



Research article

The prevalence of general anxiety disorder and its associated factors among women attending the perinatal service of Dilla University referral hospital, Ethiopia during the COVID-19 pandemic



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ABSTRACT

Background: Coronavirus is rapidly increasing in Ethiopia, and the number of perinatal service users at the hospital decreased due to the fear of contracting the virus. The mental health of a pregnant mother is vital for preventing pregnancy and birth-related complications. This study aimed to determine the magnitude and associated factors of General anxiety disorder among perinatal service users in Dilla University referral hospital, Dilla, Ethiopia.

Methods: A hospital-based cross-sectional study was conducted among 178 respondents from April 6 – May 6, 2020. The sampling technique of this study was Consecutive sampling. Data were collected using a structured interview. General anxiety disorder (GAD-7) was used to determine the outcome variable. Logistic regression analysis and adjusted odd ratio at 95% CI and $p < 0.05$ was used to determine the statistically significant association between general anxiety disorder and its predictors.

Result: A total of 178 respondents with a 100% response rate were enrolled in the study. The mean income of respondents was 1500 (± 700) Ethiopian birr. The overall prevalence of general anxiety disorder (GAD) was 32.2%. Living in Rural area [AOR = 0.48; 95% CI: (0.25–0.9) $P = 0.02^*$], Primary level of education [AOR = 0.41; 95%CI:(0.21–0.75), $P = 0.03^*$], poor social support [AOR = 4.3995%CI:(2.29–12.53), $P = 0.001^{**}$] and primigravida [AOR = 3.05; 95% CI: (1.53–6.08), $P = 0.001^{**}$] were variables significantly associated with general anxiety disorder at 95% confidence interval, $p < 0.05$.

Conclusions: This study found that nearly one-third of the respondents had general anxiety disorder. Therefore, working on the mental health impact of the pandemic among perinatal service users is an urgent solution to promote their physical, mental, and psychological health of a mother and her baby.

1. Introduction

The Perinatal period of a woman is between 22 weeks of pregnancy to 1 week of delivery and a period in which most pregnancy and birth-related problems occur due to the different physiological and environmental factors [1]. The current fertility rate in Ethiopia is 4.109 births per woman, a 2.28% decline from the 2019 fertility report [2]. Women died from the preventable causes of pregnancy and childbirth-related problems, and it was up to 94% in lower and middle-level income countries due to a lack of skilled health professionals and inadequate service coverage [3].

The 2019 coronavirus disease (COVID-19) pandemic report showed that at the global level, 48,385,603 confirmed cases (1,229,473 deaths),

in Africa 1581922 cases (34, 407 deaths), and Ethiopia, 91, 118 confirmed cases (1384 deaths) [4]. The virus is highly contagious, which transmits from human to human via respiratory droplets and body contact with the symptom of fever, cough, fatigue, and difficulty of breathing [5]. Around 538 pregnant mothers were confirmed for corona and showed symptoms of fever, cough, elevated C-reactive protein, and 91 % of them delivered by cesarean section. From all confirmed cases, there were three maternal intensive care unit admissions, one neonatal and intrauterine death, but no maternal death report [6, 7, 8].

The Separation of corona confirmed mothers from their infants is not recommended, but only in the case of severe symptomatic illness that the neonate should be separated and treated with fresh and quality pasteurized milk [9, 10].

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The pandemic discourages women from seeking their antenatal, delivery, and postnatal care services. Thus, the Ethiopian ministry of health collaboration with different organizations working on mothers to continue their perinatal service as previously during the period of the pandemic [11, 12].

The world health organization recommend mothers to wash their hand with soap before and after contact with the infant, routinely clean surfaces, face mask use, social distancing with other people and avoid touching eyes, mouth, and nose [13].

Psychological problems are common among confirmed cases, families of confirmed cases, and peoples living around the area of the high prevalence, and the most observed symptoms were suicide, anxiety, hopelessness, and fear of stigma [14].

The most common psychological problems seen among pregnant and delivering mothers were feeling of shame, self-blame, dissociative symptoms, social isolation, and depression and this problem have been significant in the period the pandemic [15, 16, 17].

