

## Research Article

# Utilization of Immediate Postpartum Intrauterine Contraceptive Device and Associated Factors among Women Who Gave Birth at Government Hospitals of Gamo Zone, Southern Ethiopia, 2019

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## Abstract

**Background:** An intrauterine contraceptive device is suitable for women of all reproductive age groups for preventing unwanted pregnancies. Immediate post partum family planning services need to be emphasized where in the woman leaves the hospital with safe and effective contraception in place. Despite the accepted demand for post partum family planning, many women do not access the services they need prevent unintended pregnancies.

**Objective:** To assess utilization of immediate postpartum intrauterine contraceptive device and associated factors among women who gave birth at government hospitals of Gamo Zone, Southern Ethiopia.

**Method:** Facility-based crosses sectional study was conducted from March 1 to 30 of 452 participants were studied using systematic random sampling technique. Data were entered into Epi-data v. 4.2.2.1 and exported to SPSS v.23 for analysis. Crude or adjusted odds ratio, and 95% confidence interval were used to assess the strength of association and statistical significance. Variables which had a p-value of  $\leq 0.25$  in bivariate analysis were considered as candidates for multivariate regression analysis; variables that had a p-value of  $\leq 0.05$  in the multivariate analysis were considered as independent factors associated with utilization of immediate postpartum intrauterine contraceptive device among parturients in the final multiple logistic regression analysis.

**Results:** This finding revealed that about 161 (36%) of the respondents had showed willingness to use immediate PPIUD, however, only about 62 (14%) of study participants were utilized immediate PPIUCD. Mothers who did not plan to have another child (AOR = 2.84, 95% CI, (1.12, 7.21), undecided plan to have another child (AOR = 2.55, 95% CI, (1.21, 5.35), counselled about PPIUCD (AOR=4.35, 95% CI, (2.11, 8.96) and completed ANC follow up (AOR=2.43, 95% CI, (1.28, 4.60) were associated with immediate post partum contraceptive device utilization.

**Conclusion and Recommendation:** Even though 58% and 53% of the mothers were counselled and completed antenatal service respectively but efforts need to improve antenatal care service and integrate counselling service through the whole cascade of pregnancy.

**Keywords:** Utilization; Immediate post partum intrauterine contraceptive device

## Introduction

The Intrauterine Contraceptive Device (IUCD) is a small plastic device that is inserted into the uterus and one of the long-term reversible family planning method choices. It is suitable for women of all reproductive ages, and represents the most cost effective contraceptive method for preventing unwanted pregnancies. Provision of IUCD during immediate postpartum period gives effective and safe method for spacing and limiting births because it gives the advantage of the immediate postpartum period for counselling on family planning method choices [1,2].

Postpartum period is one of the critical times when both woman and newborn need a special and integrated package of health services as morbidity and mortality rates are quite high during this period and also the women are vulnerable to unintended pregnancy. It is an ideal time to educate about future fertility and provision of appropriate Family Planning (FP) methods like IUCD [3].

Intrauterine contraceptive device use is particularly important in Sub-Sahara African countries, because large unmet need for long acting and permanent methods both during in immediate post partum period. Moreover, in developing countries, women who once go back

home after delivery do not return for even a routine postpartum check-up, leave aside contraception. Thus, immediate postpartum contraceptive services need to be emphasized where in the woman leaves the hospital with an effective contraception in place [4,5]. Most women do not desire a pregnancy immediately after delivery but are unclear about contraceptive usage in postpartum period.

According to mini Ethiopia demographic health survey -2014 reports showed that IUCD use has been nearly absent from the contraceptive method mix. It showed that from 28.8% modern FP method choices, the use of IUCD contributed only 0.8%. The report also implied that almost all no focus on immediate post partum IUCD use [6]. The Health Sector Transformation Programme 2015-2020 has focused on equitable service but the core equity indicators of this document did not include FP indicators, no details about long acting FP methods but the revised RH strategy, gives due emphasis to focuses on long acting FP methods by setting clear targets, to increase the proportion IUCD to 7% and meet need for immediate postpartum contraception to 100% by 2020 [7,8]. Since in Ethiopia, there is a scarcity of information and evidence on immediate post partum IUCD utilization. Findings from this study will contribute to the benefit of society, planners to designing strategies so as to promote to use post-partum IUCD and researchers who will be interested to study to this and related topics by providing as base line information.

## Methods

### Study design and setting

The study was conducted in government hospitals of Gamo zone, Southern Ethiopia which has being given immediate post partum IUCD service. Arba Minch town is the capital city of Gamo zone which is 505 km southwest far from, Addis Ababa, the capital city of Ethiopia. The town has elevation of 1285 meters above sea level. All of the hospitals have being given maternal and child health services like skilled delivery and family planning.

