

Pregnancy History and Associated Factors Among Hawassa University Regular Undergraduate Female Students, Southern Ethiopia

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Abstract: *Introduction:* Global incidence of pregnancies among University students is increasing; and challenging in Universities of Ethiopia. There are a few studies on pregnancy experiences among university students in Ethiopia. The finding will be used by policy makers, additive of the existing knowledge and as a reference for future researchers. *Objective:* To assess magnitude of pregnancy experiences and associated factors among Hawassa University regular female students from May 1-15, 2019. *Methods:* Institution based cross-sectional study was conducted from May 1-15, 2019 and 741 participants were selected using multistage sampling method from Hawassa University regular undergraduate female students. EPidata for entry and SPSS for analysis were used. Variables with $p < 0.25$ on bivariate were used for multivariable analysis and $p < 0.05$ were considered significant. *Result:* Magnitude of pregnancies experience among Hawassa University regular undergraduate female students was 98 (13.2%) (95% CI: 10.8, 15.7). Collage of Agriculture 3.76 (AOR= 3.76, 95% CI: 1.66, 8.50), Social Science and Humanity 2.63 (AOR= 2.63, 95% CI: 1.02, 6.81), and Natural and Computational science 3.41 (AOR= 3.41, 95% CI: 1.54, 7.54) times more likely to have pregnancy compared to college of Medicine and Health sciences. Married respondents were 2.39 (AOR=2.39, 95%CI: 1.54, 7.54) times more likely to have pregnancy compared to respondents who were not married. Respondents source of income was parent were 47% (AOR=0.53, 95%CI: 0.29, 0.96) less likely to have pregnancy compared to respondents whose source of income were partner. Respondents who have history of using contraceptive were 75% (AOR=0.25, 95%CI: 0.14, 0.44) less likely to have pregnancy. *Conclusion:* Magnitude of pregnancy experience was high among regular undergraduate female students of Hawassa University compared to other studies. Being non health colleges, married status, partner as a source of income and not having contraceptive usage history were statistically significant factors to have pregnancy. Non health colleges' needs to be evaluated about their SRH information flow by the university.

Keywords: Student, Pregnancy, University, Hawassa, 2020

1. Introduction

Global incidence of pregnancies among University students is increasing [1]. It is shown that out of 210 Million pregnancies occurring globally, nearly 80 million of them were unintended each year [2]. Recently, unintended

pregnancy in Africa was reported to be 57 per 1000 female university students [3, 4]. In Sub-Saharan Africa 14 million unintended pregnancies occur every year, with almost half occurring among women aged 15-24 years [3]. In which 17% pregnancies were mistimed, and 8% were unwanted [5]. Around 101 unwanted pregnancies occurred per 1,000 women aged 15-44, and 42% of all pregnancies were

unintended [6].

The major reason for it is gap on accessing and practicing contraceptive [7, 8]. In Africa there is a high incidence of risky sexual behaviors among university Students [9]. Reproductive health-related knowledge gaps among sexually active University female student is an important cause of unintended pregnancy [10-13]. The outcome of unintended pregnancies is unsafe abortions (3); it is a global social and health burdens [2, 3, 14]. Death due to risks related with procedure of unsafe abortion is common [2]. Many of these abortions take place in legally restrictive settings [13, 15-17]. In Ethiopian students having unintended pregnancy is about 32.4% [18]; more likely ends with abortion complications [19].

In Ethiopia education regarding family planning service and supply points helped to decrease the level of unintended pregnancy [12, 20]; and the country also has an old population policy developed in 1993, which adopted the principle that every pregnancy should be wanted [2]. Unintended pregnancy prevention practice is very low because young unmarried women have little access to information or advice about contraception [21]; access to contraceptive methods including emergency contraceptives can prevent unintended pregnancy [22].

Despite health education efforts, University female students are still faced with major preventable health problems [23]. The researches available from the student population in Ethiopia suggest that an unintended pregnancy is prevalent in Ethiopian universities [24, 25]. Unintended pregnancy is very critical challenge especially for students, but it is under reported due to the fact that the legal, social and cultural norms are not open to discussing the sensitive issue of unintended pregnancies followed by abortion [18]. Even though there is widespread availability of highly effective methods of contraception unintended pregnancy and induced abortion are still frequent and worrisome in Universities of Ethiopia [26].

