



Anxiety Levels and Behavioral Changes among Pregnant Women Amidst the Coronavirus Disease-19 Pandemic at Fauziah Mother and Child Hospital Tulungagung, East Java

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Abstract

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AIM: The coronavirus disease (COVID-19) pandemic has reportedly led to anxiety in women during pregnancy around the world. Anxiety during pregnancy is known to have negative outcomes for pregnancy and the baby. The aim of this study is to describe anxiety levels and behavioral changes of pregnant women during the COVID-19 pandemic at Fauziah Mother and Child Hospital Tulungagung, East Java.

METHODS: This descriptive study involved 30 pregnant women. The instrument used was a questionnaire asking about socio-demographic characteristics, gestational age, and the number of children, a questionnaire to assess attitudes and behavioral changes, and Generalized anxiety disorder-7-item Scale.

RESULTS: About 66.6% of pregnant women exhibited mild anxiety levels, while 16.7% of them had moderate anxiety levels. Most pregnant women worried about their own, their children's, unborn babies, and their elderly family members' health, worked from home, avoided large-scale social activities and gatherings, and limited visits to health facilities.

CONCLUSION: The COVID-19 pandemic increases the likelihood of anxiety symptoms and changes in attitudes and behaviors in pregnant women.

Introduction

The Coronavirus Disease 2019 (COVID-19), that first appeared in China in December 2019 is a new beta coronavirus that is transmitted between humans through close physical interaction, and there has been a rapid increase in the number and number of deaths of cases since the first identification [1]. The World Health Organization (WHO) stated the COVID-19 outbreak as a global pandemic and become a public health emergency of international concern [2]. Pregnant women could be more vulnerable to COVID-19 infection than the general population because of immune-compromised status and physiological adaptive changes during pregnancy which make them susceptible to mental health disorders [2], [3].

Data related to COVID-19 infection and its complications in pregnant women are still limited. Pregnancy is a state of decreased immunity, moreover, adaptive biological changes during pregnancy make pregnant women more vulnerable to respiratory viral infections [3]. In addition, the outbreak of the COVID-19 has a significant potential to create fear, anxiety, and adversity which can lead to negative emotional effects on pregnant women [1]. Stress, anxiety, and

depression are serious public health issues throughout pregnancy [2]. Generalized anxiety disorder (GAD) in pregnancy has been associated with numerous adverse maternal and perinatal outcomes [4]. Maternal anxiety in pregnancy is associated with various complications, including increased nausea and vomiting during pregnancy, spontaneous abortion, pre-eclampsia, placenta abruption, low birth weight, preterm labor, lower head circumference, and smaller mental developmental scores in infants [4], [5].

So far, Indonesia has not seen any decline in the number of COVID-19 cases. COVID-19 cases are evenly distributed across all provinces and districts/cities in Indonesia. There is no indication that the pandemic in Indonesia will end soon [6]. The government has implemented several strategies to break the chain of COVID-19 transmission. One of them is by issuing the Minister of Health Regulation number 9 of 2020 that regulates Large-Scale Social Restrictions. The existence of social restrictions causes reduced social support for pregnant women due to limited communication with the closest people [7]. During pregnancy, women also have special challenges because they have a responsibility to care for their children and other family members. However, the importance of providing antenatal care in

maternity services escalates the chance of exposure to viral infection [8].

In Indonesia, studies on the mental health of pregnant women during the pandemic are still limited. The aim of this study was to determine the level of anxiety and behavioral changes of pregnant women during the COVID-19 pandemic at Fauziah Mother and Child Hospital, Tulungagung, East Java.

Materials and Methods

Participants

A descriptive study of pregnant women visiting the Outpatient Department of Obstetrics and Gynecology, Fauziah Mother and Child Hospital, Tulungagung, East Java was conducted on February 8–15, 2021. Pregnant patients were included regardless of gestational age and parity. A total of 30 pregnant women with the design of an anonymous survey were selected in this study using consecutive sampling (non-probability) techniques. Direct and written consent was obtained from all research subjects.

Data collection

The instrument used was a questionnaire asking about socio-demographic characteristics (i.e., age, occupation, and education), gestational age and number of children, a questionnaire assessing attitudes and behavioral changes during the pandemic and GAD-7.

The GAD-7 is a 7-item questionnaire is a 2-week follow-up tool that measures the severity of GAD symptoms. The points of GAD-7 are: (a) nervousness; (b) inability to stop worrying; (c) excessive worry; (d) restlessness; (e) difficulty in relaxing; (f) easily irritated; and (g) fear of something terrible happening. The total score of the GAD-7 ranged from 0 to 21 and score each item ranges from 0 to 3. The GAD-7 has shown great reliability, factorial validity, and internal consistency [4]. The total score was used to assess intensification of anxiety. The GAD-7 was recommended by National Institute for Health and Care Excellence to measure prenatal anxiety [9]. Data analysis was performed using Statistical Product and Service Solutions Version 23.0. The descriptive statistics were presented as percentages, means, and standard deviations.

