



## Research Article

# Factors Influencing Contraception Usage: A Cross-Sectional Study among Mothers Receiving Abortion Services in Orotta Maternity Hospital, Eritrea

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**Received:** 10 August, 2020

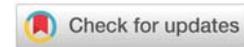
**Accepted:** 29 October, 2020

**Published:** 30 October, 2020

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**Keywords:** Contraception; Factors; Maternity; Orotta; Eritrea

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## Abstract

**Background:** Contraception usage helps in preventing unintended pregnancies and unsafe abortions as well as avoiding sexually transmitted disease including HIV. This study was aimed to determine the contraception prevalence and its influencing factors among mothers receiving abortion services in Orotta Maternity Hospital.

**Methods:** Using a cross-sectional study, 250 mothers receiving abortion services in Orotta national referral maternity and teaching hospital were surveyed over a period of three months, December 2018 through February, 2019. Patient demographic and obstetric data were collected using a pretested questionnaire. Bivariate and multivariate logistic regression models were utilized to identify factors influencing contraception usage using SPSS (Version 22.0).

**Results:** The prevalence of contraception usage was 26.4 %. Young mothers aged less than 31 years (P value: 0.029), and those who were primigravida (P value: 0.004) were more likely to use contraception (p value 0.03).

**Conclusion:** Contraception usage rate was low in the current study. Better family planning systems and more counselling opportunities are needed to scale up the usage of contraception.

## Abbreviations

COR: Crude Odds Ratio; AOR: Adjusted Odds Ratio; CI: Confidence Interval; SSA: Sub-Saharan Africa; OMH: Orotta Maternity Hospital

## Introduction

Globally, pregnancy related complications contribute to about half a million preventable maternal deaths each year [1]. In the united states alone, approximately 49% of all reported pregnancies were unintended, half of which ended in abortion [2]. As a result of such maternal-related complications, one in 26 women of reproductive age die in Africa, compared to one

in 9400 in Europe [3]. A 15-year-old girl living in sub-Saharan Africa faces about a 1 in 40 risk of dying during pregnancy and childbirth, while a girl of the same age living in Europe has a lifetime risk of 1 in 3,300 [4]. The use of contraception in the past two decades has decreased the amount of global maternal deaths by 40% [5]. Contraception decreases maternal deaths through preventing unintended pregnancy and unsafe abortions as well as avoiding sexually transmitted disease including HIV [6]. In addition to its role of improving health outcomes for children and women, contraception allows individuals to achieve desired birth spacing and family size [7]. Nevertheless, lack of contraceptive use was reported as one of the most direct causes of unintended pregnancy in developing countries [8].

It is estimated that the number of reproductive aged women in Sub Saharan Africa (SSA) will be projected to increase to 353 million by 2030 [9]. Unless family planning services are improved and contraception prevalence is increased, the higher fertility rate and maternal deaths in SSA is hardly to decrease [10]. Responding to the reproductive health challenge, it is a mandate to ensure universal reproductive and sexual health coverage as well as to increase the contraception usage rate. This study was therefore aimed to determine the contraception prevalence and its influencing factors among mothers receiving abortion services in Orotta Maternity Hospital.

## Methods

### Study design and setting

A cross-sectional study with a quantitative approach was conducted on abortion case mothers admitted in Orotta Maternity Hospital from December 2018 to February 2019. Orotta Maternity Hospital (OMH) is the largest national referral hospital providing comprehensive maternal services in Eritrea. It is a public hospital located in the Southern part of the capital Asmara. Not only does it provide health services but it also functions as a teaching hospital where medical and nursing students practice their clinical sessions.

### Subjects selection criteria

**Inclusion criteria:** Participants diagnosed with abortion.

**Exclusion criteria:** Unwilling patients to participate and unable to communicate due to severe disease.

### Study participants and variables

All subjects who were admitted as abortion cases during the specified timeline were the population for this study. Twelve participants who were not willing to participate were excluded from the study, hence a total of 250 participants were enrolled during the study period. The dependent variable used in this study was the contraception use among the specified participants. The independent variables were socio-demographic variables (age, educational status, marital status, ethnicity, and religion) and factors related to obstetrics (previous experience of abortion, gravidity, parity, regularity of menstrual cycle and gestational age during which the pregnancy was terminated).

### Data collection tool and procedure

A structured and pretested questionnaire was used to collect information. The data collection tool consisted of thematic areas that include socio-demographic information of mothers and their obstetric data. The original English version questionnaire was first translated into Tigrigna (local language) by one person and then back translated into English by another one to confirm its consistency. Face and content validity of the questionnaire was determined through the review of experts in various relevant fields.