The magnitude of perinatal depression before the pandemic period in Ethiopia was 25.8% [18], and psychological distress during the pandemic period at the community level was 66.4% [19].

The mother's mental health at the perinatal period is vital for the prevention of preterm birth and complication during delivery; however, the pandemic becomes stressful due to its separation nature of transmission prevention from one to another [20, 21]. Factors associated with perinatal stress and depression were low educational level, rural residence, low income, previous complication, and multiparty [22].

The studies done during the period of a pandemic among perinatal mothers showed that mental health problems were increasing. Thus, strengthening the mental health service on those groups of populations is a solution taken to prevent the psychological impact of the pandemic for both the mother and her baby [23, 24]. There is no sufficient study done on low and middle-level countries regarding the psychological impact the pandemic on those groups of populations. Therefore, this study aimed to determine the magnitude of corona anxiety symptoms, and its associated factor among perinatal attending mothers related to the pandemic.

2. Methods

2.1. Study design, setting and period

Hospital-based cross-sectional study design was conducted from April 6-May 6 at Dilla University referral hospital, Dilla, Ethiopia. The hospital is currently serving more than 100,000 peoples, and annually 400 mothers were delivered. The fertility rate in this study area was 69.1% [25]. The common language spoken in this study area was Amharic and Gedeoffa.

2.2. Study participants

All mothers attending a perinatal service of the study area were the source of population, and all mothers during the period were study populations. The respondent who was not able to respond to the interview for various reasons, including acutely or severely ill during the study period were excluded, from the study.

2.3. Sample size and sampling technique

All Participants during the study period were included and a consecutive sampling technique was used to select the required number samples.

2.4. Data collection and instruments

The data was collected by two BSc midwifery and psychiatry professionals using a structured interview. The first part of the questionnaire was about the sociodemographic characteristics of the respondents. The

second part of the questionnaire was general anxiety disorder (GAD-7) used to determine the general anxiety disorder in response to the pandemic. The score $\geq 9/21$ was considered as General anxiety disorder [26]. The third part of questionnaire was current knowledge, attitude and practice of the coronavirus (KAP-12) [26]. The final part of the questionnaire was Oslo social support scale (Oslo -3) used to measure social support level ranging from 3 to 14 [27].

2.5. Ethical approval

This study followed the principles of Dilla University College of medical and health science research ethics and Helsinki declaration. The written Informed consent was obtained from each participant. The issues of voluntary participation and Confidentiality was maintained throughout the data collection period.

2.6. Data quality control

To assure the data quality and consistency, the English version of the questionnaire was translated Amharic and Gedeoffa, the official language of the study period then, back-translated to English by a language expert. The Amharic and Gedeoffa version questionnaire was used for the actual data collection. The pretest was done before two weeks of the concrete data collection on 20 respondents. The four days of training was given for supervisors and data collectors. The data was checked for its completeness on a daily base.

2.7. Data management and analysis

Data was entered into the Epi-Data version 3.4 software package and exported to the Statistical Package for Social Science version 22. The sociodemographic and other factors of the respondents were described using descriptive statistics (frequency, percentage, mean and standard deviation). Bivariate logistic regression analysis at $P \leq 0.25$ was performed to identify the association of each independent variable with the outcome variables.

All variables with a p-value of ≤ 0.25 at bivariate logistic regression analysis were entered into the multivariate logistic regression model to control the possible effect of confounders. A p-value of less than 0.05 was considered statistically significant, and the adjusted odds ratio (AOR) with 95% confidence interval (CI) was calculated. The model fitness was checked using Hosmer and Lemeshow goodness of fit test statistics.

3. Result

3.1. Socio demographic results

The mean (SD) age and income of the respondents were 28 (± 5.6) years old and 1500 (± 700) Ethiopian birr respectively. More than two-thirds of the respondents came from the urban area. Half of the respondents were attended up to the primary level of education (Table 1).

More than two-thirds of the respondents were reporting false/I don't know for the item, "Persons with COVID-2019 cannot infect the virus to others when a fever is not present". More than two-thirds of the respondents have not worn a face mask when leaving their homes? (Table 2).

