






Literature Review

Anxiety Disorders in Pregnancy During The COVID-19 Pandemic: What are The Risk Factors?

Eunike Deborah Phoebe¹, Tiwi Mustikasari¹, Wigaviola Socha Purnama Asri Harmada¹,  Dinda Sella Octaviana¹,  Grahana Ade Candra Wolayan¹,  Qonita Kanza Husnina¹, Nicholas Fernando Purnomo¹, Ian Marvin Gotama¹, Johan Sebastian Tjoewinata¹, Nyoman Sumiati^{2,3,4}

¹Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia

²Department of Psychiatry, Faculty of Medicine, Universitas Tadulako, Palu, Indonesia

³Department of Psychiatry, Faculty of Medicine, Universitas Alkhairaat, Palu, Indonesia

⁴Department of Psychiatry, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia



ARTICLE INFO

Received: September 23, 2021

Revised: October 27, 2021

Accepted: January 1, 2022

Published: November 30, 2022

*) Corresponding Author:
dinda.sella.octaviana-2017@fk.unair.ac.id

Keywords: Anxiety Disorders, Pregnancy, COVID-19

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ABSTRACT

Introduction: The COVID-19 pandemic, since the beginning of 2020, has become a concern for the world community in the health sector. Literature found anxiety symptoms to increase during the COVID-19 pandemic, particularly in the pregnant women population. This literature review study aims to provide an overview and risk factors for anxiety in pregnancy related to the COVID-19 pandemic. **Methods:** PubMed and Google Scholar were searched using the following keyword (anxiety disorders) AND (pregnancy) AND (COVID-19) using the journal publication filter for the 2009-2021 issues. **Results:** Therefore, the psychological condition of pregnant women during COVID-19 pandemic is influenced by various restrictive measures taken by the government and the community, the uncertainty of the pandemic in the future, and most importantly, the fear of being infected so that it can harm the baby they are carrying. Risk factors for anxiety disorders that may be closely related to pregnancy are women who became pregnant for the first time reported having significantly more pregnancy-related anxiety than women who had given birth, high levels of anxiety and depression were found in women with unplanned pregnancies, increased anxiety was associated with worry pregnant women do not receive adequate antenatal care as a result of COVID-19, and a significant correlation was found between higher education and anxiety levels. **Conclusion:** Risk factors for anxiety disorders in pregnancy are the first pregnancy, unplanned pregnancy, inadequate ANC visits, and higher education. The risk factors that affect pregnant women do not stand alone but simultaneously with each other.

INTRODUCTION

The COVID-19 pandemic since the beginning of 2020 has become a concern for the world community in the health sector. COVID-19 is a disease that originated from the SARS-CoV-2 virus. Coronavirus belongs to the Coronaviridae family which manifests respiratory problems in humans. Recently, there have been three types of coronavirus that are causing outbreaks around the world. It started with SARS-CoV in 2002, then continued with the MERS-CoV in 2012, and now SARS-CoV-2, also known as COVID-19 [1]. However, the pandemic of COVID-19 has been discerned in all aspects of human life and is one that significantly impacts mental health [2]. Anxiety disorder is the most common mental health problem caused by the pandemic COVID-19 [3]. Several studies have shown that depression and anxiety increased after the COVID-19 pandemic in the US [4–6]. Research in Indonesia also showed increased anxiety during the COVID-19 pandemic [7].

Literature found anxiety symptoms to increase during the COVID-19 pandemic, particularly in the pregnant women population [8]. Pregnant women become vulnerable because pregnancy itself has psychological changes [9]. In addition, a naturally weakened immune system makes pregnant women vulnerable to infections and at high risk of severe complications [10]. A study shows that since the pandemic began, general anxiety levels have increased in pregnant women compared to the general population (15-23% vs. 3-5%) [11]. One of the common causes of morbidity during pregnancy is mental health disorders. High anxiety levels in late pregnancy were found in 22% of women, and about 12% experienced depression [12]. Unfortunately, there is a lack of more representative data in the existing literature on anxiety during the COVID-19 pandemic, particularly in the pregnant maternal population. This literature review study aims to provide an overview and risk factors for anxiety in preg-

nancy-related to the COVID-19 pandemic.

REVIEW

ANXIETY DISORDERS

Anxiety disorders include disorders characterized by excessive fear, anxiety, and associated behavioral disorders, such as selective mutism, specific phobia, social phobia, agoraphobia, panic disorder (PD), generalized anxiety disorder (GAD), separation anxiety disorder, substance/medication-induced anxiety disorders, anxiety disorders due to another medical condition, other specified anxiety disorder, and unspecified anxiety disorder [13]. Anxiety disorders are the most common mental disorders. The prevalence of specific phobia is 10.3%, followed by panic disorder with or without agoraphobia with a prevalence of 6.0%, social phobia with a prevalence of 2.7%, generalized anxiety disorder with a prevalence of 2.2%. Compared to men, women have a 1.5 to 2 times higher risk of developing an anxiety disorder [14].

