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The Contraceptive Knowledge, Practices and Reasons for Failure among Abortion Care Seekers in Hawassa City, Ethiopia

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Abstract
Unwanted pregnancy and induced abortion occur in every society and all governments and health care systems face the challenge of providing some elements of abortion care. Annually, millions of unintended pregnancies occur worldwide and most of them were due to the non-use or the inconsistent or incorrect uses of contraceptive methods. The majority of them end in induced abortions. The objective of the study was to assess contraceptive knowledge, practice and reasons for failure among abortion seekers in the health institutions of Hawassa city. Institution based cross-sectional study design supplemented with qualitative data was done. The study subjects were volunteer induced abortion care seekers in randomly selected health facilities in the city. Pretested and structured questionnaire was used to collect the data and data were entered onto a computer using Epi-info 3.5.1 statistical program then exported to SPSS Windows version 16.0 for further analysis. Binary descriptive statistics and multiple variable regressions were done. The majority of women, 246(91.85%) have awareness about contraceptives. Most of them were aware of pills 215(87.4%) followed by condoms 193(78.5%). The likelihoods of reporting contraceptives use at time of conception was higher among age group 20 -24 (AOR=1.86, 95% CI 1.01, 3.60) and 25-29 (AOR=3.31, 95% CI 1.48, 7.43). The reporting of the contraceptive use at time of conception was lower among never married (AOR=0.38, 95% CI 0.17, 0.82). Women undergoing repeated abortions were more likely to report using contraceptives at time of conception (AOR=1.8, 95 % CI 1.01, 3.30). The age, length of marriage, history of abortion and history of contraceptive uses were significantly association with intention of contraceptive use in the future. The majority of women became pregnant due to forgetting to take contraceptive (23.1%) and contraceptive failure (21.3%). The result of this study showed that the majority of respondents were aware of existence of contraceptives. However, there was poor contraceptive usage among abortion care seekers. Generally in abortion, prevention is better than cure; preventive works like highly effective contraceptive services, health education should be generated among risky segment of population.
Keywords: Abortion, Contraceptive, Hawassa City.

INTRODUCTION

The use of modern family planning methods and maternal and newborn health care already contributes to lower rates of unintended pregnancy, unsafe abortion, and maternal and newborn death and disability. But all of these indicators remain too high in the developing world (Singh S et al., 2009)

Unwanted pregnancy and induced abortion occur in every society and all governments and health care systems face the challenge of providing some elements of abortion care. Annually, millions of unintended pregnancies occur worldwide and most of them were due to the non-use or the inconsistent or incorrect uses of contraceptive methods. The majority of them end in induced abortions (Kost K et al., 2008).

In 2008, an estimated of 208 million pregnancies that occurred in the world, of which 33 million resulted in unintended birth and 41 million ended in induced abortions (20%). Of the 185 million pregnancies that occur in developing countries, 40% are unintended, and 19% end in induced abortion (Singh S et al., 2010).

The world Health organization (WHO) estimated that, worldwide almost 20million unsafe abortion takes place each year that emanated from unintended pregnancies, with 95% of these performed in developing countries. About 5.5 million unsafe abortions occur in Africa each year, accounts for almost half world's death from unsafe abortions (Singh S et al., 2009). An estimated 358,000 maternal deaths occurred worldwide in 2008, a 34% decline in developed world, developing countries continued to account for 99% of the deaths. Among developing regions, sub-Saharan Africa had the highest maternal mortality at 640 maternal deaths per 100,000 live births in 2008(WHO, 2008).

Ethiopia has the fifth highest number of maternal deaths in the world and about a two third of these deaths are the result of unsafe, back-street abortions (FMOH, 2011). Based on 2006 Federal ministry of Health (FMOH) report of Ethiopia, an estimated of 3.27 million pregnancies occurring every year and of which, more than half a million ends in either spontaneous or unsafely induced abortion (FMOH, 2006). Abortions accounts for about 50 percent of total gynecological and obstetric admissions and it accounts 32% of maternal mortality in Ethiopia (ESOG et al., 2005).

In Ethiopia, 15% of married women ages range between 15-49 use contraceptives and 14 % of married women uses the modern contraceptives. The contraceptive prevalence rate of the country is still very low with only 29%

of married women using any types of contraception contradictory to their contraceptive knowledge levels . The use of contraceptive is high in urban regions of the country even though the abortion rate is considerably higher than the national average in urban areas. There is great discordance between contraception use and abortion rate in urban areas of the country (CSA, 2011).

Improving maternal health is one of eight millennium development goals adopted at 2000 millennium summit. Providing effective contraceptive services will contribute greatly to achievement of every one of the MDG (WHO, 2008). So it significantly lowers maternal mortality and maternal morbidity associated with unintended pregnancies by reducing number of abortions especially unsafe one. In addition, it would also contribute substantially to women's empowerment, achievement of universal primary schooling, and long-term environmental sustainability. However, the burden of unintended pregnancies is still large .One of the root cause for unwanted pregnancy is imperfect use and failure of contraception (Amy O et al., 2010, Siegrid T et al., 2004). About one-third of unwanted birth and one-half of all induced abortions could be prevented if women switched to effective contraceptive method (DHS, 2002).

