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Prevalence of Induced Abortion and Associated Factors among Wachamo University Regular Female Students, Southern Ethiopia, 2015.

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Abstract
Background: All over the world, women experience unwanted pregnancy and some of them seek to terminate the pregnancy and undergo induced abortion. In Ethiopia, abortion is still common and it is one of the contributing factors for maternal death. In 2008 it was estimated that, there were 382,000 induced abortions in Ethiopia and 52,600 women were treated for complications of abortion. Most of these women who tend to experience induced abortion are adolescents and youth with age below 25 years. The aim of this study was, to assess the magnitude of induced abortion and associated factors among Wachamo University regular female students.
Methods: A cross sectional study design was used. Data were collected from 461 randomly selected female students of Wachamo University by using pre-tested structured questionnaire from January to March, 2015. The collected data were entered using EPI info Version 3.5.1 and analyzed by SPSS version 16. Descriptive statistics was computed and odds ratio along with the 95% confidence interval was estimated to identify factors associated with induced abortion using multivariate logistic regression. Level of statistical significance was declared at P-value less or equal to 0.05.
Results: In this study the prevalence of induced abortion was 5.9% (95% CI 3.8-8.0%), from which 9(33.3%) were conducted in an unsafe conditions. A total of 180(39 %) female students had sex and 58 (12.58%) of them get pregnant. Out of the total pregnancies, 53(91.4%) were unwanted. Based on the results from multivariate logistic regression, living out of campus [AOR= 6.78, 95% CI: (1.44, 31.97)], Substance use [AOR= 4.75, 95% CI: (1.12, 20.16)], and earning enough pocket money [AOR= 6.91, 95% CI: (1.62, 29.50)] were significantly associated factors with induced abortion.
Conclusion and Recommendation: A significant proportion of pregnancies among students in higher educational institution are terminated with induced abortion. Living out of campus, substance use and pocket money have significant association with induced abortion. The university and local health bodies should work together to address for prevention of unintended pregnancy and induced abortion.
Keywords: Induced abortion, Abortion, Adolescent and youth

Introduction

Abortion is the termination of pregnancy by the expulsion of a fetus or embryo from the uterus. It can occur spontaneously due to complications during pregnancy or can be induced. The term abortion most commonly refers to the induced abortion of a human pregnancy, whereas, spontaneous abortions are usually termed miscarriages. By convention, induced abortion is usually defined as pregnancy termination prior to 20 weeks for developed countries and 28weeks for developing countries (1).

Abortion can also be classified as safe or unsafe. World Health Organization (WHO) defines 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 (2).

Worldwide approximately one in five pregnancies end in an induced abortion. There were an estimated 43.8 million induced abortions in 2008 from this close to 38 million induced abortions were in developing countries and it continues to occur in measurable numbers in all regions of the world, regardless of the status of abortion law (2, 3).

Among the direct cause of maternal death in the world, unsafe abortion accounts for 13% of overall maternal deaths and as much as 25% in some countries and developing world (4). 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. Abortion prevalence is higher where the unmet need for family planning is high, contraceptive prevalence is low, and less-effective contraceptive methods prevail (5,6,7).

The maternal mortality ratio (MRR) in Ethiopia was estimated at 676 deaths per 100,000 live births in the year 2011(8). It is estimated that there are 3.27 million pregnancies in Ethiopia every year, of which approximately half million end in either spontaneous or induced abortion (9).

Review of risk factors of abortion illustrate that several variables have been implicated as risk factors of abortion in studies conducted across different countries. In Ghana, among those women who had had an abortion, the most commonly given reasons were not to disrupt education, employment and too young to bear a child (10).

In Nigeria adolescent girls procure abortion because they lack proper sex education or sexual knowledge and moral decadence. In addition, decision to have abortion is due to the poor economic situation leads to fear for financial difficulty to raise the child, what other people might think or say concerning the nine months of pregnancy and the psychological fear of scaling through the nine months.

Unmarried adolescent girls are more prone to abortion than the married women and it is more common among 25 to 34 years old women than woman in other age categories (11, 12).

A study conducted in Ethiopia at Adama University indicate that, lack of knowledge, fear of being seen by others, and inconvenient service delivery were pointed out as the main reasons for not using contraceptives service. As a result, 92 % of the pregnancies were unintended and three fourth of them are terminated by induced abortions which is carried out by untrained persons (13).

Despite continued attention given to reproductive health issues, maternal and reproductive health status in most of the world remains dismal (14).