Selective mutism is characterized by an inability to speak in social situations where one is expected to speak, such as school, even though the individual speaks in other situations. Specific phobia is a fear or anxiety or avoidance of an object or situation. Individuals with social phobia experience fear or anxiety or avoidance of social interactions and situations that have the possibility of being scrutinized. Individuals with agoraphobia experience fear and anxiety about two or more situations such as using public transportation, being in open spaces, being in closed places, lining up or being in crowds, and going out alone. Panic disorder has recurrent unexpected panic attacks and persistent concern or worries about more frequent occurrences of panic attacks or maladaptive behavioral changes, such as avoidance of exercise or unusual locations. The hallmark of generalized anxiety disorder is persistent and excessive anxiety and worry about various things that are difficult to control by oneself. Separation anxiety disorder is characterized by

persistent fear or anxiety about impending harm to the related figure, events that could lead to separation from the related figure, reluctance to stay away from the related figure, nightmares and physical symptoms, and symptoms often present in childhood. However, they do not rule out the possibility of appearing as an adult. Substances/medications-induced anxiety disorders including anxiety caused by substance poisoning or withdrawal or medical treatment. Complaints of anxiety characterize anxiety disorders due to another medical condition resulting from a current medical condition [13].

Anxiety disorders such as GAD and PD are often found in pregnant women. If this diagnosis is treated well, some unwanted problems during and after pregnancy can be reduced. GAD and PD have different characteristics, in GAD excessive anxiety and worry occurs at least six months that difficult to control and disturbs social, occupational and other important areas of function, feeling restlessness, being easily fatigued, difficulty concentrating, irritable, feeling muscle tension, sleep disturbance, not caused by the substance, such as drugs, others medical condition, or mental disorders, such as panic disorder, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, somatic symptom disorder, and body dysmorphic disorder, often founded and can be diagnostic criteria for GAD. GAD can be graded into mild, moderate, or severe depending on the time it occurs. On the other hand, PD is more like causing episodic disorders, has an uncertain cause and is prolonged. The sign that can be used to diagnose PD are palpitations, pounding heart, or accelerated heart rate, sweating, trembling or shaking, shortness of breath or smothering, feelings choked, chest pain or discomfort, nausea or abdominal distress, feeling dizzy, unsteady, light-headed, or faint, chills or heat sensations, paresthesia, derealization or depersonalization, fear of losing control, and fear of dying. Tools used for screening

for anxiety disorder will simplify diagnosis and grading the patients [15].

PREGNANCY

Pregnancy is a significant and of course precious time for every woman. Various physiological changes are carried out by the body to support the existence of a “new individual,” including non-physiological changes experienced by pregnant women, which can occur only during pregnancy or persist until after [16]. The experiences experienced by women during this period can affect these changes; for example, women during pregnancy are sure to feel a change in their roles, even identities. The emergence of the role or identity of “motherhood” can naturally change the pattern of life and habits experienced so far to protect and maintain the baby’s safety in the womb. The role of parents can also lead to a desire to maintain a healthy lifestyle to maintain the health of their babies which can lead to the desire to exercise, or in another possibility the desire to take care of their babies can also reduce the activities of pregnant women because of concerns for their babies. Social pressure from the surrounding environment that pregnant women get where they are required to be good mothers can force themselves to change their lifestyles such as regularly taking specific vitamins or supplements, a diet containing healthy foods with adequate nutrition, reducing alcohol consumption, not smoking, or generally lead a “healthier” lifestyle [17]. Because the changes, especially the non-psychological ones that she experienced, made her desire to be a “successful mother” to encourage pregnant women to seek advice regarding their pregnancy, both from professional health workers, friends around them, family, and even online communities such as social media, also information through magazines, books, or the internet [16, 18]. In fact, according to research results, pregnant women tend to have “too much information,” especially in the early stages of

pregnancy or their first pregnancy. These changes are likely only to be more successful than others, and research shows that physical activity is seen as a low priority. Thus, even when the desire to be “active” during pregnancy is high, women may experience challenges when faced with many changes [16].

COVID-19 PANDEMIC

COVID-19 is a disease that originated from the SARS-CoV-2 virus. Coronavirus belongs to the Coronaviridae family which manifests respiratory problems in humans. Recently, there have been three types of coronavirus that are causing outbreaks around the world. It started with SARS-CoV in 2002, then continued by the MERS-CoV in 2012, and now SARS-CoV-2, also known as COVID-19 [1].