### Sample size and sampling procedure

The sample size was determined using epi-info-v.7.2.2.6 calculator by considering different assumptions for each objective accordingly. The sample size was computed from the second objective and was taken as 422 by considering the following assumptions; confidence interval of 95%, power of 80%, ratio of unexposed to exposed group equal to one, outcome or proportion in unexposed group and adjusted odds ratio of parity was considered [9]. After adding 10% non-response rate, the final sample size was calculated as 465.

There are 5 government hospitals in Gamo zone, Southern Ethiopia and among these 3 hospitals is being provided immediate PPIUCD service and all were studied. The determined sample for each hospital was achieved through pre exit interview through systematically sampled and allocated to each hospital by proportional to size ratio allocation based on monthly skilled delivery services. Systematic random sampling technique was used in this study to select study subjects. The first respondent from each hospital was selected randomly by lottery method in first day. Then the subsequent respondents were selected every other respondent for all hospitals using the formula  $(k_i = N_i/n_i) \approx 2$  by considering the monthly skilled delivery service until the required respondents were selected depends on voluntarily consenting women who gave birth within one month

duration.

### Data collection instrument and procedure

The data were collected by using semi-structured, translated and pre-tested questionnaire. Data were collected by using interviewer administered semi-structured questionnaire which was developed from different literatures and it contains socio-demographic, individual related factors ,reproductive health and family planning related factors and facility related factors [9-12].

### Data analysis

The data of completed questionnaire were entered in to SPSS (statistical package for social science) version 23.0 software for analysis. After the data were cleaned up, summary statistics was done. The bivariate analysis was done by fitting logistic regression for each explanatory variable separately with 95% CI to assess their crude effect on their outcome variable and statistical significance. Variables with p-values of <0.25 in bivariate analysis were included in multivariate logistic regression model (Back-Ward stepwise) to identify independent significant associated factors.

### Ethical considerations

Ethical clearance and support letter was obtained accordingly, prior to data collection, respective study hospitals' administrators were informed about the objective of the study through a support letter from Arba Minch University, department of Public Health and permission was obtained from the hospital administrators as per the recommendation letter from the department. Informed verbal consent was obtained from each participant.

### Measurements

Post-partum IUCD acceptance is defined as those women who gave verbal consent to use IUCD within 10 minutes to 48 hrs of delivery of placenta [10].

Post-partum IUCD utilization is defined as women who had actual IUCD insertion within 48 hours of delivery [11]. Post partum family planning counseling is defined as counselled about PPIUD during ANC or latent phase of labour or within 48 h of delivery if the health professionals told her at least either of the benefit, side effects or duration of PPIUD use [11].

Immediate postpartum IUCD is one of the PFP method choices which is inserted immediately following delivery of the placenta but within 48 hours of delivery [1].

Knowledge in immediate post partum IUCD were measured in postnatal women who have understanding about postpartum IUCDs as FP method and measured by the total number of correct answers to 10 items on knowledge, with a minimum score of 0 and maximum of 10 [13].

Good knowledge is measured as those who knew 50% and above from 10 knowledge measuring questions.

Poor Knowledge is defined as those who knew less than 50% from 10 knowledge measuring questions.

Attitude in immediate post partum IUCD were measured in the following way [14].

Favorable attitude: From seven attitudes measuring questions

**Table 1:** Socio demographic characteristics of the study participants in Gamo zone Hospitals, Southern Ethiopia, 2019.

Variables (n=452)	Categories	Frequencies (n)	Percent (%)
Age (completed years)	15-24	140	31
	25-34	269	59.5
	35-49	43	9.5
Educational status	No formal education	86	19
	Primary education	168	37.2
	Secondary education	124	27.4
	Above secondary education	74	16
Respondents husband educational status	No formal education	59	13.6
	Primary education	131	30.2
	Secondary education	88	20.3
	Above secondary education	156	35.9
Marital status	Married	434	96
	Unmarried	14	3.1
	Others	4	0.9
Ethnicity	Gamo	260	57.5
	Gofa	54	11.9
	Konso	73	16.2
	Wolyta	45	10
	Others	20	4.4
Religion	Orthodox Christian	214	47.3
	Protestant Christian	219	48.5
	Muslim	19	4.2
Occupational status	Employed	258	57.1
	Unemployed	194	42.9
Residence	Rural	188	41.6
	Urban	264	58.4

those who score above mean to the correct answers from attitude measuring questions.

