



Pregnancy History and Associated Factors among Hawassa University Regular Undergraduate Female Students, Southern Ethiopia, 2020

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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 policymakers, additive of the existing knowledge, and as a reference for future researchers.

Objective: To assess the magnitude of pregnancy experiences and associated factors among Hawassa University regular female students from May 1, 2019, to May 15, 2019.

Methods: Institution based cross-sectional study was conducted from May 1, 2019, to May 15, 2019, and 741 participants were selected using a 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). College 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 the 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 for a parent was 47% (AOR=0.53, 95%CI: 0.29, 0.96) less likely to have pregnancy compared to respondents whose source of income was a partner. Respondents who have a history of using contraceptives were 75% (AOR=0.25, 95%CI: 0.14, 0.44) less likely to have a pregnancy.

Conclusion: The 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 a pregnancy. Non-health colleges' needs to be evaluated about their SRH information flow by the university.

Keywords

Student; Pregnancy; University; Hawassa; 2020

Abbreviations

FP: Family Planning; HCA: Hawassa College of Agriculture; HU: Hawassa University; IT: 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; WCFNR: Wondogenet College of Forestry and Natural Resource; WHO: World Health Organization

Introduction

The 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% of pregnancies were mistimed, and 8% were unwanted [5]. Around 101 unwanted pregnancies occurred per 1,000 women aged 15-44 years, and 42% of all pregnancies were unintended [6].

The major reason for it is the gap in accessing and practicing contraceptive [7,8]. In Africa there are high incidences 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 to the 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 (FP) service and supply points helped to decrease the level of unintended pregnancy [12]; 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 [20]; access to contraceptive methods including emergency contraceptives can prevent unintended pregnancy [21].

Despite health education efforts, University female students are still faced with major preventable health problems [22]. The researches available from the student population in Ethiopia suggests that unintended pregnancies are prevalent in Ethiopian universities [23]. Unintended pregnancy is a very critical challenge especially for students, but it is under-reported because 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 the

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widespread availability of highly effective methods of contraception unintended pregnancy and induced abortion are still frequent and worrisome in the Universities of Ethiopia [24].

The magnitude of pregnancy experience among University students as well as the factors associated with it at the community level is very crucial. Therefore this study would provide a reference for the development of reproductive health policies, services to better address the sexual health needs, the 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 the experience of pregnancies among Universities in Ethiopia the finding will also be used as a reference for future researchers.

Methods and Materials

The study was conducted at Hawassa University (HU) located in Hawassa City. Hawassa is the capital city of southern nations' nationality peoples region (SNNPR) located at 275 km south to Addis Ababa, the capital city of Ethiopia. Hawassa's climatic condition is woinadega and has 280,000 populations. Hawassa University (HU) is a comprehensive university which was established in 2000 through the merger of three independently operating colleges in the Southern Region. They were Hawassa College of Agriculture (HCA), Wondogenet College of Forestry and Natural Resources (WCFNR) and Dilla College of Teacher Education and Health Science (now an autonomous University) [25].

Currently, Hawassa University has seven functional campuses in Hawassa City namely the College of Agriculture (COA), College of Medicine and Health's Sciences (CMHS), Institute of Technology (IT) Campus, and the Main Campus where the seat for the top administration. There are also other three campuses located outside of Hawassa City namely the College of Forestry and Natural Resource (CFNR) campus at Wondogenet town, College of Business and Economics (CBE) at Yirgalem town and Bensa Daye Campus at Bensa Daye. Within its seven campuses, HU operates 8 Colleges and 1 Institute (Institute of Technology (IT)). IT is situated adjacent to the Main Campus. Currently HU runs 81 Undergraduate degree programs, 108 Masters, and 16 Ph.D. programs in its 41 Schools and Departments. The student population as of March 2018 is 48,558 (of which 28.86% are female) [25].

Institutional based crossectional study was conducted from May 1, 2019, to May 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 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 a 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.

A stratified multistage sampling technique was used, and the procedure was as follows. There are eight colleges in Hawassa University; these colleges were divided into two practical strata as health and non-health colleges. A simple random sampling method was applied to select three non-health colleges, and the sample size was allocated to the stratified colleges proportional to their size. Next three depart-

ments 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 was 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 College registrar (Table 1).

Pregnancy experience during life in university was the dependent variable, and Sociodemographic (Age, Marital status, Income, place of permanent residence, class year, partner occupation, partner education), Contraceptive related (heard about a contraceptive, source information, type of contraceptive known, contraceptive experience, the 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, the reason of termination), Personal behaviors and experiences (history of intercourse, discuss 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 on how to introduce the 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 the department head and instructor who own each class during data collection time.

For the student's purpose of the study, confidentiality, and the need for providing honest answers were clarified. After the 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 at 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 the Amharic language, and translated back to English for consistency. The 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, the questionnaire was pre-tested. After the pretest, questions were revised, edited, and those found to be unclear were modified.

Data were checked manually for completeness. Then the data were cleaned and stored for consistency after entered into 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 variables over unintended pregnancy. Variables that were significant on bivariate analysis at p-value

Table 1: Sampling procedure for associated factors of pregnancy experience among regular Hawassa University female student, 2019.

