

## Research Article

# Depressive Symptoms in High-Risk Pregnancies During the COVID-19 Pandemic

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**Abstract.** A high-risk pregnancy is one that has a higher risk than a normal pregnancy, both to the mother and to her baby, which can cause disability, disease or even death before or after delivery. In the city of Bandung, there were 29 cases of maternal mortality in 2019. One of the potential effects of a risky pregnancy is antenatal depression. The results of previous research conducted in Indonesia showed that 50% of pregnant women are at risk of experiencing depressive symptoms. The COVID-19 pandemic can trigger stress, and unresolved stress can cause depression and endanger the mental and physical health of pregnant women and their babies. This study aimed to describe the symptoms of depression in mothers with high-risk pregnancies. A descriptive quantitative approach was used with a cross-sectional design and there were 60 participants. The inclusion criteria were at-risk pregnant women who had been screened using the Poedji Rochjati Score Card, had a smartphone, and were able to communicate well. The instrument used was the Patient Health Questionnaire-9. The findings showed that 90% of women with high-risk pregnancies during the pandemic experienced symptoms of depression and 10% experienced mild depression. The majority of the depressive symptoms that were experienced were somatic-gastrointestinal symptoms. It can be concluded that symptoms of depression in pregnant women increased during the COVID-19 pandemic. So, it is necessary to improve the quality of pregnancy services to overcome the symptoms of depression in pregnant women.

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## 1. Background

A risky pregnancy is a pregnancy that has a higher risk than a normal pregnancy, both to the mother and to her baby which can cause disability, disease or even death before and after giving birth [1] The results of research conducted in Indonesia show that 50% of mothers with pregnancy are at risk of experiencing symptoms of depression. Mothers with pregnancies are at risk of being more susceptible to psychological disorders, one of which is depression [2] Depression that occurs during pregnancy is called antenatal depression. Antenatal depression or depression during pregnancy is a mood disorder whose symptoms vary, such as feeling sad, irritability or more sensitive to being irritable

and even easy to cry, restless, feeling hopeless for the future, disturbances sleep disorders such as insomnia and nightmares, decreased appetite, less libido, impaired social interaction, easy to feel tired so that they experience disturbances in carrying out daily activities, difficulty concentrating or experiencing problems in remembering, even in some mothers hallucinations occur and are at risk of injuring themselves and other people around him [2] Psychological problems such as stress and depression in mothers with risky pregnancies do not only occur during pregnancy, but can also continue until after birth. This condition can of course have a negative impact on the fetus it contains (Handayani, 2018). The impact of depression on pregnancy can be in the form of disruption of fetal growth and development, increased risk of abortion, premature birth and low birth weight (Kusuma, 2019). Currently, mothers with pregnancies are at risk of being faced with the COVID-19 pandemic. Almost 72% of pregnant women are confirmed by COVID-19. A part from being a risky pregnancy, the COVID-19 pandemic also increases anxiety and symptoms of antenatal depression in pregnant women which causes changes in physical activity, nutrition and sleep which will affect the mother's mood and fetal development. In addition, antenatal anxiety and depressive symptoms can increase the risk of miscarriage as well as lower the APGAR score at birth. The prevalence of anxiety and depression in pregnant women during the COVID-19 pandemic was 64.5% and 56.3%, respectively[3]

Therefore, researchers are interested in knowing how the symptoms of depression in mothers with high-risk pregnancies to get information and can arrange prior intervention to prevent postpartum depression.

## 2. Methods and Equipment

### 2.1. Methods and Instruments

This research is a quantitative descriptive using a cross-sectional and purposive sampling study with the number of respondents being 60 people with inclusion criteria: pregnant women at risk, having a smartphone, willing to be a respondent. This study was conducted in midwifery clinic in Bandung, West Java. Questionnaire-9 (PHQ-9) to measure symptoms of depression in pregnant women[4]. The scores in the Poedji Rochjati scorecard are divided into 3 groups. The first group is the Low Risk Pregnancy group with a score of 2, the second group is the High Risk Pregnancy group with a score range of 6-10 and the last is the Very High Risk Pregnancy group with a score of 12[1]. PHQ-9 Questionnaire consists of 9 questions with a maximum score of 27. The PHQ-9

