


Unintended pregnancy and associated factors during COVID-19 pandemic in Ethiopia: Community-based cross-sectional study

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Abstract

Introduction: The term 'unintended pregnancy' refers to a pregnancy that occurred when no children were desired or occurred earlier than desired. Unintended births account for one out of every three births in Ethiopia, and they are the leading cause of maternal morbidity and mortality. During the coronavirus disease (COVID-19) pandemic, this could be useful. COVID-19 has a significant impact on maternal health care utilization, including family planning services. As a result, this study aimed to assess unintended pregnancy and associated factors in Ethiopia during the COVID-19 pandemic.

Method: A community-based cross-sectional study was conducted in Gedeo zone, Ethiopia, from April 1 to May 30, 2021. A simple random sampling technique was utilized to get 383 pregnant women from their respective kebeles. A structured questionnaire was used to collect data during a face-to-face interview. The data were coded, cleaned, and entered into Epidemiological Data Version 3.1 before being exported to the Statistical Package for Social Science Version 23.0 for analysis. A bivariate and multivariable logistic regression model was used to identify statistically significant associations between dependent and independent variables. The odds ratio, with a 95% confidence interval and a P value of 0.05%, was considered statistically significant.

Result: A total of 383 pregnant women participated in the study, giving a response rate of 90.8%. During the COVID-19 pandemic, 140 (36.6%) participants stated that their current pregnancy was unintended. Unintended pregnancy was significantly associated with respondents' age (adjusted odds ratio (AOR)=5.214 (1.449–18.762)), primary decision maker for family planning services (AOR=9.510 (5.057–17.887)), and fear of COVID-19 to visit a health care facility (AOR=7.061 (2.665–18.710)).

Conclusion: During the COVID-19 era, more than one-third of women had unintended pregnancies. Unintended pregnancy was significantly associated with respondents' age, autonomy to use contraceptive methods, and fear of COVID-19, which required them to attend a health care institution.

Keywords

COVID-19, Ethiopia, unintended pregnancy

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Introduction

Unintended pregnancies are pregnancies that are mistimed or unwanted at the time of conception. It can have serious health, economic, and social consequences for women, their children, and their families.¹ It is a major global public health problem with serious consequences for a mother, her children, her family, her community, and her country.^{2–4} Unintended pregnancy is linked to a lack of utilization of

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maternal health care services. It predisposes women to maternal death and illness, potentially arising from unsafe abortions and inadequate maternity care, and it has negative social and health consequences for the mother, her children, and the entire family.^{4,5} One of the most common causes of unsafe abortion is unintended pregnancy, which is also the leading cause of maternal mortality and morbidity. Every year, nearly 80,000 mothers die as a result of unsafe abortions, with developing countries accounting for nearly 95% of the deaths.¹

Globally, approximately 121 million pregnancies were unintended between 2015 and 2019, with an average of 64 unintended pregnancies per 1000 women aged 15 to 49 years.² The majority of these unintended pregnancies occur in Africa, particularly in Sub-Saharan Africa. The overall prevalence of unintended pregnancy in Sub-Saharan Africa is 29%, ranging from 10.8% in Nigeria to 54.5% in Namibia.³ According to a systematic review study, the mean unintended pregnancy rate in Ethiopia was 33.9%.⁴ A multilevel analysis of 2016 Ethiopia Demographic and Health Survey (EDHS) data revealed that the prevalence of unintended pregnancy was 26.6%.⁵

According to recent studies conducted around the world, socio-demographic factors such as⁵⁻¹⁰ household size,^{5,11,12} level of education of the mother,^{5,7,9,13} marital status,^{5,10,11,14,15} income/wealth status,^{3,7,16,17} distance from the nearest health facility,¹⁵ parity,^{3,5,9,10,13,14,18} knowledge of ovulation cycle,^{12,18} ever had of terminated pregnancy,^{6,8,14} birth interval,¹⁶ not being primary decision maker,^{19,20} knowledge of family planning,^{13,16} residence,^{3,13,17,19} region,^{3,5,9,12,17} antenatal care (ANC) follow-up of previous pregnancy,¹⁹ obstetric history,²⁰ community education about maternal health care,^{19,20} health care provider support,²⁰ and complication during index pregnancy have a significant association with unintended pregnancy.

