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Anxiety and Perinatal Depression in High-risk Pregnancies at the Fetomaternal Polyclinic RSUP Prof. Dr. IGNG Ngoerah

Ida Aju Kusuma Wardani
Department of Psychiatry, Faculty of Medicine, Udayana University/ Prof. Dr. IGNG Ngoerah Hospital, Denpasar, Indonesia
Corresponding author email: kusuma_wardani@unud.ac.id

I Made Darmayasa
Department of Obstetrics and Gynecology, Faculty of Medicine, Udayana University/ Prof. Dr. IGNG Ngoerah Hospital, Denpasar, Indonesia

Abstract---*Background: In this phase, a woman is prone to experiencing mental disorders due to an increase in psychological distress. There is some evidence that psychological stress during this period can have deleterious effects on the mother's health and may harm the child. The most common psychiatric disorders in the perinatal period are anxiety disorders and depression. Objective: To determine the prevalence of perinatal anxiety and depression in high-risk pregnancies. Method: The research sample was pregnant and postpartum women who checked themselves into the fetomaternal polyclinic at RSUP Prof. Dr. IGNG Ngoerah as many as 41 people. The research was conducted by distributing the Beck Anxiety Inventory and Beck Depression Inventory questionnaires to the research sample. The research was conducted from October 1 2022 to October 31, 2022. Results: In this study, 7 people (17.1%) experienced mild anxiety and 11 people (26.8%) experienced moderate anxiety. For the prevalence of depression, 6 people (14.6%) had mild depression and 15 people (36.6%) had moderate depression. Perinatal anxiety and depression disorders are most commonly found in pregnant women with Human Immunodeficiency Virus (HIV) infection. Conclusion: The prevalence of perinatal anxiety and depression in high-risk pregnancies is greater than the prevalence of perinatal anxiety and depression in the normal population. It is necessary to screen mothers during the perinatal period to detect digestive disorders and depression.*
Keywords---*anxiety, depression, high-risk pregnancies, perinatal.*

Introduction

The perinatal period starts from the first week of pregnancy until one year after delivery. During the perinatal period, there are 3 phases, namely the pregnancy phase, the delivery phase, and the postpartum phase. In this phase, a woman is prone to experiencing mental disorders due to an increase in psychological distress. There is some evidence that psychological stress during this period can have deleterious effects on the mother's health and may hurt the child. Evidence from previous studies has shown that there is intergenerational transmission of poor mental health from pregnancy to the first year of life (Dagher et al., 2021).

Anxiety is a mental disorder that most often occurs in pregnant women. Previous research has produced data on more than 50 pregnant women experiencing symptoms of anxiety (Osman et al., 2021). Anxiety disorders in the perinatal period are more common than depressive disorders, although anxiety disorders often coexist with depressive disorders. It is said that anxiety disorders are more common in the first trimester of pregnancy (5-7 weeks) and significantly higher than the adult population who have never experienced pregnancy (Koukopoulos et al., 2021). Where anxiety in pregnant women averages 20-36% compared to the general population of 15-17% (Osman et al., 2021). This is thought to be due to pregnancy comorbidities that occur in the mother, and fetus or adverse events that may occur during the birth process (Osman et al., 2021). The perinatal period is a very vulnerable

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period for the occurrence of psychiatric problems where anxiety disorders are the most common disorders. Anxiety disorders during the perinatal period are common because pregnancy is a transitional process in a woman's life that can change expectations and can cause emotional disturbances in the mother (Osman et al., 2021).

In previous studies, it was found that 13-25% of pregnant women and 11-21% of postpartum women experience anxiety disorders. Approximately 20.7% experience one symptom of anxiety after the peripartum period (Koukopoulos et al., 2021). During the perinatal period, the prevalence of anxiety disorders during the first trimester is 18%, which will decrease marginally to 15% in the last two semesters of pregnancy with a pattern that continues to decrease until one year after delivery. A meta-analysis estimates the prevalence of postpartum anxiety disorders to be around 8.5% compared with 10-15% for depression (Koukopoulos et al., 2021). It is said that the source of anxiety that occurs is related to the possibility of complications for the mother and fetus including complications during prenatal and at birth, inability to become parents, marital satisfaction and lack of social support, and disruption of mother and child attachment. Other things that are a source of anxiety are the economic situation, the role, and the responsibilities of being a mother (Green et al., 2022).

