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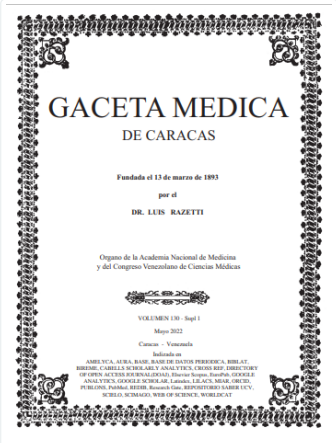
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An Overview of Anxiety Levels in Pregnant Women During the COVID-19 Pandemic

Una descripción general de los niveles de ansiedad en mujeres embarazadas durante la pandemia de COVID-19

Nova Elok Mardliyana^{1a*}, Irma Maya Puspita^{2a}, Awwalul Wiladatil Qodliyah^{3a}, Yuanita Wulandari^{4a}

SUMMARY

Introduction: Pregnant women often experience anxiety because hormonal changes affect physical and psychological changes during pregnancy. During the COVID-19 pandemic, pregnant women are worried about regular checkups during pregnancy in the health services because they are afraid of being exposed to the virus, especially in cities or regions with social restrictions. This study aims to describe the anxiety levels in pregnant women during the COVID-19 pandemic in Surabaya.

Methods: This study was descriptive research with a quantitative design. The population was pregnant women living in Surabaya during May – July 2020. Meanwhile, there were 100 respondents by purposive sampling. The instrument was the Hamilton Anxiety Rating Scale (HARS) to determine the anxiety levels. The method of collecting data utilized a questionnaire

through a google form link distributed to respondents. Then, the data were analyzed univariately and presented in a frequency distribution.

Results: The study results revealed that 44 % of respondents had moderate anxiety levels, 31 % had severe anxiety, and 25 % had mild anxiety.

Conclusion: In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

Keywords: Anxiety levels, COVID-19 pandemic, pregnant women

RESUMEN

Introducción: Las mujeres embarazadas suelen experimentar ansiedad debido a que los cambios hormonales inciden en cambios físicos y psicológicos durante el embarazo. Durante la pandemia de COVID-19, las mujeres embarazadas están preocupadas por los controles regulares durante el embarazo en los servicios de salud porque temen exponerse al virus, especialmente en ciudades o regiones con restricciones sociales. Este estudio tiene como objetivo describir los niveles de ansiedad en mujeres embarazadas durante la pandemia de COVID-19 en Surabaya.

Métodos: Este estudio fue una investigación descriptiva con un diseño cuantitativo. La población

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eran mujeres embarazadas que vivían en Surabaya entre mayo y julio de 2020. Mientras tanto, hubo 100 encuestados por muestreo intencional. El instrumento fue la Escala de Calificación de Ansiedad de Hamilton (HARS) para determinar los niveles de ansiedad. El método de recopilación de datos utilizó un cuestionario a través de un enlace de formulario de Google distribuido a los encuestados. Luego, los datos fueron analizados mediante el análisis de varianza de una vía (ANOVA) y presentados en una distribución de frecuencia.

Resultados: Los resultados del estudio revelaron que el 44 % de los encuestados tenía niveles de ansiedad moderados, el 31 % tenía ansiedad severa y el 25 % tenía ansiedad leve.

Conclusión: En conclusión, la mayoría de las mujeres embarazadas en Surabaya experimentan niveles de ansiedad moderados, seguidos de niveles de ansiedad severos durante la pandemia de COVID-19. Las preocupaciones sobre el riesgo de transmisión de COVID-19 aumentan los niveles de ansiedad en las mujeres embarazadas. Las restricciones de visitas de atención prenatal (ANC) podrían reemplazarse por comunicación y consulta en línea sobre el manual de salud materno infantil (MHC) realizado por trabajadores de la salud.

Palabras clave: Niveles de ansiedad, pandemia de COVID-19, embarazadas.

INTRODUCTION

Hormonal changes during pregnancy cause physical and psychological changes. Psychologically, pregnancy provides confidence to become a real woman and improves family and social life (1-3). However, pregnant women have anxiety about things that might happen to themselves or their fetuses, especially during the COVID-19 pandemic (4,5). A study reported the number of pregnant women experiencing anxiety as 23 % in Canada, 15 % in Germany, and 49 % in Pakistan (6,7). East Java is the province with the second-highest cumulative number of COVID-19 cases in Indonesia after Jakarta. It is categorized as the black zone (8-10). In addition, the number of pregnant women infected with COVID-19 in East Java is relatively high. During the pandemic, confirmed cases in pregnant women at Dr. Soetomo Hospital reached 35 people (11).

