Proportion and Determinants of Repeat Induced Abortion Among Women Seeking Abortion Care Services At Debre Markos Town Health Institutions, Amhara Regional State, Ethiopia, 2017

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Research note

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Abstract

Objective the aim of this study was to assess the proportion and determinants of repeat induced abortion among women seeking abortion care services at Debremarkos town health institutions, Amhara regional state, Ethiopia, 2017.Result from the total 567-sample size, 547 women were participated in the study making a response rate of 96.5%. In this study 191 woman reported that they had at least one previous abortion, making the proportion of repeat induced abortion 34.9%. In multivariable logistic regression analysis; illiteracy (AOR=8.45, 95%CI; 1.85, 36.49), living in an urban area (AOR=5.14, 95%CI; 2.29, 11.53), having multiple sexual partner (AOR=6.16, 95%CI; 3.25, 11.68), consuming alcohol (AOR=2.77, 95%CI; 1.52, 5.05) and having a history of physical violence by a male partner (AOR=2.68, 95%CI; 1.45, 4.94) were significantly associated with repeat induced abortion at p value less than 0.05.

Introduction

Induced abortion (IA) is a surgical or medical termination of a live fetus that has not reached viability and repeat induced abortion (RIA) is a binary indicator of whether the woman had an induced abortion prior to the current one(1).

Globally, the estimated number of IA that occurred from 2010 to 2014 were 56 million per year. Fifteen percent around 8.3 million of them occurred In Africa and 2.7 million IA per year had occurred in East Africa. In 2014, in Ethiopia, there was an estimated number of 620,300 IA with an annual rate of 28 abortions per 1,000 reproductive age women(2, 3, 4, 5). RIA accounts for a significant proportion of all IA in many countries, with reports ranging from 16% to 71%(1, 6). RIA account for 30%- 33.6% of all IA in Ethiopia(7, 8, 9).

Woman who have undergone repeated induced or spontaneous abortions are at increased risk of adverse pregnancy outcomes like mid trimester pregnancy loss and preterm birth (10). In Ethiopia, the number of women receiving treatment for complications from an abortion performed outside as well as inside a health institution increased between 2008 and 2014, rising from 52,600 to 103,600 (5).

Several measures have tried to prevent the impact of IA in Ethiopia. The major measure taken was providing post abortion care (PAC) as a response to avert deaths and injuries from abortion complications. Post abortion family planning (PAFP), a key component of PAC, has been provided targeting specifically to prevent repeat unintended pregnancies and repeat abortions (11). The International Conference on Population and Development (ICPD) Program of Action states that, “In no case should abortion be promoted as a method of family planning (FP)" (12). Nevertheless, facts on unintended pregnancy and abortion in Ethiopia states that younger women who want to space births are using IA (13).

Despite the efforts to improve FP access and PAC and specifically PAFP, the higher magnitude of repeat abortion in Ethiopia is worrisome. Furthermore, there is no study done on RIA and associated factor in Amhara region. Even if, there are few studies done in Addis Ababa, the capital city of Ethiopia, the

available knowledge is insufficient to answer the relation of partner physical violence and substance exposure with RIA. Therefor this study aimed to assess the magnitude and associated factors of RIA in Debre Markos town, Amhara region, Ethiopia.

Methods

Study design and period

An institutional based quantitative cross sectional study was conducted from October 1 to November 30, 2017 GC at health facilities of Debremarkos town, Amhara region, Ethiopia.

Source and study population

All reproductive aged women who seek abortion care services at health institutions of Debre Markos town was the study population, and those who seek the service at the selected health institutions of the town during the study period was the study population. Women on therapeutic abortion or those who had an abortion service somewhere else and came to the institution for PAC service were the exclusion criteria for the study.

Sample size and sampling procedure

The final sample size, 567, was calculated using single population proportion formula with the assumption of 95% confidence interval, 5% margin of error, 33.6% magnitude of RIA in Addis Ababa from a previous study (9), 10 % non-response and a design effect of 1.5. Multi stage sampling was the technique used to select the study participants. First, by using stratified sampling technique, health facilities with safe abortion service was stratified based on facility ownership as public, NGO and private facilities. There were four public health centers and one public referral hospital, two facilities owned by Non-Governmental Organizations (NGO) and six private clinics in the town. By simple random sampling technique, two public, one NGO and four private health facilities were selected from each strata. After allocating proportional sample for each strata, based on their average monthly abortion service, systematic random sampling technique finally employed to select the study participants from each health institution. The sampling interval K calculated by using the formula K = N/n and every second women was selected from each facility.