Furthermore, a variety of barriers expose women to unintended pregnancy. The barriers are related to health institution accessibility, autonomy, reproductive health-related knowledge, health service quality, and the current state of the health care system during the corona virus disease (COVID-19) era.^{10,21}

Coronavirus is a contagious disease exacerbated by a recently discovered coronavirus. It started in China in December 2019, and it is still a major public health concern around the world.²² Coronavirus infection is a highly contagious viral disease that threatens the lives of over 15 million people around the world.²³ In February 2020, the COVID-19 pandemic arrived in Sub-Saharan Africa (SSA), killing nearly 33,000 people.²⁴ While COVID-19's direct impact is not as widespread in SSA as it is in other regions,²⁵ the indirect costs may be higher. Public health measures to reduce infections have destabilized economies and weakened fragile health care systems.²⁴

Public health measures such as quarantine and social distancing are the most effective means of preventing

disease spread.^{26,27} On the other hand, home confinement and lockdowns have introduced new challenges and vulnerabilities, particularly in women, leading to significant changes in sexual health and couple stability.^{28,29} These vulnerabilities are related to social, political, and economic systems, which amplify the effects of the pandemic.²⁹ During lockdowns, couples' sexual desires vary greatly, with some using sex as a coping strategy to stay connected and reduce anxiety, while others totally lose interest in sex.³⁰

The inverse is also true, as condonation and limited contact with the outside world can lead to various forms of violence.³¹ There is no doubt that violence against women has increased since countries implemented lockdowns to contain the pandemic.^{31,32} According to recent research, unplanned pregnancy and partner violence are strongly linked.^{33,34} When people resort to transactional sex to meet their basic needs and cope with a reduced and inadequate income, the risk of unintended pregnancy increases.³⁵

Because of the disease's severity, major disruptions in health care services will last for a long time.³⁶ When the principles of isolation, physical distancing, restriction, and staying at home are applied to maternal health services, family planning provision is reduced, and unintended pregnancy may increase as a result of COVID-19. Couples spend more time engaging in sexual activity as a result of COVID-19, and they are more likely to become pregnant unintentionally. In addition, restrictions and lockdowns prevent the use of contraceptive services and supplies. Millions of women face the risk of dying as a result of unsafe abortions.³⁷

They are increasingly recognized as having a high risk of unintended pregnancy due to a lack of reproductive health control, which is exacerbated by pandemic diseases such as COVID-19. Some of the factors that contribute to unintended pregnancy include forced sex, financial difficulties, having children, and being unmarried.^{38,39} As a result, the purpose of this study was to determine the prevalence of unintended pregnancy among pregnant women in Ethiopia, as well as the factors that contribute to it.

Methods

Study design, area, and period

A community-based cross-sectional study was carried out in Gedeo zone, Ethiopia, from April 1 to May 30, 2021. The Gedeo zone is located in southern Ethiopia. The Gedeo zone has six districts and two city administrations with a total population of 1,086,768 people (532,516 males and 554,225 females) and an area of 1,210.89 km². All women who were currently pregnant and who registered in the last 6 months with health extension workers at selected kebele (the smallest administrative unit) during the era of COVID-19 participated in the study.

Sample size determination, sampling techniques, and procedure

The sample size was calculated using the single population proportion formula ($n = (Z/2)^2 p(1-p)/d^2$) with 0.05 margins of error at the 95% confidence interval (CI), with a 50% proportion of unintended pregnancy. The sample size was increased by 10% to $n = 422$ to account for a possible non-response rate during the study. Initially, five kebeles (smallest administrative units of the community) were selected using a simple random sampling technique (lottery methods). Then, a census was conducted to identify the number of pregnant women who resided in the community. A total of 2249 pregnant women were identified in the community based on the census.