Results

Descriptive statistics of socio-demographics characteristics, gestational age, number of children,

and GAD-7 are shown in Table 1. The average age of the respondents was 26.2 ± 4.2 years old and the mean gestational age was 27.2 ± 9.3 weeks. Nearly half of pregnant women had one child ($n = 14, 46.7\%$). A total of five pregnant women (16.7%) reported having a minimal level of anxiety ($GAD-7 = 0-4$), 20 pregnant women (66.6%) reported having a mild anxiety level ($GAD-7 = 5-9$), and 5 pregnant women (16.7%) reported having moderate anxiety levels ($GAD-7 = 10-14$). The mean GAD-7 score was 7.1 ± 2.6 . Meanwhile, the results of the questionnaire assessing the attitudes and behavior of pregnant women related to COVID-19 are shown in Table 2. Most pregnant women (90%) did not worry about their own health before the pandemic. After the pandemic, more than half of pregnant women (60%) often worry about their own health. They mostly worried about their other children (88.9%), followed by the unborn babies (86.7%) and elderly families (76.7%).

Table 1: Descriptive statistics

n = 30	Category	n (%)	Mean	Std. dev
Age	≤19 years old	2 (6.7)	26.2	4.2
	20–35 years old	22 (73.3)		
	>35 years old	6 (20)		
Gestational Age	1–13 weeks	4 (13.3)	27.2	9.3
	14–26 weeks	8 (26.7)		
	27–40 weeks	18 (60)		
Number of Children	0	12 (40)		
	1	14 (46.7)		
	2	4 (13.3)		
Last Education	Junior High School	3 (10)		
	Senior High School	13 (43.3)		
	Undergraduate/Graduate	14 (46.7)		
Occupation	Housewife	8 (26.7)		
	Civil servant	4 (13.3)		
	Private	18 (60)		
GAD-7	Minimal (0–4)	5 (16.7)	7.1	2.6
	Mild (5–9)	20 (66.6)		
	Moderate (10–14)	5 (16.7)		
	Severe (15–21)	0		

More than half of pregnant women who work were working from home (54.5%). As many as, 26.7% carried out self-isolation at home. Most of the pregnant women avoided large-scale gatherings and social activities (76.7% and 66.7%) and limited visits to health facilities (60%). Most of the pregnant women made large purchases (83.3% of food, 63.3% of hand sanitizers, and 56.6% of Personal protective equipment [PPE]). As much as 44.4% pregnant women needed

Table 2: Responses from 30 pregnant women to a questionnaire on their attitudes and behaviors relating to COVID-19

	% Positive	Yes	No	n
Often feel anxious				
About oneself – before pandemic	10	3	27	30
About oneself – after pandemic	60	18	12	30
About unborn babies	86.7	26	4	30
About children	88.9	16	2	18
About elderly family member	76.7	23	7	30
Behavioral changes				
Working from home	54.5	12	10	22
Self-isolation	26.7	8	22	30
Avoiding large scale meetings	76.7	23	7	30
Avoiding social events	66.7	20	10	30
Limiting visit to health care facility	60	18	12	30
Bulk buying				
Food	83.3	25	5	30
Hand sanitizer	63.3	19	11	30
Personal Protective Equipment	56.6	17	13	30
Child care				
Needs help from other to take care of the child at home because of pandemic	44.4	8	10	18
Work from home/left the job because the need to take care of the children at home due to the pandemic	33.3	6	12	18

help from other people to take care of their children at home since the pandemic, while 33.3% of pregnant women worked at home or left their jobs because they had to take care of their children at home.

Discussion

The results of this study exhibited that the most of pregnant women had a mild level of anxiety (66.6%), followed by moderate and minimal anxiety (16.7%) with an average GAD-7 score of 7.1 ± 2.6 . This shows that the COVID-19 pandemic elevates the likelihood of pregnant women experiencing symptoms of anxiety. This result is in line with previous study which reported that a possible increase in symptoms of anxiety and depression amid pregnant individual during the COVID-19 lockdown [10]. Pregnant women during the COVID-19 pandemic have a number of concerns, such as anxiety as indicated by the high prevalence of mild, moderate, and severe anxiety [11].

Depression is a common complication of pregnancy and the postpartum, and the WHO informed that approximately 10% of pregnant women experience mental disorders, especially depression [12]. Pandemic is common with uncertainty and insecurity for everyone, mostly in pregnant women and it is common that these could lead grow of anxiety and fear [1]. During pandemics, mental disorders occurred at twice the rate than under normal circumstances [2]. Prenatal anxiety and depression can lead changes in nutrition, physical activity, and sleep, which affect the mood and development of the mother's fetus, causing various complications for the mother and fetus [13].

