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Research Article

Assessment of Modern Contraceptive Method Utilization and Associated Factors Among Women of Reproductive Age Group in Arba Minch Town, SNNPR, Ethiopia

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Abstract

Background: Ethiopia is one of the most populous countries in Africa where only less than 29% of women in the reproductive age group is currently using modern contraception. To prevent over growth of population, availability, usability of modern contraceptive method and identifying factors affecting practice of modern contraceptives should be given a priority.

Objective: The objective of this study is to assess utilization and factors associated with the modern contraceptive methods among women of reproductive age (15 - 49 years) in A/M town, SNNPR, Ethiopia, June 2017.

Method: A community based cross-sectional study design was conducted in Arba Minch town among women of reproductive age group (15 - 49). The study was conducted among 388 women of reproductive age group by face to face interview technique by using structured questionnaire. A multi-stage sampling technique was employed for the selection of the sampling units. Simple random sampling method was used to select the households from each kebele. Then analysis was made using SPSS version 20 statistical packages.

Result: A total of 388 women of reproductive age group (15 - 49) years were included in this study. More than one third 170 (43.8%) were in 25 - 34 years and Mean age of respondents was 32.62 ± (SD = 7.326) Years ranging from 17 - 49 years. Modern contraceptives utilization among women in Arba Minch town 2463 (63.4%) were currently using modern contraceptive method. Respondents age 15 - 24 years [AOR = 3.3 (1.875, 12.957)], completed primary school [AOR = 1.3 (1.225, 2.912)], Family size above 5 [AOR=1.2 (1.192, 2.129)], Monthly income less than 1000 birr [AOR = 1.5 (1.375, 3.214)] and respondents having adequate Knowledge about modern family planning [AOR = 2.3 (1.374, 3.945)] were factors associated with modern contraceptive utilization.

Conclusion and Recommendation: In conclusion majority of respondents were user of modern family planning methods. Most commonly used modern family planning methods were implants and injectable. Respondents age 15 - 24 years, completing primary school, Family size above 5, Monthly income less than 1000 birr and respondents having adequate Knowledge about modern family planning were factors associated with modern family planning method utilization. Based on finding from this study we recommend Gamo Gofa Zone health department and Arba Minch Town health extension workers to focus factors predicting likelihood of modern contraceptive use to further improve modern contraceptive utilization. Focusing on Educating women to improve contraceptive related knowledge is important for success.

Keywords: *Modern Family Planning Method; Reproductive Age; Arba Minch; Gamo Gofa; Ethiopia*

Abbreviations

CPR: Contraceptive Prevalence Rate; CSA: Central Statistics Agency; EDHS: Ethiopia Demographic Health Statistics; FGAE: Family Guidance Association of Ethiopia; FMOH: Federal Minister of Health; FP: Family Planning; HIV: Human Immunodeficiency Virus; IUCD: Intra-

uterine Contraceptive Device; MCM: Modern Contraceptive Methods; MFP: Modern Family Planning; NGO: Non-Governmental Organization; SNNPR: Southern Nations Nationalities and People Region; STI: Sexually Transmitted Infections; TFR: Total Fertility Rate; UK: United Kingdom; UN: United Nations; WHO: World Health Organizations

Introduction

Family planning is the ability of individuals and couples to avoid unwanted pregnancies, regulating the interval between pregnancies, controlling the time at which birth occurs in relation to the ages of the parents and determining the number of children in the family. It is achieved through use of contraceptive methods and the treatment of infertility [1,2].

Modern Contraceptives are tools used for family planning they include A) Hormonal (pills, Depo-Provera, Norplant, IUD,) B) Barrier methods (male and female condoms) C) Vasectomy and tubal ligation. The careful planning of births saves lives, for example the use of contraceptive can prevent at least 25% of all maternal deaths by allowing women to delay motherhood. By spacing birth at least two years apart family planning can prevent an average of one in four infant deaths in developing countries [3].

In Ethiopia, modern contraception was introduced in 1966 by Family Guidance Association of Ethiopia (FGAE). Modern contraceptive utilization among married women varies according to women's age, occupation and women's and husband's education status [4,5].

In Ethiopia the total fertility rate is 4.1 births per woman and there are about 3.27 million pregnancies per year of which approximately 500,000 are ends as induced abortion due to unwanted pregnancy. The maternal mortality ratio (MMR) is 420 per 100,000 live Births and estimated 32% of all maternal deaths attributed to unsafe abortions. The overall family planning prevalence among married women has been progressive increasing from 2.6% (1990), to 29% (2011) 42% (2014), which defers significantly among regions Addis-Ababa is the highest (64.1%) and SNNP region is lowest (40.5%). Similarly any modern method in nationwide is (40.4%) also Addis-Ababa is the highest (57%) and SNNP region is lowest 39.2% [6,7]. One of the targets of the Ethiopian ministry of health with respect to improving maternal and child health is to increase the contraceptive prevalence rate from 42% in 2014 to 55% by the year 2020 by giving priority to the provision of family planning services in the community [8].

Total fertility rate for SNNPR the region is 4.9, infant mortality rate is 85 per 1000 live births, and less than 5 mortality rate is 145 per 1000 live births. MM Ratio in the region is 673/100,000. The child mortality rate is 50 deaths per 1,000 live births, with a crude birth rate of 35.7 births per 1,000 populations and a crude death rate of 13.2 deaths per year per 1,000 populations and unmet need for family planning was 25% [9].

