Induced Abortion and Its Predictors Among Hawassa University Female Students

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Abstract: Global incidence of unsafe abortion among University students is increasing; and still frequent and worrisome in Universities of Ethiopia. There are a few studies on induced abortion among university students. There for this study was aimed to determine magnitude and predictors of induced abortion among Hawassa University female students. Institution based cross-sectional study was conducted from May 1-15, 2019 and 741 participants were selected from Hawassa University regular undergraduate female students. For entry and analysis EPidata and SPSS was used respectively. Association between dependent and independent variables were measured by adjusted odds ratio. Variables with p <0.25 on bivariate were used for multivariable analysis and p<0.05 were considered significant. Magnitude of induced abortion among Hawassa University students was 9.6%. From the respondents 68% of them age greater or equal to 20 (AOR=0.32, 95% CI: 0.14, 0.74) were less likely to have induced abortion compared to those respondents with age less than or equal to 19. Married respondents were 3.32 times (AOR=3.32, 95% CI: 1.51, 7.28) more likely to have induced abortion compared to not married respondents. From the respondents 95% of them who have heard only about short term contraceptive (AOR=1.95, 95% CI: 1.04, 3.66) were more likely to have induced abortion compared to those who have heard only about long term contraceptives. Respondents who have used methods to avoid pregnancy currently were 5.41 times (AOR=5.41, 95% CI: 2.73, 10.72) more likely to have induced abortion compared to who haven’t used any method. Induced abortion among Hawassa university female student was high compared to other studies. This study showed the independent predictors of abortion among Hawassa University students were age, marital status, type of contraceptive they know and using any method to avoid pregnancy currently.

Keywords: Induced Abortion, Student, Sexual Health of Youth, University, Hawassa

1. Introduction

1.1. Background

Induced abortion is an intentional termination of pregnancy by any means or person other than spontaneous miscarriage [1]. Women usually under-report their abortion experiences, mainly because abortion is a sensitive and controversial issue with religious, moral, cultural, political and scopes other reasons in many countries across the world [2–5]. World Health Organization (WHO) estimates that one woman dies every eight minutes due to unsafe abortions; consequently around five million women who undergo unsafe abortions require hospitalization [6–8].

The world attains 42 million induced abortions annually almost all of this is induced abortion [2, 10]. Worldwide, around 120 million women annually need contraception but it is not accessible to them; parallel with this, approximately 250 million pregnancies occur and one-third of them are unintended; out of them 20% are terminated as induced abortion [6]. More than one-fourth of the world’s people live in rural areas where the procedure is not allowed or allowed only to preserve the woman’s life [6, 11].

Most of women undergoing induced abortion have no previous births preceding abortion [12, 13]. Unsafe abortion is a significant but preventable cause of global maternal mortality and morbidity [14]. Utilization of family planning is very crucial to decrease unintended pregnancy and unsafe
abortion which in turn reduces maternal morbidity and mortality [7, 8, 15]. However, there is limited understanding over the counseling needs of women accessing abortion services, particularly in sub-Saharan Africa [16].

Ethiopia government revised the laws of abortion in 2005 that had permitted induced abortion with certain conditions like: if woman’s pregnancy could create health problems on her, if the fetus had conditions incompatible with life, or if the conceived pregnancies were from incest, rape or minor groups [3, 17]. However, irrespective of legal status, abortions still occur and increasing from time to time and nearly half of them are performed by an unskilled practitioner or in less than sanitary conditions, or both [12, 18].

Even if restrictive laws often render safe abortions more difficult to acquire, they are frequently ineffective at minimizing the incidence of abortion [19, 20]. In case the restrictive law reduces induced abortion rate it could have the unintended consequence [21, 22]. But it is publicly known that number of countries in the world legalize abortion without restriction [23], however this alone does not guarantee access to safe abortion, and 30% of maternal mortality is attributable to unsafe procedures [14].

