

Assessment of Induced Abortion and Its Associated Factors among Reproductive Age Group Women in Debre Markos Referral Hospital, Amhara Region, Northwest Ethiopia

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Abstract

Background: Nearly 56 million induced abortions (safe and unsafe) were performed worldwide every year between 2010-2014, and from these about 25 million accounts for unsafe abortion and over half of all estimated unsafe abortions globally had taken place in Asia. In developing countries, the risk of death following complications of unsafe abortion procedures was several hundred times higher than that of an abortion performed professionally under safe conditions. Worldwide women of all ages seek abortion, but there was highest burden of illness and deaths due to abortion among the youths. So, the aim of this study was to assess induced abortion and its associated factors among reproductive age group women in Debre Markos Referral Hospital, Northwest Ethiopia.

Methods: Institutional based cross sectional study design was conducted in Debre Markos Referral Hospital among reproductive age group women from September, 1/2017 to December, 20/2017. Sample size was determined by using single population proportion formula. Systematic sampling technique was used. The data were entered into Epi-Data version 3.1 and were exported to SPSS version 23 software for further analysis. Logistic regression model was fitted to determine the predictors of induced abortion and those variables with p value <0.2 in binary logistic regression were entered into a multi-variable logistic regression analysis. Finally variables with a p value of <0.05 in multi-variable logistic regression model were declared as statistically significant.

Result: In our finding the magnitude of induced abortion was 32(18.2%). Unwanted pregnancy [AOR=0.28 (95%CI (0.87-0.89))], utilizing of family planning [AOR=7.4 (95%CI) (2.7-20.3)], maternal illness in the last one month [AOR=4.28 (95%CI) (1.27-15.1)] were statistically significant factors associated with induced abortion.

Conclusion: This study had shown the undeniable fact that the problem of induced abortion was still the highest as compared with previous studies. Majority of induced abortion was the result of unwanted pregnancy. Federal ministry of health in collaboration with different stake holders had better work on strengthening comprehensive reproductive health education, particularly on the consequences of abortion.

Keywords: Reproductive age group women; Induced abortion; Associated factors; Debre markos referral hospital

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Introduction

Nearly 56 million induced abortions (safe and unsafe) were performed worldwide every year between 2010-2014, and from these about 25 million accounts for unsafe abortion and perhaps over half of all estimated unsafe abortions globally had taken place in Asia countries. About 7 million unsafe abortion had taken

place in developing countries. It brings approximately 80,000 maternal deaths and hundreds of thousands of disabilities [1]. Worldwide women of all ages seek abortion, but in sub-Saharan Africa, there is the highest burden of illness and deaths from unsafe abortion, but there are more burdens among the youths as it had shown that one in four unsafe abortions was among adolescents aged 15-19 years. The recent report showed that out

of 210 million pregnancies that occur each year 46 million (22%) were terminated. Abortion is termination of pregnancy prior to 28 weeks of gestation in developing countries or 20 weeks of gestation in developed countries which occur spontaneously or deliberately induced. The term abortion was commonly used to refer induced abortion while spontaneous abortion was termed as miscarriage [1]. Induced abortion is an intentional termination of pregnancy before the fetus has developed enough to live for the feature born. Common clinical features of abortion include fever, chills, malaise, abdominal pain, vaginal bleeding and discharge, which is often purulent. Induced abortion can be therapeutic for the reason to preserve the health of the pregnant mother or elective that is doing for any other reason. Even though induced abortion is either of two, it can be safe or unsafe based on the skill of health professional, the procedures being applied and the environment where the abortion is taking place [2,3]. The world health organization (WHO) estimated that worldwide 210 million women become pregnant each year. One third of these pregnancies end in miscarriage, still birth, or induced abortion. Of the estimated 56 million induced abortions each year, nearly 25 million were performed in unsafe conditions or by unskilled professionals and resulted in the deaths of an estimated 47,000 girls and women and this represent about 13 percent of all pregnancy-related deaths [4]. Almost all unsafe abortions had taken place in developing countries, and this was where 98 percent of abortion-related deaths occur [5]. In Ethiopia, where the present study taking place is one of the African countries where unwanted adolescent pregnancy is a health challenge. A huge number of abortion was done and had shown approximately 620,300 induced abortions which were performed in Ethiopian in 2014.

