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RESEARCH ARTICLE

Prevalence of Induced Abortion and its Associated Factors among Female Students of Health Science in South West Ethiopia

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Abstract:

Background:

Globally, approximately 180-200 million pregnancies occur each year, about 75 million are unwanted pregnancies. The majority of unwanted pregnancies end in induced abortions each year. Combating abortion, abortion-related morbidity and mortality by preventing unwanted pregnancy has a great role in decreasing maternal mortality. Induced abortions, specifically unsafe abortion, are an important public health concern in developing countries. Nursing professionals encounter cases in their everyday activities; thus, findings from this study have paramount importance for nurses to be aware of the magnitude problem, which in turn help them to make an informed decision in their activities.

Objective:

To assess prevalence induced abortion and its associated factors among Health Science Students in South West Ethiopia.

Methods:

A facility-based cross-sectional study was conducted on female students. A systematic random sampling method was used to select the study participants. Data were collected using a structured self-administered questionnaire. Data were entered into Epidata manager version 3.1, and analyzed using SPSS version 21 statistical software for windows for analysis. Logistic regression was used to identify factors associated with induced abortion.

Results:

A total of 420 randomly selected female students were involved in the study. The prevalence of induced abortion was 18.8%. The factors associated with induced abortion among college students were urban residents (AOR = 3.91, 95%CI: 1.85-8.27), having poor knowledge of sexually transmitted diseases (AOR = 3.21, 95%CI: 1.62-6.38), and having a father with no formal education (AOR = 4.20, 95%CI: 1.87-9.42).

Conclusion:

The prevalence of induced abortion among the College of health science female students was found remarkable and we can conclude that induced abortion is one of public health importance among this population. Therefore, Mizan-Tepi University, College of health science, and Town health offices have to collaborate to decrease unwanted pregnancy to prevent induced abortion. Health education regarding contraceptive use, the consequence of induced abortion, and youth friendly services have to be delivered for students.

Keywords: Induced abortion, Adolescent reproductive health, The prevalence of abortion, Reproductive health, Health education, Unwanted pregnancies.

Article History

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1. INTRODUCTION

Every woman has a recognized human right to decide freely and responsibly without coercion and violence, the

number, spacing, and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health [1]. Access to modern family planning is essential for the realization of these rights. Almost 25% of all pregnancies end in induced abortion, which is a configuration of safe and unsafe abortion

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[2]. The World Health Organization defines induced abortion as the termination of pregnancy either by medicine or by the manipulation of certain procedures [3].

Globally, approximately 180-200 million pregnancies occur each year, about 75 million are unwanted pregnancies. An estimated 50 million pregnancies end in induced abortions each year. Among the direct causes of maternal death in the world, unsafe abortion accounts for 13% of all maternal deaths and as much as 25% in some countries and the developing world. More than 40% of the total deaths due to unsafe abortion have occurred in Africa, making it the leading cause of maternal mortality in the region [4].

Ethiopia expanded its abortion laws and efforts made to improve access to quality abortion-related care. In this region in 2014, 53% of induced abortions were legal procedures performed in health institutions, which is two times the proportion of 2008. Despite a marked increase in modern contraceptive use among married women 14% in 2005 to 40% in 2014, still, there are high levels of unintended pregnancies that can end up in abortion EDHS 2005 AND 2014. Nationally, 38% of pregnancies were unintended in 2014 [5 - 7]. The Maternal Mortality Ratio (MRR) in Ethiopia was estimated at 412 deaths per 100,000 live births in the year 2016 [8]. One of the causes of maternal death is unsafe abortion in this region.

Even though the Ethiopian government has developed policies that aim to ensure adolescents' and youth reproductive health needs, there is still a gap in the utilization of sexual and reproductive health (SRH) services. In this region, among all sexually active women of reproductive age, adolescents and young populations had the highest rates of pregnancy and unintended pregnancy. In 2014, 44% of pregnancies among adolescents were unintended, and 46% of those unintended pregnancies ended in abortion [9]. One-third of the abortions among adolescents were clandestine and thus potentially unsafe and life-threatening [10]. Even though the government has made meticulous efforts in formulating policies, designing strategies, and establishing facilities, the country still suffers more from the burden of poor maternal health and mortality as well overutilization of limited health care human and financial resources. The risky sexual behavior of adolescents and young populations increases the burden of induced abortion. Therefore, this study aimed to assess the prevalence and associated factors of induced abortion among College of Health Science female students.

