



Prevalence and Associated Factors of Unsafe Abortion among Women of Reproductive Age Group in Gondar Town, Northwest Ethiopia, 2017: A Community-based Cross-sectional Study

**Tesfamichael G. Mariam^{1*}, Senetsuhel Melkamu¹, Fisseha Yetwale²,
Medina Abdela¹ and Mehammed Adem Getnet¹**

¹Department of Nursing, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia.

²Department of Midwifery, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia.

Authors' contributions

This work was carried out in collaboration between all authors. Authors FY, TGM, MA, SM and MAG designed the study, participated in the data collection, performed analysis and interpretation of data and drafted the paper and revised the manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2018/44664

Editor(s):

(1) Dr. Sevgul Donmez, Faculty of Health Sciences, Gaziantep University, Turkey.

Reviewers:

(1) Mostafa Abdulla Elsayed, Benha University, Egypt.

(2) Shigeki Matsubara, Jichi Medical University, Japan.

(3) Juliano Scheffer, Brazilian Institute of Assisted Reproduction, Brazil.

(4) Najemdeen Ajao Adeleke, OsunState University, Nigeria.

(5) Chinomnso Nnebue, Nnamdi Azikiwe University Teaching Hospital, Nigeria.

Complete Peer review History: <http://www.sciedomains.org/review-history/27513>

Original Research Article

Received 02 September 2018

Accepted 06 November 2018

Published 30 November 2018

ABSTRACT

Background: Globally approximately one in five pregnancies ends in an induced abortion, and it was one of the direct cause of maternal death in the world, unsafe abortion accounts for 13% of all maternal deaths and as much as 25% in some countries and developing world. This emphasized the need to solving the problem of abortion.

Objective: The aim of this study was to assess the prevalence and associated factors of unsafe abortion among women of reproductive age group in Gondar town, North West Ethiopia, 2017.

*Corresponding author: E-mail: tesfish888@gmail.com;

Methods: A community-based cross sectional study design was conducted among women of reproductive age group in Gondar town, North West Ethiopia. Data were collected by using a pre-tested interviewer-administered questionnaire and systematic random sampling technique was used, the data was entered and analyzed with SPSS version 20. Frequency distribution, and the bivariate and multivariate binary logistic regression was used to check the association of unsafe abortion with the dependent variables by using 95%CI.

Results: This study found that the overall prevalence of unsafe induced abortion among women of reproductive age group was 3.9% [95%CI (1.3-7.1)] and marital status of the respondents was significantly associated with unsafe abortion [AOR = 6.9 (1.88-25.4)].

Conclusion: Our study demonstrated the high prevalence of unsafe abortion in this area and unmarried women were more likely to procure unsafe abortion. This study can be helpful for making health policy in this area and also may be applicable to some area. Providing reproductive health education for unmarried women as well as a community based health educations might be vital to prevent unsafe abortion.

Keywords: Unsafe abortion; associated factors; Gondar town.

ABBREVIATIONS

AOR : Adjusted Odds Ratio

BSC : Bachelor of Science

COC : Crude Odds Ratio

DC : Data Collectors

ETB : Ethiopian Birr

EDHS : Ethiopian Demographic and Health Survey

MMR : Maternal Mortality Ratio

SPSS : Statistical Package of Social Science

UNPD : United Nation Population Demography

1. INTRODUCTION

Abortion is termination of a pregnancy that can be either spontaneous or induced. Also, induced abortion can be either safe or unsafe, and unsafe abortion is one of the major public health problems [1,2]. The World Health Organization defined unsafe abortion as a procedure for terminating unwanted pregnancy either by people lacking the necessary skills or in an environment lacking minimal medical standards, or both [3].

In the years from 2010 to 2014, an estimated 25 million unsafe abortion cases occurred worldwide and at least 8% of maternal deaths were from unsafe abortion [4]. But, the figure is highest (up to 25%) generally in the developing region, and more than one third of all abortion-related deaths are occurred in Africa making it the leading cause of maternal mortality in the region [5]. A facility-based survey estimated that 620,300 induced abortions were performed in Ethiopia in the year 2014, and about 48% of all induced abortions occurred outside of health facilities [6].

