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Repeated Induced Abortion and Trends of Contraceptive Utilization

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Abstract

Worldwide more than 227 million women become pregnant each year, and roughly two-thirds of them deliver live infants. The remaining one-third of pregnancies end in miscarriage, stillbirth, or induced abortion. Following this fact, abortion is a sensitive and public health concern with religious, moral, cultural, and political dimensions. According to the World Health Organization (WHO) Newsroom report, from 2015 to 2019, an average of 73.3 million induced (safe and unsafe) abortions occurred worldwide each year and approximately 45% of all abortions worldwide were unsafe. There were 39 induced abortions per 1000 women aged between 15–49 years. Risk is greater for women in areas of high fertility because they are pregnant more often and therefore face the risks of pregnancy more often than women in areas of low fertility. Of all the regions in the world, Africa has the highest number of abortion-related deaths, estimated at more than 15,000 in 2017, accounting for 7% of pregnancy-related deaths.

Keywords: abortion; contraceptive utilization; reproductive age groups; female; fertility time

Introduction

Worldwide more than 227 million women become pregnant each year, and roughly two-thirds of them deliver live infants. The remaining one-third of pregnancies end in miscarriage, stillbirth, or induced abortion[1]. Following this fact, abortion is a sensitive and public health concern with religious, moral, cultural, and political dimensions [1, 2]. According to the World Health Organization (WHO) Newsroom report, from 2015 to 2019, an average of 73.3 million induced (safe and unsafe) abortions occurred worldwide each year and approximately 45% of all abortions worldwide were unsafe. There were 39 induced abortions per 1000 women aged between 15–49 years [3]. Risk is greater for women in areas of high fertility because they are pregnant more often and therefore face the risks of pregnancy more often than women in areas of low fertility [1, 4-6]. Of all the regions in the world, Africa has the highest number of abortion-related deaths, estimated at more than 15,000 in 2017, accounting for 7% of pregnancy-related deaths [1].

The prevalence of repeated induced abortion varies across the world with different causative factors; 43.1-65.2% % in Northwest China, 30.1% in Switzerland, 70% in Georgia, 50% in France [2, 4, 7, 8]. The magnitude of a repeated abortion ranges from 20.3% to 33.5% based on the studies conducted in some parts of the country [9-11]. Findings demarcated enormous causative environs driven the reproductive age groups of females for repeated induced abortion [1, 3, 5, 6, 12, 13]. Females with lower socioeconomic status, lower educational background, young age, exposure to rape, exposure to multiple sexual partners, perception of lower pain to commit abortion, failure to know fertility time, initiation of sexual intercourse before eighteen, and disclosure to 3rd party were more likely for repeated abortion [9, 10, 12, 13]. Besides, their relationship status; level of support from family and friends; health status; and abortion experiences; psychological problems tended to discontinue contraception, a transient or prolonged absence of contraception, partnership conflicts or intimate partner violence (IPV), social deprivation, and lose of desire to parent are also the investigated reasons [2, 6, 13-15]. Some usage of contraceptive methods like post-termination contraception with implants and Depo-Provera are found to be associated with repeat termination[14].

Repeated abortion has many psychological, physical, social, and advanced health problems [14]. When the abortion goes unsafely, the complications worsen and life-threatening circumstances like; hemorrhage, infection, and injury to the genital tract and internal organs [3, 16]. A female with repeated abortion could be also the victim of uterine carcinoma increasing as per the number of abortions, accelerated or aggravated cognitive deficiency, and impairment of learning memory [16, 17]. Studies also have come up with the amplified stigma associated with having more than one-lifetime abortion [13]. Scholars assured that strategies to reduce repeat abortion should consider the psycho-social risk factors and characteristics of women, besides the utilization of contraceptive usage [2, 14]. Screening for breaks in the contraceptive history is recommended as an essential to familiarize and maintain contraception at each platform of the fertile female life [15].

Methods

Study period, design, and area

Quantitative institution-based cross-sectional study design was applied. The study was conducted from September 1st, 2022 to May 30th, 2023 in Mizan Tepi University Teaching Hospital (MTUTH). It is located 561 km away from Addis Ababa, the center of Ethiopia.

Source population: All females who utilize public health institutions in Bench-Sheko Zone for abortion services.

Study population: All females who utilize MTUTH for abortion services during the study period.