The number of women receiving treatment for complications from induced abortions was nearly doubled between 2008 and 2014, showing how much abortion brings bad outcomes for both current and feature life expectancies. About 39% of pregnancies were unintended as the report done in 2014 shows and a slight decline from 42% in 2008 [6]. The fertility of Ethiopian women was among the highest groups from the whole nations in sub-Saharan Africa. Those women who were poor economically and who were not educated and encountered to unwanted pregnancy had intentions to have induced abortion either locally by themselves or traditionally and by the help of untrained practitioner [7]. In developing countries more than one third of all the pregnancies were considered unintended and almost 19% could be end up with abortion, which were most often unsafe and accounting for 13% of maternal deaths in the Glob [8]. It was also reported that between 20-40% of all births occurring in developing countries were unwanted posing hardships for families and jeopardizing the health of millions of women and children [3]. Nearly half of all abortions worldwide were unsafe, and nearly all unsafe abortions (98%) occurred in developing countries. As hospital records showing in many developing countries, between 58% and 68% of women were treated for abortion related complications and the majority of women were below 30 years old with regard to their age [9].

Methods and Materials

Study design, area, and Period

An institution based cross-sectional study design was carried out. The study was conducted in Debre Markos referral hospital from September 1/2017 to December 20/2017. The Hospital is located at 295 km Northwest of Addis Ababa, the capital city of Ethiopia and 265 km from Bahir Dar, capital city of the Amhara region and the town has a total of 7 kebeles. According to the 2016, health office population number, it has a total population of 81872; among these 40892 were males and 40980 females (source, 2016 annual plan of Debre markos town health office).

Eligibility criteria

All women who came gynecology clinic and family planning services were considered as source populations for our study. Mothers who lived in the area for six or more months were included in the study and those who were seriously ill and unable to response for our questionnaires were excluded from the study.

Sample size determination and sampling procedure

The sample size was determined by taking induced abortion prevalence from the research done in Amhara region 19.2% (10). Single population proportion formula was used by considering 95% CI, 5% margin of error and 10% non-response rate.

$$n = \left(\frac{Z_{\alpha/2}^2 (P(1-P))}{d^2} \right)$$

Where n=sample size, Z=standard normal deviate, (a constant set at 1.96 on the basis of using the 95% confidence interval for estimation). P=estimated proportion of females with induced abortion (19.2 rate of abortion was taken from a study done in Referral Hospitals of Amhara region d=margin of error (5%), $n = (1.96)^2(0.192)(0.808)/(0.05)^2 = 238$

After getting this value, the 10% non-response rate, should be considered and to get our final sample size, $238 \times 10/100 + 238 = 23.8 + 238 = 261.8 = 262$, therefore; our final sample size was 262.

The study was conducted in Debre Markos Referral Hospital on mothers who had attended gynecology clinic and family planning services. The total number of service seekers in both gynecology clinic and family planning services in the Hospital was 550 women in five consecutive days. From those service seekers, systematic sampling technique was employed to get the study participants at every k interval ($N/n = 550/262 = 2.09 \approx 2$, therefore; $k=2$). The same procedure was followed each day until the sample size had been reached during the specified study period.

Data collection techniques

Structured pre-tested questionnaires were used for data collection. The data collection tool was developed after reviewing different literatures. The data collection tools had 3 parts. Part 1 was about socio-demographic variables, part two was about reproductive related variables and part three was about health related variables. First of all, the questionnaires were prepared in English language and then translated into Amharic language for better understanding of data collectors and respondents. Data

were collected by five nurses who had taken the data collection training and one supervisor was assigned. The contents on questionnaires were briefly described to reduce interviewer bias and each of the study participants for data collection had their own codes. The questionnaires were filled side by side as the interviewing process was going on.

Data quality assurance

Data quality was assured through careful design of the questionnaire. Two days intensive training was given for data collectors and a supervisor. Pre-test was done other than the selected study institution by taking 5% of the sample size and prior to the data collection. Frequent supervision was conducted to support data collectors from initial up to the end of the data collection period.

Data processing and analysis

The collected data were entered into Epi-Data version 3.1 and were exported to SPSS version 23 for statistical analysis. Binary logistic regression analysis was done to determine the association between the independent variables and the outcome variable. Explanatory variables with the p value of less than 0.2 were candidates for multi-variable logistic regression. Variables with the p value of less than 0.05 in multi-variable logistic regression analysis were considered as statistically significant.