The questionnaire was pretested on 20 mothers of abortion

cases admitted in Edaga Hamus Community Hospital (a maternity hospital located in the center of Asmara). The questions were clearly understandable and consistent, hence no further amendments was done. Training was given to data collectors before the start of data collection. The trained data collectors were explaining the aim of the study to the participants, and those who signed the written informed consent were recruited in the study. Then face-to-face interview was conducted. All activities in data collection were supervised by the principal researcher.

### Statistical analysis

Data was entered and analyzed using SPSS software version 22. Before entering the data, all questionnaires were checked for their completeness and consistency by trained data encoders. The dependent variable i.e. contraceptive use was a binary categorical variable with 'yes' or 'no' responses. Those women who were using any kind of contraception were considered as "users", where as those who have never used any kind of contraceptive method were considered as "non-users". Descriptive statistics were used to summarize and show frequency distribution and percentages of the variables. A bivariate analysis with 95% confidence interval was used to estimate the association of independent variables with contraceptive use. Variables found significant at the bivariate level were then entered into multivariate logistic regression models to compute the adjusted odds ratio. A P value of < 0.05 was used for statistical significance.

### Ethical approval

Ethical clearance was obtained from the Ministry of Health 'Scientific and Research Ethical Committee'. A permission was secured from the hospital medical director for allowing data collection. Informed consent was obtained from each respondent after a thorough explanation of the aim and potential benefits of participating in the study was given. Anonymity and confidentiality were ensured in that the respondent's name never appeared on the questionnaire.

## Results

### Socio-demographic and obstetric variables of the participants

A total of 262 patients of abortion cases were admitted, out of which 12 women refused to participate in the study. Hence 250 patients were enrolled for data analysis. Contraception users make up 26.4% of the total participants. The median age of the participants was 29 years. About one tenth (9.6%) of the mothers were single and more than half (54%) had attained secondary and above educational level. Majority of the respondents (65.6%) had abortion during their first trimester, yet there was no big difference on contraception use compared to those who had not history of abortion. It was observed that 28% of those participants residing in the urban places were utilizing contraception compared to 21% of those from rural. One third (33.3%) of the Muslim participants were contraceptive users compared to 25.6% of the Christians (Table 1).



**Table 1:** Frequency distribution of participants' demographic and obstetric variables and contraception usage, OMH, Asmara, Eritrea, 2019 (n=250).

Variables	Frequency(%)	Contraceptive users (%)	Contraception non- Users (%)
Age (Median= 29 Years)			
≤ 20 years	15 (6)	1 (6.7)	14 (93.3)
21-30 years	135 (54)	31 (23)	104 (77)
31-40 years	91 (36.4)	32 (35.2)	59 (64.8)
41-50 years	9 (3.6)	2 (22.2)	7 (77.8)
Educational Level			
No formal education	10 (4)	2 (20)	8 (80)
Primary education	105 (42)	35 (33.3)	70 (66.7)
Secondary education	122 (48.8)	25 (20.5)	97 (79.5)
Tertiary education	13 (5.2)	4 (30.8)	9 (69.2)
Marital Status of the			
Married	226 (90.4)	64 (28.3)	162 (71.7)
Single	24 (9.6)	2 (8.3)	22 (91.7)
Residence			
Rural	61 (24.4)	13 (21.3)	48 (78.7)
Urban	189 (75.6)	53 (28)	136 (72)
Religion			
Muslim	27 (10.8)	9 (33.3)	18 (66.7)
Christian	223 (89.2)	57 (25.6)	166 (74.4)
Menstrual Cycle Regularity			
Regular	186 (74.4)	50 (26.9)	136 (73.1)
Irregular	64 (25.6)	16 (25)	48 (75)
Gestational Age During Abortion			
≤ 12 weeks	164 (65.6)	43 (26.2)	121 (73.8)
> 12 weeks	86 (34.4)	23 (26.7)	63 (73.3)
History of Previous Abortion			
Yes	86 (34.4)	24 (27.9)	62 (72.1)
No	164 (65.6)	42 (25.6)	122 (74.4)
Gravidity			
Primigravida	95 (38)	12 (12.6)	83 (87.4)
Multigravida	155 (62)	54 (34.8)	101 (65.2)
Parity			
Primipara	102 (40.8)	26 (25.5)	76 (74.5)
Multipara	148 (59.2)	40 (27)	108 (73)
Overall Contraception Usage			
66 (26.4)		66 (26.4)	184 (73.6)
184 (73.6)			

Irregular\*: Infrequent Bleeding, No monthly bleeding, and prolonged bleeding; OMH: Orotta Maternity Hospital

of contraception use. Participants younger than 31 years were 1.7 times more likely to use contraception than the older ones. Likewise, those who were primigravida were 2.9 times more likely to use contraception than the multigravida participants. The remaining variables including religion, place of residence, history of previous abortion, gestational weeks during abortion and regularity of menstrual cycle were not observed to have a significant influence on contraception use (Table 2).