A cross-sectional study done in Arba Minch town SNNPR, Ethiopia in 2014 on long acting contraceptive methods utilization and associated factors among reproductive age women was only 13.1% [10]. Another cross study done in Jinka town in 2008 on long acting and permanent contraceptive methods among women of reproductive age was 7.3% [11] and study done in Gedeo zone on utilization of a contraceptive methods and associated factors among married women was 69.5% [12].

According to the most recent data available, modern contraceptive prevalence among married women of reproductive age are higher in the more developed regions (70%) than in the less developed regions (62%) with a world average of 63%, for e.g. in Norway (88%), in UK (82%), in France (76%), in Canada (74%) and (72%) in Northern American [13].

Globally, use of modern contraception has risen slightly, from 54% in 1990 to 57.4% in 2014. In Africa it went from 23.6% to 27.6%, in Asia it has raised slightly from 60.9% to 61.6%, and in Latin America and the Caribbean it rose slightly from 66.7% to 67.0% respectively. Use of contraception by men makes up a relatively small subset of the above prevalence rates. The modern contraceptive methods for men are limited to male condoms and sterilization (vasectomy) [14].

In developing countries the prevalence of modern contraceptive utilization among married women was low when compared with developed countries for example a study done in Turkey 60.4%, in Rwanda 45%, in Tanzania 12.2% and in Sudan 51.4% [15-17]. While in developed countries prevalence of modern contraceptive utilization among married women were in 80% in United Kingdom, 72% in Finland, 75% in Brazil, 73.8% in Uruguay and 72.2% in Switzerland [18].

Geographical variation on modern contraceptive prevalence among married women across Ethiopia was 27.3% with variation in urban 49.5% and rural 22.5% and by regions which Addis-Ababa is the Highest 56.3% and still SNNP region is lowest 39.2% [19]. But the latest Ethiopian health survey (MINI-EDHS 2014) revealed that the prevalence of modern contraceptive methods among currently married women in Ethiopia is 40.4%, which defers significantly among regions Addis-Ababa is the Highest (57%) and Somali region is lowest 2%, urban are 56% and Rural 37% [3,5,38].

Cross-sectional community based study done in Adigrat town; Tigray Ethiopia showed intention to use long acting and permanent contraceptives was 48.4% [20].

A recent study done in Kwabre District, in Ghana among women of reproductive age women showed that 67% is the age group of 20-35 years; only 2% were above 45 years of age were used modern contraceptive [21].

A recent survey done across Ethiopia among married women of reproductive age group declared that wealthy women had two times higher odds of using modern contraceptives than poor married women. Married women who lived in rural areas had 30% lower odds of using modern contraceptives than urban married women. Educated women had better odds of using modern contraceptive methods than uneducated married women. Women who had worked or been employed had a 30% lower odds of using modern contraceptives compared to married women who had no employment history [19]. Similar study done in Debremarkos town, north-west Ethiopia declared that being Old aged; having no desire for-more child, desire to have one child after two years, not ever heard of modern family planning methods, not ever used of modern family planning methods, and no spousal discussion were factors associated the utilization of modern family planning methods among married women with strong associations [22].

Several studies showed that intention to have more children is an immediate factor that can cause negative effect for the utilization of modern family planning toward the married women, for example a study done in Nigeria in 2013 states that the major reason for the non-use of modern family planning was intention to have more children, 33 (31.46%) followed by pressure from the husband and religious factors respectively 21 (12.5%), 18 (10.9%) [23]. Similar study done in Northern Shewa Amhara region Ethiopia revealed the need for more children, husband approval and family income were important factors for low utilization of family planning with strong association [24].

Educational level of the spouses is a very important factor for the utilization of modern family planning. Contraceptive use increase with educational attainment and about 22% of a woman with no education use one method of family planning compared to 68% of women with secondary education or higher use two or more methods [9]. Similar study done Jimma zone Ethiopia founded that, the formal education of the married women was the most important factor with strong association, the more the education level increases the utilization increases [25]. Study conducted in 2006 on urban and rural Youth in Ethiopia indicated that contraceptive use was 4.9% in those with no education, 13.1% in primary/low education and 82% among higher education [26].

A study done in Malaysia showed that the number of living children has effects on modern family planning utilization. The majority of respondent have begun to adopt modern family planning practices after their first birth with increasing adaptation up to their 8th birth with different methods [27].

Attitude toward modern contraceptive is an immediate key factor that accepts or prevents for any new innovations and needs prior intervention for new programs. A study done in western region, and central river region of the Gambia showed that utilization of modern

contraceptives among married women is highly affected by the Attitude of women. Therefore, attitude is the major cause that hindered the utilization of modern contraceptives among married [28].

Another study done in central Tanzania in 2010 indicates that a significant number of study participants had positive attitude toward modern family planning methods and the result shows that halve (50%) of the total respondent were aware of modern contraceptives and they thought benefits of modern family planning contraceptives outweigh the negative effects [29].

For sustainable use of modern family planning, awareness creation and knowledge are crucial inputs to change the negative behavior of the users. A cross-sectional study done in Barely India declared that lack of awareness was the key factor that hindered the married women not using modern family planning contraceptives [30]. A study done on urban and rural southern Ethiopia on modern family planning methods utilization among married women indicated that the knowledge was important factors contributing modern family planning utilization [31,32].