1.2. Statement of the Problem

Updated reports show that around 13% of maternal deaths are the result of unsafe abortion in the globe [1, 24]. Overall, 10%–15% of abortions worldwide occur in the second trimester, this account for a disproportionate number of maternal deaths when provided under unsafe conditions [25]. Health sequel of unsafe abortion account for an estimated 7.9% of global maternal mortality and maternal deaths among Sub-Saharan Africa is 9.6% (19, 26).

In Africa, about one in every seven pregnancies (15%) ends in an induced abortion [27]. Unsafe abortion is a leading cause of death among young women’s in sub-Saharan Africa [28]. Both the incidence and health burden of unsafe abortions are disproportionately concentrated in low income countries, where approximately 97% of the 25 million annual unsafe abortions occur [19].

The ages at which women have induced abortion is a significant factor [29]. A study shows that the interviewed women decided to terminate their pregnancies for different reasons like poverty, poor timing of the pregnancy and absence of support from male partners [15]. Women’s reasons for induced abortions represented their vulnerability types at the critical time of decision making [30]. In addition to this absence of planning programs and more information and access to contraception methods were the risk factors of induced abortion [31]. Women's knowledge of abortion legislation is a significant determinant of the utilization of safe abortion services [32].

The 2030 Agenda for Sustainable Development renewed the commitments by 193 Member States of the United Nations (UN) to reduce global maternal mortality through universal access to sexual and reproductive health (SRH) services, education and information [33, 34]. Over six million induced abortions were reported in Africa with over two million induced abortions occurring in Eastern Africa [28].

Although the Ethiopia has expanded access to abortion and post abortion care, the last estimates of abortion incidence date from 2008 [28]. According to a study more than 32% of maternal mortality reported in Ethiopia is due to unsafe abortions [32]. The overall magnitude of unintended pregnancy in Ethiopia is about 42%; 3.27 million estimated pregnancies, half a million ends up in abortion [1].

Even some studies done in Ethiopia, which shows the magnitude and associated factors for induced abortion at community and facility base, but there is limitation of studies done on the magnitude and associated factors for induced abortion among University students. So that this study were planned to show the magnitude and predictors of induced abortion among Hawassa University female students. This will help for the policy makers and program implementers to consider the prevention of repeat induced abortion and its associated factors at facility and community based level.

2. Main Body

2.1. Methods and Materials

The study was conducted in Hawassa University (HU) located in Hawassa City. Hawassa is the capital city of southern nations nationality peoples region (SNNPR) located at 275km south to Addis Ababa, the capital city of Ethiopia. Hawassa’s climatic condition is winnadoega and has 280,000 populations. Currently, Hawassa University has seven functional campuses, within it seven campuses, HU operates 8 Colleges and 1 Institute. HU runs 81 Undergraduate degree programmes, 108 Masters and 16 PhD programmes in its 41 Schools and Departments. The student population as of March 2018 is 48,558 (of which 28.86% are female) [37].

Institutional based crossectional study was conducted from May 1-15, 2019. Hawassa university undergraduate female students were the source population of this study and selected female students of Hawassa University during data collection period were the study population.

The required sample size for the first objective was calculated using single population proportion formula and with an assumption of 95% confidence interval, 5% margin of error, a proportion of 32.4% from study done at Medawalub University, Ethiopia on induced abortion [38] making 673. Adding 15% contingency to account for non-response rate yielded a final sample size of 774.

For the second objective various Sample sizes were calculated based on proportions of different variables from literatures using Open Epi statistical software Version 3.03 considering the assumptions: 80% power of the study, 95% confidence and ratio of unexposed to exposed 1:1. Of thus calculated sample sizes the one with the highest sample size was taken by considering 2 for design effect and 15% contingency, but the samples were less than sample size of the first objectictiv. Since sample size for the first objective is
greater it was used in this study.