Perinatal depression in *the Diagnostic and Statistical Manual of Mental Disorders-5th Edition* (DSM-5) is defined as an episode of major depression during pregnancy (antenatal depression) or after delivery (postpartum depression), with the presence of "with peripartum onset" as a determinant for the disorder. depression (onset during pregnancy or within 4 weeks of delivery). Perinatal depression should not be confused with " *postpartum blues*," which are states of fluctuating mood, fatigue, crying, irritability, and feelings of anxiety that are generally experienced within 10-14 days after delivery (American Psychiatric Association, 2013).

Although biological factors may influence mood in the early postpartum recovery period, growing evidence suggests that accumulated psychological stress in the first year after delivery also contributes to the onset or recurrence of depressive episodes (Pilkington et al., 2015; Kendig et al., 2017; Highet et al., 2014). Symptoms of a depressive disorder include depressed mood, loss of energy and/or interest in daily activities, sleep problems or changes in appetite/weight, poor concentration, feelings of worthlessness, guilt and/or hopelessness, and thoughts to kill me. For a diagnosis of major depression, five or more specific symptoms must be present for at least 2 weeks, one of which must be a depressed mood or loss of interest. By strict DSM-5 standards, depressive episodes that occur after 4 weeks after delivery are classified as depressive disorders without peripartum modifiers. However, in practice, the prenatal period and up to 1 year postpartum are important risk periods for the recognition and screening, and treatment of depression (Dagher et al., 2021).

Several risk factors have been associated with perinatal depression, including social, psychological, biological, and genetic factors. A systematic review of antenatal depression risk factors found the following factors to be associated with a higher likelihood of antenatal depressive symptoms: life stress, history of depression, maternal anxiety, lack of social support, lower frequency of exercise, unwanted pregnancy, Medicaid insurance, partner violence, history of child abuse, low income, low education, smoking, single status, and poor relationship quality (Tsakiridis et al., 2019; Underwood et al., 2016). In Indonesia, there has not been much research on perinatal anxiety and depression. Perinatal anxiety and depression are closely related to high-risk pregnancies, so it is necessary to study the prevalence of perinatal anxiety and depression in this population. RSUP Prof. Dr. IGNG Ngoerah as a referral center accepts many cases of high-risk pregnancies. This study aims to determine the prevalence of perinatal anxiety and depression in mothers who checked their pregnancies and postpartum controls at the fetomaternal polyclinic of RSUP Prof. Dr. IGNG Ngoerah.

Method

Time and place of research

The research was conducted at the fetomaternal polyclinic of RSUP Prof. Dr. IGNG Ngoerah from October 1 2022 to October 31, 2022.

Research sample

The research sample was all patients who came to the fetomaternal polyclinic to have their pregnancy checked and the controls were carried out by postnatal patients. Screening of the research sample was carried out using inclusion and exclusion criteria. Inclusion criteria: a. pregnant and postpartum women up to 1 year who came for control at the fetomaternal polyclinic at RSUP Prof. Dr. IGNG Ngoerah, b. willing to participate in this research. Exclusion criteria: a. Have a previous history of mental disorders. b. Not willing to participate.

Data collection

All research samples were given questionnaires either manually or by filling out the Google form. The research sample was asked to fill out a demographic questionnaire and *the Beck Anxiety Inventory (BAI)* and *the Beck Depression Inventory* (BDI).

Data analysis

BAI results are divided into minimal anxiety (0-5), mild (6-15), moderate (16-31), and severe (31-63). *BDI* results are divided into 4 criteria, namely, Not Depressed (0-16), Mild Depression (17-20), Moderate Depression (21-30), and Severe Depression (30 and over). After that, the data obtained were processed using the *Statistical Product and Service Solutions* 26.0 (SPSS 26.0) application.