The virus firstly came from Wuhan, China, in December 2019, with initial symptoms similar to pneumonia. Almost all cases that arise are coming from the Hunan seafood market which many kinds of animals were sold. An unknown beta coronavirus was identified in the sample of the lower respiratory tract of the infected people. The sample used to identify the virus was isolated from the Human airway epithelial cells. After that, World Health Organization (WHO) named the disease COVID-19, and on March 11, 2020, WHO declared that COVID-19 was a pandemic [1].

Coronavirus can travel from the mouth or nose in particles when the infected person is coughing, sneezing, speaking, singing, or breathing. The particles range from large droplets to aerosols. COVID-19 can result in varying severity depending on the infected person’s body response. COVID-19 is a self-limiting disease in which most will experience mild to moderate respiratory disorder and recover without any intensive treatments. However, in a small percentage of severe cases, impacting the old ones and people with co-morbid as heart problems, diabetes, chronic respiratory disorders, pregnancy, or cancer, chances are devel-

oping severe illness and require special medical treatment. Regardless, anyone can still get the disease and suffer severe cases, even die at any age [19].

The clinical manifestation caused by COVID-19 could be specific and non-specific. Common symptoms in infected patients were fever, shortness of breath, ageusia, anosmia, cough, dan fatigue [19].

These days, many countries are locked down and encouraged to stay home to prevent transmission. The serious impact caused by this COVID-19 pandemic is mental health problems. We want to discuss this study especially pregnant women who suffered mental health problems during this pandemic.

ANXIETY DISORDERS IN PREGNANCY DURING THE COVID-19 PANDEMIC

During pregnancy, psychological health problems, such as anxiety disorders, are often experienced by pregnant women and are serious health problems experienced by pregnant women. A study by Durankus and Aksu (2020) reported that among 260 pregnant women participants, 35.4% showed anxiety and depression symptoms [20]. Previous research conducted in Malang, East Java, Indonesia, using the questionnaire method, showed a significant correlation between anxiety disorders in pregnant women during the COVID-19 pandemic [21]. Based on the characteristics of pregnancy in their study, it can be seen that the majority of pregnant women are aged 20-35 years. Based on their pregnancies, the majority of pregnant women are multi-gravida or have had a previous pregnancy. Meanwhile, based on gestational age, the majority of pregnant women are in their third trimester of pregnancy. Based on their education, the majority of pregnant women are high school graduates, and based on their occupation, the majority of them are housewives [21]. Anxiety disorders during pregnancy are more common among pregnant women at a younger age and those

with lower levels of education. Pregnant women in this category are pregnant women who need more attention from midwives and also health care professionals because they are more at risk and vulnerable so that the quality of pregnancy is better and pregnancy outcomes are better [22].

In addition to pandemic-related stress and anxiety, many factors that contribute to the quality of mental health during pregnancy, and the insecurity associated with natural disasters and catastrophic events have been mentioned. Pregnancy creates anxiety and the risk of depression in women, and the COVID-19 pandemic is stressing pregnant women even more. In addition, pregnant women are also psychologically affected by various restrictive measures taken by the government and society, the uncertain future of the pandemic, and most importantly, the fear of being infected and endangering the baby they are carrying [9]. Researchers are competing to understand the risk factors for pregnant women during pregnancy, especially during the COVID-19 pandemic. The risk factors that affect pregnant women do not stand alone but together with each other. The trimester of pregnancy is one of the things that affect anxiety in pregnant women. A recent study by Yassa et al. published in April 2020 evaluated the impact of the COVID-19 pandemic on third-trimester pregnant patients and reported that the pandemic increased the anxiety and worry of pregnant women about pregnancy their babies [23]. One factor may be closely related to pregnancy parity, as first-time mothers report more significant pregnancy-related anxiety than women who have given birth [24]. The differences found between primiparous and multiparous women regarding labor-related anxiety may reflect the experiences of women expecting their firstborn. Those who are pregnant with their first child feel more stressed. This may be related to hormonal changes and adjustments during pregnancy, as well as nausea, morning sickness, and other pregnancy-related