Religious and cultural factors have the potential to influence the acceptance and use of modern contraceptive and couples' decisions about family size and contraception [33]. Study done in East Hararge zone showed that religion was strongly associated with utilization of modern contraceptives. Some Muslim said Islam strongly objects the use of modern contraceptives [34]. For sustainable use of modern family planning methods awareness creation and knowledge of the side effects of the contraception are crucial inputs to change the negative behavior of the users. A recent cross-sectional study done in shire endaslasie declared that 20.5% of the respondents were fear of side effect on contraception [35]. Another institutional based un-matched case control study done in angolela and tera district north shewa administrative zone Amhara, 2006 indicates that a significant number of study participants had positive attitude toward modern family planning methods but the result shows that 30% of the total respondent were agreed that MCM causes maternal health problem due to methods related side effect [36].

Improving modern FP service utilization, in addition to contributing towards fertility control, is important to reduce the maternal, child and infant mortality in the area and ultimately improves the socio- economic development of the local community and the nation as a whole. The identification of the prevalence and possible associated factors that determine the utilization of modern contraceptives in the study area would have greater input for designing programs, proper implementation and evaluation of their contribution regarding family planning methods. The study will also may give baseline to the concerned bodies like: regional health bureau, zonal and woreda policy makers, Arba Minch town health office, partner NGOs, as well as reference documentation for next researchers.

Methods and Materials

Study area and period

Study was conducted from April 1 - 15, 2017 in Arba Minch Town which Located in Gamo Gofa Zone, 505 km to the south of Addis Ababa and 275 km from Hawassa. Arba Minch Town has 4 sub cities; within the 4 sub-city it has 11 administrative kebeles. Based on the 2007 population and housing census, the total population size of the Town estimated to be 107,575 and the number of child bearing age group of women were 25654 [37]. The number of households in the Town is estimated to be 22470 at the time of the study. According to the information obtained from District Health Office; there are 1 hospital, 2 health centers, 20 clinics, 11 health posts and 13 pharmacies which provide health services for the community. Family planning service is available in most of the public and private health facilities including health posts.

Study design: A community based cross-sectional study design was conducted.

Population

The source population: All women with age 15 - 49 years found in the A/m Town.

The study population: Women of reproductive age group who lives in selected 4 kebeles of each stratum with age 15 to 49 years were included.

Study unit: Households from the selected kebeles

Eligibility criteria

Inclusion criteria: All women of child bearing age (15 - 49 years), residing in selected kebeles in Arbaminch Town was allowed to participate in the study.

Exclusion criteria: Women with mental problems, not voluntary to respond and unable to give birth were excluded.

Sample size and sampling techniques

Sample size estimation

Using the formula, $n = (Z_{\alpha/2})^2 pq/d^2$ where q = 1-P

Assuming 80% modern CPR which is taken from similar study conducted in Tigray Region [35], 95% confidence level, 5% margin of error and design effect of 1.5, adding the non-response rate of 5%, finally the total sample size required will be 388 of women of reproductive age group (from age 15 - 49 years). Confidence level of 95% ($\alpha = 0.05$, $Z_{\alpha/2} = 1.96$) and ± 5% precision was used

$$n = \frac{(1.96)^2 \times (0.8)\ (0.2)}{(0.05)^2}$$

$$= \frac{0.614656}{0.0025} = 245.8$$

$$= 245.8 \times 1.5 = 368.7$$

$$368.7 + 18.43 = 387.13 \approx 388$$

Where:

- n = is the sample size (the desired sample size when target population is greater than 10,000)
- $(Z_{\alpha/2})^2$= is the abscissa of the normal curve that cuts off an area α at the tails (1 - α equals the desired confidence level, e.g., 95%) or standard normal deviation, set at 1.96, correspond to the 95% confidence interval
- d= is the desired level of precision/margin of error
- p= is the estimated proportion of an attribute that is present in the population (p = 80%), and q is 1-p.
- Based on this the final sample size become 388

Sampling techniques and procedures

A multi-stage sampling technique was employed for the selection of the sampling units. In the town there were four sub-cities and within four sub-cities there were 11 kebeles. One kebele was selected from each sub-city by using simple random sampling method. Finally the totals of 4 kebeles (Gurba, Kulfo, W/minch and Chamo) were selected. The sample size for each of the selected kebeles was allocated proportionally to the size of the women age 15 - 49 years of each kebele. Then systematic sampling method was used to select the households from each kebele. K^{th} interval was calculated by using the estimated number of child bearing age group women to the sample size. The first household interviewed was determined from the kebele house number register using simple random sampling method. The next household was identified systematically 25th interval by going in a clockwise direction. In cases of selected household with more than one eligible respondent, only one respondent was chosen by lottery method.

Data collection tool and procedures

A Structured and pre-tested questionnaire was adapted from other similar studies by considering socio-demographic and reproductive health characteristics to collect the data. The questionnaire was translated from English to Amharic version for data collection.

Variables of the study

Independent variables

Socio-demographic (Age, Religion, Ethnicity, and Culture), Socio-economic (Level of education of men, Educational Status of women, Occupation, economic status and Knowledge, and attitude Reproductive health psychological (Desire number of Children, Number living Children, Husband discussion) and methods related variables (side effect, medical problems).

Dependent variable

• Modern contraceptive utilization

Operational definition

Family planning: Having the number of children they want when they want them.
Modern Family planning methods: A modern system of medicine (hormonal), materials (condoms) and minor surgery (sterilization) to limit or space the child-Birth, which excluded the old traditional system of birth control (Abstinence, withdrawal).
Modern Family Planning utilization: Those women who using any types of modern FP during data collection.

