive users compared to couples who stayed less than five years in their current marriage.

Religion was significantly associated with current modern contraceptive use. In this study followers of Christianity were 1.2 times more likely to be current contraceptive users compared to Muslims ( $P = 0.000$ ; 95% CI: 1.28, 1.55). This finding is consistent with the finding in Nigeria in which contraceptive use was highest among Christian women compared to Muslim women.<sup>43</sup> Similarly, a study in western Ethiopia corroborates this finding in which Muslim women were 65% less likely to utilize modern contraceptives compared to Orthodox Christian women.<sup>44</sup> However, the current finding is different from the findings by Alvergne et al<sup>45</sup> in the Arsi zone, Ethiopia in which Orthodox Christians were 78% less likely to be current contraceptive users compared to Muslims. The current finding is also different from the finding by Marrone et al in Ghana in which religion was not associated with current contraceptive use of females.<sup>46</sup> This demonstrates the importance of enhancing enlightenment campaigns aimed at challenging the existing negative perceptions towards family planning and contraceptive use targeting reproductive age couples.

The prevalence ratio of current modern contraceptive use was higher among couples who had 3–4 children compared to couples who had 1–2 children (aPR = 1.2; 95% CI: 1.10, 1.31). This finding is similar with reports in the Ethiopian Demographic and Health Survey,<sup>13</sup> Alemayehu et al in Dabate Health and Demographic Surveillance System Site, northwest Ethiopia,<sup>16</sup> and Abate and Tareke in Ethiopia.<sup>14</sup> The current finding is also consistent with the finding in Nigeria in which, as the number of living children that women have increases, the odds of using contraceptive by the women increases.<sup>43</sup> Couples who desired to have five and above children were found to be eleven percent less likely to be current contraceptive users compared to couples who desired one to four children.

Household monthly income was found to be significantly associated in both bivariate and multivariate analysis. Couples from households with an average monthly income between three thousand and six thousand Ethiopian Birr were 13% less likely to be current contraceptive users compared to couples from households with average monthly income of three thousand and less.

Family planning approval by both husband and wife (aPR = 4.7; 95% CI: 2.19, 10.01) and either by husband or wife (aPR = 3.1; 95% CI: 1.40, 6.64) was significantly

associated with current modern contraceptive use of women. This finding is consistent with the findings in Prata et al in Luanda, Angola,<sup>34</sup> in Tuloro et al in Hossana Town, southern Ethiopia,<sup>11</sup> and in Berhane et al in Angolela Tera District, Amhara Region, Ethiopia<sup>12</sup> in which women's perception that their husbands/partners approve the use of family planning and husbands' approval of family planning were significantly associated with women's contraceptive use. In a study done in Ibadan, Nigeria partners' refusal to use family planning was a major obstacle to women's contraceptive use while the approval significantly increased contraceptive use.<sup>47</sup>

The significant association found between women's family planning counseling by health workers and their current modern contraceptive use (aPR = 1.2; 95% CI: 1.09, 1.29) in this study is in line with a finding in Uttar Pradesh, India and a study in Ethiopia in which women who were counseled about family planning by health workers were more likely to be current contraceptive users compared to those women with no family planning counseling.<sup>48,49</sup> In the current study family planning use decisions made by wives and jointly by husband and wife were better in leading women to the actual use of modern contraceptive methods compared to decisions made by husbands. Couples who were not supporters of large family size were 1.1 times more likely to be current modern contraceptive users compared to couples who support a large family size.

A limitation inherent to cross-sectional surveys is the difficulty to establish causal relationship. In our analysis it is impossible to identify whether spousal family planning communication causes contraceptive use except predicting contraceptive use. Spousal family planning communication may actually have occurred after contraceptive acceptance, given that the question on spousal family planning communication referred to the 12 month period before the survey. Another limitation to our study was the study covered only urban areas. We have no study participants from the rural part of eastern Ethiopia which limits its generalizability to rural parts of this region. As effective spousal family planning communication has emerged as an important predictor of family planning use, we recommend future research to include not only the three dimensions of family planning communication but also other matters in the family that require communication between spouses, for example, decisions about education of children, financial matters and food purchases, among others.

## Conclusion

In conclusion, about half of the study participants were current modern contraceptive users. Effective spousal family planning communication was significantly associated with current modern contraceptive use of couples, even controlling for other socio-economic and demographic variables. Hence, the study result implies that policies and programs aimed at promoting family planning could benefit from productive spousal family planning communication.

## Recommendations

This study highlights the critical role played by spousal family planning communication in the use of contraception, even when controlling for other predictor variables of contraceptive use. Thus, policies and programs aimed at increasing contraceptive prevalence should properly address the importance of spousal communication about family planning in their programs. Interventions made by governmental and non-governmental organizations to promote family planning should integrate men into family planning programs. Programs facilitating and enhancing couples communication skills and encouraging them to communicate need to be promoted.

When both husband and wife approve family planning, their contraceptive use was higher even compared to couples of which either husband or wife approves it. This highlights the need to encourage husbands to approve family planning in relation to contraceptive utilization of their wives. Moreover, family planning use decisions made by wives and jointly by husband and wife were better in leading to contraceptive use than decisions made by husbands. It is therefore important to incorporate men in contraceptive counseling to improve couples' contraceptive use and ultimately ensure reduction in maternal mortality by preventing high risk pregnancies as well as achieve a healthy mother, family and society. In this study the proportion of men visited by house to house visits of health extension workers and their proportion counseled about family planning at health institution was very low. This should be improved to promote the involvement of men in family planning communication and decision-making so that to increase the prevalence of contraceptive use in the study area. Women who were visited by house to house visits of health extension workers and who were counseled about family planning by health workers were better contraceptive users compared to women who never visited and were not counseled. Thus,

the health extension program should be strengthened so that those women who were not reached could be reached for counseling by health workers.

## Abbreviations

CI, confidence interval; HDSS, Health and Demographic Surveillance System; FP, family planning; aPR, adjusted prevalence ratio; RC, reference category; TV, television; P, P-value (or significance level); HW, health workers.

## Data Sharing Statement

Data analyzed and materials used for this article are available with the corresponding author and can be obtained on request.

## Ethical Approval and Consent

Ethical approval was secured from Institutional Health Research Ethics Review Committee of College of Health and Medical Sciences, Haramaya University. Informed, voluntary, written and signed consent was obtained from the study participants.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising and critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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