Results

Socio-demographic characteristics of the study participants

Among 262 study participants, 116 (44.3%) were in the age group of 25-34 years and the majority of respondents were urban by residence 177(67.6%). The mean age (Mean ± SD) of the respondents was 29 ± 7 years. Of the total respondents, 221(84%) were Orthodox Christians and about 22(8.4%) were Muslims. With regard to educational status 74(28.2%) of the study participants had educational status of college and above, about 40(15.3%) could only read and write, 33(12.6%) had preparatory education, while 73(27.9%) could not read and write. With regard to occupation, 79(30.2%) were housewives, 55(21%) were students and 40(15.3%) were merchants. From the total respondents, 144(55.8%) were married and 90(34.6%) were single (Table 1).

Reproductive health related characteristics

Among the study participants, 8(4.5%) were more than 5 times pregnant. Out of the women who were pregnant 148(84.1%) of them belong to the age group of 18 and above during their first pregnancy. From the study participants who were being pregnant, majority of them had total live birth of less than five 154(95.7%). With regard to menstrual cycle, about 117(45.2%) of respondents had regular menstrual cycle. In this study among the total respondents, 141(54.2%) had ever used contraceptives, out of these 62(44%) were using injectable type of contraceptive followed by 32(22.7%) pills. From those who were pregnant 32(18.2%) pregnancies were terminated by induced abortion (Table 2).

Table 1 Socio-demographic characteristics of women in reproductive age group in Debre Markos Referral Hospital in 2017.

Variable	Category	Frequency(n)	Percent (%)
Residence	Urban	177	67.6
	Rural	85	32.4
AGE	15-24	76	29
	25-34	116	44
	>34	70	26.7
Educational status	Unable to read and write	73	27.9
	Read and write only	40	15.3
	Primary (Grade 1-8)	13	5
	Secondary (Grade 9-10)	28	10.7
	Preparatory (Grade 11-12)	33	12.6
	College level and above	74	28.2
Occupational status	Housewife	79	30.2
	Farmer	23	8.8
	Student	55	21
	Government employee	26	9.9
	Private employee	39	14.9
Marital status	Single	90	34.5
	Married	145	55.8
	Widowed	9	3.5
	Divorced	10	3.8
	Separated	6	2.3
Husbands educational Status	Unable to read and write	48	33.1
	Read and write only	31	21.4
	Primary (Grade 1-8)	3	2.1
	Secondary (Grade 9-10)	13	9
	Preparatory (Grade 11-12)	1	7

Health related characteristics

Out of all study participants, 91(35%) had some kind of illness in the last one month, among them 6(6.6%) had pregnancy related disease and 5(1.9%) reported that as they were exposed for fetal deformity problem during this pregnancy.

Factors associated with induced abortion

Our finding revealed that using family planning method, unwanted pregnancy, illness in the last one month and age of respondents were found to be associated with induced abortion in the binary logistic regression analysis. Those variables with p value <0.2 were entered once into a backward stepwise multiple logistic regression model. Finally the model retains only those factors with significant associations at value <0.05. Unwanted pregnancy [AOR=0.28 (95%CI:0.87-0.89)], utilizing family planning method [AOR=7.4(95%CI:(2.7-20.3)], illness in the last one month [AOR=4.28 (95%CI:(1.27-15.1)], were significantly

associated variables in multi-variable logistic regression analysis (Table 3).

Table 2 Reproductive health related characteristics of women in reproductive age group in DebreMarkos Referral Hospital in 2017.

Variable	Category	Frequency	Percent
Ever been pregnant	Yes	176	67.7
	No	84	32.3
Age at first Pregnancy	<18	28	15.9
	≥18	148	84.1
Was Pregnancy wanted?	Yes	153	86.9
	No	23	13.1
Total live birth	≤5	154	95.7
	>5	7	4.3
Birth spacing	≤2	75	50.3
	>2	74	49.7
Ever had induced Abortion	Yes	32	18.2
	No	144	88.8
Reason for induced Abortion	Still in School	11	34.3
	Employment needs	9	28.1
	Rape	3	9.3
	Divorced	1	3.1
	Fear of being outcaste	4	12.5
	Risk for life	4	12.5
The place to get the Service	Private clinic	10	31.3
	Private hospital	3	9.4
	Government health center	7	21.9
	Government hospital	12	37.5
Menses	Yes	117	45.2
	No	142	54.8
Utilization of family Planning	Yes	141	54.2
	No	119	45.8
Type of family Planning	Condom	5	3.5
	Pills	32	22.7
	Injection	62	44
	IUCD	11	7.8
	Implant	29	20.6
	Emergency post pills	2	1.4

Discussion

Our study revealed that the overall rate of induced abortion was 18.2 per 262 which was relatively comparable with the research done in Wolayta Sodo University. The rate of abortion among university students was 65 per 1000 women, nearly threefold of the national rate of abortion for Ethiopia (23/1000 women aged 15–44) [2]. The rate of this study was relatively higher than the study conducted in Kenya which was 48 per 1,000 women aged 15–49 years. This discrepancy may be due to the study design, sampling technique and the study area in which the study had been conducted [2,3].