Most Previous studies have shown that there is a wide gap between knowledge and use of contraception. Surprisingly, Knowledge about contraception is relatively high when compared with utilization rate. For instance, knowledge about modern contraceptives was around 97% in Ethiopia , 96% in Kenya and 85% in Tanzania , but their Contraceptive prevalence rate were 29%, 28% and 25% respectively (CSA, 2011, Lewis N et al , 1998, Olenik I, 1998).

MATERIALS AND METHODS

Study Area and Period

This study was conducted in Hawassa City. It is the capital City of the Southern Nation Nationalities and Peoples' Regional State located at the Eastern shore of Lake Hawassa 275 km South of Addis Ababa. It lies at altitude of 1708 m (5604 feet) above sea level and has a plain topography with 70' 03'' latitude and 80' 29'' East longitude. The mean annual temperature and rainfall is 20.3^{o}C and 933.4 mm, respectively. The City is divided in to 7 sub-cities and 20 kebeles. Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia, this city has a total population of 258,808, of whom 133,123 are men and 125,685 women; with an area of 157.21 square kilometers. The selection of the city was based on abortion prevalence and administrative convenience. Hawassa is the capital city of a state more than 45 ethnic groups and currently, its population is alarmingly increasing from time to time and one of the fastest growing cities in Ethiopia. The city has Five Hospitals (two governmental and three private), four health centers (three governmental, one private), 12 health posts (11governmental, 1private), and 45 clinics (CSA, 2007). The study was conducted from March 20 to June 3, 2012

Study Design and Sample Size

Health institutions based cross-sectional study design supplemented by qualitative data was conducted to assess contraceptive knowledge, practices and reasons for failure among abortion care seekers in the health institutions of Hawassa city. A sample of 278 women who were identified as volunteer induced abortion seekers was participated in this study. The sample size was determined using a formula for estimation of single population proportion with the assumption of 95% confidence level, margin of error of 5%, a design effect of 1.5 and expected prevalence of population with contraceptive use among urban reproductive age group in Dawuro town (87.5 %) (Binyam et al., 2011). To compensate the non-response rate, 10% of the determined sample was added.

Sampling Technique

Among Eight health institutions, which provide legal abortion care, five health institutions (two governmental hospitals, one health center and two non-governmental clinics) were selected to conduct the survey by using simple random sampling method. In order to recruit study participant , convenience sampling method were used. The sample size was allocated for study facilities by using probability allocation to size for each selected health institution based on previous three months document review. At each study health institution, the study subjects were recruited until proportionately allocated sample were obtained and every pregnant women who were voluntarily seeking to terminate their pregnancy at each sampling unit were included in the study until allocated sample size were achieved. Those who have incomplete abortion or those women terminating their pregnancy for obstetric reason and women with spontaneous abortion were excluded from the survey because they might not be willing to practice contraceptives for probably of wanting the pregnancy.

Data Collection Techniques and Procedures

Interviewer administered questionnaires was employed to collect the data. The questionnaires adopted and modified from EDHS and related thesis works after reviewing relevant literature (CSA, 2011). The English version of the questionnaire was translated into Amharic language for better understanding by the data collectors and respondents. The questionnaire then retranslated back to English by other people who are proficient in both languages to maintain the consistency of the questionnaires.

The questionnaires contain socio- demographic factors, previous obstetric history, period of gestation (POG), length of marriage, sex composition of children, current number of children, Reason for termination of pregnancy, status of contraceptive knowledge, practices and reason for failure. The questionnaire which assessed reason for contraceptive failure is more focus on condom, IUCD and pills failure and prevalence of all method failure at time of conception because these contraceptive methods were conducive to investigate failures. They were also accounted more than half of modern contraceptive failure among users as evidenced by many researches.

To administer the structured questionnaire, five high school completed female were recruited from the study area. Training was given for three days about the objective, relevance of the study, confidentiality of information, respondent's right, informed consent and techniques of interview. Moreover, practical demonstration of the interview was carried out. Two supervisors who have first degree were supervise the data collection procedures. All field questionnaires were reviewed each night and morning sessions was conducted every day with the data collectors and supervisors to discuss on the problem encountered during data collection procedures.

For qualitative, data were collected using open-ended and responsive questioning technique (in-depth interviews) by principal investigator. Before data recording or taking the field note, verbal informed consent was taken from participants, then information were obtained through tape recorded and for those who were not volunteer for their voice recording, the field note was taken. The data collections were preceded until the redundancy of information among participants. The data collection was preceded in the silent room and last for thirty minutes.