2. METHODS AND MATERIALS

2.1. Study Design

A facility-based cross-sectional study was conducted among health science college female students.

2.2. Populations

The source population was all female students of the college during the study period. While the study population was randomly selected, female students. All regular female students who were attending Health Science College were included. Students who were ill and unable to respond were excluded.

2.3. Sample Size Determination and Sampling Techniques

The sample size was determined using a single population proportion formula. With the input of p expected proportion induced abortion among these populations (50%) to get the maximum sample size, precision level (5%), 95% confidence interval, and 10% for non-response compensation. The computed sample size was 423. *i.e.* $[n = ((z_{\alpha/2})^2 p(1-p))/d^2]$. A total of 423 regular female students from 6 departments of college were selected. The total sample size was proportionately allocated to each department. A simple random sampling technique was used to select study participants based on their registration.

2.4. Data Collection Procedure

Data were collected using a structured self-administered questionnaire. It was adapted from previously conducted studies [11 - 13]. The English questionnaire was adapted and translated into the local language (Amharic) and retranslated back into English for checking its consistency by an independent translator. To increase the quality of the data, the questionnaire was pre-tested before the actual data collection.

2.5. Data Processing and Analysis

Data collected were entered into Epi Data version 3.1, cleaned, and analyzed using SPSS version 21 software for windows. Binary logistic regression analysis was used to look for the association between outcome and independent variables (age, place of origin, father education, mother education) and dependent variables (induced abortion). Multivariable logistic regression analysis was done to control for potential confounding factors and to identify the most important determinate variables. Independent variables with a p-value of less than 0.25 in the bivariate logistic regression were included in multivariable logistic regression. Odds ratio (OR) and the respective 95% confidence intervals were used to assess the statistical significance of associations among the variables. Multi-collinearity between the exposure variables was checked. The Hosmer-Lemeshow goodness-of-fit test was performed to check model fitness.

2.6. Study Variables

2.6.1. Dependent Variable

Prevalence/magnitude of induced abortion.

2.6.2. Independent Variables

It includes age, place of origin, father educational status, mother educational status, age at sexual intercourse, knowledge about STD, history of childbirth, and previous history of abortion.

2.7. Operational Definitions

- **Sexually active:** Having a previous history of vaginal sexual intercourse.
- **The practice of induced abortion:** Any previous history of induced abortion in the last one year before the study.

- **Knowledge of STI:** Knowledge about STI was assessed by asking to mention some STI, methods of transmission, symptoms, and treatment options. Knowledge of STI was categorized as good or poor based on when participants answered more than half of the knowledge above question and less than half, respectively.

19.99 (SD±2.87) years. About 203(48.3%) of the respondents were protestants by religion. About 184(43.3%) respondents' mothers did not attend education, while 136(32.4%) of respondents' fathers did not attend formal education. The majority of respondents 284(67.6%) were living with their families. About 295(70.2%) of students came from urban areas (Table 1).

3. RESULTS

3.1. Sociodemographic Characteristics

A total of 420 women were interviewed, making a response rate of 99.3%. The mean age of the respondents was

3.2. Reproductive Characteristics of Respondents

Among respondents, about 347 (82.6%) of them have a history of sexual intercourse. The mean age at initiation of sexual intercourse was 17.74 (SD± 1.80) years. About 84 (20.1%) respondents had a history of childbirth and about 103(24.5) had a history of unwanted pregnancy (Table 2).

Table 1. Socio-demographic characteristics of students and parents of college of health science, July 2018.

	Variables	Frequency	Percent
Age group	Less 20 years	230	54.8
	Above 20 years	190	45.2
Religion	Protestant	203	48.3
	Orthodox	150	35.7
	Muslim	51	12.1
	Catholic	16	3.9
Live with whom	Family	284	67.6
	Husband	54	12.9
	Alone	48	11.5
	Friend	34	8.1
Place of origin	Unban	295	70.2
	Rural	125	29.1
Father educational status	No education	136	32.4
	Primary	92	21.9
	Secondary	76	18.1
	Secondary and above	116	27.6
Mother educational status	No education	182	43.3
	Primary	124	29.5
	Secondary	55	13.1
	Secondary and above	59	14
Occupation of mothers	Housewife	274	65.2
	Private	81	19.3
	Government employee	17	11.2
	Students	18	4.3
Occupation of father	Farmer	226	53.8
	Government employee	117	27.8
	Private	77	18.4

Table 2. Reproductive characteristics of students of college of health science July 2018.

