

# Factors Influencing Intention to Use Intrauterine Device Among Family Planning Clients in Southwestern Ethiopia

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## Research

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# Abstract

**Background:** Intrauterine devices are the second most widely used modern family planning methods in the world. In Ethiopia, only 2% of married women use intrauterine device. Therefore, the aim of this study is to determine factors associated with the intention to use the intrauterine device in southwest, Ethiopia.

**Methods:** A facility-based cross-sectional design was employed to collect data from 784 women using a structured questionnaire. Data were collected from October-November, 2020. Data were managed using Kobo Collect v1.25.1 and Stata version 16.0 was used for analysis. A multivariable logistic regression was employed.

**Results:** The prevalence of intention to use intrauterine device in this study was 30%. Having an intrauterine devices information (AOR=2.28(1.63-3.20)), being highest wealth status 1.76 (AOR=1.76(1.07-2.95)), and being able to read and write (AOR = 3.60; 95% CI: 1.59-7.89) were found to be significant factors influencing women's intention to use an intrauterine device. The most common reasons for not having an intention to use were fear of side effects, lack of knowledge, and husband disapproval.

**Conclusion:** An intention to use an intrauterine device was low. Public health interventions should provide an information focusing on the cited reasons reaching all the community in need, and give priority for women who unable read and write, and lowest wealth status. Further interventional studies were recommended to determine effective interventions to increase women's intention to use intrauterine device.

## Background

The copper-bearing IUD is a thin, flexible plastic frame with copper sleeves or wires around it. IUD is one of the world's most widely used reversible contraceptive methods. Modern IUDs are safe, highly effective, and cost-effective forms of contraception is (1). Less than 1 pregnancy per 100 women used an IUD in the first year. This means that out of every 1,000 women using IUDs, 992 to 994 are not pregnant (2).

Contemporary or conventional, is used by two out of three reproductive-age women married or unionized in 2015 worldwide, and another 12% have an unmet need for contraception. Most basic methods, female sterilization, and IUD account for approximately 60 percent of existing methods used (3).

Latest figures from 21 developed nations, Asian countries 13%, and Middle East and North Africa, use are the highest among all reproductive-age married women 12%. The overall IUD use is the lowest in North America (1.5 %) and sub-Saharan Africa (0.8%) (1).

The use of IUD was just % in Kenya and 4.8 Ethiopia, as reported in the Ethiopian Demographic and Health Survey 2016 (4,5). In Ethiopia, IUD is used and ranging from 5.2% in Addis Ababa, 0.4% in

Gambella, to 0% in Somali (6). Study conducted in Nigeria show that the intention of intrauterine contraception devices for postpartum women was 14.7% (7).

A study done in Tigray region, North-Ethiopia and Debre Markos in North West Ethiopia found that the prevalence of intention to use IUD was 24.0% and 28.3%, respectively. (8,9). Interestingly, in the southwest of Ethiopia, no research has identified factors associated with intention to use the IUD.

## **Methods**

### **Study area and period**

A facility-based cross-sectional study design was used. A study was conducted in the Gambela, Ilubabor, and Bench-Sheko Zones, in Southwest Ethiopia. The study was conducted from October-November 2020 on all reproductive age group women who visited health facilities for family planning services.

### **Source and study population**

The population for the study was of reproductive age who came to the health facilities in the selected district of the study zones and region for family planning services.

### **Sample size and techniques**

To estimate the sample size, a single population proportion formula with the following assumptions was used. Desired precision (d) = 4%, design effect 2, Confidence level = 95%, and  $Z_{\alpha/2} = 1.96$  (value of Z at  $\alpha$  0.05 or 95% CI. The proportion of long-acting and permanent contraceptive methods from the previous study done in Debre-Markos town was 19.5%(8). And by considering a 15% non-response rate, the calculated minimum sample size was 851.

### **Sampling techniques**

The study area was purposively selected. All hospitals from the two-zone and Gambela regions were selected, and 30% of the health centers from each zone and region were taken. Then, clients of family planning services were selected systematically after calculating  $K^{th}$ -value based on the preceding quarter report of each health facility.

#### **Data quality control**

The data collection tool was translated into the local language and translated back to English to check its consistency. A pre-test was done on 5% of participants and some modifications were made in the final

version of the questionnaire. During data collection, completeness and consistency of information including typing errors were checked by the supervisor and principal investigator.