COVID-19 is a new respiratory disease that has spread throughout the world. Knowledge

related to pregnancy and the fetus is still limited. The COVID-19 pandemic increases stress and anxiety for pregnant women. They are worried about regular checkups during pregnancy in the health services because they are afraid of being exposed to the virus, especially in cities or regions with social restrictions (12,13). During the COVID-19 pandemic, there were no specific guidelines for COVID-19 treatment in pregnant women. Pregnancy causes a decrease in partial immunity due to physical and psychological changes, resulting in pregnant women being more susceptible to viral infections (14). Therefore, pregnant women are highly recommended to increase their immunity so as not to be vulnerable to the disease (15).

Some data obtained from cases of pregnant women with COVID-19 shows that there is no vertical intrauterine transmission. No virus is found in the amniotic fluid, placenta, breast milk, and baby's nasal secretions. However, the infection occurs due to close contact between the baby and the mother during postpartum. Direct breastfeeding is not recommended for postpartum mothers with COVID-19, so the most likely method is giving expressed breast milk to babies by healthy caregivers or health workers (16). This paper describes the anxiety levels in pregnant women during the COVID-19 pandemic in Surabaya.

METHODS

This research was conducted in the city of Surabaya in May - July 2020 using a descriptive method with a cross-sectional approach. The population in this study was all pregnant women in the city of Surabaya. The sampling technique used is a non-probability technique with the accidental sampling method so that the sample taken is 100 people with the consideration of the minimum sample limit set. This research was conducted through an online survey by filling out a google form questionnaire. Questionnaires were distributed to pregnant women who live in the city of Surabaya. The research instrument uses the Hamilton Anxiety Rating Scale (HARS) which was developed by Max Hamilton in 1956 to measure signs of anxiety, both psychological and somatic (17).

This research is in accordance with the ethical principles of research, namely respect for human dignity, respect for the privacy and confidentiality of research subjects (respect for privacy and confidentiality), and fairness, considering the benefits and disadvantages.

RESULTS

The study results included characteristics of respondents and anxiety levels in pregnant women during the COVID-19 pandemic.

Table 1

Characteristics of the respondents by age, education, occupation, parity status, and gestational age

Characteristics	Frequency	Percentage (%)
Age		
Young Reproduction (<20 years old)	1	1
Healthy reproductive period (20-35 years old)	96	96
Old Reproduction (>35 years old)	3	3
Education		
Primary (Elementary School - Junior High School)	8	8
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Tertiary (College)	36	36
Occupation		
Work	46	46
Housewife	54	54
Parity Status		
Multigravida	52	52
Primigravida	48	48
Gestational Age		
1-3 months	30	30
4-6 months	33	33
7-8 months	37	37
Total	100	100

Table 1 shows that most respondents are housewives (54 %) and multigravida (52 %). In addition, they are in a healthy reproductive period (96 %), have secondary education (56 %), and have seven to eight months of gestation (37 %).

Table 2 reveals that almost half of respondents have moderate anxiety levels (44 %), followed by severe anxiety (31 %).

DISCUSSION

In this paper, almost half of the respondents had moderate anxiety levels, followed by severe anxiety. Several factors are closely associated with anxiety in pregnant women, including COVID-19. The COVID-19 pandemic causes pregnant women to become anxious and afraid of being infected with the virus. Concerns about the risk infected increase anxiety levels in pregnant women. As a result, they choose to labor in an independent midwife practice because they

Table 2

Anxiety Levels in Pregnant Women during the COVID-19 Pandemic

Variable	Frequency	Percentage (%)
Anxiety Levels		
Mild	25	25
Moderate	44	44
Severe	31	31
Total	100	100

consider the hospital vulnerable to transmitting the virus (18).

Pregnant women are vulnerable to being infected with the COVID-19 virus because of the decreased immune system due to physiological changes during pregnancy. Several studies have stated that the COVID-19 pandemic is likely to severely affect pregnant women (19) whether at times of disaster or not, are well-established risk factors for preterm birth, low birthweight, and infant health problems and may have long-lasting effects on the offspring. 1,2 Approximately 21% to 25% of women experience prenatal anxiety symptoms (eg, excessive worry, nervousness, agitation. Both physiological and immunological changes during pregnancy can increase the risk of respiratory and obstetric infections in the mother and fetus. Based on the experience of previous outbreaks (SARS and MERS), pregnant women are at higher risk of obstetric complications such as abortion, premature birth, IUGR (Intrauterine growth restriction), and even death. In addition, the Covid-19 pandemic also causes psychological problems in pregnant women and increases the number of depressions during pregnancy. There should be proper management is needed to overcome the issues (20).