3.2. Prevalence of generalized anxiety disorder

From a total of 178 respondents, 57 (32.2%) of them were scored $\geq 9/21$ and considered as General anxiety disorder.

3.3. Factors associated with general anxiety disorder

On multiple logistic regression analysis, living in Rural [AOR = 0.48; 95% CI: (0.25–0.9) $P = 0.02^*$], Primary level of education [AOR = 0.41;

Table 1. Socio-demographic characteristics of respondents attending in Dilla referral hospital, Dilla, Ethiopia, 2020 (N = 178).

Variable	Category	Frequency (n = 178)	Percent
Age	≤28 year	110	61.7%
	>28 year	68	38.3%
Residence	Urban	119	66.8%
	Rural	59	33.2%
Marital status	Single	3	1.6%
	Married	168	94.5%
	Divorced/widowed/separated	7	3.9
Educational status	Primary	95	53.3%
	Secondary and above	83	46.6%
Income	≤1500 ETB	63	35.3 %
	1500 ETB	115	64.6%
Number of pregnancy	Primigravida	51	28.6%
	Multigravida	127	71.3%
Parity	Prim parity	45	25.2%
	Multiparty	133	74.8%
pregnancy status	Wanted	168	94.3%
	Un-wanted	10	5.7%
Current status	Delivered	132	74.2%
	Not delivered	46	25.8%
Previous history of mental illness	Yes	3	1.68%
	No	175	98.31%
Social support	Poor social support	39	21.9%
	Moderate social support	62	34.8%
	High social support	77	43.2%

95%CI:(0.21–0.75), $P = 0.03^*$], low social support [AOR = 4.39, 95% CI:(2.29–12.53), $P = 0.001^{**}$] and primigravida [AOR = 3.05; 95% CI: (1.53–6.08), $P = 0.001^{**}$] were significantly associated with General anxiety disorder at 95% confidence interval, $p < 0.05$ (Table 3).

4. Discussion

This study found that the overall prevalence of general anxiety disorder was 32.2 %, and variables associated with the outcome variable

Table 2. Knowledge, Attitude and Practice response of respondents living quarantine center in Addis Ababa, Ethiopia (N = 178).

Knowledge assessment tool		True	False (I Don't know)
1	The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	123 (69%)	33 (31%)
2	Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus.	75 (42%)	103 (58%)
3	Currently there is no effective cure for COVID-2019, but early symptomatic and supportive treatment can help most patients recover from the infection.	130 (73%)	48 (27%)
4	Not all persons with COVID-2019 will develop to severe cases. Only those who are elderly, have chronic illnesses, and are obese are more likely to be severe cases.	53 (30%)	125 (70%)
5	Eating or contacting wild animals would result in the infection by the COVID-19 virus.	52 (29%)	126 (71%)
6	Persons with COVID-2019 cannot infect the virus to others when a fever is not present.	27 (15%)	151 (85%)
7	The COVID-19 virus spreads via respiratory droplets of infected individuals	168 (94.3%)	10 (5.7%)
8	Ordinary residents can wear general medical masks to prevent the infection by the COVID-19 virus	110 (61.7%)	68 (38.2%)
9	It is not necessary for children and young adults to take measures to prevent the infection by the COVID-19 virus	51 (25%)	152 (75%)
10	To prevent the infection by COVID-19, individuals should avoid going to crowded places such as train stations and Avoid taking public transportations.	172 (96.6%)	5 (2.8%)
11	Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus.	150 (84%)	28 (16%)
12	People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place. In general, the observation period is 14 days	142 (80%)	36 (20 %)
Attitude		Agree	Disagree (I don't know)
13	Do you agree that COVID-19 will finally be successfully controlled?	30 (17%)	148 (83%)
14	Do you have confidence that Ethiopia can win the battle against the COVID-19 virus	45 (25%)	133 (75%)
Practice		Yes	No
15	In recent days, have you gone to any crowded place?	84 (47.2)	94 (52.8%)
16	In recent days, have you worn a mask when leaving home?	50 (28%)	128 (72%)

Table 3. Multi-Variable regression analysis result of corona anxiety symptom with the predictable independent variables at Dilla referral hospital, Dilla, Ethiopia, (N = 178).