Results

Sample characteristics

41 women who came to the fetomaternal polyclinic at RSUP Prof. Dr. IGNG Ngoerah participated as respondents took part in the study, where the youngest age in this study was 19 years and the oldest was 43 years, where the highest percentage was obtained in the age range 20-35 years (80.5%), a secondary education level (48.8%), and most work as private employees (48.8%), and have comorbidities (53.7%) according to table 1. The pregnancy status of the respondents obtained the highest gestational age in the third trimester (36.6%), with a total of the most living children was not yet (31.7%) and 1 (31.7%), and the most current pregnancies were the 2nd pregnancy (26.8%), with the most history of abortion being none (61%).

Table 1
Sample characteristics

Characteristics	Amount (n)	Percentage (%)
Age		
<20	1	2,4
20-35	33	9,8
>35	7	53,7
Education		
Tall	19	22.0
Intermediate	20	48,8
Low	2	4,9
Work		
IRT	17	41.5
Private employees	20	48,8
Businessman	4	9,7
Disease History		
There aren't any	19	46,3
There is	22	53,7

Anxiety and depression data

The prevalence of anxiety disorders and depression were obtained by using the BAI and BDI questionnaires, obtained an anxiety disorder rate of 18 (43.9%), mild anxiety (17.1%), and moderate anxiety (26.8%), and a depression rate of 21 (51.2%), with the highest rate of Moderate Depression (36.6%). Based on age, when compared between anxiety disorders and depression, 11 participants (26.8%) had both symptoms. The highest anxiety disorders and depression were found in the age range <20 years with a prevalence of 100%, while for those aged 21-35 years, there were 14 (42.4%) anxiety and 13 (39.4%) depression (Lavender et al., 2016; Mulyani et al., 2017; Pinto et al., 2017). Based on education, the highest prevalence of anxiety was found in respondents with secondary education (70%) and depression in those with low education (100%). From work, the highest rates of anxiety were found in

housewives (53%) and depression in entrepreneurs (100%) and a history of co-morbidities both showed rates of anxiety disorders (63.6%) and depression (68.2%) were higher if compared to respondents who did not have comorbidities.

Table 2
Prevalence of anxiety and depression

Category	Amount (n)	Percentage (%)
Anxiety Level		
Minimal Worry	23	56,1
Anxiety Disorder	18	43,9
Depression Rate		
Not Depression	20	48,8
Depression	21	51,2

Table 3
Comparison of anxiety and depression

Category	Not Depression n(%)	Depression n(%)
Minimal Worry	13 (31.7)	10 (24.4)
Anxiety Disorder	7 (17,1)	11 (26,8)

Table 4
Levels of anxiety and depression based on characteristics

	Anxiety Level		Depression Rate	
	Minimal Worry n(%)	Anxiety Disorder n(%)	Not Depression n(%)	Depression n(%)
Age Group				
<20	0 (0)	1 (100)	0 (0)	1 (100)
21-35	19 (57.6)	14 (42.4)	20 (60.6)	13 (39.4)
>35	4 (57.1)	3 (42.9)	0 (0)	7 (100)
Level of education				
Tall	15 (79)	4 (21)	11 (57.9)	8 (42.1)
Intermediate	6 (30)	14 (70)	9 (45)	11 (55)
Low	2 (100)	0 (0)	0 (0)	2 (100)
Work				
IRT	8 (47.1)	9 (52.9)	11 (64.7)	6 (35.3)
Private employees	13 (65)	7 (35)	9 (45)	11 (55)
Businessman	2 (50)	2 (50)	0 (0)	4 (100)
Disease History				
There aren't any	15 (78.9)	4 (21.1)	13 (61.9)	8 (38.1)
There is	8 (36.4)	14 (63.6)	7 (31.8)	15 (68.2)

When viewed from the respondent's pregnancy history, the number of anxiety disorders was found to be almost evenly distributed at each gestational age (41.6%; 42.8%; 46.6%) while depression was found to be highest at 12-24 weeks of gestation (71.4%), of the current number of pregnancies, anxiety disorders were high in the first pregnancy (77.8%), while depression occurred in pregnancies more than 3 times (73.3%). Meanwhile, the number of children who were born healthy and abortions showed different numbers, namely anxiety disorders increased in respondents who did not have children (61.5%) and depression in respondents who had 2 children (66.7%), and of the total

abortion, high anxiety in patients who have had > 1 abortion (75%) and depression in those who have had 1 abortion (87.5%) (Bauer et al., 2016; Fairbrother et al., 2016; Alfirevic & Neilson, 1995).