Concern about COVID-19 transmission increases anxiety, stress, and fear in pregnant women. There were 34.2 % of pregnant women had depressive symptoms (6). This happened along with the increasing number of COVID-19 cases in various regions for several months. The number has not subsided until now. During the COVID-19 pandemic, pregnant women planning healthcare delivery, especially in hospitals, feel worried and afraid. They are scared of being exposed to COVID-19 during the delivery process or during a trip to the hospital. Some pregnant women who still have to work and interact outside the home increasingly use antiseptics such as sodium hypochlorite and alcohol. Antiseptics can protect themselves from virus transmission. However, antiseptics use in large quantities, and recurring frequency can cause poisoning and affects fetal growth and development (4).

In pregnant women, factors influencing anxiety are age, education level, parity status, occupation, previous obstetric history, and daily habits. In this paper, most respondents were in

a healthy reproductive period. The mother's age during pregnancy affects her pregnancy. Pregnant women with a healthy reproductive period will lower complications than young or old reproductive years. Pregnant women who are too young or old will be more anxious or afraid because their physical state is not ready for pregnancy and childbirth. In a healthy reproductive period, they have better prepared physically and mentally to undergo pregnancy and childbirth.

Moreover, most respondents had secondary education. Education also affects the psychological state of pregnant mothers. Higher education makes mothers have insight, self-development, and intellectual maturity. So, they can more easily find information and seek medical help during pregnancy. Furthermore, they can prepare for child delivery during the COVID-19 pandemic (21).

On the other hand, 46 % of respondents in this paper were a worker. Working hours are correlated with the level of work stress felt by pregnant women significantly. It can affect employees' stress levels because work generally demands cognitive, emotional, and physical resources. At a cognitive level, working hours of more than eight hours per day are associated with decreased attention. Working excessive hours can also reduce mental health disorders such as fatigue or depression. A study reported that the risk of cardiovascular disease in pregnant women increased by stress caused by long working hours, affecting the health of the mother and fetus (22).

Parity status can affect anxiety because it is related to psychological aspects. In this research, 48 % of respondents were primigravida, while 52 % were multigravida. A previous study revealed that Nulliparous women reported higher childbirth anxiety than multiparous mothers (23). Primigravida mothers do not have an idea about what will happen during childbirth. They are afraid because they often hear terrible stories from friends or relatives about experiences during delivery, such as the mother or baby dying. It affects their mindset about the scary childbirth process. Meanwhile, multigravida feels fear, tension, and anxiety due to her pain from previous childbirth (24).

In addition, most of the respondents were

at 7-8 months of pregnancy (third trimester). Results from previous studies showed that anxiety in pregnancy was significantly associated with preterm birth. Anxiety in the Second-trimester pregnancy was not associated with preterm birth, while in the third trimester was correlated with preterm birth (25).

One of the government policies implemented to reduce the transmission of COVID-19 is social distancing. Pregnant women have to restrict themselves from interaction outside the home. They must be more vigilant and disciplined in implementing Health protocols by hand washing and personal protective equipment (PPE) – such as masks and face shields. They can minimize visits to the hospital through online consultations with a midwife. In addition, they can increase their knowledge by learning the Maternal and Child Health (MCH) handbook. The handbook consists of information to improve health and recognize danger signs during pregnancy (25,26).

There is a restriction on antenatal care (ANC) visits to prevent the transmission of covid-19. However, the ANC visits can be held online by communication and consultation between health workers and mothers, both individually and in groups. Health workers, especially midwives, must improve mothers' and families' ability to understand the MCH Handbook to recognize the signs and dangers of pregnancy and care during pregnancy. The handbook also includes preparation for labor, postpartum and newborn babies in everyday life (27).

CONCLUSION

In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

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consider the hospital vulnerable to transmitting the virus (18).

Pregnant women are vulnerable to being infected with the COVID-19 virus because of the decreased immune system due to physiological changes during pregnancy. Several studies have stated that the COVID-19 pandemic is likely to severely affect pregnant women (19) whether at times of disaster or not, are well-established risk factors for preterm birth, low birthweight, and infant health problems and may have long-lasting effects on the offspring. 1,2 Approximately 21% to 25% of women experience prenatal anxiety symptoms (eg, excessive worry, nervousness, agitation). Both physiological and immunological changes during pregnancy can increase the risk of respiratory and obstetric infections in the mother and fetus. Based on the experience of previous outbreaks (SARS and MERS), pregnant women are at higher risk of obstetric complications such as abortion, premature birth, IUGR (Intrauterine growth restriction), and even death. In addition, the Covid-19 pandemic also causes psychological problems in pregnant women and increases the number of depressions during pregnancy. There should be proper management is needed to overcome the issues (20).