Data Quality Control

Before conducting the main study, pre-test was carried out on 5 % sample on similar clients to study participants in Yergalem hospital one week before data collection, which were not included to sampling participants. Based on the finding of pre -test, data collectors were reoriented and the questionnaire was modified as necessary.

Data entry and analysis procedures

Data was coded and entered into version 3.5.2 EPI data. 10 % of the responses were randomly selected and checked for consistency of the data entry. Then printed frequencies were used to check for outlier and clean data. After cleaning data it was transported into SPSS version 16 for analysis. Analysis of association for selected exposure variables was done with the outcome variable.

Initially, bivariate analysis was performed between dependent variable and each of the independent variables, one at a time. Their odds ratios (OR) at 95% confidence intervals (CI) and p-values were obtained. The findings at this stage helped us to identify important associations. Then all variables found to be significant at bivariate level (at p-value<0.05) were entered in to multivariate analysis using the logistic regression model to test the significance of the association. Tables, pie chart and bar graphs were used to present the data.

For qualitative , before analyzing the data, the code was given for each participant's response in each health facility, and then Interviews were written in full form and repeatedly were guided by the interview questions. The recorded and reported responses were first transcribed completely to Amharic and fully translated to English and analyzed by narrative method.

Ethical clearance

Letter of ethical clearance was obtained from Addis Ababa University Research and Publications committee of Department of Nursing and Midwifery. Formal letter of cooperation was written from Addis Ababa University Department of Nursing and Midwifery to SNNPR health Bureau and for respective sampling unit health facility of the city for legality. Written Informed consent was obtained from each respondent before interviewing. Confidentiality of individual client information was ensured by using unique identifiers for study participants and limiting access to the principal investigator and research assistants of study information by storing the completed questionnaires and all documents with participant information in a lockable cabinet.

For uniformity of understanding of the approach of key words is given below

Current user: -refers to a woman who is using contraceptive method at the time of the study.

Contraceptive failure is defined as a pregnancy occurring while contraception is being practiced at time of conception. This definition of failure includes both methods failure and failures attributed to inconsistent or incorrect use, which is also called "user failure".

Ever user: refers to a woman who has practiced contraceptive methods sometime in the past but not using at the time of this study.

Non user: -refers to a woman who has never used contraceptive methods up to the date of interview.

Results

1. Background Characteristics of the respondents

Out of 278, 268 women were provided full information with response rate of 96.8%. The mean age of respondents was 23.2 years with standard deviation (SD) of $\pm$ 5.2 years. More than half of abortion seekers, (68%) were within age range of 15-24. The majorities of women seeking abortion were orthodox (41.8%),

wolayta (24.6%), never married (59%), secondary education (35.8%), (42.9%) were students. Two third of respondents (75.4%) were from urban areas and among those married (61%) length of marriage is ranged from 1 to 5 years. (Table 1)

75.75% women had no history of previous induced abortions and (18.28 %) women had one previous history of induced abortions. More than half of study participants 150(56.0%), had not been pregnant in the past while 44% of women had one or more pregnancies in the past. Most, 189(70.52%) of respondents were nulliparous while the rest, 79(29.48%) were grand multiparous. The outstanding reasons for occurrence of current unintended pregnancies were forgot take contraceptive 62(23.1%), contraceptive failure 57(21.3%) and rape case 53(19.8%) and least of them were not know the reason (Table 2)

The distribution of women according to their period of gestation was interrogated. More than half, 163(61.0%) of respondents' period gestation was from 5-8 weeks duration. The 39(14.6%) and 62(23.2%) of respondents' period of gestation was 1-4 weeks and 9-12 weeks duration respectively. and least, 3(1.1%) period of gestation was above 13 weeks duration(Table 2).

Table 4: Background characteristics of abortion seekers in health institutions of Hawassa City, 2012 (n=268).

Characteristics	Frequency	Percentage	Characteristics	Frequency	Percentage
Age			**Marital status**		
<20	89	33.2	Married	65	24.3
20-24	96	35.8	Never married	158	59.0
25-29	59	22.0	Widowed	16	6.0
30-34	13	4.9	Divorced	15	5.6
≥35	11	4.1	Cohabiting	14	5.2
Religion			**Ethnicity**		
Orthodox	112	41.8	Wolayta	66	24.6
Protestant	98	36.6	Sidama	53	19.8
Muslim	40	14.9	Amhara	43	16.0
Catholic	15	5.6	Oromo	36	13.4
Others*	3	1.1	Hadiya	24	9.0
			Others**	46	17.2
Educational status			**Occupation**		
No formal edu.	28	10.4	Merchant	22	8.2
Primary	75	28.0	Employee	22	8.2
Secondary	96	35.8	Housewife	46	17.2
Preparatory	24	9.0	House maid	18	6.7
College & above	45	16.8	Student	115	42.9
			Comm.sex worker	13	4.9
			Daily labor	19	7.1
			Others***	13	4.8
Residence			**Length of marriage**		
Urban	202	75.4	1-5 years	50	61
Rural	66	24.6	6-10 years	23	28
			>10 years	9	11

Other* religion like Jehovah witness, traditional belief Others ***occupation like waiter, janitor etc
Other**ethnicity like Gedio, Gurage, kembata etc

Table 2: The distribution of women according to their previous induced abortion history in the health institution of Hawassa city, 2012.