Due to the Sensitive nature of the topic, data sources are limited and accurate information on the occurrence of induced abortion is difficult to obtain. There are also limited numbers of literatures dealing with the induced abortion rates among female students of higher educational institutions. Having this information in mind, the heart of this study was to address the clear knowledge gap on the prevalence and associated factors of induced abortion among University female students, which enable reduction of risk factors that contribute to unwanted pregnancy.

Methods

A cross sectional study was conducted from January to March, 2015 among regular female students of Wachamo University, which is one of the newly emerged governmental higher educational institutions in Ethiopia.

Participants and Sampling procedures

Multistage sampling technique was used to select 482 regular female students in 25 departments of the 6 faculties of the university. In the first step, 11 departments were selected by simple random sampling technique and the total sample size is proportionately allocated for each department. Further stratification was done based on the academic year of study. Finally, simple random sampling technique was applied to select the study participants. Female students who are severely ill or incapacitated, unwilling to participate and blind were excluded from the study.

Data collection

Data collection tool was adapted from previous related researches done inside and outside the country. To insure quality of data, the questionnaire was prepared in English and translated in to Amharic and back to English. The data collection process was facilitated by Nurse and public health officer who has previous data collection experience.

Before data collection, ethical clearance and approval was obtained from Wolaita Sodo University and Addis continental institute of public health (ACIPH) institutional review board (IRV). In addition, a written consent was obtained from each study participants.

Data processing and Analyses

Data were entered using EPIinfo Version 3.5.1 statistical software and exported to SPSS software package version 16. Descriptive statistics were done to describe the study population. To identify associated factors, Bivariate and Multivariate analyses were employed on data obtained from participants who have had pregnancy. Variables which were significant in the bivariate analysis at p-value $\leq$ 0.2 were entered to the multivariate analysis. Finally, associations of variables with induced abortion were declared by multivariate logistic regression analysis at P.value of less than or equal to 0.05.

Result

Socio-demographic characteristics of the Respondents

A total of 461 regular female students were participated in this study with a response rate of 96%. The mean ± (SD) age of the study participants was 20.12 ± (0.079). The campus was current residence for 434 (94.1%) of the participants.

From all the students in the six faculties, 195 (42.3%) of them were year two and 149 (32.3%) were year one. Regarding their origin of residence, 240(52.1%) were from rural areas, whereas, the rest 221 (47.9) were from urban.

Two hundred fifty nine (56.2%) of the respondent have regular pocket money, and 230 (49.9%) of them believe that they get enough amount.

Concerning religion of study participants, Orthodox, Protestant, Muslim and Catholic religion

follower's are 196 (42.5%), 186 (40.3), 60 (13.0%), 14 (3.0%) respectively (Table 1).

One hundred sixty two (36.7%) of the respondent's family have monthly income less than 500 ETB, and 184 (41.6%) have medium income between 500 - 1500 ETB. Parents educational background shows that, 103 (22.5%) can't read and write whereas, 165(36.1%) only write and read (Table 2).

Magnitude of induced abortion and Reproductive history of the respondents

Induced abortion was reported by 27 (5.9%) female students in the study. About two fifth (180 or 39%) of the respondents had sexual intercourse with majority (54.4%) of them had their first sexual intercourse between age 15-19 years. The remaining 51(28.3%) started sexual intercourse before completing the age15 years, 21(11.7 %) between age 20-24 and 10(5.6%) after the age of 25 years.

Fifty eight (12.5%) of the students in this study had pregnancy at least once, and 53(91.4%) of these pregnancies were unwanted.

The most common stated reasons given for induced abortion were, not to interrupt education by 22(81.5%), bad timing of occurrence of pregnancy by 15 (55.6%), Too young to have a child by 8(29.6%), fear of social stigma by 3 (11.1%) and unable to afford cost for the baby by 3(11.1%) respondents.

The most common reason not to avoid unwanted pregnancy among participants who had at least once were, unwilling to use contraceptives; 17 (32.1%), lack of access of contraceptives; 11(20.8%), lack of awareness on how to prevent pregnancy; 10(18.9%), failure of contraceptives; 8(15.9%) and rape and incent by the rest 5(9.5%) respondents.

Health professionals attend 18(66.7%) of the total abortion from which, 15(57.7%) case managed at private health facilities whereas 3(11.5%) of cases were managed at governmental health facility (Figure 1).

Four hundred fifteen (90%) of the respondent knew at least one contraceptives methods. Fifty seven (12.4%) respondents have used contraceptives at least once in their life time. Out of, 27 females with history of induced abortion, 18(66.7%) knew at least one family planning methods, and 8 (29.6 %) of them used family planning methods at least once.

Factors associated with induced abortion

On the bivariate analysis, current residence, substance use, availability of financial support and experience of watching pornographic movie were selected for multivariate analysis.

