



Unwanted Pregnancy and Associated Factors among Female College Students in Debre Tabor, Northwest Ethiopia

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Abstract

Background: Globally unwanted pregnancy is among the major social and public health problem. Of an estimated 210 million pregnancies that occur in the world each year, 38% are unwanted, out of which 22% end up with abortion. Therefore, the aim of this study was to assess the prevalence of unwanted pregnancy and associated factors among college female students in Debre Tabor, northwest Ethiopia.

Methods: An institutional based cross-sectional study was conducted from June to October 2017. A multi-stage stratified sampling technique was applied to select a total of 862 study participants from five governmental and private colleges. Bivariable and multivariable logistic regression models were also carried out to identify the association between dependent and independent variables. The odds ratio with the 95% confidence interval was computed to determine the level of significance.

Results: A total of 821 college students participated in the questions on unwanted pregnancy yielding a response rate of 95.2%. Of the respondents who ever had a history of pregnancy, 75.3% of them encountered unwanted pregnancy. Field of study [AOR: 4.1; 95% CI: 1.06, 16.08], ever heard about emergency contraceptive [AOR: 12.3; 95% CI: 2.23, 68.03] and performing discussion on reproductive health issues [AOR: 3.6; 95% CI: 1.08, 12.06] were found to be significant contributing factors for unwanted pregnancy.

Conclusions: The finding of this study indicates that; unwanted pregnancy among college students in Debre Tabor is high. Student's field of study ever heard about emergency contraceptives and conducting a discussion on reproductive health issues were independently associated with unwanted pregnancy. Therefore, providing modern contraceptives methods targeting female students who are at increased risk of unwanted pregnancy is important to prevent unwanted pregnancy and its complications.

Keyword: Unwanted pregnancy; College student; Debre Tabor; Ethiopia

Abbreviations: EC: Emergency Contraceptives; RH: Reproductive Health

Introduction

Unwanted pregnancy is a key public health indicator that affects the social, economic and cultural aspects of the modern life [1]. Globally nearly 800 women die from preventable causes related to pregnancy and childbirth from which 99% of all maternal deaths occur in low-income countries where more than half of these deaths occur in sub-Saharan Africa and almost one-third in South Asia even though maternal mortality worldwide declined to 50% between the year 1990 to 2010 [2].

Most maternal deaths are directly resulting from direct obstetric complications which accounts almost 73% [3]. Every year, more than 120 million couples have an unmet need for contraception, and 80 million women have unwanted pregnancies from which 45 million of them ends up with abortion; which is mainly associated with unsafe sex the second most important risk factor for disability and death in the world's poorest communities [4].

Even though, many users report number of side effects associated with utilizing emergency contraceptives (like irregular bleeding, headache, nausea, weight and mood changes) [5] however, if used correctly emergency contraceptive pills even can decrease the risk of unwanted pregnancy by 75% which in turn helps to reduce unplanned pregnancy and unsafe abortion [6].

In most cases, unwanted pregnancies are followed by abortion, which can have a serious health, social and economic consequences. A finding done elsewhere pointed out that, from the total maternal mortality worldwide, abortion is the major cause of maternal death

which accounts for 49% in which half of the deaths occur in Africa where one in four teenagers unsafe abortions is common practice [7].

Unwanted pregnancies are those that occurred when the woman did not want to have any more pregnancies at all [8]. Despite there are a number of technological advancements related with modern contraception methods, unwanted pregnancy is still a critical health problem issue. Different findings indicated that age, low awareness about emergency contraceptives, having no partner and alcohol abuse are the most contributing factors for unwanted pregnancy [9-12].

Though, unwanted pregnancy can be highly minimized by proper utilization of emergency contraception, findings in middle and low income countries revealed that the proportion of emergency contraceptive utilization is still low (29% in China, 21.2% in South Africa, 13.3% in Nigeria, 39.9% in Ghana and 2.7% in Ethiopia [13-17]) which needs considerable effort. Particularly college students have higher likelihood of inconsistent or nonuse of effective family planning methods and are at greater risk for mistimed pregnancy.