**Table 2:** Predictors of contraception use OMH, Asmara, Eritrea, 2019 (n=250).

Variables	Incidence (%)	Contraception use (%)	COR (95% CI)	P value	AOR (95% CI)	P value
Younger age (below 31)	60	21.3	1.9 (1.0, 3.3)	0.026	1.7 (0.9, 3.2)	0.029
Single	9.6	8.3	4.3 (0.9, 19.0)	0.03	2.2 (0.4, 10.7)	0.29
Higher education	54	21.5	1.7 (0.9, 2.9)	0.05	1.3 (0.7, 2.5)	0.27
Rural residents	24.4	21.3	1.4 (0.7, 2.8)	0.3		
Christian Religion	89.2	25.6	1.4 (0.6, 3.4)	0.38		
Primigravida	38	12.6	3.6 (1.8, 7.3)	<0.001	2.9 (1.4, 6.3)	0.004
Primipara	40.8	25.5	1.1 (0.6, 3.4)	0.78		
Regular menstrual cycle	74.4	26.9	1.1 (0.5, 2.1)	0.76		
First trimester	65.6	26.2	1.02 (0.5, 1.8)	0.92		
Having previous abortion	34.4	27.9	1.1 (0.6, 2.1)	0.69		

COR: Crude Odds Ratio; AOR: Adjusted Odds Ratio; CI: Confidence Interval

## Discussion

The present study focused on the utilization rate of contraception and the influencing demographic factors among mothers receiving abortion services in Orotta Maternity Hospital. The study revealed that 26.4% of the participants were contraception users. The findings of the study indicates a significantly lower contraception rate compared to results reported from other countries. Studies in Australia, United States, Ethiopia and Turkey reported a contraception usage rate of 61%, 37%, 35% and 33% respectively [11-14]. In this study, being young (age less than 31 years) and those who were primigravid were the most significant factors influencing contraception use. Consistently, the use of contraception had an inverse relationship with age in studies conducted elsewhere [13,15]. Various studies depicted that women with higher educational level were more commonly to use contraception than the lower educated group [11,13,16]. Likewise, urban residents and those who were married were more likely to use contraception compared to their counterparts in studies conducted in South Africa and Ethiopia respectively [17,18]. In the present study however, though educational level and marital status had a potential influence during the univariate analysis, adjusted odds ratio revealed non significance of the factors to influence contraception use. Religion, parity and residence also didn't attain significant influence in contraception use. The inconsistency of the results could probably be due to sample size differences. Religion, residence and educational differences

## Factors influencing contraception use

Those participants younger than 31 years (COR (95% CI): 1.9 (1.0, 3.3), p=0.026), single (COR (95% CI): 4.3 (0.9, 19.0), p=0.03), primigravida (COR (95% CI): 3.6 (1.8, 7.3), p<0.001) and having higher education (COR (95% CI): 1.7 (0.9, 2.9), p=0.05) were found to have a significantly better contraception use than their counter parts at the bivariate level. However, after adjusting the effect of confounding, multivariate analysis revealed younger age and primigravidity as the sole predictors



were significant factors contributing to contraception use in other studies [19,20]. The present study was conducted in a Christian majority city, hence the higher prevalence of contraception use among the Christian groups could not be a legitimate evidence to say that religion has a potential factor. Similarly, being the study conducted only in the capital city, it failed to explore the geographical and residential differences of the participants. Patients' socioeconomic status was also found to affect their contraception use [21]. Socioeconomic status was not included in the study due to the fact that contraceptives are provided freely and there is no clear cut points of wealth index in the country to differentiate between poor and rich.

**Limitations:** the study has several limitations. First: due to budget and time constraints, the study adopted a cross-sectional survey, with fewer sample size and in short period of time. Hence, it is difficult to ensure the external validity of the results as well as cause and effect relationship is difficult to be established. Second: though the study was conducted in a national referral hospital, the paper was not of a wide scope to cover geographical differences and thus the study participants can't reflect the picture of the whole country. Third: variables that could affect contraception use like women autonomy on decisions, partner's role, and knowledge about contraception, accessibility of all contraceptives and attitudes of contraception providing nurses towards contraception were not addressed due to their vast scope. Hence a more geographical and population centered research that covers wide scope variables and factors is needed to fill the aforementioned gaps.

## Conclusion

In conclusion, contraception usage rate was low in the current study. Better family planning systems and more counselling opportunities are needed to scale up the usage of contraception. Further researches and national surveys are highly recommended to identify all possible variables that can affect contraception usage.

## Declarations

### Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

### Ethical approval

The study proposal was approved by the Ministry of Health "Scientific and Research Ethical Committee".

### Authors' contributions

IMI, was responsible for study conception, data acquisition, analysis, interpretation and manuscript drafting for publication.

## Acknowledgments

The author thank all data collectors and study participants for their help and participation.

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