Results of multiple logistic regression model Showed that, those who live out of campus and those who have enough pocket money are about seven times more likely to have induced abortion than who lives in the campus [AOR=6.78, 95% C.I: (1.44, 31.97)] and who have no enough pocket money [AOR=6.91, 95% C.I: (1.62, 29.50)] respectively. In addition, substance users are about five times more likely to encounter induced abortion than none users [AOR=4.75, 95%CI: (1.12-20.16)] (Table 3).

Discussion

The current study revealed that 5.9% (95 % CI 3.8-8.0%) of the students had history of induced abortion. This finding is lower than a prevalence of 21% from the study conducted in Ghana (10). Similarly, it is also slightly lower than a 6.5% prevalence in Wolaita Sodo University , a 14.4% prevalence in Harar, Ethiopia and a 12.3% prevalence from a facility based study done at Gurage zone, Ethiopia in 2014 (15,16, 17).

To the contrary, the finding is slightly higher than a 2.8% induced abortion prevalence of the study conducted among female university and college students in ArbaMinch town in 2011(18). These differences can be explained by time and socio cultural differences of the study areas.

Students who live out of campus were found to have induced abortion more than their counterparts [AOR=6.78, 95% CI: (1.44-31.97)]. This finding was supported by the studies in Haramaya University which revealed risky sexual behavior to be higher among out campus students and Hosanna town study finding on unprotected sexual intercourse and unplanned pregnancy which will lead to undertake induced abortion (19, 20). The justification could be that; those students living out of campus in rental house with their friends are adolescent and youths. Thus, they are moving towards independency which will let them to experiment and test limits like; having a boyfriend, practicing sexual intercourse, using drugs, alcohol and others, which make them more susceptible to unplanned pregnancy and then lead them to induced abortion.

Additionally, even though, it has no statistically significant association, most of the female students who were sexually active didn't use contraceptives which put them at a higher risk of unwanted pregnancy and leads them to conduct induced abortion. This might be aggravated when students live out of campus or in rental houses, since they are young adolescents and youths, they lack good decision of self control in the absence of parents. Farther more, peer pressure may lead them to engage in unprotected sexual life while living alone or with other friends (19).

On the other side, students who stay in campus are having duties like; study in libraries, carry out their assignments and group works. This might make them busy with less time to establish sexual relation.

Having enough regular pocket money was found to have association with induced abortion [AOR=6.91, 95% CI: (1.62-29.50)]. This finding is similar with the finding of the study done in Thailand, which supports that having a higher income was positively associated with affording for substance and all it adverse outcomes including unplanned pregnancy and abortion (21).

This might be due to more liable to enjoyment, less fear for pregnancy outcome, able to pay fees to attend night parties and to purchase substances like alcohol and chat (22). Thus, attending parties and taking substances can disrupt their decision making ability and put them into a risky sexual practice which will result in unintended pregnancy. In addition, adolescents and youths develop very close relationships with their peers, conforming to group norm, dress, and customs. This helps them to feel secure and sense of belonging to a large group. Research has shown that adolescents and youths tends to conform their sexual behavior, including timing of sexual debut, use of contraceptives and substance use, to what they perceive their peers are modeling; this peer pressure aggravated when students have enough amount of money.

Students who ever have history of substance use were also found to be about five times more likely to experience abortion than their counterparts [AOR=4.75, 95% CI: (1.12-20.16)]. This result is consistence with institution based studies done in Gamo Gofa Zone, South West Ethiopia, Bahirdar University, Northern Ethiopia, Wolaita Sodo University, Port Harcourt University, Nigeria, Colombia and California, USA, (15, 23, 24).

Most of these university students are studying away from home interfacing with population of rapidly growing urban centers. As the result they exposed to drinking alcohol, chewing chat and using other substances. This may expose them for being involved in risky sexual behavior like unprotected casual sexual intercourse, unplanned pregnancy which ends up with induced abortion.

Even if adolescents and youth are now allowed free access to family planning information, education and services, among the total 52 unplanned pregnancies, 28 (50%) of them occur as a result of not using contraceptive either due to lack of access or absence of willingness.

The most stated reasons for the termination of pregnancy were: “not to cease education”; the next most common reason given were that bad timing of pregnancy, too young to have child, high cost for child care and the pregnancy socially unacceptable (fear of social stigma). These findings are similar with studies done in Ghana and Nigeria (10, 25).

Generally, female University students are more prone to encounter induced abortion and this will be aggravated when students live out of campus and have enough pocket money to afforded and engaged in substance use.

Limitation of the study

Since this study is done based on response of participants, the sensitive nature of the issue can lead them to social desirability bias; as a result it may underestimate prevalence of induced abortion.