The safety of induced abortion services and the treatments for post-abortion complications has

improved with widening legality and an increasing reliance on medication abortion. Despite this, complications from unsafe abortions are still common in developing regions where abortion remains highly restricted [7,8].

In most of the developing countries, health service managers didn't give due attention and high priority to solving the problem of unsafely induced abortion. A woman seeking induced abortion already may have experienced an unwanted pregnancy either as a result of not using contraception or method failure [9]. This could be averted by filling the gaps in the unmet need of modern contraceptive usage.

Even though safe induced abortion has been legalized under certain preconditions in many countries including Ethiopia, it is still utilized unsafely and illegally that performed by unskilled persons and/or performed outside the healthcare facilities because of other problems (such as religious and social issues) that faced by unintendedly pregnant women while those undergone safe abortion legally [6,10,11].

Less is known regarding the prevalence and associated factors of unsafe induced abortion in Gondar town, Northwest Ethiopia. Thus, this study was conducted in order to assess the prevalence and associated factors of unsafe abortion among women of reproductive age group in Gondar town, Northwest Ethiopia.

2. METHODS

2.1 Study Design and Period

Community based cross sectional study design was conducted to assess the prevalence and associated factor of unsafe abortion among

women of reproductive age group in Gondar town, Northwest Ethiopia, from March 1 to 30, 2017.

2.2 Study Area

The study was conducted in Gondar town. Gondar town is the capital city of north Gondar zone, Amhara regional state which is located in northwest part of Ethiopia and far about 180km from regional capital city Bahir-Dar and 728km from Addis Ababa, capital city of Ethiopia. The city divided in 12 sub cities and with an estimated population of 327,661 among them 68153 are women of reproductive age group, the town has,1 referral hospital 8 health centers,14 health post and 1 NGO Family guidance association which have their own contribution for abortion care and post abortion service according to Gondar town health department office.

2.3 Source and Study Population

All women of reproductive age group in Gondar town.

2.4 Study Population

All women of reproductive age group in the selected sub cities during the study period.

2.5 Inclusion and Exclusion Criteria

Inclusion Criteria: Women of reproductive age group in the selected sub cities during the study period, were included in the study.

Exclusion Criteria: Women severely ill, physically impaired at time of data collection throughout the study period were excluded.

2.6 Study Variables

Dependent variable: Unsafe abortion.

Independent variables: Socio demographic characteristics, maternal condition, availability and accessibility of family planning, and social factors.

2.7 Operational Definitions

Unsafe abortion: Termination of pregnancy performed or treated by untrained person and/or by unsterilized instrument, over dose of medication, taking of herbal medicine

Abortion: Termination of pregnancy before the fetus is capable of extra uterine life (Before 28 weeks of GA in Ethiopia).

2.8 Sample Size Determination and Sampling Procedures

2.8.1 Sample Size Determination

By considering the following assumptions the total sample size for this study is calculated as:

- 95% confidence interval
- Marginal error of 5%
- Proportion 4.8% (according to a research done in Northwest Ethiopia)
- Non response rate 10%
- Design effect 2
- Using single proportion formula
- $n = z^2 \frac{p(1-p)}{d^2} = (1.96)^2 (0.048) (0.952) / (0.05)^2 = 71$
- Non response rate 10% = $71 * 0.1 = 8$. Total sample size = $79 * 2 = 158$

2.9 Sampling Procedure

Systematic Random Sampling technique was used to select the sampling unit (Households) and determined the sampling interval (K^{th}) by dividing total households of each selected sub cites by proportional sample size. Then to select the first household form the sampling interval, simple random sampling (Lottery method) was used.

2.10 Data Collection Procedures

Data were collected by using a pretested interviewer administered structured questionnaire. The questionnaire was prepared first in English language and then translated back to Amharic. Five data collectors those who have diploma in nursing and one BSc nurse as supervisors was participate in the data collection process, and monitored data collectors. Both data collectors and supervisors were given a two day training before the actual work about the aim of the study, procedures, and way how to collect the data and keeping confidentiality of information gained from respondents.