	Variable	Frequency	Percent
Age of first sexual intercourse	Less than 18	143	41.2
	Above 18	204	58.8
History unwanted pregnancy	Yes	103	24.5
	No	317	75.5
History of childbirth	Yes	84	20
	No	336	80

(Table 2) contd....

Reason for unwanted pregnancy	Forget to take pills	33	32
	Contraceptive fail	26	25.2
	Lack of awareness about EC	22	21.4
	Rape	14	13.6
	Condom rupture	8	7.8
Knowledge about STD	Low knowledge	189	45
	Good knowledge	231	55

3.3. Prevalence of Induced Abortion

About 79(18.8%) students had a history of induced abortion. The most common place of abortion was a private clinic. The place where these abortions were conducted were Private Clinic 41(51.9), Health Center 22(27.9) Hospital 9(11.4), and traditional practitioners 7(8.8%). The most common reason pregnancy occurrence that resulted in abortion was a contraceptive fail (Fig. 1).

3.4. Factors Associated with Induced Abortion

Bivariate analysis was done for potentially expected associated factors based on the literature review. As a result, place of origin, age class, age at sexual intercourse, father’s

educational status, mother’s educational status, and knowledge about STD were found to have P-values < 0.25. In multivariable logistic regression, 7 variables were entered. Multicollinearity between independent variables in the model was checked, and the variance inflation factor (VIF) was found acceptable (less than 2). The Hosmer-Lemeshow goodness of fit test indicated (P = 0.457) that the model was good enough to fit the data well. Finally, the predictors of induced abortion among college students were from urban residence [AOR = 3.91, 95%CI: 1.85-8.27], having insufficient knowledge about sexually transmitted diseases (STD) [AOR = 3.21, 95%CI: 1.62-6.38] and having a father with no formal education [AOR = 4.20, 95%CI: 1.87-9.42] (Table 3).

Reason of pregnancies resulted in abortion

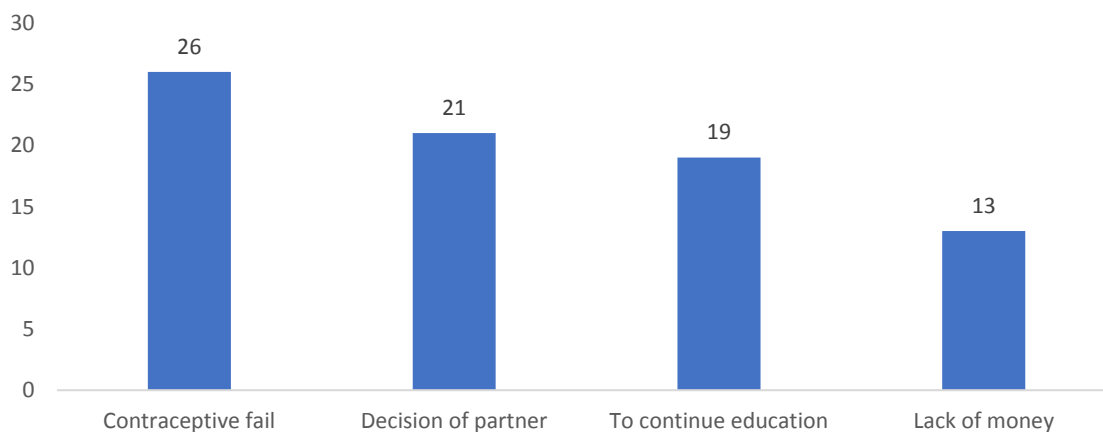


Fig. (1). Reason for abortion among college students of College of health science July 2018.

Table 3. Bivariate and multivariable analysis of factors associated with induced abortion among college of health science students in July 2018.

Variables	Induced abortion		COR (95% CI)	AOR (95% CI)
	Yes	No		
Place of Origin				
Urban	39	86	2.89(1.75-4.79)	3.91(1.85-8.27) *
Rural	40	255	1	1
Age interval				
Less than 20	28	202	1	1
Above 20	51	139	2.65(1.59-4.40)	1.49(0.63-3.52)
Age of sexual intercourse				
Less than 18	36	37	1.34(0.73-2.4)	1.64(0.73-3.69)
Above 18	43	59	1	1

(Table 3) contd....