TABLE 1: Distribution of Respondents Characteristics (n=60)

Characteristics	Total (n=60) %
<b>Respondent's age</b> Mean $\pm$ (SD)	27.85 (5.784)
<b>Gestational age</b> Mean $\pm$ (SD)	27.10 (7.843)
<b>Salary</b> Rp 2.000.000 –Rp5.000.000/month Above Rp 5.000.000	56 (93.3) 4 (6.7)
<b>Education</b> Primary Secondary School Bachelor Degree	4 (6.7) 18 (30.0) 34 (56.7) 1 (1.7) 3 (5.0)
<b>Parity</b> Primipara Multipara	22 (36.7) 38 (63.3)
<b>Poedji score</b> Low risk High risk Risk	43 (71.7) 17 (28.3) 0 (0)

questionnaire has relatively fewer questions than other depression questionnaires. This questionnaire also focuses more on symptoms of depression in the DSM-IV (Diagnostic and Statistical Manual of Mental Disorder) 9 items of questions will be answered by respondents according to what they have felt during the last 2 weeks. Respondents will be presented with 4 column answers with the choices of “never”, “a few days a week”, “more than a week” and “almost every day”[4].

## 2.2. Data Collection Procedures and data analysis

This research was conducted after getting an ethical pass test from STIKep PPNI West Java with No III/21/KEPK/STIKep/PPNI/Jabar/V/2021. Data collection in this study was carried out using an online google form. This data collection takes into account ethical aspects such as autonomy, justice, privacy, beneficence, nonmaleficence, veracity, and confidentiality. The analysis in this study used univariate analysis to determine the distribution of the variables of high risk pregnancy and depressive symptoms among respondents

## 3. Results

### 3.1. Characteristics of Respondents

Characteristics of respondents in this study include age, gestational age, education, income, parity status and poedji score.

TABLE 2: Distribution of Depression Category Description Based on the PHQ-9 Instrument (n=60)

Category Depression	Total (n=60) %
Symptoms of Mild Depression	54 (90)
Mild depression	6 (10)

TABLE 3: Distribution of Depression Variables in Risky Pregnancy Based on the PHQ-9 Instrument (n = 60)

Variable	Total	
	Range Min-Max	Mean $\pm$ SD
<b>Total Score</b>	0 – 12	5.72 $\pm$ 3.026
<b>Score Domain</b>		
Mood and Depression	0 – 4	0.83 $\pm$ 1.137
Sleep Disorder	0 – 3	1.05 $\pm$ 1.064
Guilt and Suicide Perasaan	0 – 3	1.60 $\pm$ 1.045
Somatic-Gastrointestinal Symptoms	0 – 3	1.70 $\pm$ 1.094
retardation	0 – 1	0.12 $\pm$ 0.324
Work and Activities	0 – 2	0.42 $\pm$ 0.561

## 4. Discussion

The description of depressive symptoms in high-risk pregnancies is that as many as 90% experience mild depressive symptoms. The prevalence of anxiety and depression during pregnancy is quite high. Without treatment, nearly 8 percent of women with prenatal anxiety and 70% experience prenatal depression, and this continues into the postpartum period even into their first year of life [2]

The high score of depressive symptoms in pregnancy is at risk not only during pregnancy, but also during and after birth. The impact of depression on pregnant women can also be in the form of disruption of fetal growth and development, increased production of serotonin, gotamine and neuraladrenaline, increased risk of bleeding during pregnancy and increased risk of abortion, premature birth and low birth weight [5]Untreated antenatal depression can also lead to the postpartum blues.

The parity status of the respondents in this study was mostly multipara. This is not in line with previous study which states that mothers who give birth to their first child (primiparous) tend to experience feelings of liability, guilt and anxiety because they

are more worried about the possibility of unwanted things, such as death in their first child, baby or feel not ready to have children. So it can be concluded that depressive symptoms do not only occur in primiparas, multiparas do not rule out experiencing depressive symptoms[6][7].