Sample size calculation and sampling technique

Sample size calculation: the sample size was determined by using a single population proportion formula using a basic assumption of 95% confidence level, 5% margin of error, and proportion (P=20.3%), which was the proportion of repeated abortion in Central Ethiopia(Debre Birhan) [9]. Using the formula

$$n = \frac{(Z\alpha/2)^2 P(1-P)}{d^2} \quad n = \frac{(1.96)^2 0.203(0.797)}{0.0025} = 249$$

Where: n = Sample size= 373, Z = Confidence level which is 95%, P = Proportion= 41.44%, d = the margin of error taken as 5%, But, since the catchment areas population is,10,000 the adjusted sample size will be the final sample size(nf);

$$nf = \frac{ni}{1+ni/N}, \quad nf = \frac{249}{1+\frac{249}{212}} = 211, \text{addig five percent}$$

non-response = <u>221</u>

This was taken as the final minimum sample size. The sample sizes calculated for the second objective (factors associated with repeated abortion in the previous studies) yielded smaller sample sizes.

Sampling technique and Data collection procedure

A consecutive sampling technique was used to select the study subjects. Two BSc midwives from two health centers (outside of the study area) were assigned for the data collection after having two days of training on how to collect the data and research ethics. The data was collected using a pre-tested interviewer-administered structured questionnaire from a total of 211 mothers who were coming for abortion service utilization from September 1st, 2022 to May 30th, 2023 in Mizan Tepi University Teaching Hospital (MTUTH). The interview was implemented after informing the participants all about the ethical issues and gaining informed consent. The questionnaire was adopted and modified from different works of pieces of literature addressing the socio-demographics, the pregnancy and abortion history, and the trends of contraceptive use.

Operational definitions

Abortion: is the termination of pregnancy before viability of the fetus

Safe abortion: when the abortion is carried out by a person with the necessary skills, using a WHO-recommended method appropriate to the pregnancy duration

Unsafe abortion: when it is carried out either by a person lacking the necessary skills or in an environment that does not conform to minimal medical standards or both.

Repeated induced abortion: if the woman has more than one induced abortion.

Data quality control

Data quality was checked and ensured during the data collection, coding, entry, and analysis. Primarily, 5% of the sample size has been pretested at Mizan Health Center fifteen days before the actual data collection period to check the validity of the questionnaire. Two days of training were given to the data collectors and supervisors. Then, this designed, structured, and pretested data collection process has been implemented. The data collectors were instructed to write a code for each questionnaire during the data collection so that any identified errors could be traced back using the secret codes to track the card numbers. The filled data were checked by data collectors, supervisors, and the principal investigator for completeness, clarity, and consistency daily.

Data processing and analysis

The entire collected data have been checked for completeness and clarity, cleaned manually, coded, and entered into Epi Data 3.02 then transferred to SPSS version 21 statistical package to be cleaned, edited, and analyzed by the principal investigator for further analysis. Frequencies and percentages have been used to summarize descriptive statistics, tables and charts are also used for data presentation. Bivariate logistic regression has been done to determine the association between each independent variable with the dependent variable. Variables with a p-value < 0.2 in the bivariate analysis were entered into multivariable analysis to determine the relative prediction level of independent variables to the outcome variable. Variables having p-value <0.05wereconsidered as statistically significant and AOR with 95% CI has been used to control for possible confounders and to interpret the result.

Results

Socio-demographic characteristics

Among the total of 211 females with a 96% response rate who were in the health institution at the comprehensive abortion care unit seeking abortion care, most of them were in the age group of 21 to 34 years old with a mean age of 24.24 years old. The majority of the participants 120(56.9%) were urban dwellers, 64.9 % are the Bench ethnicity, 84939.8) were students, 148(70.1) have low income, and 59(28%) have completed a college diploma and above.

Table 1: The distribution of socio-demographic characteristics of females who have an abortion in Mizan Tepi University Teaching Hospital (MTUTH), 2022/23 (N=211).