Hawassa University	Health college	College of medicine and health science	Midwifery	Class Year	Total	selected	128	774
				Year 1	19	13		
Year 2	15	10						
Year 3	20	14						
Year 4	21	14						
Year 1	22	14						
Year 2	19	12						
Year 3	15	10						
Year 4	16	11						
Year 1	18	14						
Year 2	9	6						
Year 3	9	6						
Year 4	6	4						
Health total				189	128			
Non-health Colleges	College of natural and computational science	Biology	Year 1	47	31			
			Year 2	85	56			
			Year 3	47	31			
		Chemistry	Year 1	22	15			
			Year 2	33	23			
			Year 3	33	23			
		Sport	Year 1	56	37			
			Year 2	59	39			
			Year 3	65	43			
	College of social science & humanity	Sociology	Year 1	39	26			
			Year 2	39	26			
			Year 3	39	26			
		Journalism	Year 1	11	8			
			Year 2	22	15			
			Year 3	22	15			
	Geography	Year 1	18	13				
		Year 2	16	11				
		Year 3	20	14				
	College of agriculture	Animal. S	Year 1	41	27			
			Year 2	23	16			
			Year 3	27	18			
		Horticulture	Year 1	25	17			
			Year 2	29	20			
Year 3			25	17				
Plant. S		Year 1	40	27				
		Year 2	38	25				
		Year 3	41	27				
Non-health total				962	646			

less than 0.25 and biologically plausible were taken to multivariate analysis. The fitness of the model was checked by Hosmer and Lemeshow test. In a multivariate analysis p-value of less than 0.05% and a 95% confidence level was used as a cut of point for the presence of an association. Finally, results were compiled and presented using tables, graphs, charts, and texts.

Result

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 the College of natural and computational science (Table 1).

Respondents from year one account 234 (31.6%), year two 241 (32.5%), year three 237 (32%), and year four 29 (3.9%) participated in this study. From this 105 (14.2%) were married and 351 (47.4%) have partners from both in university and out of university (Table 2).

Personal behavior and experiences of respondents

About one-third of the total respondents 249 (33.6%) experience sexual intercourse and the mean age at first intercourse was 18.26 ± 3.56. Their reason for initiating sexual intercourse was by their 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 to discuss sexual reproductive health issues; their choice to discuss for the 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 the prevention mechanisms of unintended pregnancy. Their source of information for more than half 412 (55.6%) of the respondents was school. A condom was the most 524 (70.7) known contraceptive method by the respondents.

More than two-thirds of the respondents 544 (73.4%) have never used contraceptives. For the rest of the respondents their reason 122 (15.1%) to use contraceptives was because they are students.

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

For the 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.

Factors associated with unintended pregnancy

On bivariate analysis Colleges, year of study, marital status, source of income, the decision on how to use money, and ever use contraceptives were significantly associated with an unintended pregnancy. However only, Colleges, marital status, source of income, and ever use contraceptives were remaining statistically significant in multivariate analysis.

College 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 the 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

Table 2: Socio-demographic characteristics of pregnancy experience among Hawassa University regular female students, Hawassa, June 2019- (N=741).

	Number	Percent
Age (Years)		
15-19	109	14.7
20-24	602	81.2
25-29	30	4
Colleges		
Natural and computational science	290	39.1
Agriculture	171	23.1
Social science and 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
Partner from university (N=351)		
Yes	160	45.58
No	191	54.42
Highest grade partner completed (N=191)		
College diploma and above	177	92.67
Secondary	12	6.28
Elementary	2	1.04
Partner occupation (N=191)		
Employee	130	68.06
Student	26	13.61
Merchant	22	11.52
Other*	13	6.81
Place of permanent residence		
Urban	533	71.9
Rural	208	28.1
Religion		
Orthodox	524	70.7
Protestant	113	15.2
Muslim	85	11.5
Catholics	14	1.9
Other	5	0.7
Source of money		
From parents	613	82.7
From partner	113	15.2
Other**	15	2.02

Other*: for occupation related to family business; Other**: for source of money includes sisters, brothers and uncles

were not married. From the respondents 47% of them whose source of income of a parent was (AOR=0.53, 95%CI: 0.29, 0.96) less likely to have unintended pregnancy compared to respondents whose source of income was a 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 3).

Table 3: 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	Self	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 *= $p < 0.05$; **= $p < 0.001$; ***= $p < 0.0001$

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 Medawalabu University shows the overall magnitude of unwanted pregnancy among those who ever had the 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 several night clubs around, unlike Medawallabu University.

Moreover, the 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, the College of Agriculture, Social Science and Humanity, and Natural and Computational science were more likely to have pregnancy compared to the college of Medicine and Health science students. This study is supported by studies which state that subjects who have health background have a better trend in the prevention of unintended pregnancy [26-29]. This might be due to relatively health science students have better information on the 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 [2,3,12,14,26,27,30,31]. This might be due to respondents who were not married may not have sexual contact in turn they could not have an 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 a partner. Consistently a study in Addis Ababa supports this finding [6]. Other studies state that when parents have a better income they usually follow, support, and control their child's which reduces exposure of unintended pregnancy [8,10,32-34]. This

might be due to those whose income is from partners that might be influenced or forced by their partners due to economic dependency.

In this study respondents who have a history of using contraceptives were 75% (AOR=0.25, 95%CI: 0.14, 0.44) less likely to have a pregnancy. This result is supported by different studies which state using contraceptive is an absolute preventive mechanism of pregnancy [3,12,35].

Limitation

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

Conclusion

The 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 contraceptives were statistically significant factors to have a pregnancy.

Recommendations

1. Non-health colleges need to be evaluated about their sexual and reproductive health information flow, and the university should monitor the appropriateness of information delivery
2. The qualitative study may need to be employed to identify the reason for 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

Ethical Approval

Ethical clearance was 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.

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 participated in analysis and manuscript preparation. The conception of the manuscript was by Yohannes Fikadu Geda.

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