Gestational age can also influence the high score of depressive symptoms in this study. The average gestational age of respondents in this study was 27.30 (8.781) in the second trimester. This can happen because according to the ACOG Committee Opinion (2015) in the second trimester, women are encouraged to be shown by a separate life that encourages a woman to carry out her main psychological task, namely developing an identity as herself, which is different from her mother. Changes in the body also began to occur such as the enlargement of the uterus about 7.6 cm above the navel, weight gain of about 7.65-10.8 and fetal movements that began to be active.

Today, the COVID-19 pandemic has become a different stressor and has the potential to increase symptoms of depression in pregnant women. However, limited data about the clinical characteristics of pregnant women with COVID-19 have been reported. Given the maternal physiologic and immune function changes during pregnancy. So, pregnant women may be at a higher risk of being infected by COVID-19. During the COVID-19 pandemic, it was found that there was an increase in symptoms of anxiety and depression in pregnant women which could have an impact on the health of their babies. The prevalence increased to 37% experiencing depression and 57% experiencing symptoms of anxiety [8]. Previous studies have reported the prevalence of anxiety in pregnant women to be between 63% and 68% during the COVID-19 pandemic. The incidence are higher than before was between 7.8% and 22.3% [3].

Depression is a mood disorder in which a person feels deep sadness and loses interest in something he likes. Symptoms of a person with depression include feeling an emptiness within himself, excessive fatigue, loss of motivation to do activities, feelings of guilt, changes in appetite, changes in sleep patterns, feelings of lack of energy, difficulty making decisions, to frequent thoughts of death and suicide. The Covid-19 pandemic can be stressful for some people. Stress arises because of fears for the health of oneself and loved ones, unclear work, changes in eating and sleeping patterns, and increased use of cigarettes and/or alcohol. Unresolved stress will lead to depression[9].

The risk of anxiety and depression in pregnant women with low education levels was found to be higher than high education level. In accordance with previous findings, that the risk of anxiety and depression is higher in pregnant women who are not working. Being unemployed or being a housewife during the pandemic increases the time spent at home and reduces socialization and interpersonal communication, thereby increasing

the risk of anxiety and depression. Regular physical activity is an important factor related to the development of anxiety and depression during pregnancy. Half of the pregnant women who prefer to stay at home during the pandemic do not engage in regular physical activity. However, regular physical activities doing during pregnancy have a protective effect on the development of anxiety and depressive symptoms[3]

From the results of the study, when viewed from the domain of depressive symptoms, the most experienced somatic-gastrointestinal symptoms was with a value of  $1.70 \pm 1.094$  (mean  $\pm$  SD). In line with previous research that psychological symptoms experienced by pregnant women are 50.4% anxiety, 49.1% insomnia and 25% depression symptoms. Depression can cause indigestion, the most common of which is irritable bowel syndrome. This is because the body can directly affect the mind, way of thinking and behaving. The composition of bacteria in the gut can affect emotional health and the digestive tract is very sensitive to emotional turmoil, the response that often arises is nausea, loss of appetite or others. This is the cause of people who are experiencing eating depression are very likely to also experience digestive disorders.

An increase in depressive symptoms marked by excessive worry or anxiety in the mother due to inadequate prenatal care during the COVID-19 pandemic. This is in line with previous research that social support is associated with lower symptoms of anxiety and depression in pregnant women. And the provision of high social support is effective in reducing symptoms of anxiety and depression in pregnant women and postpartum mothers[8] (

This is in line with the previous study which states that the high score of depressive symptoms is due to a lack of knowledge of mothers regarding antenatal depression. Depressive symptoms can also occur due to a lack of health workers, especially nurses, in intervening with depressive symptoms[5]

## 5. Conclusion

Symptoms of depression in pregnant women have increased during the COVID-19 pandemic. This is due to the lack of knowledge and services on pregnancy during the pandemic. So it is necessary to improve the quality of pregnancy services to overcome the symptoms of depression in pregnant women with routine education about antenatal care during COVID-19 pandemic and the importance of Covid-19 vaccination on pregnant women

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## Conflict of Interest

The authors have no conflict of interest to declare.

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