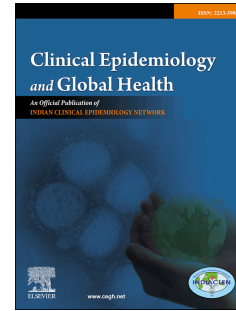


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**Unmet Need for Family Planning and Associated Factors, Among Women of Child-Bearing Age Working in Hawassa Industrial Park, Southern Ethiopia 2021: An Institution Based Cross-sectional Study**

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## ABSTRACT

**Background:** Despite the negative consequence of the unmet need for family planning no study has been conducted on women working in the industrial parks. Therefore this study aimed to determine the prevalence of unmet need for family planning and its associated factors among women in reproductive age working in Hawassa industrial park.

**Methods:** An institution-based cross-sectional study was conducted from July 1 to 30 / 2021 among randomly selected 405 women working in Hawassa industrial park. Data was collected using face-to-face interviews using a pre-tested structured questionnaire. The data was entered into Epi-data 3.1 and exported to SPSS Version 24 for statistical analysis. Bivariable and multivariable logistic regression analyses were used to identify factors associated with the unmet needs for family planning. Independent factors associated with the unmet need for family planning were assessed using AOR with their corresponding 95% CIs at P-value < 0.05 cut of point.

**Result:** In this study, the prevalence of unmet need for family planning was 27.7% (95% CI 23.2 to 32.3). Educational status [AOR= 4.53; CI (1.62, 12.61)], marital status (AOR=7.2; 95% CI: (3.77, 13.73)], residence [AOR= 0.56; 95% CI: (0.31, 0.99)], and knowledge of family planning [AOR= 0.36; 95% CI: (0.20, 0.63)] were independent predictors of unmet need for family planning.

**Conclusion:** This study found that the prevalence of unmet needs for family planning was high. Educational status, marital status, residence, and knowledge of family planning were significantly associated with unmet needs of family planning.

**Keywords:** The unmet need, family planning, associated factors, Hawassa.

## INTRODUCTION

Globally, many women and couples want to postpone or avoid unwanted pregnancies (1,2). In 2020, among 1.9 billion women of reproductive age (15-49 years), 1.1 billion women were considered to require family planning, of these women, 851 million are using a modern method of contraception and 85 million are using a traditional method. An additional 172 million women are using no method at all, despite their desire to avoid pregnancy (2). In Ethiopia despite Health Extension Program has significantly improved access to FP services (3), 22% of currently married women have an unmet need for family planning according to the Ethiopian demographic health survey (EDHS) 2016 (4).

The SDG plans to ensure universal access to sexual and reproductive healthcare services including family planning will enable more women with a need for family planning to make an informed choice about a method of contraception that is acceptable and appropriate in their circumstances (2). The Government of Ethiopia committed itself to the achievement of Sustainable Development Goals (SDGs) and strongly believed family planning was one of the key strategies to improve maternal health and bring about development. In this regard, several policies and strategies have been developed to strengthen the demand and service for the provision of family planning services (5).

The unmet need for family planning is projected to remain above 10 percent worldwide between now and 2030, despite the reductions anticipated for some regions. The largest declines are expected in Eastern Africa, where unmet need is projected to fall from 22 percent in 2017 to 16 percent in 2030 (6), similar reports from Ethiopia Unmet need for family planning among married women has declined over time, from 37% in 2000 to 22% in 2016 (4).

Globally, 43% of unintended pregnancies occurred in low and middle-income countries of which 74% of them were related to unmet need for family planning. In addition to this, in East Africa, unmet need for family planning is responsible for 86% of unintended pregnancies (7). Abortion is a frequent consequence of unintended pregnancy. An estimated 18 million unsafe abortions take place each year in the low-income countries which in turn result in serious, long-term negative health effects including infertility and maternal death (8).

Different kinds of the literature identified that different factors influencing unmet need for family planning were Age of the respondent, Marital status, Women's education, Partner education, women's employment, Multiparty, Husband attitude towards family planning, respondents' information about family planning, perceived risks of pregnancy, Knowledge of contraceptive method and discussion with partner and health professional were among the factors associated with the unmet need to limit fertility (9-15).