### **Data processing and analysis**

All data were electronically collected on-site and uploaded daily to the kobo server database using kobo collect v1.25.1([kobotoolbox.org](http://kobotoolbox.org)). Database content was checked for missing answers, duplications, and inconsistencies. Then data were then exported to Stata software version 16.0 for further analysis. Descriptive statistics were used to determine the frequency, mean, and proportions of variables. A p-value of  $\leq 0.05$  was considered statically significant. In bivariate logistics regression, a variable whose  $p \leq 0.25$  was considered as a candidate for multivariable logistic regression analysis. And variables having  $p \leq 0.05$  after multivariable logistic regression analysis were considered as independent predictors for knowledge. The backward elimination method was done to fit the final model. Statistical significance was assessed using the chi-square test, odds ratios, and 95% CI, p values less than 0.05 used as cut off point for statistical significance.

## **Results**

### **Sociodemographic Characteristics**

A total of 844 women of reproductive age group, 784 participated in the study with a response rate of 93% (Table 1).

Table 1  
Sociodemographic characteristics of the participants in Southwest Ethiopia

		Frequency (784)	Percentage
Age Mean = 28 ± 6 years	15-19	51	6.51
	20-24	208	26.53
	25-29	249	31.76
	30-34	174	22.19
	35- 49	102	13.01
Ethnicity	Oromo	351	44.77
	Amhara	112	14.29
	Agnuak	92	11.73
	Bench	84	10.71
	Nuer	33	4.21
	Kaffa	30	3.83
	Kanbata	29	3.70
	Others	53	6.76
Marital status	Married	734	93.62
	Single	25	3.19
	Separated	16	2.04
	Widowed	9	1.15
Religion	Protestant	447	57.02
	Orthodox	187	23.85
	Muslim	146	18.62
	Others	4	0.51
Educational status	Unable to read and write	148	18.88
	Able to read and write	36	4.59
	Primary School	231	29.46
	Secondary School	200	25.51
	Diploma	138	17.60

		Frequency (784)	Percentage
	Degree and above	31	3.95
Respondent occupational status	Housewife	542	69.13
	Government employee	141	17.98
	Merchant	62	7.91
	Student	34	4.34
	Daily labor	5	0.64

## Obstetrics characteristics of study participants

The mean and standard deviation of age at first sexual intercourse, first birth, and first marriage was 17.5( $\pm$ 2.4), 20.4( $\pm$ 3.4), and 18.9( $\pm$ 3.1) respectively (Table 2).

Table 2  
Obstetrics characteristics of study participants in Southwest Ethiopia

		Frequency	Percentage
Ever been pregnant	Yes	712	90.8
	No	72	9.2
Number of pregnancies (N= 712)	One	230	32.4
	Two	172	24.1
	Three and more	310	43.5
Ever encountered unintended pregnancy	Yes	112	15.7
	No	600	84.3
Ever encountered abortion	Yes	68	9.2
	No	647	87.3
Ever given birth	Yes	643	90.0
	No	69	10.0
Ever encountered child/infant death	Yes	87	13.6
	No	556	86.4
Total number of children (N=698)	one	237	36.8
	Two	175	27.2
	Three and more	231	35.9
Fertility status in the last five years	Not pregnant in the last five years	109	15.3
	Pregnant, Not wanted at All	15	2.1
	Pregnant, wanted later	97	13.7
	Pregnant, wanted then	488	68.9

## Women's intention to use IUD

In this study, the prevalence of intention to use IUD was 236 (30%). The most common cited reasons for not having an intention to use IUD were fear of side effect (48.2%), followed by lack of knowledge (17.9%), and husband disapproval (14.2%) (figure 1).

## Factors influencing family planning user's intention to use IUD

A multivariable logistic regression revealed that having an IUD information, wealth and educational status were found to be statistically significant factors influencing an intention to use an IUD.

Even after controlling for potential confounders having an IUD information was more than two times more likely (AOR=2.28(1.63-3.20)) to have an intention to use IUD compared to their counterparts.

Although IUD was being provided for free in public health facilities in the study area being in the highest wealth status about twice 1.76 (AOR=1.76(1.07-2.95)) more likely to have an intention to use IUD compared to the lowest wealth status.