However, there are few studies which document the extent of unwanted pregnancy and the influencing factors among college

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students in Ethiopia. This study was carried out to assess unwanted pregnancy and its contributing factors among college female students at Debre Tabor Town. I hope the finding of this study will play its own contribution to the reduction of maternal mortality, morbidity and related issues.

Material and Methods

Study design

An institutional based cross sectional study design was employed to assess the prevalence of unwanted pregnancy and predictors among 862 female college students in Debre Tabor in 2017/18 academic year.

Description of the study area

The town also has four kebeles (the smallest local administrative units), three public health centers, one general hospital, three medium private clinics, one primary clinic, three drug stores and two private pharmacies with an area of. The total estimated population of the town is 81,644 from which 40,985 of them were women and 19,252 of them were within the reproductive age at the time of the study. In addition, the estimated annual delivery number was 2,751 births [18].

Study Participants and sampling methods

Participants enrolled both in regular and extension programs at the time of the study period were selected out from five colleges (namely: Debre Tabor Health Science college, Guna Tabor business and health science college, Begemdir Teachers training college, Poly technic College and Feke Egzi College). A two-stage stratified sampling technique was employed: in the first case departments were selected using lottery method and then, the sample size was allocated to each department proportional to the number of female students in each department. Secondly, participant students were selected from each department proportional to their year of study using simple random sampling technique.

The sample size was determined using a single population proportion formula with the assumption of 95% confidence interval, margin of error 5%, design effect 2 and 10% nonresponse rate. For the calculation, the proportion of unwanted pregnancy of female college students was considered to be 51.4% [15]. Accordingly, a final sample size of 862 participants were obtained.

Data collection procedures

Data were collected by using a pre-tested structured Amharic version questionnaire. Two data facilitators and one supervisor were engaged for the entire data collection. Two days training was given on the objectives, respondent's right, relevance of the study, confidentiality of the information before the actual data collection. Informed consent was also held. The questionnaire includes socio-demographic, sexual and reproductive history variables.

Data analysis

Data were entered, edited and cleaned using Epi-info version 7 and exported to SPSS version 20 for further statistical analysis. Descriptive analysis such as percentages, frequency distribution and measure of central tendency were carried out to summarize the demographic, sexual and reproductive history of respondents. Bivariable logistic regression model was also used to identify whether there was an association between the independent and dependent variable to select candidate predictors. Accordingly, variables found to have an association with the dependent variable less than 0.2 p-value were

entered in to multivariable binary logistic regression using backward LR method for controlling the possible effects of confounders. Finally the variables which had significant association were identified on the bases of odds ratio (OR), with 95% CI. Goodness of fit test was also checked.

Measurements

Dependent variable

The primary outcome variable was unwanted pregnancy, based on the question 'have you ever been encountered unwanted pregnancy?' (No=0 and Yes=1).

Independent variables

Explanatory variables included socio-demographic variables such as age at present in years (≤ 19 , 20-24, ≥ 25), religion (Orthodox Christian, Muslim, Catholic, Protestant), year of study (1st year, 2nd year, 3rd year and above), marital status (never married, married, divorced, widowed), field of study (health sciences, non health sciences), study program (regular, extension), with whom currently you are living with (alone, boy friend, husband, parernts), educational status (unable to read and write, primary education, secondary education, above secondary education), do you get pocket money (no, yes), source of pocket money (parents, sisters/brothers, friends, boy friends, husband), do you have extra job (yes, no), if yes type of job (daily laborer, housmaid, house wife), amount per month in Eth birr.