A simple random sampling technique was used to select 422 pregnant women from a total of 2249 pregnant women identified and registered during the census in the community. For this study, households served as sampling units, and the final sample size was allocated proportionally to each kebele based on the number of pregnant women. The study households were then selected from each kebele in the community using a simple random sampling technique using a computer-generated random number starting from kebele 1 from a random start point after developing the sampling frame with a list of individuals' house numbers that were provided during the census. When two or more eligible pregnant women were found in the same household, the lottery method was used to select only one to be interviewed.

Variables

The outcome variable was unintended pregnancy (pregnancy that occurred when no children were desired or that occurred earlier than desired).

Independent variables were socio-demographic characteristics (age, religion, educational status, occupational status, family income), reproductive characteristics (gravidity, parity, number of children, history of abortion, stillbirth and neonatal loss, having ANC follow-up, place of delivery of previous pregnancy, contraception-related information like spousal communication, awareness and use of contraceptives, women's autonomy on family planning), and COVID-19-related characteristics (knowledge towards COVID-19, fearing of COVID-19 to visit health care facility, confidence to protect COVID-19, practice COVID-19 prevention measure).

Data collection methods

The data collection tool was adapted from the Ethiopian Demographic Health Survey. It was written in English, translated into Amharic and Gedeo-Offa, and then back-translated into English by an independent translator for

consistency. The questionnaire is divided into four sections (socio-demographic characteristics, reproductive health-related characteristics, COVID-19-related characteristics, and current pregnancy-related characteristics). A pre-test was performed on 10% of the total participants (38 pregnant women) in Gongua, a town near the study area. The questionnaire was evaluated during the pre-test for clarity, readability, comprehensiveness, accuracy, and optimal time for completing the interview. Based on the pre-test results, modifications and corrections were made.

The data were gathered through face-to-face interviews with a pre-tested structured questionnaire at pregnant women's homes, outdoor living areas, and open and closed quiet places without anyone other than the pregnant women in the community and lasted 30 to 40 min. A 1-m distance was maintained between interviewers and interviewees. All COVID-19 protocols were applied to minimize the spread of the disease. The data were collected by nine data collectors and three supervisors who each had a BSc in midwifery. Data collectors and supervisors received 3 days of training on the overall procedure of the study.

Cronbach's alpha was used to assess the item's internal consistency and reliability. The value of Cronbach's alpha was within the normal range.

Data analysis and quality assurance

The data were double checked for completeness, edited, and coded. The data were entered using Epi-Data version 3.1 software and then exported to SPSS version 23.0 for analysis. Descriptive statistics such as mean, standard deviation, frequency, and percentage were used. A bivariate analysis was done, and all explanatory variables with a P value < 0.25 were regressed on to a multivariable analysis. Multivariable analysis was used to identify independent determinant factors among the explanatory variables. An adjusted odds ratio (AOR) with a 95% CI and a P value ≤ 0.05 was used to decide a statistically significant association with the outcome variable.

The Hosmer and Lemeshow tests were used to determine model fitness. The variance inflation factor (VIF) and the tolerance test were used to assess multicollinearity. The VIF result was less than 2, while the tolerance test result was greater than 0.1, both of which were within the normal range. The study's findings were presented in the form of text, tables, and charts.

To maintain data quality, a standard questionnaire was modified. To improve their performance in the activities, the data collectors and supervisors were trained for 3 days on the goals of the research, the content of the questionnaire, and how to conduct the interview in the community. The interviews were conducted at the study participants' homes. Houses that were vacant or closed on the day of the visit were revisited twice to maintain the required sample size.

The supervisor and principal investigator checked the collected data for completeness and consistency every day. To ensure the security and confidentiality of the information obtained, all questionnaires were kept under lock and key.

Results

Socio-demographic and obstetrics characteristics of respondents

A total of 383 pregnant women participated in this study, giving a 90.8% response rate. The majority of study participants, 157 (41%), were between the ages of 20 and 34, followed by 130 (33.9%) who were under the age of 20, with a mean age of 26.8 years and a standard deviation (SD) of 3.67. The majority of them (247 (64.5%)) were protestants, followed by 92 (24.4%) who were orthodox, 327 (85.4%) were married, 140 (36.6%) attended primary school, and 130 (35.3%) had a monthly income of less than 500 Ethiopian birr (see Table 1 for more information).