Stratified multistage sampling technique was used, and the procedure was as follows. There are eight colleges in Hawassa university; this colleges were divided in to two practical strata as health and non-health colleges. Simple random sampling method was applied to select three representatives of non-health colleges, and sample size was allocated to the stratified colleges proportional to their size (PPS). Next three representative departments from each non health and health colleges have been included and then class years are stratified as first, second, third, fourth and above. The total sample size were again allocated to each class year probability proportional to size (PPS), finally 774 students were selected by Simple Random Sampling (SRS) technique using identified females ID accessed from each college registrar.

The data were collected by self-administered pretested questionnaires. Twelve data collectors and two supervisors were recruited. Moreover, practical exercises have been done by data collectors during training with the principal investigator how to introduce mentioned issues. Data collection was done by arriving at the end of the scheduled time based on the block number, lecture room number and time to collect data was arranged by communicating with department head and instructor who own each class during data collection time.

For the students purpose of the study, confidentiality and the need for providing honest answers was clarified. After necessary introduction was made the students have had informed how they were selected. Female students who were not included in the study and all male students were ordered to leave the class. In addition to specific instructions on the questionnaire, participants were given clear oral guidance on filling out the questionnaire.

Sitting arrangement was rearranged to make the process confidential and then questioners were distributed in the same time for all students in the same college and they have given similar time to finalize. They also ensured complete privacy during completing the questionnaire. Supervision of the data collection process was done by supervisors along with the principal investigator.

The questionnaire was prepared in English (instructional media of the university) as well as in Amharic languages. Training was given to data facilitators who are masters students and the supervisors before the actual data collection on how to approach and select the study participants, on the objective of the study and the content of the questionnaire. To check the clarity, consistency, skipping pattern and order of questions, questionnaire was pre-tested. After pretest, questions were revised, edited, and those found to be unclear were modified.

Data was checked manually for completeness. Then the data were cleaned and stored for consistency after entered in to Epi Data version 3.1 software. For further analysis the data were exported to statistical package for social sciences version 24.0 software. Descriptive statistics were carried out. Bivariate and multivariate analysis was used to see the effect of independent variable over unintended pregnancy. Variables which were significant on bivariate analysis at p-value less than 0.25 were taken to multivariate analysis. The fitness of model was checked by Hosmer and Lemeshow test. In multivariate analysis P- value of less than 0.05 and 95% confidence level was used as a cut of point for presence of association. Finally, results were compiled and presented using tables, graphs, charts and texts.

Ethical clearance were obtained from Hawassa University College of medicine and health science institutional review board (IRB). Permission obtained from academic vice president and registrar and alumni directorate; oral informed consent was obtained from participants. Confidentiality and anonymity were ensured, and participants were informed that their participation would be voluntary.

2.2. Result

2.2.1. Socio-demographic Characteristics of Respondents

Age of the study participants ranged from 18 to 27 years with a mean age of 20.94 ± 1.79, and the age groups 20-24 constituted 81.2%. Respondents from year one accounts 234 (31.6%), year two 241 (32.5%), year three 237 (32%) and year four 29 (3.9%) were participated in this study. From this 105 (14.2%) were married and 351 (47.4%) have partner from both in university and out of university (table 1).

| Table 1. Socio-demographic characteristics among Hawassa University female students, Hawassa, June 2019-(N=741). |
|---|---|---|
| **Age** | **Number** | **Percent** |
| 15-19 | 109 | 14.7 |
| 20-24 | 602 | 81.2 |
| 25-29 | 30 | 4.0 |
| **Collages** | | |
| Natural and computational science | 290 | 39.1 |
| Agriculture | 171 | 23.1 |
| Social science & humanity | 147 | 19.8 |
| Medicine and health science | 133 | 17.9 |
| **Year of study** | | |
| Year one | 234 | 31.6 |
| Year two | 241 | 32.5 |
| Year three | 237 | 32 |
| Year four | 29 | 3.9 |
| **Marital status** | | |
| Not married | 636 | 85.8 |
| Married | 105 | 14.2 |
| Have partner (N=636) | | |
| Yes | 351 | 47.4 |
| No | 285 | 38.5 |
| Unable to read and write | 40 | 5.4 |
| Place of permanent residence | | |
| Urban | 533 | 71.9 |
| Rural | 208 | 28.1 |

Most of the respondents 483 (65.2) have had discuss about sexual reproductive health issues; their choice to discuss for majority of the respondents 354 (47.8) were peers. Condom was the most 524 (70.7) known contraceptive method by the
respondents (table 2).