2.11 Data Processing and Analysis

All the questionnaires were checked and coded, then entered into EPI Info version 7 and later exported to SPSS version 20 software. Data analysis was carried out using SPSS version 20 software. Descriptive statistics such as frequencies were used for the presentation of

independent variables. Tables were also used for data presentation. Binary logistic regression was used to identify factors associated with unsafe abortion on the study participants. Multivariable logistic regression was then used to control the possible effect of confounders, and finally the variables which had independent association with unsafe abortion were identified on the basis of AOR, with 95%CI and p-value less than 0.05.

2.12 Ethical Considerations

Ethical clearance was obtained from the Ethical Review Committee of Community Health Nursing Unit, School of Nursing, College of Medicine and Health Sciences, University of Gondar (delegation given from the Institutional Review Board of University of Gondar). Formal letter of support was obtained from the selected sub cities of administration offices, and permission was obtained accordingly. Informed consent was obtained from each study subject, and each respondent was informed about the objective of the study. Any involvement in the study was after obtaining complete consent. Any participant who was not willing to participate in the study was not forced to participate. Privacy and confidentiality of study participants were maintained.

3. RESULTS

3.1 Socio-demographic Characteristics

A total of 154 women of reproductive age group in the study were interviewed with response rate of 97.5%. The mean age of the respondents was 28.6 with standard deviation of ±7.16. Thirty four (34.4%) of the participants were in the age group of 25 to 29 years. About 86 (55.8%) of the study subjects were married and most of them 120 (77.9%) were Christian Orthodox. Nearly two fifth of the participants 56(36.4%) had secondary education (Table 1).

3.2 Obstetrics and Gynecologic Related Characteristics

From the total study subjects, 120 (77.9%) women of reproductive age group had at least one pregnancy experience in their life time, and the mean age of the women at first pregnancy was 20.4. Among those who had at least one pregnancy experience, about 95 (79.2%) of them had 1 - 3 time of experience regarding the number of pregnancy and 108 (70.1%) of them gave a live birth in their life time. Regarding the contraceptive history, almost all of the respondents had information on methods of family planning and about 125 (81.2%) respondents had ever used at least one type of contraceptive method in their life time. The most reported type of contraceptive method used was injectable type of modern contraceptive (29.2%).

3.3 Prevalence of Unsafe Abortion

From the total study participants, 34 (22.1%) of them responded that they had history of abortion. About 6 (3.9%) study participants had history of unsafe abortion in which most of them (66.7%) were not performed by health care professionals who also conducted the termination outside from well recognized health care facilities, and almost all participants who undergone through unsafe termination of pregnancy experienced excessive bleeding as a major complication.

3.4 Factors Associated with Unsafe Abortion

In the bivariate analysis, Age of the women, Marital Status, Educational Status, and Occupational Status were found to have an association with unsafe induced abortion. But, after controlling for possible confounders, the multivariable analysis revealed that only marital status was significantly associated with unsafe Induced abortion (Table 2).

Table 1. Socio-demographic characteristics of women of reproductive age group in Gondar town, Northwest Ethiopia, 2017

Variable	Frequency	Percent
Age group (in year)		
15-19	12	7.8
20-24	34	22.1
25-29	53	34.4
30-34	22	14.3
35-39	24	15.6
40-44	3	1.9
45-49	6	3.9

Variable	Frequency	Percent
Marital status		
Single	53	34.4
Married	86	55.8
Divorced	9	5.8
Widowed	6	3.9
Educational Status		
Unable to read and write	20	13.3
Able to read and write	24	15.6
Primary education	21	13.6
Secondary education	56	36.4
Tertiary education	33	21.4
Religion		
Orthodox	120	77.9
Muslim	34	22.1
Ethnicity		
Amhara	145	94.2
Tgrie	7	4.5
Guragie	2	1.3
Occupational Status		
Civil servant	31	20.5
Student	24	15.6
House wife	36	23.4
Trader	44	28.5
Commercial sex worker	17	11.0
Farmer	2	1.3