From a total of 383 pregnant women, the majority, 183 (47.2%), were gravida 3 and 4, followed by 160 (41.8%) who were gravida 1 and 2, and the remaining 40 (10.4%) were gravida 5 and above. The majority of 232 (60.6%) of respondents had paras 1 and 2, while the remaining 151 (39.4%) had paras 3 and more. In all, 93 (24.3%) of the women who took part in this study had at least one bad obstetrical history in their lifetime. Among those with a poor obstetrical history, the majority (59%) had at least one history of abortion, 23 (4.2%) had at least one history of stillbirth, and 11 (1.6%) had at least one history of neonatal loss. From a total of 383 women, the majority (224 or 58.4%) reported that their most recent delivery was at a health facility, and 339 or 88.5% had a history of ANC follow-up. In addition, among the total of 380 respondents, the majority (217 or 56.6%) have had two or more current ANC follow-ups.

Knowledge and practice of the participants on contraceptive

Among the total 383 respondents, 354 (92.4%) had heard of contraceptive methods. Among those who heard about contraceptive methods, 74 (20.9%), 47 (13.3%), 58 (16.4%), 22 (6.2%), 17 (4.8%), 24 (6.6%), and 112 (31.6%) have been familiar with injectables, oral pills, implants, emergency contraceptives, condoms, other and more than two methods, respectively. In all, 294 (83.1%) of the 383 participants have a history of using contraceptive methods, and 361 (94.3%) intend to use family planning in the future. Among those who have used contraception in the past, 221 (75.1%) used injectable contraceptives, 51 (17.3%) used oral contraceptives, and the remaining 22 (6%) used other contraceptive methods (Table 2).

Magnitude of unintended pregnancy

From a total of 383, 140 (36.6%) participants insured their current pregnancy as unintended during the era of COVID-19 pandemic while the rest 243 (63.4%) were planned.

Factors associated with unintended pregnancy

According to bivariate logistic regression, those variables that have a P value ≤ 0.25 were regressed against the dependent variable in multivariable logistic regression.

As shown in Table 3 below, gravida, residence, marital status, respondent age, educational status, household size, confidence in protecting COVID-19, use of COVID-19 prevention measures, autonomy in using contraceptive methods, knowledge of contraceptives, fear of visiting a health care facility due to COVID-19, and chronic medical disease.

However, in a multiple logistic regression analysis, the following factors were significantly associated with unintended pregnancy: respondents' age, autonomy to use contraceptive methods, and fear of COVID-19 to visit health care facilities.

Women who were not the primary decision makers for family planning services had 9.5 times the odds of having an unintended pregnancy than those who were (AOR=9.510 (5.057–17.887)). Furthermore, women who were worried about becoming infected with COVID-19 after visiting the health care facility had 7.0 times the odds of getting an unintended pregnancy compared to those who were not worried about becoming infected with COVID-19 after visiting the health care facility (AOR=7.061 (2.665–18.710)). Furthermore, pregnant women under the age of 20 had 5.2 times the odds of having an unintended pregnancy compared to those over the age of 34 (AOR=5.214 (1.449–18.762)).

Discussion

In the era of COVID-19, this study was carried out to assess the magnitude and associated factors of unintended pregnancy among pregnant women in Gedeo Zone, Southern Nations Nationalities and Peoples State (SNNPS), Ethiopia.

In this study, 140 women (36.6%) disclosed that their current pregnancies were unintended in the COVID-19 era. This study's findings were remarkably similar to other studies conducted in Ethiopia at Jimma town (36.5%),⁴⁰ Bale zone (37.5%),⁴¹ Pakistan (38.2%),¹³ and Nepal (41%).⁴² Furthermore, the findings of this study were higher than previous studies conducted in Ethiopia at Tigray region (26%),⁴³ Debre Birhan (23.5%),¹⁵ Arba Minch (19%),⁴⁴ Southwest Ethiopia (19.5%),¹⁹ Nairobi, Kenya (24%),⁴⁵ and Senegal (14.3%).⁴⁶ This could be due to the effect of COVID-19 on the availability and accessibility of

Table 1. Socio-demographic characteristics of pregnant women in Gedeo zone, south part of Ethiopia, 2021.