Unfavorable attitude: From seven attitude measuring questions those participants who scored mean and below to the correct answers. For the purpose of analysis, the attitude of women was grouped into two: agree and disagree.

## Result

### Socio demographic characteristics of study participants

A total of 452 clients were included in the post service interview and making a response rate of 97.2%. Of the study participants 269 (59.50%) were at the age range of 25-34 years. The mean age of participants was 27 (4.8 SD) (Table 1).

### Knowledge and attitude of study participants towards immediate PPIUCD

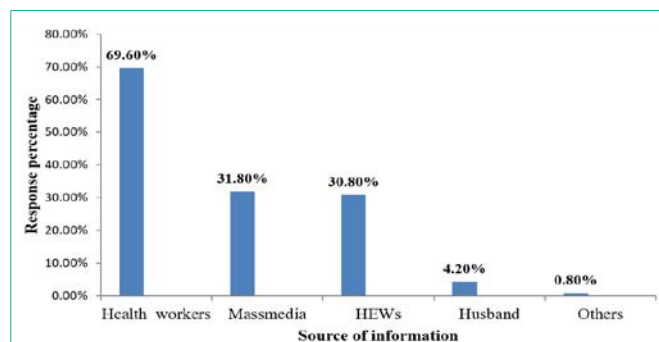
Majority of the respondents, 360 (79.6%) (n=452), were heard about immediate PPIUCD. During study period, majority of study participants were 249 (69.60%) heard message through health workers and followed by (32%) mass media in the last 12 months. About 69 (15%) of the respondents heard both from mass media and health workers. About 69 (15%) of the respondents heard both from

mass media and health workers (Figure 1).

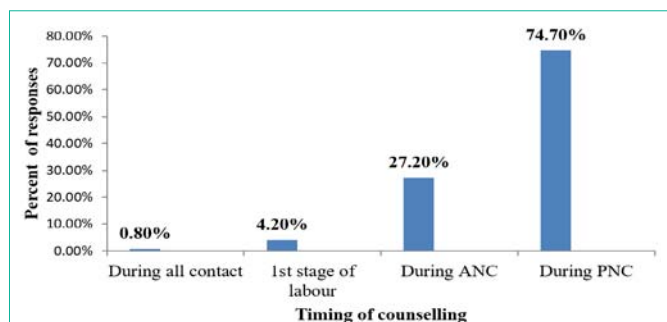
Among respondents (n=360), majority of the respondents 210 (58 %) and 195 (54 %) had good knowledge and disagree for the given seven attitude questions about immediate PPIUCD respectively.

### Reproductive history and use of family planning of the study participants

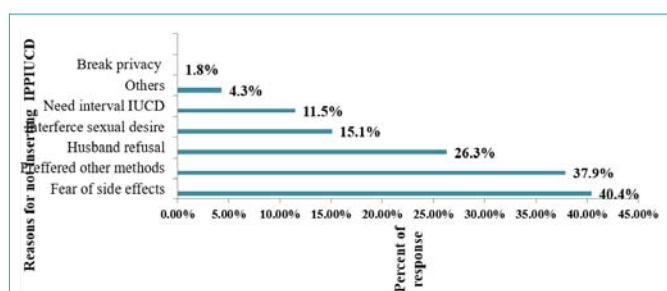
From respondents (n=452), the majority 281(62.20%) of them



**Figure 1:** Source of information about postpartum IUCD among postnatal women at Gamo zone Hospitals, Southern Ethiopia, 2019.



**Figure 2:** Distribution of timing of counselling among mothers who gave births at Gamo zone hospitals, South Ethiopia, 2019.



**Figure 3:** Distribution of reasons not inserting immediate PPIUCD among delivered mothers in Gamo zone, Southern Ethiopia, 2019.

were multipara and majority of the respondents were 274 (61.1%) had 1-2 children. From respondents, majority 340 (75.20%) had planned to have another child in the near future. Almost half of the respondents 227 (52.67%) had attended at least 4<sup>th</sup> visits in their current pregnancy. During study period, majority of study participants 372 (82.3%) were used any FP before the current pregnancy and majority of them 299 (80.40%) were used injectables.

During study period, majority of study participants 261 (57.7%) were counselled about immediate PPIUCD. Among counselled

during the study period (n=279), majority of them 195 (74.70%) were counselled within 48 hours of their delivery (Figure 2).

**Utilization of post-partum intra uterine device**

This study revealed that 62 (13.7%) of the respondents were utilize immediate PPIUCD. From the study participants who were not using PPIUCD (n=390), their main reason were due to side effects 158 (40.4%), followed by preferred other family planning methods, 148 (37.9%) and least 7 (1.8%) were due to beliefs of break privacy during insertion and removal IUCD (Figure 3).