Despite its magnitude and negative health effects, the majority of the previous studies were focused on married reproductive-age women in the community. But this study focused on women working in the industrial park, most of them are adolescents and unmarried and their working conditions and socio-demographic conditions might reduce their access to family planning services. As a result, this study may guide health care providers to initiate intervention regarding family planning, particularly for unmarried girls who work in different industrial parks. Therefore, this study aimed to determine the level of unmet need for family planning and associated factors among women of the reproductive age working in Hawassa industrial park, Southern Ethiopia.

## **METHODS AND MATERIALS**

### **Study area, design, and Period**

An institution-based cross-sectional study was done at Hawassa industrial parks, from July 1 to 30/2021. Hawassa is found 273 km south of Addis Ababa. The Hawassa Industrial Park, which opened in July 2016, has been described as the Ethiopian government's "flagship" industrial park. Currently, a total of 28,721 individuals working in the 22 companies of the park, among them 3,957 were male and 24,764 were women of reproductive age. There is one clinic for the park and one 1st aid corner for each company (16).

### **Study participants, inclusion and exclusion criteria**

The source population was all women in the reproductive age group who were working in Hawassa Industry Park. All women in the reproductive age group who were working in Hawassa industry parks and who were available during the data collection period were included in this study. Those women who were sick at the time of data collection were excluded from this study.

### **Sample size determination and sampling procedure**

The sample size for this study was computed based on single population proportion formula, using the prevalence of unmet need for family planning among women in the reproductive-age women from previous study done in Tigray region of 41.8% (17), Z-value of 1.96 at 95% confidence level, the margin of error of 5%, and 10% non-response rate. The final sample size was 412.

All the company of the Hawassa Industrial parks was covered by the study. From a total of all companies (22), seven of them were selected through simple random sampling using the lottery method. After selecting the company sample size was proportionally allocated to the selected company based on the number of women working on them. Finally, a simple random sampling technique was employed from the list of women working in the selected company.

### **Study variables**

Dependent variable- The unmet need for family planning and dichotomized as the presence of unmet need (1 = yes) and absence of unmet need (0=no)

Independent variables- Socioeconomic and demographic factors (age, marital status, ethnicity, religion, educational status (women and partner), mothers and partner occupation, household monthly income, family size, number of live children; Reproductive history (age at marriage, age at pregnancy, history of pregnancy, parity, desired number of children); Awareness and information related characteristics:(Women Knowledge, and Media exposure)

### **Operational definitions**

**Unmet need for family planning:** women who desire to either delay the next pregnancy or limit future pregnancies but are not using any method of contraception.

**Good knowledge-** 9 questions were used to measure the level of knowledge regarding family planning. Those respondents who score mean and above on knowledge questions were categorized as having good knowledge.

### **Data collection instrument and Procedures**

Data was collected using interviewer-administered structured questionnaires that were prepared after reviewing different published literature ( 9-14) The questionnaire was designed in English and was translated into Amharic and Sidaamu Afoo for common understanding, and then translated back to English by a language expert to check for consistency.

The first part of the questionnaire contains information about sociodemographic and socioeconomic characteristics and the second part includes reproductive characteristics and the third deals with awareness and information-related characteristics. Data collectors were four nurses and supervisors were two health officers.

### **Data quality assurance**

Data collectors were trained on how to collect and handle data. A questionnaire was pretested on 5% of the sample in Yirgalem Industrial Park two weeks before the actual data collection period. After data collection, each questionnaire was given a unique code by the investigators. The researcher checked the filled questionnaires at the end of data collection every day for completeness, consistency and to take corrective measures. Before entering epi-data data completeness was checked manually.

### **Data processing and analysis**

Data were entered into Epi data version 3.1 and was exported to the SPSS version 24 for analysis. Data exploration was conducted to examine different characteristics of the data and descriptive statistics were used to describe the data depending on its nature. Descriptive statistics such as frequencies, proportions, and percentages were done for the categorical variables while measures of central tendency and dispersion were summarized for continuous data.