Variables	Frequency	Percent (%)
Age in years		
<18	12	15.7
18-21	21	27
21-34	134	63.5
≥ 35	8	3.8
Residence		
Urban	120	56.9
Rural	91	43.1
Ethnicity		
Bench	137	64.9
Kaffa	48	22.7
Amara	9	4.3
Oromo	17	8.1
Marital status		
Married	41	19.4
Single (never married)	144	68.2
Divorced	26	12.3
Duration of marriage(N=67)		
≤1year	4	6
>1year	63	96
Age at marriage (N=67)		
<18	9	13.4
≥18	68	86.6
Occupation:		
Housewife	31	14.7
student	84	39.8
Government employee	45	21.3
Private employee	28	13.3
Prostitute	21	10
Others (daily laborers)	2	0.9
Educational status		
Unable to read and write	42	19.9
Can read and write	37	17.5
Elementary school	23	10.9
Secondary school	50	23.7
College diploma and above	59	28
Monthly Income		
Lower income (≤3250 ETB)	148	70.1
Middle income (3251-5000 ETB)	17	8.1
Higher income (>5000 ETB)	46	21.8

The pregnancy and abortion history

The majority of participant females 101(47.9) have a history of pregnancy, 71(62.8) have last pregnancy of less than one year. Of all the participants, 96(45.5%) have an abortion history with one to three times frequently in their lifetime. Among females with an abortion history, most of them 34(35.4%) reasoned out for the reason for their abortion was being single.

Table 2: Pregnancy and Abortion related history of the women seeking an abortion in Mizan Tepi University Teaching Hospital (MTUTH), 2022/23 (N=211).

Variables	Frequency	Percent (%)
Had pregnancy history		
Yes	110	52.1
No	101	47.9
Last pregnancy time(N=113)		
≤1year	71	62.8
>1year	42	37.2
History of abortion		
Yes	96	45.5
No	115	54.5
Number of abortions(N=96)		
One time	66	68.8
Two times	19	19.8
Three times	11	11.5
How many of it induced? (N=96)		
Once	69	71.9
Twice	23	24
Three times	4	4.2
Reason for the abortion(N=96)		
Being single	34	35.4
Being student	31	32.3
Unemployment	12	12.5
Wanting to space	12	12.5
Being prostitute	7	7.3
Last abortion(N=96)		
≤1year	75	78.1
>1year	21	21
Who did the abortion? (N=96)		
Trained person	44	45.8
Untrained person	29	30.2
Myself	23	24
The method used for the abortion(N=96)		
Medication	51	53.1
MVA	4	4.2
Herbal	41	42.7
Place of the abortion service(N=96)		
Public health institution	38	39.6
Private clinic	6	6.3
Home	52	24.6
Price paid for abortion services(N=96)		
≤1000 ETB	90	93.8
>1000ETB	6	6.3
Was this pregnancy wanted?		
Yes	5	2.4
No	206	97.6
How did it happen?		

Casual	144	68.2
Rape	10	4.2
Incest	9	4.3
Contraceptive failure	48	22.7
The reason for coming to the health institution		
I don't want another child	104	49.3
Economic problem	19	9
To continue my education	66	31.3
I want to space	5	2.4
I am divorced	15	7.1
Health problem	2	0.9

The trends of contraceptive use

Even if the whole participants had a piece of information about modern family planning methods of contraceptives, 4.3% of the participants didn't use modern contraceptives.

However, 48(22.7%) of the participants didn't hear about emergency contraceptives and 167(79.1%) didn't use emergency contraceptives in their experience of contraceptive use because the majority of respondents 94(56.3%) fear sterility.

Table 3: The trends of contraceptive use of women seeking an abortion in Mizan Tepi University Teaching Hospital (MTUTH), 2022/23 (N=211).

Variables	Frequency	Percent (%)
Did you ever hear about modern contraceptives/?		
Yes	211	100
No	0	0
If "Yes", where did you hear it?		
Family	63	29.9
School	47	22.3
Nearby friends	33	15.6
Mass-media	68	32.2
Which type of contraceptive methods do you know?		
Pills	39	18.5
Injectable	62	29.4
Loop	13	6.2
Implants	7	3.3
condom	11	5.2
All of these listed	79	37.4
Do you think the contraceptive you use is accessible?		
Yes	159	75.4
No	52	52
You and others around you, where did you access it?		
Health center	91	43.1
Hospital	27	12.8
Private clinic	86	40.8
Mari stops	7	3.3
Have you ever used contraceptives?		
Yes	202	95.7
No	9	4.3
If "No" why? (N=9)		
Unaware	7	95.7
Not accessible	2	4.3
If "Yes" which type, do you use?		
Pills	84	38.4
Injectable	95	45
Loop	3	1.4