In our study from the respondents who had abortion almost all (99.8%) performed abortion at health institution which was higher than the nationwide abortion rate of 27%. In this study it was found that all of the females who had induced abortion (34.3%) were due to attaining school followed by financial reasons (28.1%) and fear of future life 12.5% [6]. From all abortion cases, 23(13.1%) were unwanted pregnancy [10]. In this study family planning utilization, unwanted pregnancy and recent illness in the last one month were significantly associated with induced abortion. This study revealed that women who wanted their pregnancy were 72% less likely to have induced abortion as compared to women who didn't want their pregnancy. Another factor that was significantly associated with induced abortion was the use of family planning method [11-15]. Among the women who had induced abortion, women who didn't use family planning methods were 7.4 times more likely to have induced abortion as compared to women who used family planning [16]. The reason for this may be women who were familiar with family planning may not be exposed for unwanted pregnancy and later which may not lead to induced abortion. In our study, recent maternal illness had 4.2 times more likely to have induced abortion than their counter parts; the possible justification for this might be exposed for the disease like tuberculosis, sexually transmitted disease, malaria and schistosomiasis in which some of them may lead to fallopian tube infection and thus induced abortion may be followed. In contrast with other studies, this study showed that, there was no significant association between the level of education and induced abortion [16]. This may be due to high number of study participants (28.2%) had finished college and above and at least enrolled to secondary education (10.7%). Other studies revealed that the level of education plays a big part in determining the factors associated with unwanted pregnancy and induced abortion [17-19]. This study showed that

Table 3 Factors associated with induced abortion, result from logistic regression analysis, Debre Markos Referral Hospital, 2017.

Variables(n=262)	Induced abortion	No induced abortion	P –value	COR(95%CI)	p-Value	AOR(95%CI)
Pregnancy Wanted	19	134		1		1
	13	10	0.0001	0.1(0.04-0.283)	0.032	0.28(0.87-0.89)
Unwanted Yes	10	116		1		1
	22	28	0.0001	9.1(3.88-21.41)	0.0001	7.43(2.7-20.3)
No	5	56	0.017	3.43(1.25-9.4)	0.023	4.28(1.27-15.1)
	27	88		1		1

there was no significant association between age and rate of induced abortion. This may be due to high number of our study participants were belonging the age group of 25-34(44%), and these age groups might be less likely to have a risk for induced abortion than the age groups who belong to 15-24(29%) [20].

We can compare and contrast our finding with different results globally, nationally and locally: This result is lower than the study done in Tanzania, (47%), Addis Ababa 77% and Gondar University 42.6% [15,18,21] respectively. But our result is higher than the studies conducted in Wachamo University (5.9%), Gurage Zone (12.3%), Wolaita Sodo University (6.5%), and Harare, Ethiopia (14.4%) respectively [11,12,14,21]. The discrepancy between these may be due to sampling techniques being conducted in each area, socio-demographic characteristics of the community and the study designs which were applied in each study area [17].

Conclusion

The result of this study showed that the rate of induced abortion was relatively higher. Family planning utilization, unwanted pregnancy and recent illness in the last one month were significantly associated factors with induced abortion.

East Gjjam Zonal health department had better to advocate family planning service, about the prevention of unwanted pregnancy and illness during pregnancy by focused antenatal care and work on strengthening comprehensive reproductive health awareness in the community. Federal ministry of health in collaboration with different stake holders had better work on strengthening comprehensive reproductive health education particularly on the consequences of abortion.

Declarations

Acknowledgement

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Availability of data and material

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

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Authors' contributions

SB and MT participated in the design, data collection, data analysis, and interpretation. AT also participated in the analysis, interpretation, and drafting of the manuscript. EK, HT, BT and HT participated in the data analysis, and interpretation. WW AND AN also participated in the drafting of the manuscript All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Ethical approval and consent to participate

Ethical clearance was obtained from Debre Markos University, college of medicine and health science, ethical clearance committee. Permission was obtained from Debre Markos Referral Hospital administrative office. The importance of the study, data collection process, confidentiality and the ethical issues were briefly described for the study participants before data collection, and verbal consent was obtained. Parental or guardian verbal consent was obtained for participants below the age of 18. Women who have more than 2 abortions were advised to have medical checkup for further pregnancies.

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