Characteristics	Number and %	Characteristics	Number and %
Repeated abortion seekers (n=268)		**Women who have children (n=78)**	
First seekers(new)	203(75.75)	1	24(30.8)
Second seekers	49(18.28)	2	24(30.8)
Third and above	16(5.97)	≥3	30(38.4)
Gravidity(n=268)		**Parity(n=268)**	
GI	150(56.0)	0	189(70.52)
GII	46(17.2)	1-2	49(18.28)
GIII	27(10.1)	3-4	14(5.23)
≥GIV	45(16.8)	≥ 5	16(5.97)
Reasons for termination		**Reason for becoming pregnant**	
Prev. child was young	30(11.2)	Forget to take contraceptives	62(23.1)
No need of pregnancy	45(16.8)	rape case	53(19.8)
contraceptive failure	42(15.7)	pressure from partners	47(17.5)
rape case	40(14.9)	lack of knowledge	19(7.1)
pregnancy from relative	28(10.4)	contraceptive failure	57(21.3)
financial reasons	27(10.1)	no response	20(7.5)
social reasons	31(11.6)	Others**	10(3.7)
Others*	25(9.3)		

Others* reasons for termination like too young, out of relationship, refusal of partners etc
Others ** reason for becoming pregnant like considering not risky to become pregnant, lack of contraceptive access

2. Contraceptive Awareness, Usage and Reasons for failure among study participants in the health institution of Hawassa city, 2012.

2.1 Contraceptive Awareness

The majority, 251(93.7%) of women were heard about any contraceptive methods. Only 17(6.3%) were not heard about contraceptives. The women were interrogated for source of information for contraceptives. Over half of women, 172 (68.3.0%) cited friends as their commonest source of information followed by health professionals, 141 (56.0%). Among women who came for termination of pregnancy, 246(91.85) were knew about contraceptives. The majority of the respondents knew pills 215(87.4). Among permanent contraceptive method, 52(21.1%) were aware for male sterilization. Majority of women, 246(91.8%) were mentioned that contraceptive is used for prevention of unintended pregnancy. (Table 3)

Table 5: The Distribution of women according to awareness of contraceptive method among abortion seekers in the health institution of Hawassa city, 2012.

Characteristics		frequency	Percentage
Heard about contraceptives	Yes	251	93.7
	No	17	6.3
Source of contraceptives information (n=251)	Radio	120	47.6
	Television	95	37.7
	Friends	172	68.3
	Health professional	141	56.0
	Others*	45	17.9
Know contraceptives	Yes	246	91.8
	No	22	8.2
Types of contraceptives they recalled (n=246)	Abstinence	56	22.8
	Breast feeding	64	26.0
	Calendar/rhythm	144	58.5
	With drawl	67	27.2
	Pills	215	87.4
	Injectables	189	76.8
	IUCDS	118	48.0
	Condom	193	78.5
	Implants	119	48.4
	Male sterilization	52	21.1
	Female sterilization	54	22.0
	Others**	26	10.6
Knowledge on importance of contraceptives	prevent pregnancy	246	91.8
	space children	159	59.3
	Avoids complication	73	27.2
	Limit family size	154	57.5
	maintain health	93	34.7
	Others ***	27	10.1

Others *sources were like magazine, leaflets, internet and other printed materials
Others** methods they aware like emergency pills, body temperature increases
Others*** importance of contraceptives like STI protection

2.2 Contraceptive usage among induced abortion seekers

177(66%) of women had ever used contraceptives. The commonest method they had ever used was Calendar method 99(55.9%). None of respondents were used permanent contraceptive method before time of data collection or the survey. After the termination of current pregnancy, majority of women, 211(78.7%) were intended to use contraceptives for future. Most of them were intended to use injectables153 (72.5%). From permanent method, 12(5.7%) were intended to use female sterilization after termination of current pregnancy (Table 4).

Table 6: The distribution of abortion seeker women according to usage of contraceptives method in the health institution of Hawassa city, 2012.