Data collection tool and procedures

Data collection was conducted by eight female diploma midwifes using an interviewer-administered questionnaire and supervised by four BSc midwifes. They were given proper training about the instrument and way of getting consent for an interview for three days prior to the data collection. The data collection tool was prepared from literatures and it was first translated from English to the native language of the region (Amharic), and then re-translated to English language to ensure consistency. Pretest on 28 woman who came for induced abortion service at University of Gondar referral hospital, Gondar town was conducted and relevant modifications were done before the actual data collection period. The

questionnaire contains; Part I -socio-demographic characteristics, Part II - sexual and reproductive health history, Part III—FP use and fertility intentions, Part IV - substance exposure status and Part V - gender based violence.

Statistical analysis

The data were first coded, entered and cleaned using Epi info statistical software version 7 and then exported into SPSS statistical software version 20 for analysis. Descriptive statistical analysis such as simple frequencies, measures of central tendency and measures of variability were used to describe the characteristics of participants. To see the association between each independent variable with the outcome variable, bivariate logistic regression was used and a variables with a p-value <0.2 were selected for multivariable logistic regression. Independent predictors of RIA was determined by Multivariable logistic regression and crude and adjusted odds ratios (COR & AOR) together with their corresponding 95% confidence intervals were computed to see the strength of association. Finally, level of statistical significance was declared at p-value < 0.05.

Results

Socio- demographic characteristics
Out of the total 567-sample size, 547 woman were participated in the study making a response rate of 96.5%. The mean age of the participants was 23.98 (+4.27) years and 42.6% of the participants were in the age group of 20–24 years. Half of the participants had an educational level of more than secondary (50.1%) and the majority (82.6%) were urban residents. [Table 1].

Sexual and Reproductive characteristics

In this study 191 woman reported that they had at least one previous abortion, making the magnitude of RIA 34.9% (95% CI (30.7- 38.8)). Most of the participants had their last pregnancy unplanned and unwanted (78.6%). Among woman with RIA, the majority had only one previous abortion (91.6%), over half (60.1%) received a PAFP method before they left the facility and pregnancy was medical terminated in 78.5% of the cases. 31.8% of the participants reported they have given birth previously. 47.2% and 72.5% of the participants reported a history of physical and sexual violence by their male partners, respectively. [Table 2]

Factors associated with RIA
Five variables was significantly associated with RIA on multivariable logistic regression. Educational status had an association with the outcome variable; Participants with no education (AOR = 8.45, 95%CI; 1.85, 36.49), with primary educational level (AOR = 5.46, 95%CI: 2.06, 14.47) and with secondary educational level (AOR = 12.96, 95%CI; 6.16, 27.29) were 1.85, 5.46 and 12.96 times more likely to have RIA compared to those who were above secondary educational level. Compared to rural residents, Woman who were urban residents, had 5.14 times chance of RIA (AOR = 5.14, 95%CI; 2.29, 11.53). Woman who had multiple sexual partner were 6.16 times more likely to have RIA compared to their

counter parts (AOR = 6.16, 95%CI; 3.25, 11.68). Alcohol consuming woman had 2.77 times more chance to experience RIA compared to non-users (AOR = 2.77, 95%CI; 1.52, 5.05). Woman who had physical violence by a male partner had 2.68 times more chance of engaging in RIA than those who had not (AOR = 2.68, 95%CI; 1.45, 4.94) [Table 3].

Discussion

The overall magnitude of RIA for this study was 34.9% (95% CI (30.7- 38.8)), the result is found to be comparable with two studies conducted at public and Non –governmental health institutions of Addis Ababa city, Ethiopia, 31% and 33.6%(8, 9).

The figure however is slightly higher than a study done in Kenya and Nigeria with magnitude of RIA 16% and 23% respectively(1, 14). This might be due to the liberalized abortion law in Ethiopia may encourage women to seek for abortion care in a health institution. On the contrary, this study has smaller magnitude compared to the study done in Tunisia (42.2%) (15). This may be due to the long time history of the liberalization of abortion law in Tunisia. Furthermore, this study has a much lower figure compared to two studies conducted in United States of America (USA) in New York (57%) and San Francisco (59%), (16, 17). This may be due to the relatively better development stage of the country may contribute to better reporting of previous abortions.