complaints that they have not experienced before. This raises anxiety before learning of a pandemic [25]. Furthermore, the association between higher gestational weeks and poorer health status and anxiety about childbirth may be due to the realization that there is a real chance of giving birth during the current crisis, with a higher risk for those whose health is compromised [26]. Indeed, nulliparous individuals had significantly higher pregnancy-related anxiety symptoms than primiparous and multiparous individuals [27]. Another factor is preparation for pregnancy. Women who experienced COVID-related impairment in anticipation of pregnancy and their abortion experience (i.e., loss of control) exhibited more significant changes in pregnancy-related anxiety. In line with this study, Karmaliani et al. also found that women with unplanned pregnancies experienced high levels of anxiety and depression [28]. Saadati et al. reported that because of limited access to health services, pregnant women were concerned about the unsafe environment of the health care setting and concerns over suffering from illness [29]. Importantly, the concern of pregnant women that they are not getting adequate prenatal care because of COVID-19 is associated with higher anxiety [27]. The main fear of pregnant women is the lack of support from family members due to policy changes. Apart from general concerns regarding health impacts, financial burdens, and new daily routines, the main concern of pregnant women is the welfare of the fetus [8]. Apart from general concerns regarding health impact, financial burden, and new daily routines, pregnant women's main concern is fetal well-being [8]. In addition, the length of education also plays a role in the anxiety experienced by pregnant women. They found a significant correlation between years of education and anxiety levels [20]. Regarding psychosocial risk factor indicators, there is increased stress about food being depleted or unavailable, losing a job or household income, or losing child

care [30]. Several studies have reported that COVID-19-related stress and anxiety in pregnancy may increase further due to uncertainty regarding the direct impact on pregnancy or perinatal complications, in addition to the lack of reliable predictions around the future spread of infection and the major trends in driving fake news. The negative psychological impact, especially among mass media and social media users, may have been associated with increased anxiety due to misinformation, as expected during the pandemic [31].

As mentioned before, various factors can cause anxiety in pregnant women. A pregnant woman's history and health condition can trigger or exacerbate the anxiety experienced because it is closely related to her pregnancy risk. Risk assessment in pregnant women is carried out through detailed history taking, thorough physical examination, and laboratory examinations [32]. Pregnancy conditions accompanied by various complications of medical diseases, which can endanger the safety of the mother and baby, are termed high-risk pregnancies [33]. Studies show that if the high-risk label is received positively, it will increase alertness during pregnancy and childbirth. On the other hand, when viewed negatively, it can make pregnant women feel more afraid and anxious about the process of giving birth [32]. Pregnancy with hypertensive disease exhibits higher anxiety levels than other groups without hypertensive disease [34]. Another study that compared high-risk and low-risk pregnancies found that the highest rates of postpartum depression were found in the high-risk pregnancy group [35]. The COVID-19 pandemic has also provided additional stressors for pregnant women. The first study comparing anxiety levels in high-risk and normal pregnant women during the COVID-19 pandemic stated that anxiety levels are more increased in the high-risk group. It is also found that anxiety levels are increased significantly in high-risk pregnancy patients hospitalized during their pregnancy

compared to those who have not been hospitalized [33].

Some previous studies from the earlier epidemics experience (SARS and MERS), separation from close friends, relatives, and family; feelings such as being isolated; loss of freedom to perform daily activities; which can lead to boredom; and of course financial disturbances are some of the factors that can affect psychological health, uncertainty during the pandemic period and the end of when the pandemic will end also increases stressors [36, 37]. This condition is a big enough stressor for pregnant women. Pregnant women are more susceptible to raw health disorders than those who are not pregnant when exposed to conditions with considerable stressors [38, 39]. A study has confirmed that pregnant women experience a significant increase in anxiety levels which indicates the negative impact of the pandemic on maternal mental state. Increased anxiety in pregnant women increases the likelihood of developing antenatal depression five times. This increased anxiety level is also associated with the incidence of postpartum depression, depression later in life, other mood and affect disorders, as well as possible other complications such as preterm disorders [40-42]. Periodic monitoring of the mother's mental condition is crucial, especially during this pandemic period. It is necessary to develop aspects of telemedicine so that pregnant women can easily monitor their psychological health, early screening to prevent depression, and therapy if pregnant women have fallen into this condition [42, 43].

CONCLUSION

One of the negative impacts of the COVID-19 pandemic is mental health problems, which are anxiety disorders. Anxiety disorders include disorders characterized by excessive fear, anxiety, and associated behavioral disorders. Compared to men, women have a 1.5 to 2 times higher risk of developing an anxiety disorder. Temporary or permanent changes in roles

and identities are felt and can be associated with every woman's pregnancy experience. The COVID-19 pandemic is a significant stressor for pregnant women. Therefore, the psychological condition of pregnant women is influenced by various restrictive measures taken by the government and the community, the uncertainty of the pandemic in the future, and most importantly, the fear of being infected so that it can harm the baby they are carrying. Risk factors for anxiety disorders that may be closely related to pregnancy are women who became pregnant for the first time reported having significantly more pregnancy-related anxiety than women who had given birth, high levels of anxiety and depression were found in women with unplanned pregnancies, increased anxiety was associated with worry pregnant women do not receive adequate antenatal care as a result of COVID-19, and a significant correlation was found between higher education and anxiety levels. The change in policy causes the lack of support from family members to become the main fear of pregnant women. The risk factors that affect pregnant women do not stand alone but simultaneously with each other.

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