Sexual and reproductive history of respondents questions included have heard about emergency contraceptives (EC) (no, yes), source of information for EC (friend, health institutions, mass media, boy friend, parents, college), discussion on reproductive health (RH) issues (health personel, brother/siste, parents, employer, friends, boy friend, husband, teachers in school), sexual experience (yes, no), age at first sex (≤ 19 , 20-24, ≥ 25), have you ever been pregnant (yes, yes), age at first pregnancy (≤ 19 , 20-24, ≥ 25), reasons for unwanted pregnancy (foret to take contraceptives, rape, contraceptive failure, rapture of condom, lack of awareness on EC, pressure by partner, unavailability of contraceptives, reliogion/moral reasons, infrequent sexual act), did you encounter induced abortion (no, yes), place of induced abortion (untrained abortionest house, private clinics, governmental health institutions, self inflection), reasons for abortion (fear of discontinuing school, fear of parents, economic problem since unwanted, social stigma).

Data quality control

The quality of data was assured by giving pre-test, training for data collectors and supervisor on the objective of the study and making frequent supervision. The completeness of the questionnaire was checked every other day by the supervisors and principal investigator.

Ethical considerations

Ethical clearance was obtained from Amhara Public Health Institution. Oral informed consent obtained from participants. The benefits and risks of the study were informed and individual participant records were coded on each respective questionnaire and accessed only by the investigator to keep confidentiality.

Results

Socio demographic characteristics of students

In this study, a total of 821 college students were participated giving

a response rate 95.2%. The age of the study participants ranged from 15 to 35 with mean \pm SD of 19.9 ± 2.3 years and 390 (47.5%) of them were under twenty years of old. In the religion category, Orthodox Christianity students accounted for the largest share 796 (97%). Two

hundred ninety nine (36.4%) of the respondents were living alone followed by 269 (32.8%) living with their parents.

With regard to marital status, 692 (84.3%) of them were nevermarried women and majority (82.6%) of students were attending their education in regular program in the field of health sciences 519 (63.2%). Five hundred sixty two (68.5%) of the respondents were 1st year students and more than half 473 (57.6%) of the total respondents had pocket money mainly from their parents 336 (71.0%). Of the total respondent's only 82 (10.0%) of the them had extra job. The type of the job in which they engaged were daliy laborer 28 (34.1%) and house maid 54 (65.9%) with a monthly salary leads than or equal to 1000 Eth. Bir 66 (80.5%) shown in Table 1.

Variables	frequency	%
Age at present in years (n=821)		
≤ 19	390	47.5
20-24	386	47
≥25	45	5.5
Mean \pmSD 19.9\pm2.3		
Marital status (n=821)		
Never married	692	84.3
Married	98	11.9
Divorced	31	3.8
Currently with who you are living (n=821)		
Alone	299	36.4
With my friend	181	22
With my boy friend	22	2.7
With my Husband	50	6.1
With my parents	269	32.8
Education status with who you are living with (n=522)		
Unable to read and write	24	4.6
Primary education	93	17.8
Secondary education	97	18.6
Secondary and above	308	59
Religion (n=821)		
Orthodox	796	97
Muslim	20	2.4
Chatolic	4	0.5
Protestant	1	0.1
Year of Study (n=821)		
1 st year	562	68.5
2 nd year	149	18.1
3 rd year and above	110	13.4
Field of study (n=821)		
Health Sciences	302	36.8
Non health Sciences	519	63.2
Study program (n=821)		
Regular	678	82.6
Extension	143	17.4
Do you get pocket money? (n=821)		
No	348	42.4
Yes	473	57.6
Do you have extra job? (n=821)		
No	739	90
Yes	82	10
From where you get pocket money (n=473)		
Parents	336	71
Sister/brother	68	14.4
Boy friend	13	2.7
Husband	42	8.9
Type of the Job (n=82)		
Daily laborer	28	34.1
Housemaid	54	65.9
Amount of income per month in Birr (n=82)		
≤ 1000	66	80.5
>1000	16	19.5

Table 1: Socio-demographic characteristics of college students in Debre Tabor Town, northwest Ethiopia, October, 2017.