Data quality management

The questionnaire was Pre-tested in similar setting by principal investigators prior to the data collection on 5% of total sample size (20 women) at one of kebele which was not part of the main study. Revisions and adjustments were made after pre-test i.e. some unnecessary questions were excluded and missed questions were incorporated. Training was given for five data collectors before starting data collection. In addition, the data were collected under close supervision of principal investigator. Principal investigators checked the collected data daily for its completeness and consistency. Then corrections were made accordingly.

Data processing and Analysis

Frequency distribution and analysis of the data was carried out and the descriptive statistics was used for tabular and graphic presentation of the findings by sing SPSS version 20. Binary logistic regression and multivariable logistic regression analysis were done to describe the association between dependent and independent variables and independent predictors of modern contraceptive utilization. Percentages, frequency distributions and measures of central tendency and measures of dispersion was used for describing the utilization of modern contraception methods and displayed in graphs and statistical significance was set at p-value of <0.05.

Ethical consideration

Ethical clearance for the study was obtained from Arba Minch University. Permission was obtained from college of medicine and health sciences and the first page of the questionnaire was provided full informa¬tion to the study participants regarding the purpose and nature of the research. Verbal consent was obtained from each participant. Participation to the study was on voluntary basis, and par¬ticipants was informed their right not to participate in the study if they do not want to participate and the right to withdraw from the study at any point of the interview. Moreover, confidentiality of the information was assured through using anonymous questionnaire and keeping the data in secured place.

Dissemination of result

The final report of the study will be presented and submitted to Arba minch University, college of medicine and health science, department of nursing and attempt will be made to publish in peer reviewed national or international journals.

Results

Socio-demographic characteristics of respondents

A total of 388 women of reproductive age group (15 - 49) years were included in this study. More than one third 170 (43.8%) were in 25 - 34 years and Mean age of respondents was 32.62 ± (SD = 7.326) Years ranging from 17 - 49 years. The majority of respondents 265

(68.3%) were Gamo by ethnicity followed by Amhara 51 (13.1%). The majority of respondents 187 (48.2%) were Protestants by religion 157 (40.5%) were Orthodox by religion. More than one third 148 (39.3%) were married at age of 16-20 years with mean age of respondents first marriage was 20.79 ± (SD = 4.244) years ranging from 13 - 40 years (Table 1).

Socio-demographic characteristics		Frequency	Percent
Age category	15 - 24 years	51	13.1
	25 - 34 years	170	43.8
	35 - 44 years	139	35.8
	45 and Above	28	7.2
Marital status	Single	11	2.8
	Married	323	83.2
	Separated	30	7.7
	Divorced	24	6.2
Ethnicity	Gamo	265	68.3
	Amhara	51	13.1
	Gofa	30	7.7
	Oromo	24	6.2
	Tigray	18	4.6
Religion	Protestant	187	48.2
	Orthodox	157	40.5
	Muslim	28	7.2
	Catholic	11	2.8
	Jehovah	5	1.3
Educational status of the respondent	Illiterate	57	14.7
	Can read and write	57	14.7
	Primary School	87	22.4
	Secondary School	84	21.6
	Diploma	66	17.0
	Degree and above	37	9.5
Educational Status of the husband (n = 377)	Illiterate	20	5.3
	Can read and write	37	9.8
	Primary School	78	20.7
	Secondary School	82	21.8
	Diploma	69	18.3
	Degree	74	19.6
	Above	17	4.5
Occupation of the respondent (n = 388)	Farmer	8	2.1
	Merchant	98	25.3
	Government Employee	125	32.2
	Private	21	5.4
	Daily worker	40	10.3
	Student	22	5.7
	Housewife	74	19.1

Occupation of husband (n = 377)	Farmer	20	5.3
	Merchant	84	22.3
	Government Employee	149	39.5
	Private	60	15.9
	Daily worker	60	15.9
	Others	4	1.1
Age at 1st marriage (n = 377)	10 - 15 years	49	13.0
	16 - 20 years	148	39.3
	21 - 24 years	132	35.0
	Above 24 years	48	12.7
Family size (n = 388)	1 - 2	15	3.9
	3 - 5	196	50.5
	Above 5	177	45.6
Monthly income in birr	Less than 1000 birr	48	12.4
	1000 - 2000 birr	104	26.8
	2001 - 3000 birr	48	12.4
	3001 - 4000 birr	37	9.5
	Above 4000 birr	151	38.9

Table 1: *Socio-demographic characteristics of respondents in Arba Minch town SNNPR, Ethiopia, 2017.*

Reproductive history of respondents

Among 388 respondents 371 (95.6%) have history of pregnancy and 17 (4.4%) did not have history of pregnancy. More than one third 156 (41.4%) were become pregnant for first time at age of 21 - 25 years with mean age of first pregnancy 21.59 ± (SD = 4.211) years ranging from 13 - 38 years. Regarding the number of desired children 174 (44.8%) reported that they need four children followed by 156 (40.2%) reported that they need more than 4 children (Table 2).