### Table 2. Sexual and reproductive health characteristics among Hawassa University female students, Hawassa, June 2019-(N=741).

| Issues discussed                        | Number | Percent |
|-----------------------------------------|--------|---------|
| Yes                                     | 487    | 65.7    |
| No                                      | 254    | 34.3    |
| Discussion SRH issues with              |        |         |
| Peers                                   | 354    | 47.8    |
| Partner/husband                         | 110    | 14.8    |
| Parents                                 | 16     | 2.2     |
| Other*                                  | 7      | 0.9     |
| Types known                             |        |         |
| Injectable                               | 610    | 82.3    |
| Pills                                    | 548    | 74      |
| Condoms                                  | 524    | 70.7    |
| Implants                                 | 504    | 68      |
| IUCD                                     | 446    | 60.2    |
| Calendar                                 | 398    | 53.7    |
| Emergency contraceptive                 | 398    | 53.7    |
| Other**                                  | 9      | 1.2     |
| Money used will be decided by           |        |         |
| You and Your husband/partner jointly    | 160    | 21.6    |
| You                                      | 260    | 35.1    |
| Parents                                  | 240    | 32.4    |
| Your husband/partner                     | 81     | 10.9    |
| Experience intercourse                   |        |         |
| Yes                                      | 249    | 33.6    |
| No                                       | 492    | 66.4    |
| Unintended pregnancy (N=98)             |        |         |
| Yes                                      | 98     | 13.2    |
| No                                       | 643    | 86.8    |

### Table 3. Predictors of induced abortion among Hawassa University female students, Hawassa, June 2019-(N=741).

| Variables                              | Category                  | Have induced abortion | COR (CI)       | AOR (CI)      |
|----------------------------------------|---------------------------|-----------------------|----------------|---------------|
|                                        |                           | Yes, N (%)            | No, N (%)      |                |               |
|                                        |                           | 18 (25.4)             | 216 (32.2)     | 0.71 (0.408,1.25) | 0.48 (0.23,1.01) |
| Year of study                          | Year one                  |                       |                |               |
|                                        |                           | 53 (74.6)             | 454 (67.8)     | 1              | 1              |
|                                        | Year two and above        | 15 (21.1)             | 100 (14.9)     | 1              | 1              |
|                                        | <19                       | 56 (78.9)             | 570 (85.1)     | 0.65 (0.36,1.20) | 0.32 (0.14,0.74)* |
|                                        |                           | 22 (31.0)             | 186 (27.8)     | 1.17 (0.68,1.99) | 1.38 (0.76,2.49) |
|                                        |                           | 49 (69.0)             | 484 (72.2)     | 1              | 1              |
| Age                                    | Rural                     | 60 (84.5)             | 576 (86.0)     | 1              | 1              |
|                                        | Urban                     | 11 (15.5)             | 94 (14.0)      | 1.12 (0.45,1.75) | 3.32 (1.51,7.28)* |
|                                       |                           | 21 (29.6)             | 172 (25.7)     | 1              | 1              |
| Place of permanent residence           |                           | 50 (70.4)             | 498 (74.3)     | 0.82 (0.48,1.41) | 0.66 (0.34,1.31) |
|                                        | Not married               | 51 (73.9)             | 520 (78.2)     | 1              | 1              |
|                                        | Married                   | 12 (17.5)             | 172 (25.7)     | 1              | 1              |
|                                        |                           | 47 (66.2)             | 436 (65.1)     | 1.05 (0.57,1.59) | 1.20 (0.65,2.23) |
|                                        |                           | 24 (33.8)             | 234 (34.9)     | 1              | 1              |
|                                        |                           | 18 (26.1)             | 113 (17.9)     | 1.62 (0.91,2.88) | 1.95 (1.04,3.66)* |
| How to use your money                  |                           | 51 (73.9)             | 520 (78.2)     | 1              | 1              |
|                                        |                           | 38 (53.5)             | 138 (20.6)     | 4.44 (2.69,7.34) | 5.41 (2.73,10.72)* |
|                                        |                           | 33 (46.5)             | 352 (79.4)     | 1              | 1              |