Table 2. Bivariate and multivariable analysis of factors associated with unsafe abortion among women of reproductive age group in Gondar town, Northwest, Ethiopia, 2017

Variable	Unsafe abortion		COR (95% CI)	AOR (95% CI)
	Yes	No		
Age(year)				
15-24	6	40	4.8(0.54-41.93)	1.43(0.12-16.89)
25-34	10	65	4.9(0.01-40.15)	3.26(0.34-31.25)
35-49	1	32	1	1
Educational Status				
Unable to read and write	2	18	0.65(0.13-3.14)	0.25(0.15-4.19)
Able to read and write	1	23	0.25(0.03-2.05)	0.49(0.06-4.01)
Primary education and above	14	96	1	1
Marital status				
Single	13	42	7.3(2.26-23.8)*	6.9(1.88-25.4)**
Married and others	4	95	1	1
Occupational status				
Trader	6	40	3.8(0.73-19.98)	5.1(0.71-36.03)
Civil servant	9	46	4.9(1.02-24.29)	3.6(0.49-26.87)
House wife and others	2	51	1	1

4. DISCUSSION

This community-based cross-sectional study tried to assess prevalence and factors associated with unsafe abortion among women of reproductive age group in Gondar town.

In the present study, prevalence of unsafe induced abortion among women of reproductive age group was found to be 3.9% [95% CI (1.3 -

7.1)]. The current finding is in line with 3.25% reported by Gelaye A. et al. [12], 4.8% by Senbeto E. et al. [11], and 1.9% by Mitiku S. et al [13]. The possible reasons for this could be due to similarities in the socioeconomic characteristics, study design and utilization of modern contraceptive methods.

The prevalence of unsafe abortion in this study is, however, found to be lower when compared to

a study conducted in Ghana which reported a prevalence of 21% [14]. This could be due to a difference in the contraception utilization rate in the populations between Ghana (24.2%) [15] and Addis Ababa, Ethiopia (56%) [16]. Furthermore, it could be due to a reason that the study in Ghana was done as nationwide with a large number of study participants in both urban and rural community where as study participants of the current study were almost all from the urban community.

In this study, marital status of the women was found to be significantly associated with induced unsafe abortion. Those unmarried women were almost 7 times [AOR: 6.9, 95% CI: (1.88 - 25.4)] more likely to undergo through unsafe induced abortion than their counterparts. This could be due to the reason that those unmarried women would fear stigmatization coming from their community members as well as their economic status (income) wouldn't be sufficient enough to cover their child's care and support. This finding is consistent with evidences from studies conducted in different parts of Ethiopia [11,17] and Ghana [14].

5. LIMITATIONS OF THE STUDY

- As any cross-sectional study, cause and effect relationship was not possible to establish for the factor dealt in the study
- The source of data for this study was based on the self-report of respondents with no objective measures to evaluate them, and there might be recall bias

6. CONCLUSION

In this study the result showed that the prevalence of unsafe abortion among women of reproductive age group was high and marital status of the women was the factor associated with unsafe induced abortion. This study can be helpful for making health policy in this area and also may be applicable to some area.

7. RECOMMENDATIONS

Policy makers such as the district health office and Ethiopian family guidance association would better to design a program to provide reproductive health education especially for unmarried women as well as for the general community, and instruct the health extension workers to give health education about

reproductive health and promote about family planning methods for this community. This is very crucial in the prevention of maternal morbidity and mortality related with unsafe induced abortion.

CONSENT

The written consent was provided to the participants after informing them all the purpose, benefit, risk, and the confidentiality.

ETHICAL CONSIDERATIONS

Ethical clearance was obtained from Ethical Review Board of University of Gondar, School of Nursing, Community Health Nursing Unit. Gondar town Administration office was informed prior to the initiation of the study with a letter of support from the University of Gondar, and letter of support was obtained from the selected sub cities of administration offices.