S. no	Variables	Frequency	Percentage	χ^2	df	P value
1.	Age			11.037	2	0.004
	<20	130	33.9			
	20–34	157	41.0			
	>34	96	25.1			
	Total	383	100			
2.	Religion			8.343	3	0.039
	Orthodox Christian	92	24.0			
	Muslim	30	7.8			
	Protestant	247	64.5			
	Other	14	3.7			
	Total	383	100			
3.	Marital status			34.398	1	0.000
	Single	56	14.6			
	Married	327	85.4			
	Total	383	100			
4.	Ethnicity			16.777	4	0.002
	Gedeo	291	76.0			
	Amhara	11	2.9			
	Oromo	58	15.1			
	Other	23	6			
	Total	383	100			
5.	Level of education			16.601	3	0.001
	Cannot read and write	60	15.7			
	Primary school	109	28.5			
	Secondary school	120	31.3			
	Collage and above	94	24.5			
	Total	383	100			
6.	Occupation			14.193	4	0.007
	House wife	215	56.1			
	Student	15	3.9			
	Government employee	33	8.6			
	Private employee	23	6			
	Other	97	25.3			
	Total	383	100			
7.	Monthly income			15.087	4	0.005
	<1000	239	62.4			
	1001–2000	31	8.1			
	2001–3000	42	11.0			
	Above 3001	71	18.5			
	Total	383	100			
8.	Residence			.176	1	0.674
	Urban	273	71.3			
	Rural	110	28.7			
	Total	383	100			
9.	Household size			8.197	2	0.017
	<3	99	25.8			
	3–6	158	41.3			
	>6	126	32.9			
	Total	383	100			
10.	Total number of pregnancies			5.861	2	0.053
	<3	272	71.0			
	3–5	85	22.2			
	>5	26	6.8			
	Total	383	100			

Table 2. Knowledge and practice of the participants on contraceptive use, Gedeo zone, south part of Ethiopia, 2021.

Contraceptive methods	Frequency	Percentage
Pill	47	13.3
Condom	17	4.8
Injectable	74	20.9
Implant	58	16.4
Emergency contraceptive	22	6.2
Other	24	6.8
More than one answer	112	31.6
Total	383	100.0

maternal health services in the area,⁴⁷ including access to modern contraception during this vulnerable time. However, this finding is lower than that of studies conducted in Northwest Ethiopia (47.17%),²⁰ Tanzania (45.9%),⁴⁸ Ghana (70%),⁴⁹ and Democratic Republic of Congo (51.4%).⁵⁰ This difference could be explained by variation in study area, sample size, socio-cultural differences, health coverage differences between countries, time variation, and study sitting variation (previous studies were conducted at health institutions, but this study was conducted at a community).

Furthermore, this study found that pregnant women who were worried about becoming infected with COVID-19 after visiting the health care facility had 7.0 times the odds of getting an unintended pregnancy compared to those who were not worried about becoming infected with COVID-19 after visiting the health care facility (AOR=7.061 (2.665–18.710)). This finding is supported by a study conducted in Guinea⁵¹ and Africa.⁴⁷ This could be due to women's and couples' worries about COVID-19, which has an impact on their ability to access family planning methods during this time. COVID-19 is indirectly associated with increased time spent on sexual intercourse among couples. Having sexual intercourse without using any contraceptive methods could have a chance of getting pregnant. This is also supported by a study conducted in the United States, which found that during the COVID-19 pandemic, women with an increased desire to avoid pregnancy had difficulty accessing contraceptive and family planning services in health care facilities, which they needed to achieve their reproductive health goals during this vulnerable time. Due to difficulty in obtaining contraceptive methods, women are more likely to become pregnant unintentionally.⁵²