Concern about COVID-19 transmission increases anxiety, stress, and fear in pregnant women. There were 34.2 % of pregnant women had depressive symptoms (6). This happened along with the increasing number of COVID-19 cases in various regions for several months. The number has not subsided until now. During the COVID-19 pandemic, pregnant women planning healthcare delivery, especially in hospitals, feel worried and afraid. They are scared of being exposed to COVID-19 during the delivery process or during a trip to the hospital. Some pregnant women who still have to work and interact outside the home increasingly use antiseptics such as sodium hypochlorite and alcohol. Antiseptics can protect themselves from virus transmission. However, antiseptics use in large quantities, and recurring frequency can cause poisoning and affects fetal growth and development (4).

In pregnant women, factors influencing anxiety are age, education level, parity status, occupation, previous obstetric history, and daily habits. In this paper, most respondents were in

a healthy reproductive period. The mother's age during pregnancy affects her pregnancy. Pregnant women with a healthy reproductive period will lower complications than young or old reproductive years. Pregnant women who are too young or old will be more anxious or afraid because their physical state is not ready for pregnancy and childbirth. In a healthy reproductive period, they have better prepared physically and mentally to undergo pregnancy and childbirth.

Moreover, most respondents had secondary education. Education also affects the psychological state of pregnant mothers. Higher education makes mothers have insight, self-development, and intellectual maturity. So, they can more easily find information and seek medical help during pregnancy. Furthermore, they can prepare for child delivery during the COVID-19 pandemic (21).

On the other hand, 46 % of respondents in this paper were a worker. Working hours are correlated with the level of work stress felt by pregnant women significantly. It can affect employees' stress levels because work generally demands cognitive, emotional, and physical resources. At a cognitive level, working hours of more than eight hours per day are associated with decreased attention. Working excessive hours can also reduce mental health disorders such as fatigue or depression. A study reported that the risk of cardiovascular disease in pregnant women increased by stress caused by long working hours, affecting the health of the mother and fetus (22).

Parity status can affect anxiety because it is related to psychological aspects. In this research, 48 % of respondents were primigravida, while 52 % were multigravida. A previous study revealed that Nulliparous women reported higher childbirth anxiety than multiparous mothers (23). Primigravida mothers do not have an idea about what will happen during childbirth. They are afraid because they often hear terrible stories from friends or relatives about experiences during delivery, such as the mother or baby dying. It affects their mindset about the scary childbirth process. Meanwhile, multigravida feels fear, tension, and anxiety due to her pain from previous childbirth (24).

In addition, most of the respondents were

at 7-8 months of pregnancy (third trimester). Results from previous studies showed that anxiety in pregnancy was significantly associated with preterm birth. Anxiety in the Second-trimester pregnancy was not associated with preterm birth, while in the third trimester was correlated with preterm birth (25).

One of the government policies implemented to reduce the transmission of COVID-19 is social distancing. Pregnant women have to restrict themselves from interaction outside the home. They must be more vigilant and disciplined in implementing Health protocols by hand washing and personal protective equipment (PPE) – such as masks and face shields. They can minimize visits to the hospital through online consultations with a midwife. In addition, they can increase their knowledge by learning the Maternal and Child Health (MCH) handbook. The handbook consists of information to improve health and recognize danger signs during pregnancy (25,26).

There is a restriction on antenatal care (ANC) visits to prevent the transmission of covid-19. However, the ANC visits can be held online by communication and consultation between health workers and mothers, both individually and in groups. Health workers, especially midwives, must improve mothers' and families' ability to understand the MCH Handbook to recognize the signs and dangers of pregnancy and care during pregnancy. The handbook also includes preparation for labor, postpartum and newborn babies in everyday life (27).

CONCLUSION

In conclusion, most pregnant women in Surabaya experience moderate anxiety levels, followed by severe anxiety levels during the COVID-19 pandemic. Concerns about the risk of COVID-19 transmission increase anxiety levels in pregnant women. Antenatal care (ANC) visit restrictions could be replaced by online communication and consultation on the Maternal and Child Health (MHC) handbook conducted by health workers.

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