Bivariable variable logistic regression was carried out to select a candidate for multivariate logistic regression analysis with a p-value  $<0.25$  at a 95% confidence level. Then, a candidate variable was entered into a multivariable logistic regressions model to identify the statistically significant factors for the unmet need for family planning. The degree of association between dependent and independent variables was assessed using an adjusted odds ratio and statistically significant factors were declared at 95% of a confidence interval and a p-value of less than 0.05.

## **RESULT**

### **Socio-demographic characteristics of the respondents**

A total of four hundred five (405) women of childbearing age participated in the study, making a response rate of 98.54%. The mean (SD) age of the respondents was 23.96 (3.531) years. The minimum and the maximum age of the respondents were 18 and 35 years respectively. More than half of the respondents 253 (62.5%) had college and above level of educational status and more than half of them were 282 (69.6 %) lived in rural areas. Two hundred twenty-five (55.6%) of the respondents were single. About 101 (24.9 %) of the participants had a monthly income of the 4501-6000 Ethiopian birr. Regarding ethnicity, the majority 321 (79.3%) were Sidama (Table 1).

### **Reproductive characteristics of women of childbearing age**

The majority, 364(89.9%) of respondents had access to health facilities and from this 182 (44.9%) of them live at a medium distance from the health facility. More than half, 253(62.5%) of respondents took < 30 minutes to the health facility, and 178(44.0%) of study participants had a previous history of using FP services. Regarding the current use of contraceptives, 82(20.2%) of them use FP and 40(48.8%) of them use the injectable types of FP. Concerning the pregnancy status of non-users, 245(75.9%) of women were non-pregnant and 232(57.3%) women had no child. Of a total of women who have children, 135(78%) had fewer than two children and 247(61%) desire to have less than five children and 77(19%) of respondents had a history of abortion. Concerning discussion with health professionals, the majority 214(52.8%) of women discuss family planning with health care professionals (table 2).

### **Knowledge of women working in Industrial Park about family planning**

Two hundred eighty-five, (70.4%) of respondents had good knowledge about family planning. Most of the respondents 218 (67.9%) knew about pills and 191(59.5%) knew about the injectable type of FP. In the past 6 months before the initiation of data collection, 120 (29.6%) women never discussed contraceptive methods with their family at least once and 188(46.4%) of women rarely discuss family planning with friends (table 3).

### **The magnitude of unmet need**

In this study, the overall unmet need for FP among women in the reproductive age (15-49yrs) group working in the industry park was 27.7% (95% CI 23.2 to 32.3) of which 81(72.3%) were to delay and 31(27.7) to limit pregnancy.



### **Factors associated with unmet need for Family Planning**

In the multivariate analysis, the partner's education level, marital status, knowledge about family planning, and residence were significantly associated with the unmet need for FP.

Women who attained Primary education were 4.53 times more likely of having an unmet need for FP as compared to those respondents with college and above education [AOR= 4.53; CI (1.625,12.615)]. Furthermore, the odds of unmet need for FP were 7.20 times (AOR=7.2; 95% CI: (3.777, 13.733)] higher among those who reported being married as compared to their counterparts. Women from rural residence were 0.56 times less likely to have unmet need for FP than their counterparts [AOR= 0.56; 95% CI: (0.312, 0.991)]. The unmet need for FP was 0.36 times less likely among knowledgeable respondents as compared to their counterparts. [AOR= 0.36; 95% CI: (0.202, 0.633)] (Table 4).

### **DISCUSSION**

In this study, the prevalence of unmet needs for family planning was 27.7%. Factors associated with the unmet need for family planning were Educational status, marital status, knowledge of family planning, and residence.

This study showed that the prevalence of unmet needs for FP was 27.7%. This finding is in line with the study conducted in Debre Brehan town (13), and Tiro Afeta district in South-West Ethiopia (18). Higher than, EDHS 2016 (4). This variation is due to the EDHS included only married women. But ours include married and unmarried women. In study subjects in which those studies include only married reproductive age groups but, this study included all reproductive age groups.