Furthermore, pregnant women under the age of 20 had 5.2 times the odds of having an unintended pregnancy compared to those over the age of 34 (AOR=5.214 (1.449–18.762)). This finding is also supported by research at Gelemso Hospital,^{41,53} Bale zone,⁵³ Hossana,⁵⁴ and Brazil.⁴⁰ This could be because younger women have more sexual desire than older women. During lockdown,

young women and couples may use sex as a coping mechanism to stay connected in the era of COVID-19, even if they do not consider themselves fertile. This finding contrasts with a study conducted in Ethiopia at Jimma,⁴⁰ Kersa,⁵⁵ and West Wollega,⁵⁶ which found a higher rate of unintended pregnancy among older women. The disparity could be due to variations such as geographical location, culture, traditional practices such as early mirage, the need for more children at a younger age, the practice of deciding family size was also in the hands of the husband for cultural reasons, religious beliefs and practices, and time variation because this study was conducted in the era of COVID-19.

Women who were not the primary decision makers for family planning services had 9.5 times the odds of having an unintended pregnancy than those who were (AOR=9.510 (5.057–17.887)). This finding is supported by research conducted in Northwest Ethiopia,²⁰ Southwest Ethiopia,¹⁹ and Cambodia.⁵⁷ Women who were unable to make a decision about maternal health services, especially family planning, may be more vulnerable to upland and unintended pregnancy. This might be because women may accept their husbands' decisions regarding the use of family planning methods. This is supported by a study conducted in Ethiopia's Tigray region, which found that women who had their husbands as primary decision makers were 85% less likely to receive contraception than women who made their own decisions.⁵⁸ This could be due to fear of a conflict with their husband if they use family planning methods on their own volition. As a result, they may refuse to use contraception.⁵⁹ This implies the importance of women having the autonomy to choose family planning services in order to obtain contraceptive methods at the appropriate time to prevent unintended pregnancy.

Overall, this study discovered that unintended pregnancy is common in the community during the COVID-19 pandemic and provides valuable information about the impact of COVID-19 on maternal health service consumption, changes in demand, and women behaviour.

The pandemic of COVID-19 has a significant impact on the quality and utilization of maternal and reproductive health care services. The COVID-19 pandemic is already having a negative impact on the contraceptive commodity supply chain by disrupting the manufacture of key pharmaceutical components of contraceptive methods or the methods themselves, as well as delaying contraceptive commodity transportation, particularly in low-income countries like Ethiopia. This could be a major factor in the rise in the number of unintended pregnancies. Because of the high rate of unintended pregnancy, women may be at risk of having unsafe abortions and experiencing psychological crises, both of which have a significant impact on maternal morbidity and mortality as a result of complications from unsafe abortions and other psychosocial disruptions.

Table 3. Bivariate and multivariable analysis on factors associated with unplanned pregnancy during COVID-19 pandemic among women in Gedeo zone, south part of Ethiopia, 2021.

Variables	Unintended pregnancy		COR (95% CI)	AOR (95% CI)
	Yes	No		
Marital status				
Married	227	100	1	
Single	16	40	5.675 (3.036–10.609)*	
Gravida				
<3	117	43	1	
3–4	108	75	1.889 (1.190–3.215)**	
>4	22	18	2.226 (1.922–6.806)*	
Age of respondent				
<20	69	61	4.773 (1.658–9.732)*	5.214 (1.449–18.762)*
20–34	93	64	3.7161 (1.404–6.795)*	3.943 (1.326–9.497)*
>34	81	15	1	
Confidence to protect COVID-19				
Yes	72	47	1	
No	171	93	1.200 (1.184–6.473)**	
Resident				
Urban	186	86	2.013 (1.356–3.462)*	
Rural	58	54	1	
Practice COVID-19 prevention measure				
Yes	87	33	1	
No	156	107	1.808 (1.184–6.473)**	
Educational status				
Collage and above	47	13	1	
Secondary school	71	38	1.935 (0.933–4.014)	
Primary school	74	46	2.247 (1.098–4.599)**	
Cannot read and write	51	43	3.048 (1.460–6.364)*	
Income				
< 1000 birr	142	97	1	
1001–2000 birr	15	16	1.562 (0.737–3.306)	
2001–3000 birr	28	14	0.732 (0.367–1.462)	
Above 3001 birr	58	13	0.328 (0.171–0.631)**	
Household size				
<3	51	48	1.951 (1.134–3.356)*	
3–6	107	51	0.988 (0.599–1.629)	
>6	85	41	1	
Chronic medical disease				
Yes	38	42	2.136 (1.247–3.660)*	
No	205	98	1	
Knowledge about contraceptive				
Yes	197	93	1	
No	46	47	2.164 (1.345–3.482)*	
Having autonomy to use contraceptive methods				
Yes	127	16	1	
No	116	124	8.485 (4.759–15.129)*	9.510 (5.057–17.887)*
Fearing of COVID-19 to visit health care facility				
Yes	130	125	7.244 (4.008–13.093)*	7.061 (2.665–18.710)*
No	113	15	1	