Reproductive history		Frequency	Percent
History of pregnancy	Yes	371	95.6
	No	17	4.4
Number of pregnancies (n = 371)	1 - 3	206	55.5
	4 - 5	107	28.8
	Above 5	58	15.6
Number of children alive (n = 369)	1 - 3	232	62.9
	4 - 5	106	28.7
	Above 5	31	8.4
History of stillbirth (n = 377)	Yes	49	13.0
	No	328	87.0
History of Abortion (n = 388)	Yes	57	14.7
	No	331	85.3
Age at first pregnancy (n = 377)	10 - 15 years	29	7.7
	16 - 20 years	134	35.5
	21 - 25 years	156	41.4
	Above 25 years	58	15.4
Number of children desired	1	1	.3
	2	21	5.4
	3	36	9.3
	4	174	44.8
	Above 4	156	40.2

Table 2: *Reproductive health history of reproductive age women in Arba Minch town, SNNPR, Ethiopia, 2017.*

Socio-psychological characteristics

From the respondent 44 (11.3%) believed that having too many children helps to improve the income of the family whereas the majority of the respondents 344 (88.7%) of the respondent did not agree. Among 388 respondents 34 (8.8%) were high infant/child mortality be compensated by too much birth and 354 (91.2%) of the respondent did not agree. From the respondents 103 (26.5%) reported that it is a sin to practice modern family planning methods. From the total respondents 314 (80.9%) of the women responded that Modern contraceptives have dangerous side effect to a mother but 73 (18.8%) did not believe Modern contraceptives have dangerous side effect to a mother.

S.NO	Attitude Questions	Response	Frequency	Percent
1	Too many children help improve the income of the family	Yes	44	11.3
		No	344	88.7
2	Child mortality is compensated by too much birth	Yes	34	8.8
		No	354	91.2
3	Practicing modern family planning methods is sin	Yes	103	26.5
		No	285	73.5
4	Modern contraceptives has side effect and it will be dangerous to a mother	Yes	314	80.9
		No	74	19.1
5	Child spacing helps to protect the health of mothers and children	Yes	347	89.4
		No	41	10.6
6	Contraceptive use decrease sexual satisfaction	Yes	133	34.3
		No	255	65.7
7	Contraceptive use cause infertility in women	Yes	186	47.9
		No	202	52.1
8	Modern Family planning methods help a mother to regain her strength for next baby	Yes	315	81.2
		No	73	18.8
9	Husband share the responsibility of family planning use (n = 377)	Yes	263	69.8
		No	114	30.2
10	FP help couple to become responsible Parents	Yes	346	89.2
		No	42	10.8
11	Overall Attitude about modern family planning use	Positive	315	81.2
		Negative	73	18.8

Table 3: *Psychological/ Attitude characteristics of reproductive age women in Arba Minch town, SNNPR, Ethiopia, 2017*

Positive Attitude*: respondents were labeled to have "positive attitude" if they answered mean and above correctly for the questions designed to access attitude 315 (81.2%).*

Knowledge on modern family planning method

Respondents were asked a series of questions about their knowledge regarding modern family planning method and most of them had heard about it. The major source of information 317 (81.7%) were health workers followed by radio and television 50 (12.9%). Most of them knew about injectable 278 (71.6%) and implants 262 (67.5%). Among methods respondents have little knowledge about surgical method 31 (8.0%). The overall knowledge regarding modern contraceptive use was 262 (67.5%) (Table 4).

Knowledge on Family planning methods		Frequency	Percent
Have you Heard about modern Family planning methods	Yes	380	97.9
	No	8	2.1
Source of information about modern Family planning methods	Health worker	317	81.7
	Radio and Television	50	12.9
	Other women	21	5.4
knew Injectable	Yes	278	71.6
	No	110	28.4
Knew implant	Yes	262	67.5
	No	126	32.5
Knew pills	Yes	193	49.7
	No	195	50.3
Knew condom	Yes	93	24.0
	No	295	76.0
Knew Surgical methods	Yes	31	8.0
	No	357	92.0
Knew IUCD	Yes	146	37.6
	No	242	62.4
Reasons to use Modern family planning	Prevention of unwanted Pregnancy	68	17.5
	Child spacing	262	67.5
	To limit family size	56	14.4
	Medication	2	.5
	Good knowledge	262	67.5
	Poor knowledge	126	32.5

Table 4: *Respondents knowledge about modern family planning methods among reproductive age women in Arba Minch town, SNNPR, Ethiopia, 2017.*

"Good Knowledge"*: if they responded correctly above Mean score for Knowledge related questions otherwise poor knowledge 262 (67.5%).*

Contraceptive utilization

The use of modern contraceptives (all methods listed) was 323 (83.2%). About 246 (63.4%) were currently using modern contraceptive method. Among 323 respondents 100 (40.7%) use Implants, 99 (40.2) Inject able, 16 (6.5%) pills, 19 (9.7%) IUCD, 7 (2.8%) condom and 4 (1.6%) were used surgical methods (Table 5 and Figure 1).

The most common reason why they were not using modern contraceptive were side effects of the method 51 (35.9%), followed by rumor and intention to have more children 31 (21.8%) and 17 (12.0%) respectively (Figure 2).