This study revealed that women who attained Primary education were 4.53 times more likely of having an unmet need for FP as compared to those respondents with college and above education. This is in line with a systematic review and meta-analysis done in Ethiopia (19), which revealed that women and their partner with no formal education were significantly associated with the unmet need for family planning. In addition, other studies done were in Toke Kutaye District, Oromia (20), Rural Ethiopia (21), Damot Woyde district, southern region (12), enemy district, Northwest Ethiopia (10), also revealed that women's educational status

associated with the unmet need of family planning. This implies that the higher the education attained, the likeliness of meeting the FP needs increases. The possible explanation for this could be that women empowered through education have good knowledge of contraceptives and have better access to health facilities compared to uneducated women.

The odds of unmet need for family planning were 7.20 times higher among those who reported married as compared to their counterparts. This finding is in line with the study done in Burkina Faso (14) and Rural Tigray (11). The possible reason for this significance might be the increased frequency of sexual activity among married women irrespective of low access to family planning.

Women from rural parts were 0.56 times less likely to report having an unmet need for FP as compared with women from urban residences. This is in line with studies conducted in southern Ethiopia and Gambia, Mozambique (22, 23). The possible justification for this might be, In most parts of Ethiopia, rural residents have usually low health services coverage and decreased awareness of FP due to low education, low socioeconomic status, and have limited access to FP services, this may lead to a higher prevalence of unmet need in rural areas.

The unmet needs of FP were 0.36 times less likely among knowledgeable women as compared to their counterparts. Poor knowledge about FP has increased the risk of having an unmet needs for FP. This finding is supported by a study done in Debre Berhan Town, Ethiopia (13). This might be due to those women who had good knowledge about family planning could have decision-making ability regarding family planning utilization.

The limitation of this study is that since it was an institution-based cross-sectional study the finding of this study is difficult to generalize to reproductive-age women in the community.

## **Conclusion**

This study found that the prevalence of the unmet need for family planning was high. Educational status, marital status, knowledge of family planning, and residence were significantly associated with the unmet needs for family planning. A comprehensive education program should be introduced to focus on informing about family planning and strengthening family planning services.

## Acronyms

<b>CSA</b>	Central Statistical Agency
<b>DHS</b>	Demographic and Health Survey
<b>ICPD</b>	International Conference on Population and Development
<b>FP</b>	Family planning
<b>HSDP</b>	Health Sector Development Plan
<b>SDG</b>	Sustainable Development Goal
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TFR</b>	Total Fertility Rate
<b>UN</b>	United nation
<b>WHO</b>	World Health Organization

## Declarations

### **Ethics approval and consent to participate:**

Ethical clearance for the proposed study was obtained from the Institutional Review Board of Pharma College and a supporting letter was obtained from Sidama regional administration and Hawassa municipality. Verbal consent was obtained from the study subjects and the right of the respondents to withdraw or not to participate was respected. Anonymity and confidentiality of the data provided were strictly maintained. Participants were assured that their participation is voluntary.

**Participant consent:** Attained

**Consent for publication:** Not applicable.

**Availability of data and material:** For those who are concerned; the datasets of this study could be accessed from the corresponding author on rational request.

**Competing interests:** The authors state that they have no competing interests.

**Funding:** no fund was obtained for conducting this research.

### **Authors' contributions**

EA and TA conceptualized the paper, led the data collection process, and investigated the data. EA and TA wrote the draft of the manuscript. EA and TA revised and amended the manuscript draft. Both authors read and approved the final manuscript.

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**Tables**

Table 1:- Socio-demographic characteristics of women are of child bearing age working in Hawassa industrial parks, southern Ethiopia 2021.

Variables (n=405)		Frequency	Percentage
Age	<=25 years	279	68.9
	26-35years	126	31.1
Educational status	Read and write	26	6.4
	Primary education	23	5.7
	Secondary education	103	25.4
	college and above	253	62.5
Residence	Rural	123	30.4
	Urban	282	69.6
Marital status	Married	180	44.4
	Single	225	55.6
Religion	Orthodox	75	18.5
	Protestant	289	71.4
	Muslim	17	4.2
	Others	24	5.9
Ethnicity	Sidama	321	79.3
	Oromo	19	4.7
	Amara	31	7.7
	Other	34	8.4
Monthly income	>1500 ETB	72	17.8
	1500-3000 ETB	90	22.2
	3001-4500 ETB	77	19.0
	4501-6000 ETB	101	24.9
	>6000 ETB	65	16.0

Table 2: Reproductive characteristics of women's of child bearing age working in Hawassa industrial parks, southern Ethiopia 2021.