**Factors associated with utilization of PPIUCD**

In binary logistic regression analysis, six variables were associated with immediate PPIUCD utilization. These were; residence, plan to have another child in the future, previous FP use, counselling about PPIUCD and ANC follow up completion status of the mother (Table 2).

In multivariable logistic regression analysis, four variables were independently associated with immediate PPIUD utilization. Those variables which were significant in the multivariate analysis at p-value ≤0.05 were, undecided or not plan to have another child in the near future, counseling and ANC follow-up completion status of the mother.

Among mothers who were did not plan to have another child were 3 times more likely to utilize immediate PPIUD than their counterparts (AOR = 2.84, 95% CI, (1.12, 7.21). In same manner, among mothers who were undecided plan to have another child were 2.6 times more likely to utilize PPIUD than mothers who had a plan to have another child (AOR = 2.55 , 95% CI, (1.21, 5.35). Among mothers who had complete ANC follow up were 2.4 times more likely to utilize PPIUD than mothers who did not complete ANC follow up (AOR=2.43, 95% CI: 2.61(1.28, 4.60). Among mothers who were counselled about PPIUD were 4.4 times more likely to utilize PPIUD than mothers who did not receive counseling service about PPIUD (AOR=4.35, 95% CI: 4.53 (2.11, 8.96) (Table 3).

**Table 2:** Unadjusted Odds ratio with 95% CL of logistic regression showing associated factors on the likely hood of immediate PPIUCD use among study participants in Gamo zone Hospitals, Southern Ethiopia, 2019.

PPIUCD utilization					
Variables (n=452)	Categories	Yes [N (%)]	No [N (%)]	Crude OR (95% CI)	P-value ≤ 0.25
Residence	Urban	45 (17.0)	219 (83.0)	3.32 (1.64,6.73)	<b>0.001</b>
	Rural	17 ( 9.0)	171 (91.0)	1	
Plan to have another child	Undecided	14 (22.2)	49 (77.8)	12.14 (1.09,4.23)	<b>0.028</b>
	No	8 (16.3)	41 (83.7)	1.46 (0.64,3.34)	0.37
	Yes	40 (11.8)	300 (88.2)	1	
Family planning use	Yes	58 (15.6)	314 (84.4)	3.51 (1.24,9.97)	<b>0.018</b>
	No	4 (5.0)	76 (95.0)	1	
Counseling	Yes	52 (19.9)	209 (80.1)	4.50 (2.22,9.12)	<b>0.001</b>
	No	10 (5.2)	181 (94.8)	1	
Number of alive children	10-May	9 (22.5)	31 (77.5)	1.99 (0.88,4.55)	<b>0.099</b>
	4-Mar	18 (13.2)	118 (86.8)	1.05 (0.57,1.93)	0.874
	2-Jan	35 (12.7)	241 (87.3)	1	
ANC follow up completion	Yes	42 (18.5)	185 (81.5)	2.09 (1.18,3.69)	<b>0.011</b>
	No	20 (9.8)	184 (90.2)	1	

**Table 3:** Adjusted Odds ratio with 95% CL of logistic regression showing associated factors on the likely hood of immediate PPIUCD use among study participants in Gamo zone Hospitals, Southern Ethiopia, 2019.

Variables (n=452)	Categories	PPIUCD utilization		COR (95% CI)	AOR (95% CI)
		Yes [N (%)]	No [N (%)]		
Residence	Urban	45 (17.0)	219 (83.0)	3.32 (1.64,6.73)	
	Rural	17 ( 9.0)	171 (91.0)	1	
Plan to have another child	Undecided	14 (22.2)	49 (77.8)	12.14 (1.09,4.23)	2.84 (1.12, 7.21)*
	No	8 (16.3)	41 (83.7)	1.46 (0.64,3.34)	2.55 (1.21, 5.35)*
	Yes	40 (11.8)	300 (88.2)	1	1
FP use	Yes	58 (15.6)	314 (84.4)	3.51 (1.24,9.97)	2.04 (0.69, 6.07)
	No	4 (5.0)	76 (95.0)	1	1
Counseling	Yes	52 (19.9)	209 (80.1)	4.50 (2.22,9.12)	4.35 (2.11, 8.96)**
	No	10 (5.2)	181 (94.8)	1	1
Number of alive children	5/10	9 (22.5)	31 (77.5)	1.99 (0.88,4.55)	
	3/4	18 (13.2)	118 (86.8)	1.05 (0.57,1.93)	
	1/2	35 (12.7)	241 (87.3)	1	
ANC follow up completion	Yes	42 (18.5)	185 (81.5)	2.09 (1.18,3.69)	2.43 (1.28, 4.60)**
	No	20 (9.8)	184 (90.2)	1	1

Key: \*Significant at p-value<0.005.