Contraception utilization		Frequency	Percent
Ever use of contraceptives	Yes	323	83.2
	No	65	16.8
Current contraceptive use	Yes	246	63.4
	No	142	36.6
Ever defaulted modern Family planning methods (n = 246)	Yes	70	18.0
	No	176	45.4
Factors for discontinuation of contraceptives (n = 70)	Sickness	32	45.7
	To have extra child	27	38.6
	No reason	11	15.7
Practicing Modern FP method is culturally acceptable	Yes	265	68.3
	No	123	31.7
Reason not to use modern family planning method in the respondent culture (n = 123)	For religious reason	67	54.5
	Intention to have more children	27	22.0
	Side effect of methods	15	12.2
	Rumor	14	11.4
Religious fathers approve modern FP method use	Yes	126	32.5
	No	262	67.5
Who decide contraceptive use	Husband only	16	4.1
	Women only	23	5.9
	Jointly	349	89.9

Table 5: *Contraceptive use related factors among respondents in Arba Minch town SNNPR, Ethiopia, 2017.*

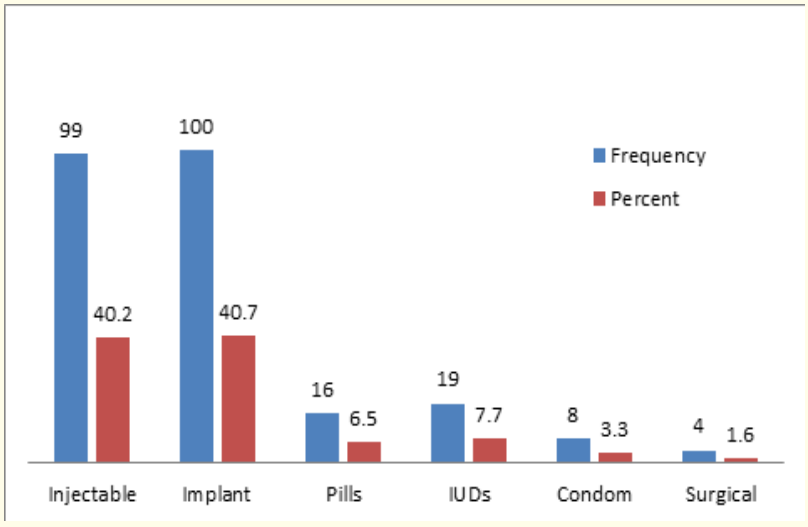

Figure 1: *Frequency distribution of Type of contraceptives currently being used by reproductive age women (n = 246).*

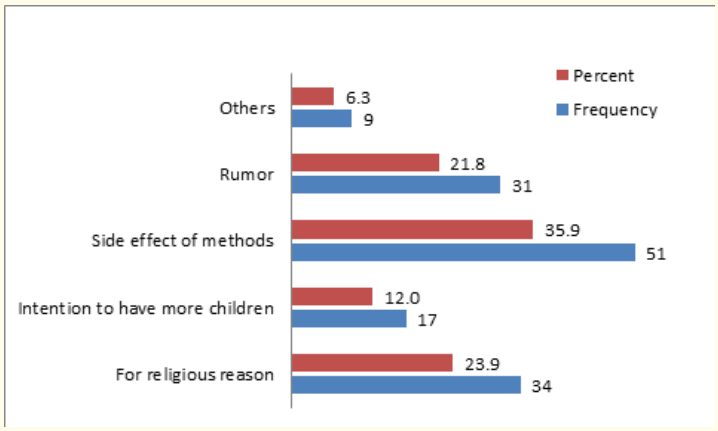

Figure 2: *Frequency distribution of the most important reason for a woman for not using Modern family planning methods (n = 142).*

Factors associated with modern contraceptive utilization

Binary logistic regression showed that Respondents age 15 - 24 years, 25 - 34 years, respondents completed primary and secondary school, Family size 3 - 5 and above 5, monthly income less than one 1000.00 birr, Knowledge about modern family planning method and attitude were factors associated modern family planning utilization practice.

Variables which show statically significant association in binary logistic regression were entered to Multivariable logistic regression to rule out confounders and respondents age 15 - 24 years were 3.3 times [AOR = 3.3 (1.875, 12.957)] more likely to use modern family planning than those age above 45 years, Respondents completed primary school were 1.3 times [AOR = 1.3 (1.225, 2.912)] more likely to use modern contraceptives than illiterate once, Family size above 5 were 1.2 times [AOR = 1.2 (1.192, 2.129)] more likely to use modern contraceptive use than those with family size of 1 - 2, Monthly income less than 1000 birr were 1.5 times [AOR = 1.5 (1.375, 3.214)] more likely to use modern contraceptive than those earning more than 4000 birr and respondents having adequate Knowledge about modern family planning were 2.3 times [AOR = 2.3 (1.374, 3.945)] were more likely to use modern contraceptive than those with poor knowledge (Table 6).