Mother educational status				
No formal education	39	199	0.70(0.43-1.14)	1.10 (0.53-2.28)
Formal education	40	142	1	1
Father educational status				
No formal education	37	240	2.69(1.64 - 4.44)	4.20(1.87-9.42) *
Formal education	42	101	1	1
Knowledge status of respondents about STD				
Poor	51	128	2.68(1.61- 4.46)	3.21(1.62-6.38) *
Good	28	203	1	1

* p-value less than 0.05, COR: crude odds ratio, AOR: adjusted odds ratio

4. DISCUSSION

This study aimed to assess the prevalence and associated factors of induced abortion among Mizan Aman health science college female students. As a result, the magnitude of induced abortion was found to be 18.8%. The magnitude of induced abortion in this study is a little lower than global figure of induced abortion, which was 25% of abortion end in induced abortion [2]. This might be due to the fact that this study was focused on college students while the global figure of induced abortion includes all age groups. It was higher than 4.8% in Nepal [14], 5.9% of Wachamo university students, Ethiopia [11] Wolayita Sodo University Students [15], and a study conducted in Ethiopia through the demographic health survey which was 28 per 1,000 women [16]. This figure is in line with the prevalence of a study conducted in Northern Ethiopia 14% [17] Cambodia 21.4% [18] and Ghana 21% [19]. But lower than the study conducted in Addis Ababa 39.6% [12], in the Ilu-Ababor Zone 42.9% [13], in the Arsi Zone, Central Ethiopia 42.9% [20] and Gurage zone 51.8% [21].

In this study, students who had poor knowledge about STD were also found to be three times more likely to practice induced abortion than those who had good knowledge about it. This might be due to those students who have poor knowledge about STD may not use condoms to protect themselves from STD and prone students to unwanted pregnancy and induce abortion.

Students who were from urban origin were about four times more likely to practice induced abortion when compared with students from rural areas. This might be because the students from urban areas are exposed to different factors that make them risky to sexual behaviors that will end in unwanted pregnancy and finally induced abortion. This finding was supported by a study in Hohoe, Ghana [19].

Those students whose fathers with no formal education were four times more likely to practice induced abortion compared to those students whose fathers had formal education. This might be because uneducated fathers are less likely to discuss basic sexual and reproductive health issues with their children. This makes them lack sexual knowledge that results in unwanted pregnancy and induced abortion. It is explained by the study that students who have been communicated about sexual and reproductive health with their parents are less likely to participate in risky sexual behaviors that may result in unwanted pregnancy and abortion [22].

The most common reason for induced abortion among students was a contraceptive failure (32.9%), followed by the

decision of a partner (26.6%), to continue education (24.1%), and lack of money (16.5%). These reasons have also been raised as a reason for inducing abortion in Nigeria [23] and Wachamo University students [11].

5. LIMITATION OF THE STUDY

Since this study is done based on the participants responses, the sensitive nature of the issue can lead to social desirability bias; as a result, it may underestimate the prevalence of induced abortion. Also, the study was conducted at the single center and as a result it is difficult to generalize.

CONCLUSION

The prevalence of induced abortion among female students of health Science College was found remarkable, and we can conclude that induced abortion is one of public health importance among these populations. The predictors of induced abortion among college students were from urban population, having low knowledge about STD, and having a father with no formal education. Induced abortions, specifically unsafe abortion, is an important public health in developing countries. Nursing professionals encounter the cases in their everyday activities; thus, findings from this study have paramount importance for the nurses to be aware of the magnitude problem, which in turn help them to make an informed decision in their activities.

RECOMMENDATION

Based on the finding of the study Health Science College, local and international NGOs, and health workers as a whole should collaborate to create awareness on how to avoid unwanted pregnancy to prevent induced abortion. Health education regarding contraceptive use, the consequence of induced abortion, and youth friendly services have to be delivered for students.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Before the actual data collection, permission letter was obtained from Mizan-Tepi University to the College of health sciences, Mizan, Ethiopia.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

All study participants were informed about the purpose of the study, their right to deny participation, anonymity, and confidentiality of the information. Written informed consent was also obtained before participation in the study.