Sexual and reproductive health characteristics

Two hundred sixty three (32%) of the total respondents ever had sexual history. Age at first sex ranged from as early as 15 years to 26 years with mean \pm SD 18.8 ± 2.3 years. From the total respondents 45 (55.5%) of them ever heard about emergency contraceptives mainly from health institutions 23 (52.4%) shown in Table 2.

Among from the total respondents, 44 (54.1%) of them held discussion on reproductive health issues from healthcare professionals 26(32.3%). From respondents who had ever sexual history, 8 (33.8%) of them were pregnant and more than half of the pregnancies 5(56.2%) were below the age of 20. Among those who were pregnant, 6 (75.3%) of these them were unwanted and majority 55 (82.1%) end with induced abortion mainly from governmental health institutions 3(60.0%) shown in Table 3.

The major reasons why respondents encountered unwanted pregnancy were forget to take contraceptives (44.8%) followed by infrequent sexual act (13.4%) shown in Figure 1. Fear of discontinuing from school (50.9%) followed by fear of parents (36.4%) were again reported as major reasons for students to terminate their pregnancies shown in Figure 2.

Factors associated with unwanted pregnancy

The prevalence of unwanted pregnancy among from those who had a history of pregnancy was 75.3% as shown in Figure 3. The multivariable logistics regression analysis showed that field of study, ever heard about

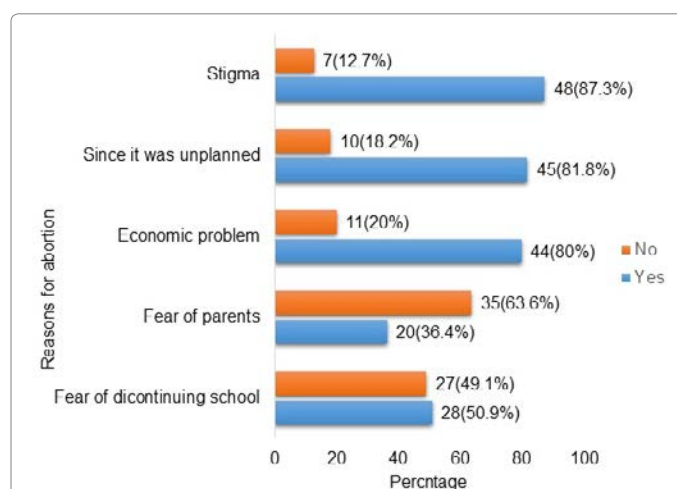


Figure 1: Reasons for abortion among college students in Debre Tabor Town, northwest Ethiopia, October, 2017 (n=55)

Variables	Frequency	Percent
Have you ever heard about EC?		
No	365	44.5
Yes	456	55.5
Source of information for EC (n=456)		
From friend	64	14
From Health Institutions	239	52.4
From mass media	107	23.5
From Boy friend	15	3.3
From parents	22	4.8
From teachers	9	2
Have you discussed on RH issues?		
No	377	45.9
Yes	444	54.1
With who you discussed RH issues? (n=444)		
Health care professionals	265	59.7
Brother/Sister	43	9.7
Parents	19	4.3
Employer	6	1.4
Friend	15	3.4
Boy friend	18	4
Husband	48	10.8
Others	30	6.7
Ever had sexual intercourse (n=821)		
No	558	68
Yes	263	32
Age at first sex (n=263)		
≤ 19	175	66.5
20-24	80	30.4
≥ 25	8	3.1
Mean (±SD) 18.8 (SD±2.2)		
Have you ever been pregenant (n=263)		
No	174	66.2
Yes	89	33.8
Age at first pregnancy (n=89)		
≤ 19	50	56.2
20-24	35	39.3
≥ 25	4	4.5
Mean (±SD) 19.7 (SD ± 2.6)		
Did you encountered induced abortion (n=67)		
No	12	17.9
Yes	55	82.1
Place of induced abortion (n=55)		
Untrained abortionest home	5	9.1
Private clinic	11	20
Government health institutions	33	60
Self inflection	6	10.9

Table 2: Sexual and reproductive history of college students Debre Tabor Town northwest Ethiopia, October, 2017.

emergency contraceptive and conducting discussions on reproductive health issues were significantly associated with unwanted pregnancy.