\*\*Significant at p-value<0.001.

## Discussion

This study revealed that only 62 (13.7%) in 95% CI (10.6, 16.8) of the study participants were use immediate postpartum intra uterine contraceptive device. This result is low compared with similar studies done in Nigeria and India [12,15-18].

The discrepancy might be difference in the possible innervations like training of the health providers on long acting family planning, Health system policies that how much has given emphasis on immediate post partum family planning and support from non profitable organizations. In addition study area, sample size and study period difference might be another possible explanation. This study also low compared with similar studies conducted in Somalia region, Gondar town and Sidama zone, Ethiopia [10,19,20]. The possible explanation might be difference in health workers, health department manager commitment to improve LACPMs like immediate PPIUCD. The other plausible explanation might be difference in regional government and non government support and possible interventions. However, this study was higher than similar studies done in Addis Ababa and Axum, Ethiopia [21,22]. A possible explanation might be the relatively good utilization of immediate PPIUCD might be the presence of health care providers training and material support from a non-governmental organization in the study areas.

In this study, those mothers who did not have a plan to have another child were more likely to use immediate PPIUD than mothers who had a plan to have another child in the future. Similar findings were reported in the study conducted in Sidama zone, Southern Ethiopia [10]. The possible explanation might be the current delivered women need a long inter pregnancy interval until to the next pregnancy. The other possible explanation might be women who did not have plan to another child in the near future were need safe and effective long acting FP methods after their immediate delivery. Nearly 65% of women in their first postpartum period have an unmet

need for safe and effective FP method choices globally [23].

In this study, those mothers who were undecided to have another child in the near future were more likely to use immediate PPIUD than mothers who had a plan to have another child in the future. These findings were inconsistent with the study conducted in Sidama zone, Southern Ethiopia, showed that mothers with undecided plan to have another child were less likely to utilize immediate PPIUD than mothers who had a plan to have another [10]. The possible explanation might be those mothers who were undecided to have child in the near future need safe and effective immediate postpartum family planning to delay their next pregnancy until they decide either to have or not to have pregnancy in the near future.

In this study, mothers who were counselled about immediate PPIUCD were more likely to utilize immediate PPIUD than their counterparts. This finding were consistent with studies done in India, Northern Ethiopia, Somalia region and Sidama zone, Southern Ethiopia [10,19,21,24]. The plausible explanation might be counseling helped women to understand many benefits of PPIUCD over other methods. The other possible explanation might be counselled women could think and discuss with their family members and husbands about it if counselled antenatal period. According to WHO and PPIUCD reference manual for provider, postpartum FP counseling should optimally begin during early antenatal care and counseling during early labor and immediately after delivery of the possible and good opportunity to use immediate PPIUCD [23,25]. In this study mothers who had completed ANC follow up were more likely to utilize PPIUD than mothers who were not completed ANC follow up. A similar finding were reported by Global health action for the patterns and trends of PFP by using EDHS-2011 data, Gondar town and rural northern, Ethiopia [20,21,26]. The possible explanation might be the women who had frequent visit during ANC had more exposure of information and had more awareness on birth spacing by the use of contraceptive after giving each birth.

## Limitation of the Study

Because of this study was done at facility level it lacks generalization to women who delivered at home.

## Conclusion and Recommendation

### Conclusion

This finding revealed that about 161 (36%) of the respondents had showed willingness to use immediate PPIUD, however, only about 62 (14%) of study participants were utilized immediate PPIUCD. Although the majority of the study participants 261(58%) were counseled about immediate PPIUCD, only 2 (0.8%) mothers were counselled during in all important contact points through the whole cascade of maternal health services. In this study about 431 (95.4%) of the study participants had attended at least one ANC visit(s), but about 227 (53%) of the respondents had completed at least four ANC visits. Among several factors such as plan to have another child in the future, ANC follow up completion status and counselling on immediate PPIUCD were factors positively predict the utilization of immediate PPIUCD.

### Recommendation

For Gamo zone health bureau and other stakeholders work on long acting family planning to improve antenatal service and integrate standard immediate PPIUCD counselling program through the whole process of pregnancy and facilitate for education of women on the benefit of immediate PPIUCD use.

For Service providers: Health service providers should promote counselling on immediate PPIUCD during the whole cascade of pregnancy (ANC, Delivery, and PNC).

For researchers: Should investigate health service provider's related factors that hinder postpartum contraceptive acceptance and utilization.

## Acknowledgement

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