

Assessment of the Level of Copper T380A Contraceptive Method Utilization and associated Factors for Discontinuation in Adama Town Health Institutions, Oromia Regional State, Ethiopia, 2014

Yirga Wondu¹, Emebet Birhane² and Bekana Fekecha Hurissa^{3*}

¹Arsi University College of Health Sciences, Ethiopia

²Addis Ababa University, Addis Ababa, Ethiopia

³Jimma University, Jimma, Ethiopia

*Corresponding author: Bekana Fekecha Hurissa, Lecturer, Jimma University, Jimma, Ethiopia, Tel: 251910716731; E-mail: bekf@rocketmail.com

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Abstract

Background: The intrauterine contraceptive device is the most frequently used reversible family planning method in the world. However, its usage is low in many developing countries with a majority of women choosing female sterilization for birth control.

Method: A retrospective study design using a quantitative method was used to identify family planning user clients for whom CuT380A was inserted from March 2009–February 2014 GC. A structured check list was employed for data collection. Data was analyzed with Statistical Package for Social Science, version 21. Multivariable logistic regression analysis was done to evaluate the possible association of all variables significant at binary logistic regression analysis. P-value of less than 0.05 in multivariable logistic regression was considered as statistically significant. Finally the result is summarized and presented in texts and charts.

Results: The average age of Cu T users was 30.7 years and median was 30.0 at the time of Cu T insertion with standard deviation of ± 7.1 . Majority of Cu T insertions 95 (27.5%) were among women between 30 and 34 years of age. The duration of Cu T380A usage for 5 years before discontinuation was 202 (58.6%) and discontinuation before 5 years after insertion was 143 (41.4%). Among 345 subjects, majority of the women 37 (10.7%) discontinued within 2-3 years. Factors associated with discontinuation include bleeding 42 (29.37%) and automatic expulsion 32 (22.37%). The logistic regression analysis shows that women experiencing health problem after CU T380A insertion (bleeding), pain and automatic expulsion of IUCD have significantly associated with discontinuation of CU T 380A.

Conclusion: Cu T 380A utilization rate for 5 years after insertion is so low (51.4%) in Adama town, which is almost equivalent with removal (41.6%). Therefore, our family planning providers has to be alert in addressing this obstacle so as to increase the discrepancy between continuation and removal rate.

Keywords: Cu T380A; Utilization rate; Continuation; Discontinuation

Abbreviations

IUD: Intra Uterine Device; Cu T: Copper T; IUCD: Intrauterine Contraceptive Device; GOV'T: Government; DC: District of Colombia; HMIS: Health Management Information System; MDGS: Millennium Development Goals; FGAE: Family Guidance Association of Ethiopia; EDHS: Ethiopia Demographic and Health Survey; EB: Ethiopian Birr; SPSS: Statistical Package for Social Sciences; WHO: World Health Organization

Introduction

A health-care provider inserts an IUCD into a woman's uterus to prevent pregnancy [1]. The placement of contraceptive devices in the uterus for the purpose of preventing pregnancy was first described in the scientific literature in the early 1900s. The original intrauterine contraceptive devices (IUCDs) were composed of contraceptive rings

made out of a variety of materials, ranging from steel to silkworm gut [2].

Today, there are two types of IUCDs: Medicated (hormone releasing) or unmediated (inert). The inert IUCDs include copper-containing devices in a range of shapes and sizes and a non-medicated polyethylene device. The copper bearing IUCD's principal mechanism of action is to prevent fertilization by affecting sperm motility and ova development. Research has shown that sperm counts found in cervical mucus and the uterine tube are much lower in women using copper-containing IUCDs. In addition to its primary mechanism of action on the sperm, the copper-containing IUCD also produces an inflammatory environment in the endometrium [3].

The intrauterine contraceptive device (IUCD) is the most frequently used reversible family planning method in the world. However, its usage is low in many developing countries with a majority of women choosing female sterilization for birth control [4]. It requires little effort on the part of the user once inserted, and its' wider use would reduce the overall number of unintended pregnancies more than any other method [5].

Even though it is ideal in so many ways, the history of its development reflects continual adaptations to minimize the side effects that lead to early discontinuations, and to maximize both contraceptive and non-contraceptive health benefits. The IUCD should play a greater role than it does today in parts of the world, and especially in sub-Saharan Africa, where fertility rates, unintended pregnancies, and unmet need for contraception are high [6].