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Table 1: Socio demographic and Economic characteristics of Wachamo University Female students, Southern Ethiopia, January, 2015 (N=461)

Characteristics	Frequency	Percent
Age		
17-19	177	38.40
20-24	269	58.40
>25	15	3.20
Religion		
Orthodox	196	42.50
Protestant	186	40.30
Muslim	60	13.00
Catholic	14	3.00
Others	5	1.20
Original residence		
Rural	240	52.10
Urban	221	47.90
Academic year		
Year I	149	32.30
Year II	195	42.30
Year III	106	23.00
Year IV	11	2.40
Faculty		
Social and Humanity	28	6.10
Business and Economics	111	24.10
Medicine and Health science	51	11.10
Engineering and Technology	167	36.20
Agricultural science	57	12.30
Natural and computational	47	10.20
Current residence		
In campus	434	94.10
Out campus	27	5.90
Pocket money		
No	202	43.80
Yes	259	56.20

Table 2: Socio demographic characteristics of family /parents of Wachamo University female students, Southern Ethiopia, January, 2015

Characteristics	Frequency	Percent
Mothers' education level (n=457)		
Can't write and reading	103	22.50
Only write and read	165	36.10
Primary school (1-8th)	87	19.00
Secondary school (9-12th)	71	15.50
Higher education	31	6.80
Fathers' education level (n=454)		
Can't write and read	79	17.40
Can write and read	133	29.30
Primary school (1-8th)	76	16.70
Secondary school (9-12th)	69	15.20
Higher education	97	21.40
Perceived Family income(n=442)		
Low	162	36.70
Medium	184	41.60
High	96	21.70

Table 3: Factors associated with induced abortion of respondents in Wachamo University, Southern, Ethiopia, and January, 2015. (N=53).

Variables	Induced abortion		COR (95% CI)	AOR (95% CI)
	Yes	No		
Age category				
15-19	9	4	11.25(0.97-130.2)	----
20-24	17	17	5.0(0.53-47.43)	
>25	1	5	1	
Year				
One	10	7	1	----
Two and above	17	19	0.63(0.19-2.01)	
Sexual Education				
No	20	14	2.45(0.77-7.78)	----
Yes	7	12	1	
Marital status				
Never married	18	17	1.06(0.34-3.30)	----
Ever married	9	9	1	
Enough pocket money				
No	17	7	4.61(1.44-14.82)	6.91(1.62-29.50) *
Yes	10	19	1	1
Current Residence				
Out of campus	13	5	3.90(1.14-13.39)	6.78(1.44-31.97) *
In campus	14	21	1	1
Ever Heard FP methods				
Yes	9	9	0.94(0.30-2.94)	----
No	18	17	1	
Ever used FP methods				
Yes	20	18	1.27(0.38-4.21)	----
No	7	8	1	
Age first pregnancy				
<18	14	9	2.03(0.67-6.15)	----
≥18	13	17	1	
Substance use				
Yes	19	11	3.24(1.04-10.07)	4.75(1.12-20.16) *
No	8	15	1	1
Watch pornographic film				
Yes	17	9	3.21(1.04-9.88)	3.46(1.88-13.63) *
No	10	17	1	1

Note: * = Statistically significant at P<0.05

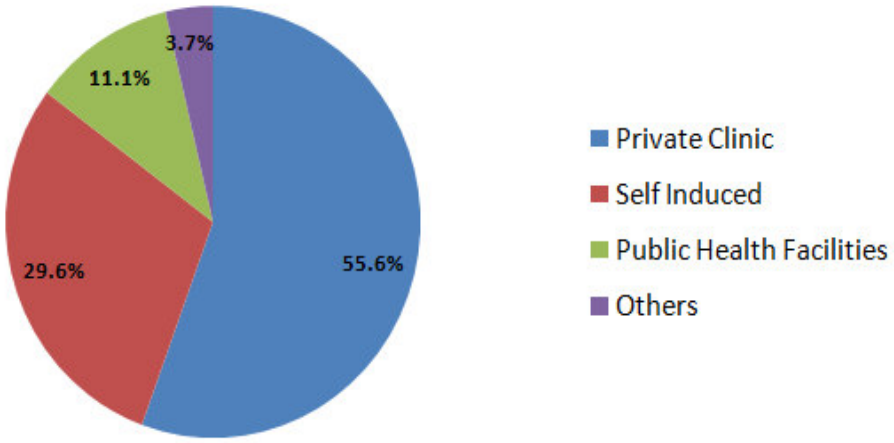

Figure 1: Ways of conducting abortion by Wachamo University regular female students, Southern, Ethiopia, January, 2015 (n=27)