Modern contraceptive use [a] Yes (n = 246) Frequency Percent			Modern contraceptive use				COR UB	95% CI for AOR		AOR UB	95% for AOR		P value [b]
			No (n = 142)			LB			LB				
			Frequency	Percent									
Yes	Age	15 - 24 years	38	15.4	13	9.2	.257	.096	.682	3.368	1.875	12.957	.037**
		25 - 34 years	122	49.6	48	33.8	.295	.130	.670	2.448	.926	6.475	.071
		35 - 44 years	74	30.1	65	45.8	.659	.290	1.495	1.333	.515	3.453	.553
		45 and Above	12	4.9	16	11.3	1	-	-	1	-	-	-
	Educational status of the respondent	Illiterate	29	11.8	28	19.7	1	-	-	1	-	-	-
		Can read and write	27	11.0	30	21.1	.325	.136	.774	1.618	.346	7.573	.051
		Primary School	58	23.6	29	20.4	.325	.136	.774	.804	.399	1.620	.011*
		Secondary School	60	24.4	24	16.9	.323	.144	.727	1.349	1.225	2.912	.002*
		Diploma	48	19.5	18	12.7	.706	.313	1.594	.623	.217	1.792	.402
		Degree and above	24	9.8	13	9.2	1.104	.465	2.624	1.537	.630	3.752	.823
	Family size	1 - 2	7	2.8	8	5.6	1	-	-	1	-	-	-
		3 - 5	142	57.7	54	38.0	1.386	1.282	3.986	.826	.156	.951	.0112
		Above 5	97	39.4	80	56.3	1.461	1.300	2.710	1.214	1.192	2.129	.006**
	Monthly income	< 1000 birr	23	9.3	25	17.6	1.952	1.012	3.766	1.579	1.375	3.214	0.02**
		1000 - 2000 birr	66	26.8	38	26.8	1.034	.615	1.739	.767	.314	1.876	.561
		2001 - 3000 birr	35	14.2	13	9.2	.667	.325	1.368	1.793	.756	4.252	.185
		3001 - 4000 birr	25	10.2	12	8.5	.862	.401	1.852	1.106	.443	2.764	.829
		Above 4000 birr	97	39.4	54	38.0	1	-	-	1	-	-	-
	Knowledge about MFP methods	Good knowledge	184	74.8	78	54.9	.411	.265	.637	2.328	1.374	3.945	0.002**
		Poor knowledge	62	25.2	64	45.1	1	-	-	1	-	-	-
	Attitude about MFP method	Positive	210	85.4	105	73.9	2.861	1.664	4.919	1.391	.737	2.624	.308
		Negative	36	14.6	37	26.1	1	-	-	1	-	-	-

***Table 6**: Multivariable logistic regression of factors predicting the likelihood of modern family planning method utilization among reproductive age women at Arba Minch town, Southern Ethiopia, 2017, (n = 388).*

a: 95% Confidence Interval for Modern contraceptive use

b: P-value between groups significant at the 0.05 level

Discussion

The current study assessed modern contraceptive utilization and its associated risk factors among reproductive age women in Arba Minch town. The overall prevalence of modern contraceptive utilization was 246 (63.4%). This is lower than findings from developed world showing that developed countries prevalence of modern contraceptive utilization among married women in United Kingdom were 80%, Finland were 72%, Brazil were 75%, Uruguay were 73.8%, and Switzerland were 72.2% [17]. However is this is higher than studies from developing countries the prevalence of modern contraceptive utilization among married women was 60.4% in Turkey in 2008 [15], Another study done in Rwanda April 2013 shows the modern contraceptive prevalence among married reproductive aged women was 45% (2010) [16,17] and in previous study done in 2011 on geographical variation on modern contraceptive prevalence among married women in SNNP region was lowest 39.2% [20] and the latest Ethiopian health survey (MINI-EDHS 2014) revealed that the prevalence of modern

contraceptive methods among currently married women in Ethiopia is 40.4% [3,5,38]. The variation could be explained by difference in socio-economic status study participants in the developed and developing countries. I could also be explained by difference in study settings and sustainable availability of different methods of contraceptives, IEC (health Education) program about reproductive health (RH) is mainly concentrated in urban rather than rural.

This study revealed that short acting contraceptives were highly preferred; from these, implants (40.7%) and Injectable (40.2%) were the most frequently used contraceptives. This result is consistent with other studies conducted in different areas of Ethiopia [39-45].

This study revealed that respondents age 15 - 24 years were 3.3 times [AOR = 3.3 (1.875, 12.957)] more likely to use modern family planning than those age above 45 years. This similar with finding from study done in 2011 across Ethiopia among married women of reproductive age declared that age had an inverse association with use of modern contraceptive methods. Older married women had lower odds of using modern contraceptive methods than younger married women [19].

Respondents completed primary school were 1.3 times [AOR = 1.3 (1.225, 2.912)] more likely to use modern contraceptives than illiterate once. This is in line with survey done in 2011 in Ethiopia among married women of reproductive age declared that Educated women had better odds of using modern contraceptive methods than uneducated married women [19]. EDHS survey detected that Contraceptive use increase with educational attainment. About 22% of a woman with no education use one method of family planning compared to 68% of a women with secondary education or higher use two or more methods [9]. The same result from study done in Jima zone founded that, the formal education of the married women was the most important factor with strong association, the more the education level increases the utilization increases [25]. Another study conducted in 2006 on urban and rural Youth in Ethiopia indicated that contraceptive use was 4.9% in those with no education, 13.1% in primary/low education and 82% among higher education [26]. This could be explained by improved access to reproductive health information by educated women than illiterate once.

Family size above 5 were 1.2 times [AOR = 1.2 (1.192, 2.129)] more likely to use modern contraceptive use than those with family size of 1-2. This is in line with study done in Malaysia showed that the number of living children that having the family can have effects on modern family planning utilization and majority of respondent have began to adopt modern family planning practices after their first birth with increasing adaptation up to their 8th birth with different methods [27] and According to the EDHS, 2011 survey showed that as the number of living children increases the modern family planning methods utilization increases, for example 23% of women who have no children are currently using family planning compared with 35% of those have 1 - 2 children [9].

Monthly income less than 1000 birr were 1.5 times [AOR = 1.5 (1.375, 3.214)] more likely to use modern contraceptive than those earning more than 4000 birr. This is unlike findings from A recent survey done in 2011 across Ethiopia among married women of reproductive age declared that wealthy women had two times higher odds of using modern contraceptives than poor married women [19].