Contraceptives	Ever used Yes 177(66%) No 91(34%)	Currently using Yes 78(29.9%) No 190(70.1%)	Desire to use in future Yes 211(78.7%) No/don't know 57(21.3%)
	Number or % (n=177)	Number or % (n=78)	Number or % (n=211)
Abstinence	38(21.5)	5(6.4)	27(12.8)
Breast feeding	29(16.4)	7(9.0)	10(4.7)
Calendar/rhythm	99(55.9)	35(44.9)	33(15.6)
With drawl	25(14.1)	9(11.5)	5(2.4)
Pills	96(54.2)	23(29.5)	40(19.0)
Injectables	76(42.7)	9(11.5)	153(72.5)
IUCDS	10(5.7)	-	52(24.6)
Condom	90(51.1)	33(42.3)	67(31.8)
Implants	8(4.5)	-	83(39.3)
Male sterilization	-	-	-
Female sterilization	-	-	12(5.7)
Others	4(4.3)	1(1.3)	12(5.7)

2.3 Contraceptive used at time of conception and remembered types methods for failure among induced abortion seekers

108(40.3%) women were used varies type of contraceptives at time of conception. Among them, majority of them used rhythm 45(41.7%) and least of them were used withdrawal 17(15.7%). More than half, 58(53.7%) of respondents who were used contraceptive at index of pregnancy remembered types of method failure at time of survey. Out of 108, who used the method, 48(44.4%) were not remembered and only 2(1.9%) were not know types method they used. Among remembered methods, pills 24(38.1%), condoms 20(31.7%) and rhythm 10(15.9%) were common (Figure 1).

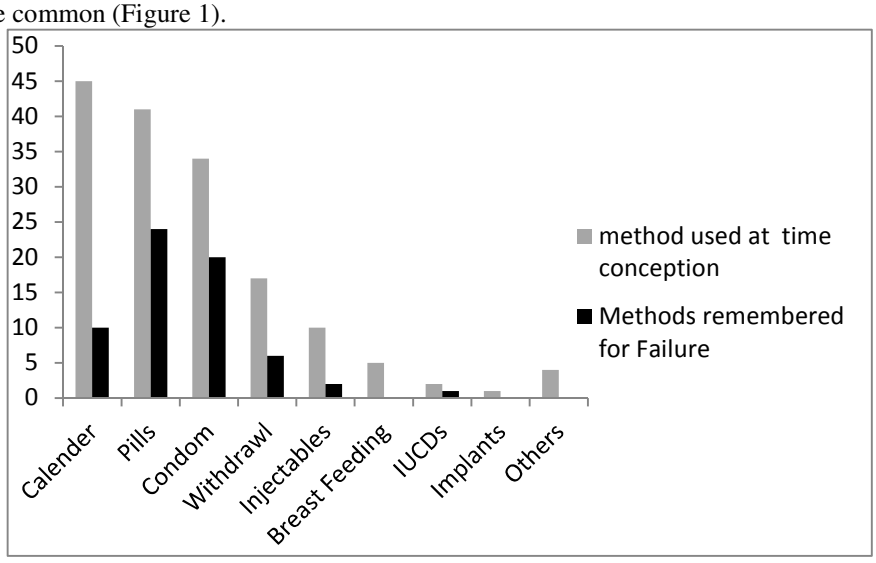

Figure 1 : Distribution of women who used contraceptive method at time of conception and method remembered for failure in the health institution of Hawassa city, 2012

3. The association between independent variables and reporting of contraceptives use at time of conceptions

A multivariate logistic regression was used to see the associations between independent variables and using contraceptive methods at time of conception. After adjusting for potential confounding variables there were a significant association between some explanatory variables and using contraceptive methods at time of

conceptions. Likely hood of reporting contraceptive methods use at time of conception was higher among age group 20 -24 (AOR=1.86: 95% CI 1.01, 3.60) and 25-29 (AOR=3.31: 95% CI 1.48, 7.43) as compared to women with under 20. The reporting of contraceptives use at time of conception was lower among never married (AOR=0.38:95% CI 0.17, 0.82) as compared to others like divorced, widowed and cohabiting. Women who were Primary (AOR=3.07: 95% 1.1, 8.54) and preparatory and above (AOR=2.72; CI: 1.01, 7.78) have high adjusted odds of reporting contraceptive methods use at time of conception as compared to no formal education and secondary educational level.

Women undergoing repeat abortions (AOR=1.8:95 % CI 1.01, 3.30) more likely than women undergoing a first abortion to report using contraceptives methods at time of conception. Likelihoods of reporting contraceptives use at time of conception was higher among Gravida two mothers (AOR=3.13:95% CI 1.20, 8.18) as compared to Gravida one mothers. Multiparious women (five or above)(AOR=0.12: 95% CI 0.04,0.97) has low adjusted odds of reporting methods use at time of conception as compared to less than two Para women. (Table 5)

Table 5: The Bivariate and multivariate analysis for associations between independent variables and reporting contraceptives use at time of conception among study subjects, Hawassa, 2012