Furthermore, women who able to read and write were more than three times (AOR = 3.60; 95% CI: 1.59-7.89) more likely to have an intention to use IUD compared to those who unable to read & write (Table 3).

Table 3

Multivariable logistic regression analysis of factors influencing family planning user's intention to use IUD in Southwest Ethiopia

Variables	IUD intension		COR	AOR	p-value	
	Category	No				Yes
IUD Information	No	298	78	1	1	.
	Yes	250	158	2.41(1.75-3.32)	2.28(1.63-3.20)	0.000
Wealth index	Poor	205	57	1	1	
	Average	183	80	1.57(1.06-2.33)	1.33(0.87-2.00)	0.185
	Rich	160	99	2.22(1.51-3.27)	1.76(1.07-2.95)	.0024
Educational level	Unable to read & write	120	28	1	1	
	Able to read & write	19	17	3.83(1.77-8.30)	3.60(1.59-7.89)	0.002
	Primary education	166	65	1.67(1.01-2.77)	1.30(0.77-2.20)	0.318
	Secondary education	130	70	2.30(1.39-3.81)	1.44(0.81-2.57)	0.206
	Diploma & Above	113	56	2.12(1.26-3.58)	1.04(0.55-1.97)	0.900

## Discussion

The prevalence of intention to use IUD in this study was 30%. This finding was higher than the study conducted in Debre Markos Town, North West Ethiopia (28.3%), and Adigrat in the Tigray region, North Ethiopia 24.0 % (9, 15), and lower than the study from Nekemte town, Ethiopia (47.9%) (10). The possible explanation for low intention to use IUD might be fear of side effects, rumors, and study setting in which those studies were conducted in an urban setting while our study was conducted in a rural and urban setting.

The common reason for not using IUD was husband disapproval in 14.2% of the participants, and lack of knowledge in 13.9%. A study in Nepal shows 31.6% and 23.5% of the participants cited lack of sufficient knowledge, and husband's disapproval respectively (16). This might be due to the existence of health extension workers in the community in improving the knowledge of women and their partners in Ethiopia.

Intention to use IUD were less likely in the poorest wealth index women compared to women in the average and richest wealth index. Women who have IUD information and able to read and write were more likely to have an intention to use IUD. This study is in line with a study conducted in Uganda, Wolaita Zone, and Mojo, Ethiopia (17–19). The possible reason might be, those exposed to IUD information are more likely to have better knowledge. Although the study includes three different regions of Southwestern Ethiopia where IUD utilization was found to be low, the finding might be affected by social desirability bias.

## Conclusion

Nearly one-third of women have an intention to use IUD, and common reasons cited for not want to use IUD were fear of side effects, lack of knowledge, and husband disapproval. Public health interventions should provide an information focusing on the cited reasons reaching all the community in need, and give priority for women who unable read and write, and lowest wealth status. Further interventional studies were recommended to determine effective interventions to increase women's intention to use intrauterine device.

## Abbreviations

AOR: Adjusted odds ratio; COR: crude odds ratio; CI: Confidence interval; IUD: intrauterine devices; MSIE: Marie stops international Ethiopia.

## Declarations

### Ethics approval and consent to participate

Ethical clearance was obtained from the Institutional Review Board of Jimma University, Institute of Health school of Post-Graduate Studies. Official letter of cooperation from the University, Gambela regional health bureau, Bench Sheko Zonal health department and Illubabaor Zonal health department were used to communicate respective administrative bodies in the study area. After getting letter of

permission to carry out the study from each administrative body, informed verbal consent was taken from each study subject prior to interview after the purpose of the study is explained.

### **Consent for publication**

N/A.

### **Availability of data and materials**

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

### **Competing interests**

The authors declare that they have no competing interests.

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### **Authors' contributions**

**DA** made substantial contributions to conception and design, or data management and quality, or analysis and interpretation of data. **TW** participated in the design of the study. **AK** involved analysis and interpretation of data. **ZA** participated in its coordination, analysis, interpretation of data, and in preparation of the manuscript. **AT** contribute to the conception and design, analysis and interpretation of data, and revising the manuscript critically for important intellectual content. All authors read and approved the final manuscript.

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## Figures

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### Figure 1

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