This study also revealed that respondents having adequate Knowledge about modern family planning were 2.3 times [AOR = 2.3 (1.374, 3.945)] were more likely to use modern contraceptive than those with poor knowledge. This is in line with findings from India in 2012 declared that lack of awareness was the key factor that hindered the married women not using modern family planning contraceptives [30] and A study done on urban and rural southern Ethiopia in March and April 2010 on modern family planning methods utilization among married women indicated the knowledge was important factors contributing modern family planning utilization [31,32].

Conclusion and Recommendation

Conclusion

In conclusion majority of respondents were users of modern family planning. Most commonly used modern family planning methods were implants and injectable. Respondents age 15 - 24 years, completing primary school, Family size above 5, Monthly income less than 1000 birr and respondents having adequate Knowledge about modern family planning were factors associated with modern family planning method utilization.

Recommendation

Based on finding from this study we recommend Gamo Gofa Zone health department and Arba Minch Town health extension workers to focus factors predicting likelihood of modern contraceptive use to further improve modern contraceptive utilization. Focusing on Educating women to improve contraceptive related knowledge is important for success.

Appendixes

Annex I- Participants Information Sheet

Good morning; my name is ----------

I am a member/ members of the research team from department of Nursing, College of Medicine and Health Sciences; Arba Minch University. We are conducting a research here on modern family planning methods utilization and associated factors among women of reproductive age-group of (15 - 49). So that you are invited to take part in this research study. So, this consent form contains information about the study. To be sure that you are informed about being a part of this research, please read (or have it read to you) this consent form. You will also be asked to sign the form or make your mark. Please take your time to decide whether you would like to participate. You may ask us to explain anything you may did not understand.

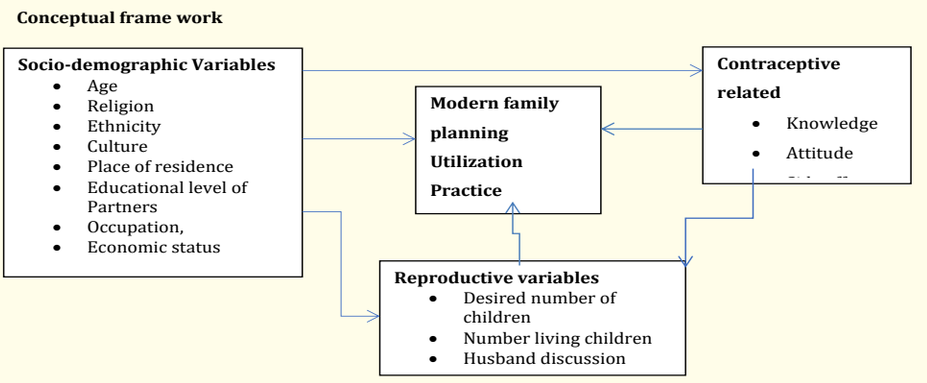

Figure 3: *Conceptual frame shows the relationship b/n independent and dependent variables of the utilization of modern family planning methods and associated factors with relevant factor modification from different literatures.*

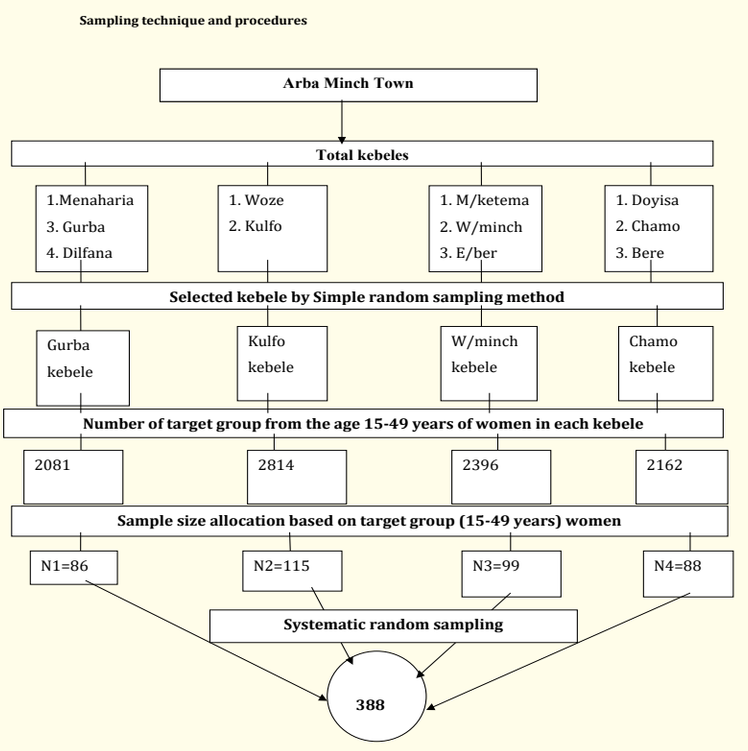

Figure 4: *Schematic representation of Sampling techniques and procedures for modern family planning method utilization among reproductive age women at Arba Minch town, Southern Ethiopia, 2017, (n=388).*

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Contribution of Authors

This research was conducted by team of nursing students for partial fulfillment of bachelor of nursing degree in Arba Minch University Ethiopia. The research team includes the following five members; Andualem Samuel, Abraham Uliso, Birke Olle, Desalech Dambe and Melkinesh Nigatu. Mende Mensa is senior researcher and lecturer in Arba Minch University with more than 10-publications has analyzed the data, polished language and prepared the Manuscript for publication.

Conflict of Interest

All the authors and Manuscript writer had no conflict of interest which influenced us during research process. All expenses regarding this paper were from out of pocket of the researchers.

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