Table 5
Levels of anxiety and depression based on pregnancy history

	Anxiety Level		Depression Rate	
	Minimal Worry n(%)	Anxiety Disorder n(%)	Not Depression n(%)	Depression n(%)
Gestational Age				
0-11 weeks	7 (58.4)	5 (41.6)	8 (66.6)	4 (33.4)
12-24 weeks	8 (57.2)	6 (42.8)	4 (28.6)	10 (71.4)
>24 weeks	8 (53.4)	7 (46.6)	8 (53.3)	7 (46.7)
Number of Pregnancy				
1	2 (22,2)	7 (77.8)	7 (77.8)	2 (22,2)
2-3	13 (76.5)	4 (23.5)	9 (53)	8 (47)
>3	8 (53.3)	7 (46.7)	4 (26.7)	11 (73.3)
Number of Living Children				
There aren't any	5 (38.4)	8 (61.5)	8 (61.5)	5 (38.5)
1	9 (69.2)	4 (30.7)	6 (46.2)	7 (53.8)
2	7 (58.3)	5 (41.6)	4 (33.3)	8 (66.7)
3	2 (66.6)	1 (33.4)	2 (66.7)	1 (33.3)
Number of Abortions				
0	18 (72)	7 (28)	17 (68)	8 (32)
1	3 (37.5)	5 (62.5)	1 (12.5)	7 (87.5)
>1	2 (25)	6 (75)	2 (25)	6 (75)

Discussion

This research is an initial study that aims to assess the level of anxiety in pregnant women and birth mothers who go to the obstetrics and gynecology polyclinic at RSUP Prof. Dr. IGNG Ngoerah. In this study, out of 41 respondents, 18 (43.9%) respondents experienced anxiety disorders, and 21 (51.2%) respondents experienced depression (Haverkamp et al., 1976; Stuart & Koleva, 2014; Woody et al., 2017). This is following the results of previous studies in Rome that the perinatal period is prone to psychiatric disorders, one of which is anxiety and depression. Anxiety disorders will occur in the first trimester by 18% and will decrease during pregnancy to 15%. Other studies have also shown that around 10-15% incidence of depression is reported in the general pregnant population. Of course, women with high-risk pregnancies will have an increased level of anxiety and depressive symptoms that arise (Dagklis et al., 2018). Several studies in Europe, Asia, and America have shown a high prevalence of depressive disorders in high-risk pregnancies, which is around 44.2% (Tsakiridis et al., 2019).

In previous studies, it was stated that the prevalence rate of anxiety disorders was 25% of pregnant women and 21% of postpartum women. In this study, anxiety disorders were found to be greater, namely 43.9%, this was because the population of this study was pregnant women who experienced *high-risk pregnancies* or high-risk pregnancies. Under the status of Prof. Dr. IGNG Ngoerah is a final-level referral facility so that pregnant women who check themselves at the obstetrics and gynecology polyclinic are those who experience pregnancy comorbidities both in the mother and in the fetus. The highest prevalence of anxiety disorders was found at the age of 26-30 years whereas in previous studies it was found that the age of mothers who often experience perinatal anxiety was the age of 27-30 years (Koukopoulos et al., 2021), and depression was found to be highest at the age of under 20 years, and over 35 years, with the figure for each age group showing 100%, but this is limited because respondents in this age group have a smaller number of respondents compared to the age group between 21 to 35 years. This is directly proportional to previous studies where 5 studies reported older pregnant women (over 29 years) are a risk factor for perinatal depression during pregnancy (Nisar et al., 2020).