Although much has been written about the IUCD utilization and discontinuation by region or state in some countries, less is known in our country, specially the reason why Ethiopian females discontinue Cu T device is not clearly known or evidenced by research still now. Considering this gap this study aims at identifying what the utilization status and factors associated with discontinuation of Cu T 380A looks like in one of the fast growing town of Ethiopia, Adama town.

Material and Methods

This study was conducted in Adama town of Oromia region which is located in the central part of Ethiopia 100 km away from Addis Ababa.

A retrospective study design using a quantitative method was used to identify family planning user clients for whom CuT380A was inserted from March 2009 to February 2014 G.C. The single population formula was used to calculate a sample size by using percentage of women who were using contraceptive for Ethiopia according to EDHS 2011 as 28.6% (P=0.286). The sampling technique used to draw randomly the 345 subjects from the secondary data (Family planning registration books which indicates IUCD utilizes) was systematic sampling techniques. Structured check list for document review was used to capture demographic, socio-demographic information, level of utilization, discontinuation and reasons for discontinuation of CU T 380A devices.

Then the collected data was coded, entered, cleaned and analyzed by using SPSS for windows version 20 computer software statistical packages. Both bivariate and multivariate analyses were used to examine the associations between the study variables and selected socio-demographic and individual characteristics.

Finally, the result of this study was displayed using tables, graphs and pie chart. Voluntary informed consent was obtained from Oromia region research and ethical review committee, Adama health bureau and responsible bodies of the respected health units. Participants' confidentiality was maintained and the informed consent process respected the language and socio-cultural norms of participants.

Result

Socio-demographic factors

Of 345 women who have used IUCD, 203 (58.8%) were Oromo, 200 (58%) were Orthodox in religion. The average age of Cu T users was 30.7 years and median was 30.0 at the time of Cu T insertion with standard deviation of ± 7.1 . Majority of Cu T insertions, 95 (27.5%) were among women between 30 and 34 years of age and followed by 91 (26.4%) between 20 and 24 years, 82 (23.8%) > 35 years and 77 (22.3%) between 25 and 29 respectively.

The duration of IUCD usage for 5 years before discontinuation was 202 (58.6%) and discontinuation before 5 years after insertion was 143 (41.4%) (Table 1).

Variable		Frequency	Percent
Age	20-24 years	91	26.4
	25-29 years	77	22.3
	30-34 years	95	27.5
	>35 years	82	23.8
	Total	345	100
Ethnicity	Oromo	203	58.8
	Amhara	100	29
	Others	38	11
	Total	345	100
Religion	Muslim	70	20.3
	Orthodox	200	58
	Protestant	17	4.9
	Catholic	29	8.4
	Others	29	8.4
	Total	345	100
Marital status	Married	307	89
	Unmarried	38	11
	Total	345	100
Education	Primary	146	42.3
	Secondary	124	35.9
	Higher	58	16.8
	no education	17	4.9
	Total	345	100
Occupation	House wife	210	60.9
	Government employee	60	17.4
	private employee	75	21.7
	Total	345	100
Number of alive children	<2	76	22
	2-4	204	59.1
	>4	65	18.8
	Total	345	100
Utilization status within 5 years	Continued	202	58.6
	Discontinued	143	41.4
	Total	345	100

Table 1: Socio demographic characteristics of reproductive age women in Adama town during 2009-2014G.C

Utilization status of IUCD in 5 years of insertion

Among 345 subjects, majority of the women 37 (10.7%) discontinue within 2-3 years, 31 (9.0%) discontinue within 4-5 years, 26 (7.5%) discontinue within 1 year, and 24 (7.0%) discontinue within 3-4 years. The mean year for the discontinuation of CU T380A device was found to be 3.7 with standard deviation of 1.6 (Figure 1).