Variable		Frequency	Percentage
Availability of health facility	Yes	364	89.9
	No	41	10.1
Distance of facility	long	105	25.9
	medium	182	44.9
	short	84	20.7
	i dont know	34	8.4
time taken to health facility	< 30 minute	253	62.5
	> 30 minute	105	25.9
	I don't know	47	11.6
Past contraceptive use	Yes	178	44.0
	No	227	56.0
Current use of contraceptive	Yes	82	20.2
	No	323	79.8
Type of contraceptive	oral pill	13	15.9
	injectable	40	48.8
	implant	22	26.8
	IUCD	7	8.5
Pregnancy status among non-user	non pregnant	245	75.9
	pregnant	78	24.1
Children	Yes	173	42.7
	No	232	57.3



Number of children	1-2	135	78
	>=2	38	22
Desire number of children	< Five	247	61.0
	> five	158	39.0
History of abortion	Yes	77	19.0
	No	328	81.0
Discussion with health professional	yes	214	52.8
	No	191	47.2

Table 3: Knowledge about family planning among women's of child bearing age working in Hawassa industrial parks, southern Ethiopia 2021.

Knowledge on FP	Good	285	70.4
	Poor	120	29.6
Knowledge on condom	yes	95	29.6
	No	226	70.4
Pills	yes	218	67.9
	No	103	32.1
Injectable	yes	191	59.5
	No	130	40.5
IUCD	yes	27	8.4
	No	294	91.6
Implant	yes	108	33.6
	No	213	66.4
Tubal ligation	yes	10	3.1
	No	311	96.9

Emergency	yes	315	98.1
	No	6	1.9
Rhythm	yes	1	.3
	No	320	99.7
Lactational_aminorrhea	yes	17	5.3
	No	304	94.7
Discussion with family	frequently	95	23.5
	sometime	100	24.7
	rarely	90	22.2
	never	120	29.6
Discussion with friends	frequently	42	10.4
	some time	102	25.2
	rarely	188	46.4
	never	73	18.0
Use of contraceptive	yes	308	76.0
	No	72	17.8
	unknown	25	6.2

Table 4: Bivariable and Multivariable logistic regression analysis of factors associated with unmet need for FP among women of child bearing age working in Hawassa industrial parks, southern Ethiopia 2021

Variable	Unmet need		COR(95%CI)	AOR(95%CI)	P.V
	Yes	No			
Age					

<=25 years	69	210	0.63(0.401, 1.002)	1.57(0.867, 2.846)	0.136
26-35years	43	83	1	1	
Educational status					
Read and write	9	17	1.50(0.638, 3.528)	1.99(0.748, 5.296)	0.168
Primary education	12	11	3.09(1.302, 7.340)	4.53(1.625,12.615)	0.004*
Secondary education	25	78	0.908(0.534,1.544)	1.09(0.589, 2.043)	0.77
College and above	66	187	1	1	
Residence					
Rural	29	94	0.74(0.454, 1.206)	0.56(0.312, 0.991)	0.047*
Urban	83	199	1	1	
Current marital status					
Married	80	100	4.82(2.998, 7.765)	7.20(3.777,13.733)	<0.001**
Single	32	193	1	1	
Knowledge about family planning					
Good	66	219	0.48(0.306, 0.768)	0.36(0.202, 0.633)	<0.001**
Poor	46	74	1	1	
Availability of health facility					
Yes	99	265	0.80(0.401, 1.616)	0.73(0.322, 1.666)	0.457
No	13	28	1	1	
Past contraceptive use					

Yes	65	106	1.99(1.281, 3.093)	1.05(0.587, 1.879)	0.68
No	47	187	1	1	
Desire number of child					
< Five	62	111	1.78(1.116, 2.843)	1.28(0.708, 2.305)	0.416
> five	50	182	1	1	
Discussion with health professional					
Yes	55	159	0.81(0.526, 1.258)	0.72(0.414, 1.246)	0.239
No	57	134	1	1	

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\* Significant at p-value <0.05. \*\* Significant at p-value <0.001