Condom	12	5.7
Implants	9	4.3
Others	11	5.2
For how long-duration did you use it? (N =201)		
≤1year	108	53.7
1.1-3 years	55	27.4
>3years	38	18.9
Have you ever heard about emergency contraceptives?		
Ye	163	77.3
No	48	22.7
If "Yes" which type, do you know? (N=163)		
Pills	163	100
Other than pills	0	0
How does it work?		
Prevent pregnancy	131	62.1
Abortion	5	2.4
No idea	75	35.5
Did you ever use it?		
Yes	44	20.9
No	167	79.1
If "No" why? (N=167)		
Not accessible	6	3.6
Fear of side effects	18	10.8
Fear of sterility	94	56.3
Forgot it	2	1.2
No idea	47	28.1

The magnitude of repeated abortion

Among 211 of all the participants, 96(45.5%) have an abortion history with one to three times in their lifetime experience with the mean range of 38.9% to 52.1%.

Factors associated with repeated abortion

In this study, from the variables entered to bivariate analysis; Educational status, Marital status, types of contraceptives used, duration of FP use, the occurrence of the pregnancy, and ever use of emergency contraceptives were associated with repeated abortion. After transferring to multivariable analysis; Educational status, types of contraceptives used, duration of FP use, the way pregnancy occurred, and ever use of emergency contraceptives were associated with repeated abortion was statistically significant. Repeated abortion was nearly five times AOR=4.767 (1.159-19.603) likely to be done within females with the academic status of those able to read and write than that of females with a college diploma and above. Besides, participants those used implants AOR=0.007(0.001-0.89) and other contraceptives like calendar method and cultural methods AOR=0.0030(0.004-0.2160) are more protected from committing repeated abortion than those used oral contraceptive pills. The participants who use family planning contraceptives less than one-year duration are six-folds AOR= 5.771(1.418-23.478) prone to commit or practice repeated abortion as compared to those used beyond two years. The same was true for those participants who have a practice of using emergency contraceptives; participants who have a history of using emergency contraceptive pills have more chance of committing repeated abortion AOR= 0.088(0.23-0.338).

Table 4: The logistic regression analysis of factors associated with repeated abortion among women seeking an abortion in Mizan Tepi University Teaching Hospital (MTUTH), 2022/23 (N=211).

	History Of abortion			
Variables	Yes	No	COR (95% CI)	AOR (95% CI)
Educational status				
Unable to read and write	37	5	0.69(0.024-0.204)	0.031(0.007-0.146) **
Can read and write	17	20	0.603(0.260-1.400)	4.767(1.159-19.603) *

Elementary school	3	20	3.419(0.906-12.899)	2.935(0.452-19.070)
Secondary school	19	31	0.837(0.382-1.835)	0.477(0.144-1.582)
College diploma and above®	20	39		
Marital status				
Married®	27	14		
Single(never married)	55	89	0.605(0.221-1.654)	1.973(0.509-7.652)
Divorced	14	12	1.888(0.814-4.378)	0.988(0.203-4.805)
Types of contraceptives used				
Pills ®	32	49		
Injectable	35	60	3.53(0.860-14.840)	1.058(0.403-2.777)
Loop	2	1	4.00(0.971-16.471)	2.013(0.003-14.158480)
Condom	13	0	1.167(0.74-18.346)	0.000(0.000)
Implants	7	2	0.000(0.000)	0.007(0.001-0.89) **
Others	7	3	0.667(0.084-5.301)	0.030(0.004-0.2160) **
Duration of FP use (N =201)				
≤1year	37	71	1(0.458-2.175)	5.771(1.418-23.478) *
>1-3 years	37	18	0.253(0.105-0.607)	0.442(0.123-1.582)
>3years®	13	25		
Occurrence of the pregnancy				
Casual	67	77	0.690(0.353-1.347	0.163(0.49-0.546)
Rape	9	1	0.067(0.008-0.571)	0.000(0.000)
Incest	2	7	2.100(0.393-11.229)	0.100(0.006-0.1773)
Contraceptive failure®	18	30		
Did you ever use it?				
Yes	16	28		
No	80	87	1.609(0.811-3.193)	0.088(0.23-0.338) **

NB: *= significant at P-Value< 0.05, **= significant at P-Value< 0.001, COR =crud odd ratio, AOR= adjusted odd ratio, CI=Confidence interval and ® = Reference, **Other contraceptive** = traditional methods like calendar method and herbals

Discussion

This study tried to emanate with the magnitude and causative environs of repeated abortion among females who came for seeking an abortion at Comprehensive Abortion Care (CAC) unit in public health institutions in Bench-Sheko Zone, South West Ethiopia.