Variables	Used at time of conception		Crude	Adjusted
	Yes (%)	No (%)	OR (95% CI)	OR (95% CI)
Age*				
<20	23(25.8)	66(74.2)	**1.00**	**1.00**
20-24	40(41.7)	56(58.3)	**2.05(1.1, 3.83)**	**1.86(1.01, 3.60)** *
25-29	36(61)	23(39.0)	**4.49(2.22, 9.1)**	**3.31(1.48,7.43)** *
≥30	9(37.5)	15(62.5)	1.72(0.66, 4.46)	0.93(0.32, 2.73)
Marital status*				
Never married	48(30.4)	110(69.6)	**0.35(0.17, 0.68)**	**0.38(0.17, 0.82)** *
Married	35(53.8)	30(46.2)	0.93(0.44, 2.00)	0.86(0.38, 1.94)
Others**	25(55.6)	20(44.4)	**1.00**	**1.00**
Educational status				
No formal education	9(32.1)	19(67.9)	**1.00**	**1.00**
Primary	35(46.7)	40(53.3)	1.85(0.74,4.60)	**3.07(1.1, 8.54)** *
Secondary	35(36.5)	61(63.5)	1.21(0.49, 2.96)	1.51(0.56, 4.06)
Preparatory & above	29(42.0)	40(58.0)	1.53(0.6, 3.86)	**2.72(1.01, 7.78)** *
Residence				
Urban	84(41.6)	118(58.4)	1.24(0.7, 2.21)	1.08(0.58, 1.99)
Rural	24(36.4)	42(63.6)	**1.00**	**1.00**
Abortion before*				
Yes	35(53.8)	30(46.2)	**2.08(1.2,3.66)**	**1.8(1.01,3.30)** *
No	73(36.0)	130(64.0)	**1.00**	**1.00**
Gravidity				
I	42(28.0)	108(72.0)	**1.00**	**1.00**
II	29(63.0)	17(37.0)	**4.38(2.18, 8.80)**	**3.13(1.20, 8.18)** *
III	14(51.9)	13(48.1)	**2.77(1.2, 6.38)**	1.31(0.43, 4.04)
≥ IV	23(51.1)	22(48.9)	**2.68(1.36, 5.33)**	1.38(0.38, 5.06)
Parity				
1-2	32(65.3)	17(34.7)	**1.00**	**1.00**
3-4	9(64.3)	5(35.7)	0.96(0.28, 3.3)	1.09(0.28, 4.18)
≥5	4(25.0)	12(75.0)	**0.18(0.05, 0.63)**	**0.12(0.04, 0.97)** *

Key= *statistically significant (p-value <0.05) 1 =**Reference category**

4. The association between independent variables and future contraceptive use among study subjects.

A likely hood of intending to use contraceptives in the future was low among women with age 30 or above (AOR=0.33:95% CI 0.11, 0.95) as compared to women under 20. Odds of contraceptive use in the future was high among women whose marriage length was 1-5 years (AOR=8.28:95% CI 1.64, 41.64) and 6-10 years

(AOR=9.66 95 % CI 1.5, 62.18) as compared to women with more than 10 years marital length. Multiparous women (five or more) (AOR=0.11 95 % CI 0.03, 0.40) are less likely than women with one to two parity to use contraceptive in the future. (Table 6)

Table 6: The Bivariate and multivariate logistic regression analysis for associations between independent variables and intention to use contraceptives in the future after the procedure among study subjects, Hawassa city, 2012