AVAILABILITY OF DATA AND MATERIALS

The data sets generated and/or analyzed during this study are available from the corresponding author on reasonable request.

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None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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REFERENCES

- [1] International Conference on Population and Development. Cairo, Egypt 1994.
- [2] World health organization, health impact of abortion. 2018.
- [3] World Health Organization. Safe and unsafe induced abortion: Global and regional levels in 2008, and trends during 1995-2008. 2012.
- [4] World Health Organization. Unsafe abortion: Global and regional estimates of incidence of and mortality due to unsafe abortion with a listing of available country data. 1998.
- [5] Central Statistical Agency [Ethiopia] and ICF International.. Ethiopia Demographic and Health Survey 2005. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International 2005.
- [6] Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey 2014. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International 2014.
- [7] Gutt Mather Institute. Induced Abortion and Post abortion Care in Ethiopia. 2017.
- [8] Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey 2016. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International 2016.
- [9] Technical and Procedural Guidelines for Safe Abortion Services in Ethiopia. Addis Ababa, Ethiopia: Federal Democratic Republic of Ethiopia Ministry of Health 2014.
- [10] Paxman JM, Rizo A, Brown L, Benson J. The clandestine epidemic: The practice of unsafe abortion in Latin America. *Stud Fam Plann* 1993; 24(4): 205-26. [http://dx.doi.org/10.2307/2939189] [PMID: 8212091]
- [11] Mitiku Shimelis, Demissie Meaza, Belayneh Fanuel, Meskele Mengistu. Prevalence of Induced Abortion and Associated Factors among Wachamo University Regular Female Students, Southern Ethiopia. *Journal of Pharmacy and Alternative Medicine* 2015; 7
- [12] 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 Womens Health Care* 2017; 6: 392. [http://dx.doi.org/10.4172/2167-0420.1000392]
- [13] Negera Ebissa. Induced Abortion and Associated Factors Among Female High School Students in Ilu-Ababor Zone, Oromiya National Regional State, Ethiopia. *Indo Am J Pharmaceutical Res* 2017; 7(9)
- [14] Abinath Y. Prevalence and Factors Associated with Abortion in Nepal: A National Cross-Sectional Study. 2016. (unpublished thesis)
- [15] 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. [http://dx.doi.org/10.1186/1472-6874-14-50] [PMID: 24666926]
- [16] Moore AM, Gebrehiwot Y, Fetters T, *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. [http://dx.doi.org/10.1363/42e1816] [PMID: 28825902]
- [17] Senbeto E, Alene GD, Abesno N, Yeneneh H. Prevalence and associated risk factoprs of Induced Abortion in Northwet Ethiopia. *Ethiop J Health Dev* 2005; 19(1): 37-44. [http://dx.doi.org/10.4314/ejhd.v19i1.9969]
- [18] Yi S, Tuot S, Chhoun P, Pal K, Tith K, Brody C. Factors associated with induced abortion among female entertainment workers: A cross-sectional study in Cambodia. *BMJ Open* 2015; 5(7)e007947 [http://dx.doi.org/10.1136/bmjopen-2015-007947] [PMID: 26231754]
- [19] Mote CV, Otupiri E, Hindin MJ. Factors associated with induced abortion among women in Hohoe, Ghana. *Afr J Reprod Health* 2010; 14(4 Spec no.): 110-6. [PMID: 21812204]
- [20] Legesse TW, Solomon TM, Teresa KB. Unsafe abortion and associated factors among women in reproductive age group in Arsi Zone, Central Ethiopia. *Int J Nurs Midwifery* 2017; 9(10): 121-8. [http://dx.doi.org/10.5897/IJNM2017.0286]
- [21] Tesfaye Gezahegn, Hambisa Mitiku Teshome, Semahegn Agumasie. Induced Abortion and Associated Factors in Health Facilities of Guraghe Zone, Southern Ethiopia. *J Pregnancy* 2014.
- [22] Nigussie T, Legese T, Abebe L, Getachew S, Alemayehu D. Magnitude of risky sexual behaviors, determinants, and consequences among high school and preparatory school students in Mizan Aman Town, Ethiopia. *J Midwifery Reprod Heal* 2019; 8(1)
- [23] Wahab Olukorede E. Causes and consequences of induced abortion among university undergraduates in Nigeria. 2006.