The magnitude of repeated abortion in this study area was very high when compared to most of the studies conducted in different countries: 0.8% among unmarried women in China, 23.4% in the Grampian region of Scotland and the Uk, 24% in Swedish, 30.1% in Switzerland, 33% in Alsace [6, 14, 18-20]. On the contrary, the magnitude is lower than the studies conducted in Northwest China (56.6%), in 30 provinces of China (65.2%), in Georgia 70%) [7, 8, 21]. But, this finding was in line with the magnitudes of repeated abortion found in Aquitaine France (41.3%), and a systematic analysis finding among Chinese women (43.1%) [4, 22].

The magnitude found in this study was the highest magnitude among the studies conducted in Ethiopia in different parts of the country; 20.3% in central Ethiopia (Debrebirhan Town), 33.6% in Addis Ababa at Marie Stops Clinic, and 29.93% with the findings of systematic

analysis [9-11]. This variation may be due to regional disparities and tendencies of contraceptive use.

The educational background females at the level of reading and writing are five times more likely to commit repeated abortion than those of females with an educational background of college diploma and above. This finding is supported by the study conducted in Addis Ababa at Marie Stops International Clinic in Ethiopia [10], a systematic and meta-analysis conducted in Ethiopia [11], another systematic and meta-analysis conducted among Chinese females [4], and in Northwestern China [7]. This may be due to the reason that literacy is a key for having awareness towards appropriate utilization of different types of contraceptives. It is also known that both Ethiopia and China are amongst high fertility rates and highly populated countries. Females with a history of contraceptive use like implants and traditional methods like calendar method and herbals have a negative association with repeated abortion. This finding is similar to the study conducted in the Grampian region of Scotland, the UK stated that females who use implants were safer than those who didn't use them [14].

Participants who used contraceptives for less than one year of duration are nearly six times more prone to have repeated abortion than those females who used contraceptives for three and more than three years. This may be due to the reason that most of the participants have no the trend to use long-acting family planning contraceptives. Instead, most of the participants (38.4%) used oral contraceptive pills.

Those females who have the practice and utilization of emergency contraceptives have likely history of repeated abortion than those who have no history of emergency contraceptive use. This may be due to the reason that those women have the trend of using other methods of contraceptives and most of them didn't use it for the complaining of side effects like infertility. Besides those who are using contraceptives responded that they have used it correctly, but their appropriate use of contraceptives was not measured except their response during the interview.

Limitations of the study

Repeated abortion is rare and somehow sensitive for social and cultural aspects, and this makes it difficult to accommodate a large sample size. To have a large nationwide sample size, it needs a fundraise and this study was not funded. Because of the small sample size, the cross-tabulation of the regression table has a value of fewer than five frequencies and this may make the regression to be affected. Therefore, it needs another research with a large sample size to be conducted. It is also better if we have included more than one referral hospital for generalization.

Conclusion and Recommendations

The magnitude of repeated abortion was high and the trends of emergency contraceptive utilization were too low for the claim of infertility. The females with college diplomas and above, those who used implants and other contraceptives like calendar method and cultural methods are more protected from committing repeated abortion than those who used oral contraceptive pills. The participants who use family planning contraceptives less than one-year duration and those with the practice of using emergency contraceptives are prone to commit or practice repeated abortion.

The trends of contraceptive usage should be a focus of intervention for the ideal tackling of this highly prevalent practice of repeated abortion. There should be a tough intervention regarding the repeated abortion and utilization of contraceptives, especially the attitude towards emergency contraceptives.

Abbreviations

AOR: Adjusted Odd Ratio, BSc: Bachelor Science, COR: Crude odd ratio, ETB: Ethiopian Birr, FHB/R, FP: Family Planning, MTUTH: Mizan-Tepi University Teaching Hospital, SNNPR: South Nations, Nationalities and peoples Region, SPSS: Statistical Package for Social Science, UK: the United Kingdom, WHO: World Health Organization

Declarations

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