### 2.2.2. Predictors of Induced Abortion

On bivariate analysis year of study, age, place of permanent residence, marital status, decision to use money, discussion about reproductive health issues, type of contraceptive they heard and using any method to avoid pregnancy were significantly associated with induced abortion. However in multivariate analysis age, marital status, type of contraceptive they heard and using any method to avoid pregnancy stay statistically significant factors associated with induced abortion.

From the respondents 68% of them age greater or equal to 20 (AOR=0.32, 95% CI: 0.14, 0.74) were less likely to have induced abortion compared to those respondents with age less than or equal to 19. Married respondents were 3.32 times (AOR=3.32, 95% CI: 1.51, 7.28) more likely to have induced abortion compared to not married respondents. From the respondents 95% of them who have heard only about short term contraceptive (AOR=1.95, 95% CI: 1.04, 3.66) were more likely to have induced abortion compared to those who have heard only about long term contraceptives. Respondents who have used methods to avoid pregnancy currently were 5.41 times (AOR=5.41, 95% CI: 2.73, 10.72) more likely to have induced abortion compared to who haven’t used any method (table 3).

### 2.3. Discussion

This study revealed very worrisome figures of unsafe abortion and unsafe sexual practices among female Hawassa University students; magnitudes of induced abortion all respondents were 9.6% and among those respondents who experience intercourse were 28.5%. Which is three fold higher than national report of abortion in Ethiopia (2.3%); but it is almost similar with a stud conducted in Wolayita
Induced abortion among Hawassa university female student was high. This study showed the independent predictors of abortion among Hawassa University students were age, marital status, type of contraceptive they know and using any method to avoid pregnancy currently.

This study had some limitations: Due to the fact that this study deals with very personal and sensitive issues such as sexual practice and induced abortion, obtaining an honest response among adolescent students was difficult. There may be social desirability bias so they may hide the real information. To the extent that in university adolescents differ from out of university adolescents, these findings may
not be applicable to out of university adolescents. Since this study was targeted only on regular undergraduate students, who are not representative of all university students.

It is imperative that improved sexual health education is rendered and wider availability of Youth Friendly family planning services are realized in Universities and other places where young men and women live together. Institutions providing safe abortion services, should devise strategies to reach out for youth who are in need of their services and prevent youth from unsafe abortion and hence they prevented from unsafe abortion. Hawassa University student clinic should devise a way to make contraceptives, especially emergency contraceptives available for those in need, overcoming privacy barriers. Information, Education and Communications (IEC) programs on youth reproductive health should be properly implemented to address topics on unwanted pregnancy and safe abortion. Finally, alongside other efforts, lobbying for further liberalization of abortion services may serve to overcome perceived unnecessary barriers to access to safe abortion services by youth students and may solve blurry among care providers.

Competing of Interest

There is no competing of interest among the authors.

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Abbreviations and Acronym

AIDS: Acquired Immune Deficiency Syndrome
AOR: Adjusted Odds Ratio
CI: Confidence Interval
COR: Crude Odds Ratio
HIV: Human Immunodeficiency Viruses
HU: Hawassa University
IEC: Information, Education and Communications
IRB: Institutional Review Board
PPS: Probability Proportional to Size
SNNPR: Southern Nations Nationality Peoples Region
SRH: Sexual and Reproductive Health
SRS: Simple Random Sampling
STI: Sexual Transmitted Infections
UN: United Nation
WHO: World Health Organization

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