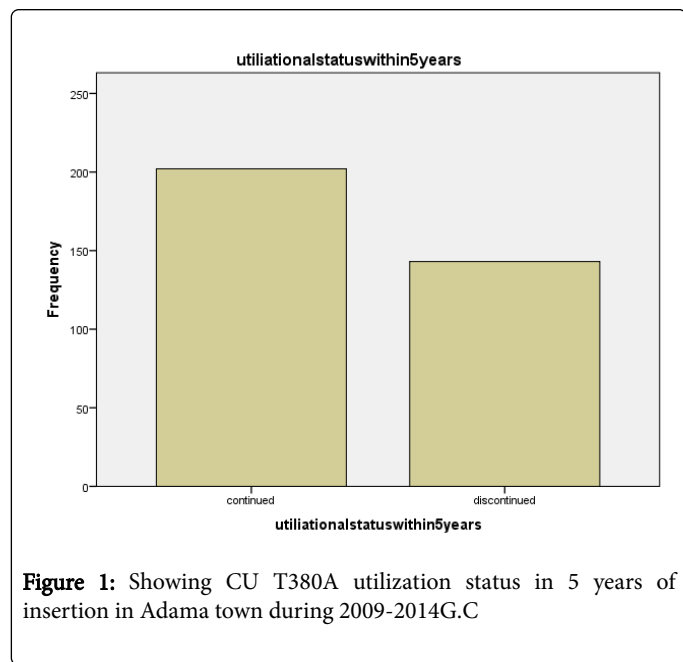


Figure 1: Showing CU T380A utilization status in 5 years of insertion in Adama town during 2009-2014G.C

Outcome of CU T 380A utilization within 5 years

Out of the women who discontinued CU T380A, bleeding accounts 42 (29.37%), pain 39 (27.27%), automatic expulsion 32 (22.37%), medical problem at the time of insertion 6 (4.19%) and 6 (4.19%) desire to conceive (Figure 2).

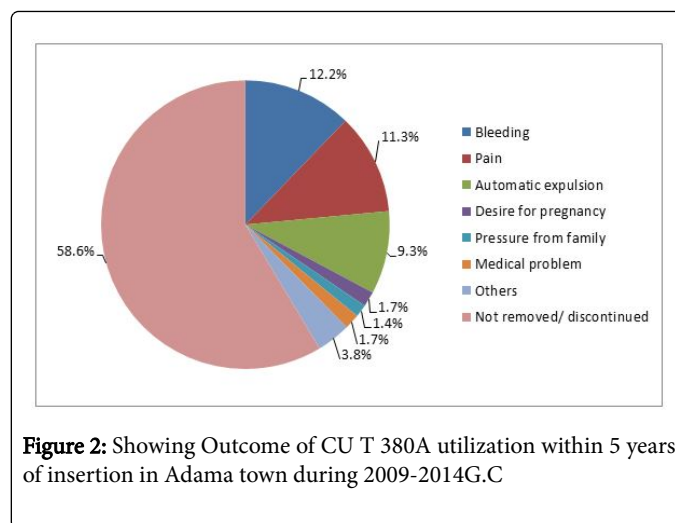


Figure 2: Showing Outcome of CU T 380A utilization within 5 years of insertion in Adama town during 2009-2014G.C

Factors associated with discontinuation

The logistic regression analysis shows that women experiencing health problem after IUCD insertion (bleeding) have significantly associated with discontinuation of IUCD. In addition, women who had automatic expulsion of IUCD 95% CI for OR (0.000, 0.003) have significantly associated with discontinuation. CU T 380A discontinuation is associated with age 20-24 years old women 95% CI for OR (0.065, 0.291). Similarly, CU T380A discontinuation has association with women who has not completed secondary education and above. On the other hand the OR indicates women who experience bleeding 95% CI for OR (6.537, 45.899), pain 95% CI for OR (12.223, 162.233) and automatic expulsion 95% CI for OR (7.497, 57.253) are less likely to continue IUCD use (Table 2).

Category		Frequency	Outcome		Sig.	Exp (B)	95% C.I. for EXP(B)	
			Continued	Discontinued			Lower	Upper
Age	20-24	91	79	12	0	0.138	0.065	0.291
	25-29	77	38	39	0.82	0.931	0.5	1.735
	30-34	95	46	49	0.91	0.966	0.535	1.745
	*34+	82	39	43				
Educational status	primary	146	57	89	0.44	0.651	0.218	1.945
	secondary	124	89	35	0	0.164	0.054	0.499
	higher	58	51	7	0	0.057	0.015	0.212
	*no education	17	5	12				
Number of alive children	less than two	76	41	35	0	0.353	0.175	0.71
	two to four	204	142	62	0	0.18	0.098	0.333
	*greater than four	65	19	46				
Bleeding	yes	49		49	0	17.322	6.537	45.899

	no	296	201	95				
pain	yes	39		39	0	44.531	12.223	162.23
	no	306	202	104				
Automatic expulsion	yes	32	201	32	0	20.718	7.497	57.253
	no	313		112				
Desire for pregnancy	yes	6		6	0.84	0.799	0.087	7.342
	no	339	202	137				
Pressure from family	yes	5		5	0.39	0.017	0	197.71
	no	340	202	138				
Medical problem- Time of insertion	yes	5		5	0.36	0.013	0	152.52
	no	340	202	138				
Other	yes	8	202	8	0.41	1.898	0.411	8.77
	no	337		135				