Magnitude of pregnancy experience among University students as well as the factors associated with it at the community level is very crucial. There for this study would provide reference for the development of reproductive health policies, services to better address the sexual health needs, burden of unintended pregnancies and related complications among female students. It would be additives of the existing knowledge and can be used by public health providers as a reference. Since there were few studies on experience of pregnancies among Universities in Ethiopia the finding will also be used as a baseline for future researchers.

2. Methods and Materials

The study was conducted in Hawassa University (HU) located in Hawassa City. Hawassa is the capital city of southern nation's nationality peoples region (SNNPR) located at 275km south to Addis Ababa, the capital city of Ethiopia. Currently, Hawassa University has seven functional campuses within this campuses, HU operates 8 Colleges and 1 Institute (Institute of Technology (IOT). Currently HU runs

81 Undergraduate degree programmes, 108 Masters and 16 PhD programmes in its, and 41 Schools and Departments. The student population as of March 2018 is 48,558 of which 28.86% are female [27].

Institutional based crosssectional study was conducted from May 1-15, 2019. All undergraduate regular female students of Hawassa University were the source population of this study. All undergraduate regular female students of Hawassa University who fulfilled the eligibility criteria were the study population.

The required sample size 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 Medawalabu University, Ethiopia on unwanted pregnancy (18). Which makes a sample size of 673; Adding 15% contingency to account for non-response rate yielded a final sample size of 774.

Stratified multistage sampling technique was used, and the procedure was as follows. Colleges were divided in to two practical strata as health and non-health colleges. Simple random sampling method was applied to select three non-health colleges, and sample size was allocated to the stratified colleges proportional to their size. Next three 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 proportional to their size, finally 774 students were selected by Simple Random Sampling (SRS) technique using identified females ID accessed from each collage registrar.

Pregnancy experience during life in university was dependent variable, and Socio demographic (Age, Marital status, Income, place of permanent residence, class year, partner occupation, partner education), Contraceptive related (heard about contraceptive, source information, type of contraceptive known, contraceptive experience, purpose of used contraceptive, type of contraceptive used), Pregnancy related histories (history of unwanted pregnancy, history of spontaneous abortion, history of induced abortion, place of termination, terminated by, materials used to terminate, reason of termination), Personal behaviors and experiences (history of intercourse, discuss about sexual and reproductive health issues, peer influence, drink alcohol, history of violence, take SRH course) were independent variables.

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 all respondents purpose of the study, confidentiality and the need for providing honest answers was clarified orally. They have signed written informed consent if they

were above 18 other wise the consent was signed by their parents or legal gurdians. 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 language and translated to Amharic language, and translated back to English for consistency. 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 and biologically plausible 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.

3. Result

3.1. Socio-demographic Characteristics of Respondents

A total of 741 female students participated in this study out of 774 selected samples. Twelve filled questionnaires were discarded due to incompleteness resulting in a response rate of 95.74%. 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%. Among the 741 respondents, more than one-third 290 (39.1%) were from collage of natural and computational science (table 1).

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 of pregnancy experience among Hawassa University regular female students, Hawassa, June 2019- (N=741).

| | Number | Percent |
|-----------------------------------|--------|---------|
| Age | | |
| 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 | 55.19 |
| No | 285 | 44.81 |
| Place of permanent residence | | |
| Urban | 533 | 71.9 |
| Rural | 208 | 28.1 |
| Source of money | | |
| From parents | 613 | 82.7 |
| From partner | 113 | 15.2 |
| Other** | 15 | 2.02 |

Other*: for occupation was working in family business

Other**: for source of money includes sisters, brothers and uncles.

3.2. Personal Behavior and Experiences of Respondents

About one third of the total respondents 249 (33.6%) experience sexual intercourse, and mean age at first intercourse was 18.26 ± 3.56 . Their reason of initiating sexual intercourse was by their own desire for more than two third 174 (70%) of the respondents and who are pushed were by their partner 31 (12.45) from those who already start intercourse.

From the total 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. From the respondents 523 (70.6) of the respondents have taken the course sexual and reproductive health.

Almost all 710 (95.8%) of the respondents were heard about prevention mechanisms of unintended pregnancy. Their source of information for more than half 412 (55.6%) of the respondents was school. Condom was the most 524 (70.7) known contraceptive method by the respondents.

More than two third of the respondents 544 (73.4%) have never use contraceptive. For the rest of the respondent their reason 122 (15.1%) to use contraceptive was because they are students (figure 1).

From the total of 741 respondents magnitude of unintended pregnancy was 98 (13.2%) (95% CI: 10.8, 15.7) and magnitude of unintended pregnancy among those who experience intercourse was 239 (39.36%) (figure 2). This means that all students who have pregnancy history were unintended.