Variables	Category of variables	Corona anxiety symptom		AOR	p-value
		Yes	No		
Residence	Rural	27	32	0.48 (0.25–0.9)	0.02*
	Urban	76	43	1	
Marital status	Others *	4	6	0.54 (0.15–1.98)	0.11
	Married	93	75	1	
Educational status	Primary	55	40	0.41 (0.21–0.75)	0.03*
	Secondary and above	63	20	1	
Income	≤1500 ETB	29	34	1.23 (0.66–2.29)	0.42
	1500 ETB	47	68	1	
Face mask use	Yes	19	31	0.76 (0.39–1.49)	0.29
	No	57	71	1	
Number of pregnancy	Primigravida	35	16	3.05 (1.53–6.08)	0.001**
	Multigravida	53	74	1	
Parity	Primiparity	24	21	0.91 (0.46–1.8)	0.13
	Multiparity	75	60	1	
pregnancy status	Un-wanted	6	4	2.1 (0.57–7.72)	0.47
	Wanted	70	98	1	
Current status	Not delivered	21	25	0.58 (0.3–1.14)	0.21
	Delivered	78	54	1	
Previous mental illness	Yes	2	1	0.69 (0.13–2.34)	0.29
	No	130	45	1	
Social support	Low social support	27	12	4.39 (2.29–12.53)	0.001**
	Moderate social support	21	41	1.22 (0.59–2.54)	0.11
	High social support	21	50	1	

Others -single, divorced, widowed and separated, * = $p \leq 0.05$, ** = $p \leq 0.001$.

were urban, the secondary level of education, low social support, and primigravida.

This study found a 32.2% prevalence of general anxiety disorder among perinatal service attending mothers, and this study finding was higher than the study conducted in china (17.2%) [29].

It might be due to the difference in Sociodemographic characteristics such as literacy, culture, resource, facility, and the assessment tool, which the previous study used was Self-Rating Anxiety Scale (SAS).

Respondent residing from rural area had 52% less likely to develop general anxiety disorder as compared to those from Urban areas which was the contrary with the study done in northwest Ethiopia [28]. In the rural area, the living and housing style, the people are scattered and had less chance of contact with strangers and peoples contributing to less chance of getting infected. The fear and worry to get infected are less in this group of population than living in urban.

According to this study result respondents with primary level education had 60% less likely to experience general anxiety disorder which was in contrast with the study done in Japan [29]. It might be due to those who learn more than the secondary level of education might have high expectation care for prevention of self and others to the pandemic with limited resources and what the world health organization recommended.

This study found that respondents with primigravida had 3.05 (1.53–6.08) times more likely to witness general anxiety disorder than their counterparts, which was supported by the study done in Northwest Ethiopia [28].

The experience difference for handling pregnancy and birth-related conditions also, the current pandemic is very stress full and difficult for handling without previous experience, and those with new pregnancy were worried about management all with this all conditions.

Respondents with poor social support had 4.39 times (2.29–12.53) more likely to suffer from general anxiety disorder than those who had high social support, which was supported by a similar study done in Malawi [30] and Ethiopia [18]. Social support is useful for providing guidance, advice, information, foods, and materials, care, affection, love, respect, which all help the mother to better capable of dealing with the stresses related to the pandemic.

4.1. Limitation of the study

The cross-sectional study design nature of this study doesn't provide an actual cause and effect relationship and, since the data collection method was an interview, it was prone to social desirability, recall, and interviewer bias.

5. Conclusion

This study found that more than one-third of the perinatal service attending mothers were experiencing anxiety, and variables such as living in the urban, secondary level of education, poor social support, and primigravida were contributing to corona anxiety symptoms. This study results indicate that there should be immediate mental health support for mothers attending a perinatal service for the current and future physical and psychological health of both a mother and her baby.

Mental health professionals should visit for mothers attending perinatal service until the pandemic ceased from the country. They should give continuous emotional and psychological support for mothers attending perinatal service and teach how to cope with the psychological impact of COVID-19 for better health care.

Declarations

Author contribution statement

D. Pandey, C. Kassaw: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data Availability Statement

Data will be made available on request.

Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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