Variables	Future to use the methods		Crude	Adjusted
	Yes (%)	No (%)	OR (95% CI)	OR (95% CI)
Age*				
<20	64(71.9)	25(28.1)	**1.00**	**1.00**
20-24	80(83.3)	16(16.7)	1.95(0.96, 3.96)	1.62(0.77, 3.42)
25-29	53(89.8)	6(10.2)	**3.45(1.32, 9.03)**	2.27(0.8, 6.52)
≥30	14(58.3)	10(41.7)	0.54(0.22, 1.39)	**0.33(0.11, 0.95)**
Marital status*				
Never married	120(75.9)	38(24.1)	0.58(0.24, 1.41)	0.80(0.32, 2.05)
Married	53(81.5)	12(18.5)	0.8((0.29, 2.26)	0.83(0.29,2.34)
Others**	38(84.4)	7(15.6)	**1.00**	**1.00**
Educational status				
No formal education	22(78.6)	6(21.4)	0.85(0.28, 2.52)	0.69(0.23, 2.14)
Primary	58(77.3)	17(22.7)	0.79(0.35, 1.78)	0.76(0.33, 1.75)
Secondary	75(78.1)	21(21.9)	0.83(0.38, 1.79)	0.76 (0.34, 1.67)
Preparatory & above	56(81.2)	13(18.8)	**1.00**	**1.00**
Residence				
Urban	161(79.7)	41(20.3)	1.26(0.65, 2.43)	1.14(0.58, 2.26)
Rural	50(75.8)	16(24.2)	**1.00**	**1.00**
Length of marriage				
1-5 years	42(84.0)	8(16.0)	**6.56(1.44, 29.06)**	**8.28(1.64, 41.64)**
6-10 years	20(87.0)	3(13.0)	**8.33(1.39, 49.87)**	**9.66(1.5, 62.18)**
>10 years	4(44.4)	5(55.6)	1.00	1.00
Abortion before*				
Yes	59(90.8)	6(9.2)	**1.00**	**1.00**
No	152(74.9)	51(25.1)	**3.30(1.34, 8.09)**	1.04(0.29,3.7)
Gravidity				
I	110(73.3)	40(26.7)	**1.00**	**1.00**
II	44(95.7)	2(4.3)	**8(1.85,34.54)**	4.12(0.84,20.25)
III	22(81.5)	5(18.5)	1.6(0.57,4.51)	0.9(0.28,2.9)
≥ IV	35(77.8)	10(22.2)	1.27(0.58,2.8)	0.67(0.25,1.8)
Parity				
1-2	43(87.8)	6(12.2)	**1.00**	**1.00**
3-4	13(92.9)	1(7.1)	**1.81(6.2,16.47)**	1.8(0.2,16.45)
≥5	7(43.8)	9(56.2)	**0.1(0.29,0.4)**	**0.11(0.03,0.40)**
Ever used methods				
Yes	47(83.1)	30(16.9)	**1.00**	**1.00**
No	64(70.3)	27(29.7)	**2.07(1.14,3.76)**	0.4(0.02,6.26)
Children now n=78				
1	19(79.2)	5(20.8)	**1.00**	**1.00**
2	23(95.8)	1(4.2)	1.90(0.55,6.59)	6.16(0.45,58.47)
≥3	20(66.7)	10(33.3)	**11.50(1.35,97.8)**	0.52(0.15,1.82)

Key= *statistically significant (p-value <0.05) 1 =**Reference category**

Health care providers included in the qualitative data reported the issue of contraceptive usage among abortion care seekers as follows:-

She stated that'' *ok, most mothers were pill users and contraceptive like pills, for example when they use pills, they forget to use it, stopping to use it, and delaying to take it on time. So, for this reason they became pregnant and they sought abortions and majority of youth were reporting that they used no contraceptives at the month pregnancy occurred.''(Senior midwife, at FGAE clinic)*

One participant at Adare hospital stated that,'' *normally when they came to us, some of them never used any*

types of contraceptives and never want to use it, even they used, it was natural methods like rhythm. After the procedure, we counseling them, then they shift to manmade methods .however, still they choose condom and pills, not long acting. The users say, when we use man made methods, it will brings infertility in the future'' (experienced midwife, at Adare hospital)

Health care providers stated reasons for non-use of contraceptives among abortions seekers. The reasons were partner refusal, not giving attention, lack of thought and preparation, rape case, their partners refused to use it, perceived low risk of getting pregnant, rumors about side effect of method.

One of expertise at FGAE clinic stated as:'' *As I told to you, when I ask them why they did not use the methods, they have no wish to use it. For instance, there was one lady, she wanted to use condom, then I asked her' you want to use it but failed to use it and why?' she replied' I want to use it, but my partner refused to use it'. So, there was a great problem, you know, one want to use, other did not'' (Female midwife, at FGAE clinic)*

'' Emm, in my personal point of view, this is may be due to not giving due attention! They may think not getting pregnancy, some others, not used for emergency case, I mean,' rape case' and others due to ignorance or carelessness to use it'(Male health officer, at millennium health center)

'' most of women seeking abortion services were did not use contraceptive for different reasons. for example lack of thought and preparation, rape case, peer pressure or their partners refused to use it, perceived low risk of getting pregnant, rumors about side effect of method , sake of not seen by friends particularly students and technical difficulties on how to use it.''(General Practioner, at Hawassa referral hospital)

''ok, this is may be due to ignorance to contraceptives, you know, naturally there was some people who personally dislikes to use it .do you see! There were a lot of contraceptives and it disseminates freely and we are counseling them exhaustively whether they used it before or not but they did use it seriously. I think those individuals who sought unwanted pregnancy'' (female nurse, at Adare hospital)

Discussion

The result of this study showed that 93.7 % of respondents had heard about contraceptive method. This finding was in line with studies conducted in India (Parvati V et al., 2008). Ethiopian studies have also made similar observations (Tekle-Ab M et al., 2007, Yilma M et al., 2003, Nasir T, 2010, Solomon et al., 2006). This may be due to the present study conducted in urban areas.

In our study, 66% of participants were used at least one contraceptives method previously and majority of them were used rhythm 55.9%, pills 54.2% and barrier method 51.1%. This finding was incomparable with study from china, 77 % of women have ever used at least one method in their past and majority of them used rhythm and condoms (Cheng Yemin et al., 1997). The possible explanation of this study finding could be, majority of them were students and would not want to be observed by their peers to be taking pills and other methods. This was also supported by qualitative part participants, the majority were not using for sake of not seen by friends.