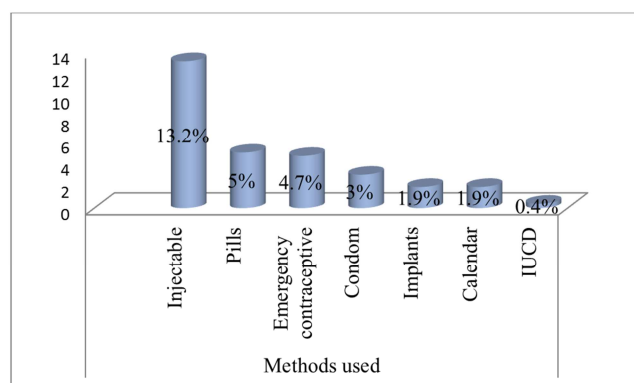


Figure 1. Contraceptive methods used by the respondents of pregnancy experience among Hawassa University regular female students, Hawassa, June 2019-(N=197).

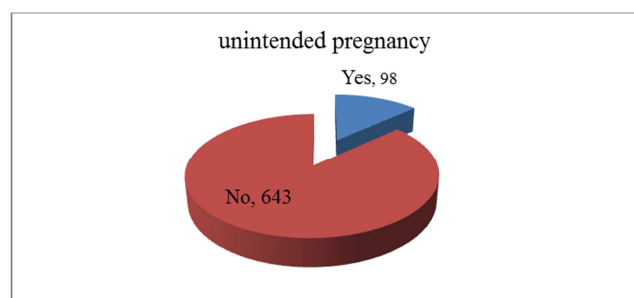


Figure 2. Magnitude of unintended pregnancy of pregnancy experience among Hawassa University regular female students, Hawassa, June 2019-(N=741).

For majority of the respondents reason for unintendedness of the pregnancy was because they were students 76 (77.55%); 14 (14.29) because they don't have enough money, 4 (4.08) raped and 4 (4.08) not married.

3.3. Factors Associated with Unintended Pregnancy

On bivariate analysis collages, year of study, marital status, source of income, decision how to use money and ever use contraceptive were significantly associated with unintended pregnancy. However only, collages, marital status, source of income and ever use contraceptive were remaining statistically significant in multivariate analysis (table 2).

Collage of Agriculture 3.76 times (AOR= 3.76, 95% CI: 1.66, 8.50), Social Science and Humanity 2.63 times (AOR= 2.63, 95% CI: 1.02, 6.81), and Natural and Computational science 3.41 times (AOR= 3.76, 95% CI: 1.66, 8.50) were more likely to have unintended pregnancy compared to college of Medicine and Health sciences. Married respondents were 2.39 (AOR=2.39, 95%CI: 1.54, 7.54) times more likely to have unintended pregnancy compared to respondents who were not married. From the respondents 47% of them whose source of income was parent were (AOR=0.53, 95%CI: 0.29, 0.96) less likely to have unintended pregnancy compared to respondents whose source of income were partner. Respondents who used contraceptive were 75% (AOR=0.25, 95%CI: 0.14, 0.44) less likely to have unintended pregnancy compared to who never used (table 2).

Table 2. Associated factors of pregnancy experience among Hawassa University regular female students, Hawassa, June 2019-(N=741).

| Variables | Category | Ever pregnant | | COR (95%CI) | AOR (95%CI) |
|------------------------------|-----------------------------------|---------------|------------|------------------|---------------------|
| | | Yes N (%) | No N (%) | | |
| Colleges | Agriculture | 32 (32.7) | 139 (21.6) | 3.17 (1.45,6.91) | 3.76 (1.66,8.50)** |
| | Social Science and Humanity | 7 (7.1) | 62 (9.6) | 1.34 (0.55,3.24) | 2.63 (1.02,6.81)* |
| | Natural and Computational Science | 44 (44.9) | 246 (38.3) | 2.46 (1.16,5.21) | 3.41 (1.54,7.54)** |
| | Medicine and Health Science | 9 (9.2) | 124 (19.3) | 1 | 1 |
| Year | Year one | 35 (35.7) | 199 (30.9) | 1.24 (0.79,1.94) | 1.25 (0.76,2.04) |
| | Year two and above | 63 (64.3) | 444 (69.1) | 1 | 1 |
| Marital status | Not married | 83 (84.7) | 553 (86.0) | 1 | 1 |
| | Married | 15 (15.3) | 90 (14.0) | 1.11 (0.61,2.01) | 2.39 (1.16,4.92)* |
| Source of income | From partner | 27 (27.6) | 86 (13.4) | 1 | 1 |
| | From parents | 71 (72.4) | 554 (86.6) | 0.41 (0.23,0.67) | 0.53 (0.29,0.96)* |
| How to use income decided by | Me | 68 (69.4) | 480 (74.7) | 0.77 (0.82,2.06) | 1.33 (0.77,2.28) |
| | Parent/partner/husband | 30 (30.6) | 163 (25.3) | 1 | 1 |
| Ever use contraceptive | Yes | 47 (49.5) | 145 (22.6) | 0.03 (0.01,0.46) | 0.25 (0.14,0.44)*** |
| | No | 496 (77.4) | 48 (50.5) | 1 | 1 |