ACKNOWLEDGEMENT

The authors would like to pass their gratitude to the University of Gondar for the approval of ethical clearance, technical support, and financial support. Our gratitude also goes to all data collectors, supervisors, study participants, and Gondar University Administrators and respected Department Heads. We also extend our appreciation to those who helped us a lot in giving additional advices.

COMPETING INTERESTS

The authors have declared that no competing of interests exists.

REFERENCES

1. Gebeyehu D, Admassu B, Sinega M, Haile M. Assessment of prevalence and reasons for termination of pregnancy at Jimma University Teaching. *Univers J Public Heal.* 2015; 3(6):251–5.
2. Gasoyan H, Babayan R, Abou Cham S, Mkhitarian S. Report: Public inquiry into enjoyment of sexual and reproductive health rights in Armenia. Yerevan, Armenia; 2016.
3. WHO. Safe and unsafe induced abortion: Global and regional levels in 2008, and trends during 1995–2008 When [Internet]. World Health Organization. Geneva,

- Switzerland: World Health Organization. 2012;1–8.
Available:http://apps.who.int/iris/bitstream/10665/75174/1/WHO_RHR_12.02_eng.pdf
4. Guttmacher Institute. Induced Abortion Worldwide [Internet]; 2018.
Available:<http://www.guttmacher.org>
 5. WHO. Complications of abortion: technical and managerial guidelines for prevention and treatment. World Health Organization. Geneva, Switzerland. 1995; (1):147.
 6. Moore AM, Gebrehiwot Y, Fetters T, Wado YD, Bankole A, Singh S, et al. The Estimated Incidence of Induced Abortion in Ethiopia, 2014: Changes in the Provision of Services since 2008. *Int Perspect Sex Reprod Health*. 2016;42(3):111–20.
 7. Ganatra B. Global, regional, and subregional classification of abortions by safety, 2010–14. *Lancet*. 2017;390(10110):2372–2381.
 8. Sedgh BG, Henshaw SK, Singh S, Bankole A, Drescher J. Legal Abortion Worldwide: Incidence and Recent Trends. *Int Fam Plan Perspect* [Internet]. 2007; 33(3):106–16.
Available:<http://Osearch.ebscohost.com.wam.city.ac.uk/login.aspx?direct=true&db=bth&AN=23652704&site=ehost-live>
 9. Tesfaye G, Hambisa MT, Semahegn A. Induced abortion and associated factors in health facilities of guraghe zone, southern Ethiopia. *J Pregnancy*; 2014.
 10. Hamdela B, G.mariam A, Tilahun T. Unwanted pregnancy and associated factors among pregnant married women in Hosanna town, Southern Ethiopia. *PLoS One*. 2012;7(6):e39074.
 11. Senbeto E, Alene GD, Abesno N, Yeneneh H. Prevalence and associated risk factors of Induced Abortion in northwest Ethiopia. *EthiopJHealth Dev*. 2005;19(1): 37–44.
 12. Gelaye AA, Taye KN, Mekonen T. Magnitude and risk factors of abortion among regular female students in Wolaita Sodo University, Ethiopia. *BMC Womens Health*. 2014;14(1):50.
 13. Mitiku S, Demissie PM, Belayneh F, Meskele M, Ababa A, Sodo W. Prevalence of induced abortion and associated factors among wachamo university regular female students, southern. *J Pharm Altern Med*. 2015;7:44–52.
 14. Mote CV, Otupiri E, Hindin MJ. Factors associated with induced abortion among women in Hohoe, Ghana. *Afr J Reprod Health*. 2010;14(4):115–121.
 15. Asante FA. Cost of Family Planning Services in Ghana. *Futur Group, Heal Policy Proj*. 2013;978(1):104–9.
 16. Macro O. Ethiopia Demographic and Health Survey, 2011. Addis Ababa, Ethiopia; 2011.
 17. Mulatu T, Cherie A, Negesa L. Prevalence of Unwanted Pregnancy and Associated Factors among Women in Reproductive Age Groups at Selected Health Facilities in Addis Ababa, Ethiopia. *J Women's Heal Care*. 2017;6(5):2–7.

© 2018 Mariam et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sciencedomain.org/review-history/27513>