Our study has found out that participants who had no education and had an educational level of primary and secondary were more likely to undergo a RIA than those who had an educational level of more than secondary. The finding is in consistent with the study in Ethiopia, Kenya, Tunisia, Georgia, and Russia(1, 8, 15, 18, 19). Unplanned pregnancy secondary to poor contraceptive knowledge and use among those with a lower educational level might be the possible reason.

This study has found out urban residents had five time higher risk of having RIA than rural residents. This finding is consistent with the study done in Kenya(20). This may be due to the low institutional service utilization of woman from rural area, and rather than seeking for safe abortion, they may choose to use unsafe abortion to terminate the pregnancy that reduces the figure.

In this study, woman who had multiple sexual partner were 2.68 times more likely to have a RIA than those who did not. This finding is consistent with the study done in Addis Ababa, Ethiopia and in Britain (8, 21). This could be due to; having multiple sexual partner will make those women to be in an unstable relationship, which leads to irregular use of contraceptive that will cause contraceptive failure and unwanted pregnancy.

This study has identified an association between alcohol use and RIA. Those who had used alcohol had a 2.7 times higher risk of having a RIA. This finding is consistent with the research done in San Francisco General Hospital, USA and with the study done in Russia (17, 19). This may be because of the impact of alcohol on logical thinking of women and might lead them to have unprotected sex.

Finally, those who had a history of physical violence by a male partner had a 2.6 times higher risk of having a RIA than those who did not have a history of physical violence. This result is consistent with the studies done in Tunisia (15). This could be due to fear of telling her male partner about the pregnancy and tend to protect themselves by having an induced abortion.

Conclusion

In nutshell, this study revealed a high rate of RIA in Debre Markos town health institutions. Upon the identified factors, it requests a call for different stakeholders including health professionals, health programmers, and different non-governmental organizations to work on reducing RIA by improving woman's consciousness on the impact and complication of RIA, furthermore, by improving their FP service utilization.

Limitation

Due to the sensitivity of this issue, participants may tend to under report history of past abortion

Abbreviations

AOR - Adjusted Odds Ratio

BSc - Bachelor of Science

CI - Confidence Interval

COR - Crud Odds Ratio

Epi info - Statistical package for epidemiological information analysis

FP - Family Planning

GC—Gregorian calendar

IA—Induced Abortion

ICPD - International Conference on Population and Development

NGO - Non-Governmental Organization

PAC - Post Abortion Care

PAFP - Post Abortion Family Planning

PI—Principal Investigator

RIA - Repeat Induced Abortion

SPSS- Statistical package for social science

USA—United States of America

Declarations

Ethics approval and consent to participate
Ethical clearance was obtained from the Department of Midwifery under the delegation from Ethical Review Board of the University of Gondar. Written consent was obtained from each study participants after informing the objective of the study. In the consent, statements about potential risk, benefit, and confidentiality were included.

Consent for publication: Not applicable

Data Availability: The authors declare that the data regarding this manuscript can be accessed as per the request of any interested body and can be submitted for publication in Spring Nature as supplementary materials.

Competing Interest: The authors declare that they have no competing interests

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Authors' contributions: DG and ME; involved in the conception and design of the study, participated in data collection, analyzed the data, drafted the manuscript and approve the final version of the manuscript. EA, TS and AT; approved the proposal with some revisions, participated in data analysis and interpretation, in revising subsequent drafts of the manuscript and approve the last version of the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1 – Socio-demographic characteristics and substance exposure status of women who seek abortion care services at Debremarkos town health institutions, 2017 (N=547)

Variables	Frequency	Percentage
Age		
15-19	88	16.1
20-24	233	42.6
25-29	186	34.0
30-34	40	7.3
Religion		
Orthodox	490	89.6
Muslim	5	0.9
Protestant	52	9.5
Ethnic Group		
Amhara	527	96.3
Oromo	12	2.2
Tigrie	8	1.5
Place of Residence		
Urban	452	82.6
Rural	95	17.4
Level of Education		
No education	46	8.4
Primary	80	14.6
Secondary	147	26.9
More than secondary	274	50.1
Marital Status		
Married	61	11.2
Single	404	73.8
Divorced/ Separated/ widowed	82	15.0
Occupation		
Unemployed	67	12.2
Student	157	28.7
Daily laborer	160	29.3
Merchant	71	13.0
Other	92	16.8
Total Monthly Income		
<500	201	37.9
501-1000	230	43.4
1001-2000	70	13.2
2001-3000	25	4.7
>3001	4	0.8
Ever smoke cigarette		
Yes	3	0.6