Where *=P<0.05, **=P<0.001, ***=P<0.0001

4. Discussion

This study revealed that the magnitude of pregnancy experience among the total respondent was 98 (13.2%). From this experience of pregnancy none of them were intended. However a study in Medawallabu University shows the overall magnitude of unwanted pregnancy among those who ever had sexual experience been 8.1% while 1.4% from total respondents (18). This difference might be due to type of the study area; since Hawassa University locates in the city and

potential tourism site with number of night clubs around unlike Medawallabu University.

Moreover, magnitude of unintended pregnancy among pregnant women in Arsi Negele was 32.4%, (12) and among mothers following antenatal care in Bale Zone was 37.2 (17). This might be due to women's following antenatal care were all pregnant mothers.

In this study Collage of Agriculture, Social Science and Humanity, and Natural and Computational science were more likely to have pregnancy compared to college of Medicine

and Health science students. This study is supported by studies which states that subjects who have health background have better trend in prevention of unintended pregnancy (28-31). This might be due to relatively health science students have better information on prevention of unintended pregnancy.

In this study married respondents were more likely to have pregnancy compared to respondents who were not married. Unlike studies done in antenatal care unit shows being unmarried was potential exposing factor for unintended pregnancy (2, 3, 12, 14, 28, 29, 32, 33). This might be due to respondents who were not married may not have sexual contact in turn they could not have unintended pregnancy.

In this study respondents whose source of income was parent were less likely to have pregnancy compared to respondents whose source of income were partner. Consistently a study in Addis Ababa supports this finding (6). Other studies state that when parents have better income they usually follow, support and control their child's which reduces exposure of unintended pregnancy (8, 10, 34-36). This might be due to those whose income is from partners might be influenced or forced by their partners due to economic dependency.

In this study respondents who have history of using contraceptive were 75% (AOR=0.25, 95%CI: 0.14, 0.44) less likely to have pregnancy. This result is supported by different studies which state using contraceptive is an absolute preventive mechanism of pregnancy (3, 12, 37).

5. Limitation

Students' might not provide honest answers to the questions; since the study was involved in sensitive issues social desirability bias was inevitable.

6. Conclusion

Magnitude of pregnancy experience in which all of them were unintended was high among regular Hawassa University female students compared to other studies. Being non health colleges, married status, partner as a source of income and not using contraceptive were statistically significant factors to have pregnancy.

7. Recommendations

1. Non health colleges' needs to be evaluated about their sexual and reproductive health information flow, and the university should monitor appropriateness of information delivery.
2. Qualitative study may need to be employed to identify reason of female students who are economically dependent other than their parents were risky for unintended pregnancy.
3. Married female students need to be emphasized by the university to work with youth family planning services.
4. For students who are sexually active and not using

contraceptive needs to be counseled by university integrated with family planning service providers.

Declaration

Ethical Approval

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.

Consent for Publication

Nil

Data Availability

The data was available but can be given with restrictions since individual privacy could be compromised.

Competing of Interest

The authors declare that we have no competing interests.

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Authors Contribution

All authors were participated on analysis and manuscript preparation. The conception of the manuscript were by YF.

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Abbreviations

FP: Family Planning
HCA: Hawassa Collage of Agriculture
HU: Hawassa University
IOT: Institute Of Technology
IRB: Institutional Review Board
IUCD: Intra Uterine Contraceptive Device
NGO: Non-Governmental Organization
OR: Odds Ratio
RH: Reproductive health
SNNPR: Southern Nations Nationalities and peoples Region

SRH: Sexual and Reproductive Health
UP: Unintended Pregnancy
WHO: World Health Organization

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