Age, marital status, educational level, abortion history, parity and gravidity were significantly associated with reporting of contraceptive use at a time of conception. The women who were at age range 20-29 were more likely than women who were under 20 in reporting contraceptive use at time of conceptions. This finding agrees with studies conducted in southern Nigeria and London (L.O.OMO-AGHOJA et al., 2009, Williams A et al., 2005). Other study from china also suggests this, the younger age; the higher was the large proportion of contraceptive non-use (Y.Cheng et al., 2004). The possible justification of this finding could be at the beginning and at extremes of reproductive age; there were low contraceptive usage, with less reporting to methods.

The women who were single were less likely than widowed, divorced or cohabiting women to use contraception at time of unintended pregnancy. This observation was consistent to the study conducted in the UK (Louise B and Tony k , 2009). The women who were at primary education and preparatory and above were more likely than illiterate women to report contraceptive use at the time of conception. Our finding was supporting with the observation from china by Y, Cheng etal, indicated that, the contraceptive use rate of the poorly educated was lower than that of the better educated (Y.Cheng et al., 2004).

In the present study, the likely hood of using contraceptive at the time of conception was higher among those women undergoing repeat abortion as compared to new abortion seekers. This was coincided with study conducted in London and Vietnam (Williams A et al., 2005, Nguyen Thi M.H et al., 2000). The possible explanation of this finding could be, though they were mentioned the method they used at time of pregnancy, they had sought unintended pregnancy and resorted to induced abortions. This is indicating that they were used less effective methods, or used it sporadically or incorrectly.

In our study the women, who were under high parity were less likely than women who were under low parity to report contraceptive use at the time of conception. This finding was similar with study conducted in the rural southern Nigeria, indicated that extremes of parity were statistically associated with low contraceptive use (L.O.OMO-AGHOJA et al., 2009) The reason could be women with high parity had more children as a result they may not consider the importance of contraceptive methods.

Post abortion contraceptive use is key method to prevent future unwanted pregnancy. In our study, 78.7% of

them were intended to use contraceptive in the future. The age, length of marriage and parity are significantly associated with intention to use contraceptive in the future. Nathalie etal in their retrospective cohort study showed that, contraceptive patterns of usage had been increased after abortion and non–use of contraception was decreased especially for pills and some long acting methods (Nathalie et al., 2006) . Similarly a study done in South Africa showed that majority of abortion seekers were intended to use contraceptive after termination of pregnancy(Roberts B, 2008)). This was also agreeing with qualitative participants' responses, that majority were shifting to other method after so many counseling. However, this was contradicting to study conducted by Adinma,E, etal in Nigeria, only 38% of respondents were expressed their desire to use in the future (Echendu et al., 2011). The possible elaboration of this observation could be fear of long time side effect of contraceptive and difficulty with resisting partners' opposition to use it. This is also supported by qualitative part of this research, partners refusal to use it and giving no due attention were commonly expressed.

In current study, more half of respondents who were used contraception at time of conception remembered types of method failure. Among timely recognized method pills, condom and rhythm were common one. This was coincided with findings from china, commonly recognized failure were condom, pills, withdrawal and rhythm (Y.Cheng et al., 2004), from Pakistan, condom, rhythm and withdrawal failure (N.Rehan et al, 2001). Their failure rate accounts more than half of contraceptive failure. In justification, those women who were using earlier mentioned methods are risky population to have unwanted pregnancy; meanwhile they need strong contraceptive counseling. In this study, main cause of condom failure, condom accidents or causes related user faults (like condom breakage and forget to use it) and among pills users, delayed pills taking and forgetting to take it were common cause. This was in line with different studies (N.Rehan et al, 2001**,** B.C.S hivakumar et al, 2011**,** Y.Cheng et al., 2004). The possible explanation of this finding could be, by nature those methods were liable to personal ignorance to use them or they need highest commitment to practice it everyday life, on other hand, they increases personal default.

Limitation of the study

The drawback of this study was cross sectional nature of the data that could obscure the causal effect relationships of different factors. The issue is so sensitive that respondents may not disclose the reality; on other hand it is more liable to recall bias.

Conclusion

The majority of respondents have awareness about existence of contraceptive. However, there was poor contraceptive usage among abortion seekers. Most of the study participants were at beginning of reproductive age, majority of them have having sex without contraceptive use and became pregnant. This is indicating that they were sexually risky segments of population for unintended pregnancy. So investing on effective contraceptives on this risky population will be productive and effective. Generally couples (both male and female) must be counseled and encouraged to use the most appropriate method, which suit for them to prevent their unwanted abortion.

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Authors' contributions

TT, TL, HM carried out the research from conception to the write up of the final draft of the article. All authors read and approved the final manuscript.

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Competing interests

The authors declare that they have no competing interests.

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