Field of study was significantly associated with unwanted pregnancy. Non-health science students (AOR=4.1, 95% CI: 1.06, 16.08) were four times more likely to encounter unwanted pregnancy when compared to health science students category. Another higher statistical association was also held between students who heard and didn't heard about emergency contraceptives. Participants who haven't heard about emergency contraceptive (AOR=12.3, 95% CI: 2.23, 68.03) were twelve times more likely to encounter unwanted pregnancy as compared to those who heard about EC. In addition, students who didn't conduct

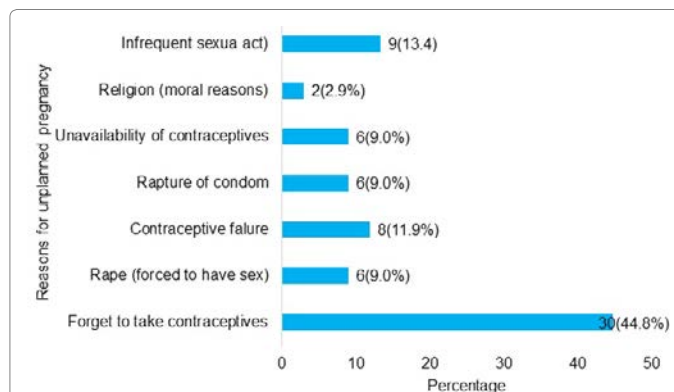


Figure 2: Reasons for unwanted pregnancy among college students in Debre Tabor Town, northwest Ethiopia, October, 2017 (n=67)

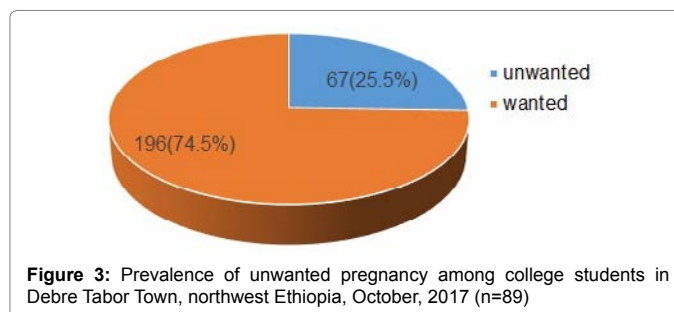


Figure 3: Prevalence of unwanted pregnancy among college students in Debre Tabor Town, northwest Ethiopia, October, 2017 (n=89)

Variables	Unwanted pregnancy		Crude OR (95% CI)	Adjusted OR (95% CI)
	No (%)	Yes (%)		
Field of study				
Health sciences	17 (77.3)	35 (52.2)	1	1
Non health sciences	5 (22.7)	22 (47.8)	3,12 (1.03, 9.39)	4.1 (1.06, 16.08)*
Have you discussed about RH issues?				
No	14 (63.6)	57 (85.1)	3.3 (1.09, 9.77)	3.6 (1.08, 12.06)*
Yes	8 (36.4)	10 (14.9)	1	1
Age in years at present				
≤ 19	3 (13.6)	25 (37.3)	5.1 (1.16, 22.7)	
20-24	11 (50)	29 (43.3)	01.6 (0.53, 4.98)	
≥25	8 (36.4)	13 (19.4)	1	
Study program				
Extension	11 (50)	17 (25.4)	1	
Regular	1150	50 (22.7)	2.9 (1.08, 8.00)	
Have you ever heard about EC?				
No	17 (25.4)	191 (97.4)	4.6 (1.12, 19.16)	12.3 (2.23, 68.03)*
Yes	5 (22.7)	5 (2.6)	1	1

Table 3: Bivariable and multivariable analysis on unwanted pregnancy among college students in Debre Tabor Town, northwest Ethiopia, October, 2017 (n=89).

discussion on reproductive health issues (AOR=3.6, 95% CI: 1.08, 12.06) were four times more likely to encounter unwanted pregnancy as compared to those who discussed as shown in Table 3.