In this study, it was found that pregnant women who experienced anxiety disorders were most likely to have a high school education compared to undergraduates and academics, increasing the likelihood of developing perinatal

depression (Rogers et al., 2020). The housewives who were the sample of this study experienced the most anxiety disorders. In previous research, the relationship between maternal work and perinatal anxiety had not been discussed, but in previous studies, it was found that mothers with low socioeconomic status were said to be more vulnerable to anxiety disorders (Juarez Padilla et al., 2022). But this is not following the incidence of depression, where previous studies said the possibility of perinatal depression increased in women who did not have a job, but in this study, the depression rate was lower in respondents who did not work and was active as housewives (35.3 %), but in this study did not look for the economic status of the respondents which might also influence the results of this study (Rogers et al., 2020).

In this study, the most common anxiety disorder was found in the 3rd trimester of pregnancy (46.6%) and the most common depression was found in the 2nd trimester (71.4%). The results of previous studies are still different where a high level of anxiety occurs in the 1st trimester, but other studies also suggest that the highest level of anxiety can also be found in the 3rd trimester. It is said that a high anxiety rate in the third trimester will lead to the presence of meconium in the amniotic fluid. fetal distress which causes cesarean section and can also cause pregnancies after the time (Bhagwanani et al., 2017). While 30 preliminary studies provided estimates of the prevalence of perinatal depression, some reported the percentage of the population with depression at a given point (24 weeks gestation or 9 weeks postpartum), while others demonstrated the period during pregnancy to the first 3 months postpartum, so it is uncertain whether gestational age influences the occurrence of perinatal depression, or the number of pregnancies determines the increase in the occurrence of perinatal depression (Dagher et al., 2021). This study also showed a history of disease from the respondents, where respondents had a history of HIV (34.2%) and a history of heart disease (14.6%), whereas from the results of this study, 14 (63.6) respondents experienced anxiety disorders and 15 (68.2%) of respondents experienced depression, this is like the results of a study of 14 studies in China where it was said that a history of any physical illness and low physical quality in pregnant women could increase the occurrence of perinatal depression (Nisar et al., 2020).

Conclusion

In this study, the results showed that of the 41 high-risk pregnant women who exercised control at the obstetrics and obstetrics polyclinic at RSUP Prof. Dr. IGNG Ngoerah found that 18 people (43.9%) had anxiety disorders and 21 people (51.2%) had depression. This is consistent with the results of previous studies that during the perinatal period, pregnant women experience mental disorders by 20% compared to the normal population. This disorder is related to Possible complications for the mother and fetus including complications during prenatal and delivery, inability to become parents, dissatisfaction with marriage and social support, and impaired attachment between mother and child**.** The levels of anxiety and depression in this study were higher than in the normal population because the study population was pregnant women experiencing *high-risk pregnancies*.

In *a high-risk pregnancy*, of course, the level of anxiety and depression will be higher because of the opportunities for prenatal and post-partum complications to occur. Anxiety and depression in pregnant women who are at high risk have the opportunity to cause mental disorders in pregnant women and also in the fetus to be born. There is evidence that mental disorders will occur in the fetus through intergenerational transmission in the perinatal period. Based on the results of this study, assistance is needed for pregnant women who are at high risk to minimize the anxiety and depression they experience. Psychiatric assistance should be provided as early as possible until the end of the perinatal period. Collaboration is needed between obstetrics and gynecology departments and psychiatry departments through *Consultation-Liaison Psychiatry* (CLP*)* to facilitate optimal service to prevent negative mental impacts on the mother and fetus.

This study is an initial study to seek data on the prevalence of anxiety disorders and depression in the perinatal period. This research has limitations because the research design is *cross-sectional* so it cannot reveal a causal relationship because data collection is only done one time. This study also cannot describe pregnant women during the perinatal period in general because the research sample is pregnant women with *high-risk pregnancies* which will increase the prevalence rate of anxiety disorders and depression. In the future, longer-term studies are needed to assess the causal relationship between anxiety disorders and depression with comorbidities in both the fetus and the mother experienced by the sample in this study.

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