CI: confidence interval; COR: crude odds ratio; AOR: adjusted odds ratio; 1: reference group.

*P value < 0.01; **P value < 0.05.

Furthermore, due to the risk of contracting COVID-19, maternal health equipment and personnel may be redirected to meet other demands such as COVID-19 prevention and treatment, clinics may close, and people may be hesitant to visit health care facilities for maternal health care service. The shift of resources to address the public health emergency may cause disruptions in key maternal health services for women, such as reproductive and sexual health services. Clients' dread of going to health facilities may cause a decline in the utilization of these services. Many governments, including Ethiopia, are restricting people's movements to slow the virus's spread, and providers are being forced to suspend some maternal health services that are not classified as essential, depriving people of this time-sensitive and potentially life-saving service.

During the COVID-19 pandemic, the need for equitable, high quality, and easily accessible contraception may help to reduce unintended pregnancy. In these trying economic times, it is critical to develop policies that ensure access to and complete coverage of critical maternal health services. In this way, we may be able to protect women's reproductive health decisions.

Limitation of the study

This study only included women who were pregnant at the time of data collection. The magnitude of unintended pregnancy during the COVID-19 era may have been underestimated because women who were pregnant during the COVID-19 era and ended up having a child or having an abortion were not included in the study. Furthermore, because pregnant women self-report their pregnancy intentions, there may be an under- or over-reporting of unintended pregnancy. Finally, the cross-sectional design of the study prevents an effective causality analysis between the variables of interest.

Conclusion and recommendation

During the COVID-19 pandemic, it was discovered that more than one-third of women's current pregnancy was unintended. The study found that respondents' age, autonomy to use contraceptive methods, and fear of visiting a health care facility were all significantly associated with unintended pregnancy. The Federal Ministry of Health and Regional Health Bureau should work with district health offices and other stakeholders to raise public awareness and support pregnant women, especially those who were afraid of COVID-19 and were hesitant to visit a health care facility, in order to increase utilization of maternal health services during the COVID-19 pandemic while implementing necessary preventive measures. We should work to empower women in terms of maternal health care service utilization, particularly family planning services to

prevent unintended pregnancy. Furthermore, in order to reduce unintended pregnancy, health professionals, health authorities, and policymakers should pay close attention to teenagers and young adult women in particular.

Declarations

Ethics approval and consent to participate

Ethical approval and clearance were obtained from the Dilla University College of Medicine and Health Science Institutional Review Board (IRB), with the ethics approval number 0629/20-04. Official letters have been sent and submitted to all respective health departments. Permission was also obtained from the appropriate authorities. Prior to data collection, all participants provided written informed consent following a brief explanation of the study's purpose and objectives; for participants who were unable to read or write, informed consent was obtained from their legal guardian or legally authorized representative. Participants' involvement in the study was totally voluntary basis, and those who were unwilling to participate in the study or who wished to discontinue their participation at any time were informed that they could do so without restriction. Confidentiality was maintained throughout the study by avoiding using the participants' names in the questionnaire. For security reasons, the collected data were kept under lock and key and used only for the purposes of the study.

Consent for publication

Not applicable.

Author contribution(s)

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All data included in this manuscript can be accessed from the corresponding author upon request through the email address.

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Supplemental material

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