No	544	99.4
Ever chew khat		
Yes	10	1.8
No	537	98.2
Ever drink alcohol		
Yes	337	61.6
No (1)	210	38.4

Table 2 - sexual and reproductive health characteristics of women who seek abortion care services at Debremarkos town health institutions, 2017 (N=547)

Variables		Frequency	Percentage
Had multiple sexual partner			
	Yes	245	44.8
	No	302	55.2
Total No of past pregnancies			
	0	251	46
	1	167	30.5
	2	62	11.3
	≥ 3	67	12.2
Ever gave birth			
	Yes	174	31.8
	No	373	68.2
Total No of living biological children			
	0	373	68.2
	1	93	17.0
	2	42	7.7
	≥3	39	7.1
History of abortion			
	Yes	191	34.9
	No	356	65.1
Number of previous abortions (n=191)			
	1	175	91.6
	2	16	8.4
Termination method of previous abortion (n= 191)			
	Medication	150	78.5
	Surgically	41	21.5
Ever use FP method			
	Yes	272	49.7
	No	275	50.3
Current FP use			
	Yes	140	25.6

No	407	74.4
Receive FP counseling during this visit		
Yes	546	99.8
No	1	0.2
Desire for children in the future		
Yes	453	82.8
No	94	17.2
History of physical violence by male partner		
Yes	258	47.2
No	289	52.8
History of sexual violence by male partner		
Yes	395	72.2
No	152	27.8

Table 3 - Bivariate and multivariable logistic regression analysis of determinants of Repeat Induced Abortion among women who seek abortion care services at Debremarkos town health institutions, 2017 (N=547)

Variables	Repeat Abortion		COR (95% CI)	AOR (95% CI)
	Yes (%)	No (%)		
Place of Residence				
Urban	172 (90.1)	280(78.7)	2.457(1.436,4.205)	**5.141(2.291,11.536)****
Rural (1)	19 (9.9)	76 (21.3)	1	1
Level of Education				
No education	15 (7.9)	31 (8.7)	1.153(0.591,2.250)	**8.452(1.856,36.491)***
Primary	25 (13.1)	55 (15.4)	1.083(0.632,1.857)	**5.462(2.061,14.478)***
Secondary	70 (36.6)	77 (21.6)	2.166(1.431,3.280)	**12.966(6.160,27.29)****
More than secondary	81 (42.4)	193 (54.2)	1	1
Had multiple sexual partner				
Yes	126(66.0)	119 (33.4)	3.861(2.662,5.598)	**6.162(3.251,11,680)****
No (1)	65 (34.0)	237(66.6)	1	1
Ever gave birth				
Yes	70 (36.6)	104 (29.2)	1	1
No (1)	121(63.4)	252 (70.8)	0.713(0.491,1.035)	-
Ever use FP method				
Yes	114(59.7)	158(44.4)	1	1
No (1)	77 (40.3)	198(55.6)	0.539(0.377,0.770)	-
Current FP use				
Yes	59 (30.9)	81 (22.8)	1	1
No (1)	132(69.1)	275(77.2)	0.659(0.444,0.978)	-
Ever drink alcohol				
Yes	149(78.0)	188(52.8)	3.17(2.124,4.733)	**2.774(1.523,5.051)***
No (1)	42 (22.0)	168(47.2)	1	1
Physical violence				
Yes	120(62.8)	138(38.8)	2.67(1.858,3.837)	**2.680(1.453,4.943)***
No (1)	71 (37.2)	218(61.2)	1	1
Sexual violence				
Yes	152(80.0)	243(68.5)	1.844(1.211,2.806)	-
No (1)	38 (20.0)	112(31.5)	1	1

1 = Reference Category
* = Variables which are significantly associated with RIA (P- Value < 0.05)
**= Variables which are significantly associated with RIA (P- Value <0.001)