Almost all pregnant women worried about their unborn babies, children and elderly family members. This result is in line with the research of Corbett *et al.* [14] which shows that more than 50% of pregnant women are worried about their unborn babies, children and elderly family members. Women prioritize the health of others over their own health, this is a common psychological event in pregnancy in which a woman may put the well-being of her baby first, potentially linked to a woman's innate desire to protect her offspring, and this shift of focus could lead to potentially damaging to the women's own health, particularly their mental health [15]. The stress of preparing for childbirth during the pandemic and concerns about COVID-19 infection in themselves as well as their children increase women's risk of experiencing anxiety [11].

Most of the pregnant women showed behavior changes related to the COVID-19 pandemic, including working from home, isolating themselves, avoiding large-scale gatherings avoiding social activities and limiting visits to health facilities. Government directives on social distancing have led to significant changes

in behavior among pregnant patients. Pregnant women who are under additional pressure may have indirect disadvantageous effects on their physical and mental health [14]. Fetal welfare is one of the main important things for pregnant women. Pregnancy is a condition that requires regular medical monitoring. The difficulty of accessing professional medical assistance became a cause of anxiety for pregnant individual. In addition, pregnant women also feel anxious about the risk of exposure to the virus while visiting health facilities [16], [17]. Most of the pregnant women made large purchases on food, hand sanitizers, and PPE. Pregnant women think about their health and their babies so that there is a doubling of their health responsibilities, personal protective such as the hygiene practices to prevent the spread of virus. Some pregnant women seem elevated these practices because of anxiety and high stress about the risk of transmitting the virus, which may have negative mental consequences [1].

From the research results, it was found that 44.4% of pregnant women needed help from others to take care of their children at home since the pandemic. Meanwhile, 33.3% pregnant women worked at home or left their jobs because they had to take care of their children at home. Since the government implemented teaching and learning activities from home, the 24-h with children at home became an extra source of stress for pregnant women due to the additional time required to take care of them. The WHO recognizes the importance of birth assistance, freedom of birthing position, keeping the mother, and baby together after birth as much as possible and promoting breastfeeding [15]. Social support is known to be needed to strengthen oneself in times of crisis and the lack of social support has psychological consequences [12]. Support from loved ones such as the partner, family, and relatives in the pregnancy and postpartum period is important for decreasing stress, averting anxiety and depression, ameliorating coping skills, and new role adaptation as mothers amidst pregnancy and after birth [1]. Policymakers and obstetricians should be aware that COVID-19, together with its isolation measures, may have a significant impact on the emotional well-being of pregnant women [10], [12]. In obstetric settings, routine screening for depression and anxiety should be undertaken to ensure optimal perinatal and fetal mental health following the current pandemic [10].

The research findings highlight a number of practices that may be useful in reducing prenatal stress during a pandemic. One way to reduce prenatal stress is to minimize barriers to antenatal care, and use telehealth effectively [18]. Regular communication with health workers has been exhibited to decrease stress in pregnant women and bring on greater mental healthcare [19]. Policies to make safe labor outside the hospitals more affordable, such as proposed by New York State, could help reduce the stress related to the fear of perinatal infections related to the hospital and

reduce the demand for hospital care which has already been burdened by the pandemic [20]. However, these policies are certainly not easy to implement in Indonesia with all the limited facilities and resources. Elevating the amount of prenatal SARS-COV-2 screening, elevating education and consciousness about COVID-19 and appropriate anticipation (such as hygiene, vaccination, and social distancing) can also help reduce stress related to fear of infection [18].

The health system needs a concerted effort to address the widespread mental health effects of COVID-19. There is an urgent need to integrate anxiety screening into antenatal programs to support for pregnant women in developing countries such as Indonesia where mental health services are limited. A comprehensive mental health plan should be developed through the introduction of innovative strategies such as remote consulting services to provide psychological assistance to pregnant women in addressing the mental health challenges of COVID-19. Further research is needed with a larger sample size and assessment on the relationship between socio-demographic factors (age, education, occupation, and monthly income), gestational age, parity, and other factors such as a history of previous mental health problems with the mental health status of pregnant women during the pandemic.

Conclusion

This study elucidated that the COVID-19 pandemic increases the likelihood of anxiety symptoms and changes in attitudes and behavior in pregnant women. Government regulations on social distancing cause changes in pregnant women behavior. Pregnant women who are under psychological stress may experience indirect adverse effects on their physical and mental health. Our findings highlight the urgent need to provide interventions that support pregnant women during the pandemic are needed to mitigate long-term negative outcomes.

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