Table 2: Association between socio-demographic factors and IUCD discontinuation in Adama town, 2009-2014G.C

Discussion

Cu T 380A usage was highest among a woman who had 2-4 children (59.1%) and declined thereafter (18%), which is the inverse of study conducted in India revealing (55.5%) had Cu T inserted with one living child. This may be explained in part by the fact that women with two to four children have nearly achieved desired family size in urban areas and thus they prefer IUCD for some years prior to opting permanent family planning methods like sterilization [7].

A significant amount of difference in CU T 380A utilization is observed between married (89%) women and un married women (11%) from the total of 345 women which has similar pattern with a retrospective study conducted in Vietnam on 1326 women indicating the majority of IUCD users (99%) were married women. This could be due to the reason that unmarried women are not a good candidate for IUCD as they could have multiple sexual partner which consequently leads to PID and its complications [8].

The Cu T 380A is an effective method that is well suited to women of all reproductive ages. However; this study has highlighted that early discontinuation of CUT 380A is a common practice in Adama town, with about 41% of women discontinued within 5 years after insertion which is much higher than that noted in Pakistan showing the overall discontinuation rate of (18.0%). This higher discontinuation rate in turn could likely to contribute for unwanted pregnancy and high abortion rates [5].

This report showed lower rate of Cu T 380A continuation after 1 year than the early months after insertions which is contrary to other literatures indicating higher rate of discontinuation within the early period (1 Year) than the subsequent years. Therefore; this lower rate of continuation after 1 year could be an alarm for our Family planning providers because higher continuation rates will be related more to factors associated with the providers than with the users of long-acting methods.

Women who had IUD insertions in the African centers had significantly higher expulsion rates than women from other centers which is consistent with this current finding, showing higher discontinuation rate within 5 years of insertion. This information will guide the need to improve the counseling and follow-up process of women not only at 3 months post insertion but also thereafter [9].

The present study demonstrated that age increment does not associate with discontinuation, but number of children showed relationship with discontinuation. This finding is similar to the study conducted in Vietnam and contradicts the recent finding in Mekele town which says as the delivery age of the mother increases by one year the use of long acting and permanent contraceptive also increases twice [8,10].

On the other hand, regarding educational status, those women who were illiterates had strong association with method discontinuation. Besides this, women experiencing health problem (bleeding) is the most important factor associated with discontinuation. Early discontinuation may be due to side effects like minor and irregular bleeding and abdominal cramp, as they normally occur early during the first 3 months following insertion. Therefore; it can be expected to see higher early discontinuation followed by low discontinuation thereafter. However; in this research, 1-2 years discontinuation was found significantly different from within 1 year rate that means lower rate of discontinuation with in the first year followed by higher rate of removal within 1-2 years. This could be possibly because of the completion of two years of birth spacing, which is nearly the median birth spacing time in Ethiopia [11].

In view of high proportion of women are using the method for the postponement of birth, the percentage of women who discontinued in order to have another child is surprisingly very low (0.4%). In fact, this may enforce one to raise the reality of the data obtained from the record. According to this report, Pain and automatic expulsion are also the second and third causes for CU T 380A discontinuation which has got different trend with the study conducted in Vietnam and USA) [8].

Pressure from the family and medical problems at the time of insertion are the least contributing factors for IUCD removal according to this study.

Perhaps this least percentage is obtained due to the fact that joint agreement between couples and screening for medical illegibility by providers a head of insertion had played a significant role.

Conclusion

Cu T 380A utilization rate for 5 years after insertion is so low (51.4%) in Adama town which is almost equivalent with removal (41.6%). Therefore; our family planning providers has to be alert in addressing this obstacle so as to increase the discrepancy between continuation and removal rate. As most literatures cited the common reasons for Cu T discontinuation are women's desire to conceive, side effects, medical problems, pressure from the family and automatic expulsion. Similarly in this study, discontinuation is found to be related to bleeding, pain, and automatic expulsion of the device.

Competing Interest

The authors declare that they have no competing interest.

Authors Contributions

YW, EB and BF participated in the design and analysis of the study. YW searched the databases, and wrote the first and second draft of the article. All authors reviewed proposal development activities and each drafts of the result article and finally revised the manuscript and approved the final version.

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