Discussion

Due to different reasons, adolescents are susceptible to unwanted

early sexual acts which lead them to unwanted pregnancies and consequently they intend to take unsafe abortion and became candidates to be suffered from its complications [19].

The finding of this study pointed out that, unwanted pregnancy among from students who had a history of pregnancy was 75.3% (95% CI: 66.3%, 84.3%) which is comparable with similar studies conducted in South Africa 74.6% [20] and China 83.9% [21] and lower than a study conducted at Adama University 92% [22], Mizan-Tepi University 85.2% [23]. However, it is higher than studies done in Ethiopia 43.3% [24], Nigeria 20% [25], Tanzania 27% [26] and Brazil 29.9% [9]. The difference might be due to time laps and sample size differences, economic problems, inaccessibility and low degree of awareness on emergency contraceptives.

The report of this study also presented that student's field of study was significantly associated with unwanted pregnancy. Non-health science students (AOR=4.1, 95% CI: 1.06, 16.08) were four times more likely to encounter unwanted pregnancy when compared to health science students. This finding is consistent with a study done in Wollita Sodo University [11]. Even though both groups might have the same information exposure regarding emergency contraceptives, students from health science students' category might acquire better understanding on it from health related courses. As a result they might utilize emergency contraceptives and prevent unwanted pregnancy.

Higher statistical significant association was also obtained between emergency contraceptives and unwanted pregnancy. Students who didn't heard about emergency contraceptive (AOR=12.3, 95% CI: 2.23, 68.03) were twelve times more likely to encounter unwanted pregnancy when compared to those who heard. This finding is similar with studies done at Medewolabu University (Ethiopia) [10]. The probable reason for this might be due to the fact that, those who heard about the emergency contraceptive might use ECs properly when they encountered unexpected sexual intercourse.

In addition, students who didn't take discussions on reproductive health issues (AOR=3.6, 95% CI: 1.08, 12.06) were four times more likely to encounter unwanted pregnancy when compared to those who did. The likely reasons for this might be due to, students who didn't discuss about reproductive health issues might not have sufficient information on emergency contraceptive methods both in terms of time of use and place where to obtain them whereas those who took discussion on reproductive health issues might be properly introduced about how and when to use contraceptive methods during the occurrence of unprotected sex. This finding is also strengthen by a study conducted in Nepal that among female college students showed that students who received reproductive health education in school/college were almost nine times more likely to be aware of emergency contraceptive compared to those who didn't receive such education [27].

In this study, causal association between the barriers and unwanted pregnancy can't be established due to the cross-sectional nature of the study. Additionally, the author can't eliminate information bias on the sexual behaviors of the participants as self-reporting data collection technique was utilized. Due to this, the rate of unprotected sexual intercourse, unwanted pregnancies and abortions may have been even under-reported among the study participants.

Conclusion

The finding of this study pointed out that the proportion of unwanted pregnancy among female college students was high; field of study, those who heard about emergency contraceptives and held discussion

on reproductive health issues were found to be major determinants for unwanted pregnancy. Therefore, the increased level of unwanted pregnancies tells us the state of female college student's reproductive health services. Hence, connect students to health services, including access to effective birth control, on or off campus is very fundamental.

Declaration

Ethics and consent to participate

Ethical clearance was obtained from Amhara Public Health Institute and oral informed consent was held for each study participants about the benefits and risks of the study.

Consent for publication

Not applicable

Computing Interests

The author declare that no competing interests.

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Author's contributions

AM designed the study, participated in the data quality control, analyzed the data, drafted the manuscript and approved the manuscript as well.

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