Oshada; Jurnal Kesehatan
https://nawalaeducation.com/index.php/O/index
Volume 1 Nomor 5 October 2024
e-ISSN : 3047-017X
DOI : https://doi.org/10.62872/bty3pr04

Mental Health Management Strategies in Pregnant Women and The Impact on Infant Health

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Input	: September 27, 2024	Revised	: October 08, 2024
Accepted	: October 15, 2024	Published	: October 30, 2024

ABSTRACT

This study aims to explore mental health management strategies in pregnant women and their impact on infant health through systematic literature studies. The focus of the research includes a range of psychological interventions, such as cognitive behavioral therapy, social support, and routine health monitoring, as well as the measuring tools used, such as the Edinburgh Postnatal Depression Scale (EPDS). Literature searches were conducted comprehensively through databases such as PubMed, Google Scholar, and ProQuest with keywords related to perinatal mental health and infant health. Inclusion criteria include publications within the last 10 years, in Indonesian or English, and relevant to maternal mental health and infant development. Thematic analysis is used to identify patterns of interventions and their impact on infant health, such as birth weight and cognitive development. The results show that good maternal mental health during pregnancy has a significant impact in lowering the risk of complications, such as premature birth and low birth weight, as well as supporting the emotional and cognitive development of the baby. This study also reveals the importance of socio-economic factors and family support in influencing maternal mental health. The implications of this study are expected to support the development of better public health policies in maternal and child health services.

Keywords : *Baby health, mental health,pregnant women*

BACKGROUND

Mental health during pregnancy has a very important role because it can affect various aspects of maternal well-being and fetal development (Federenko., 2024). Pregnant women experience significant emotional and physical changes, which can trigger feelings of anxiety, stress, or depression (Glover.., 2024). An unstable mental state can increase the risk of health problems, such as high blood pressure, sleep disorders, and other complications, which have a direct impact on the mother's health(Sunill & Franco., 2024). Research shows that mothers who experience depression or high anxiety

are more likely to give birth to babies with low birth weight and long-term health risks. Good mental health supports positive interactions between mother and baby after birth, allowing mothers to provide optimal care and affection, as well as build strong emotional bonds. Psychosocial support, counselling, and education regarding mental health help mothers cope with challenges during pregnancy, thereby creating a healthier environment for fetal growth and development (Chauhan & Poldar., 2022). Attention to the mental health of pregnant women is not only important for the well-being of individuals, but also has a far-reaching impact on the health of future generations.Mental health is critical to public health and contributes substantially to the global burden of disease (Whiteford et al., 2015). In low- and middle-income countries (LMICs), there are few resources to address this burden, resulting in a large number of people with mental health problems not receiving treatment (Demyttenaere et al., 2004). Calls have been made to make evidence-based treatment for mental disorders more accessible by integrating it into non-specialized health services, such as primary, maternal and child health systems (Lancet Global Mental Health Group et al., 2007).

Mental health issues in pregnant women are an issue that is gaining increasing attention in various parts of the world, especially given its significant impact on maternal well-being and baby development. Data shows that about 10-20% of pregnant women experience mental disorders, such as depression and anxiety, which can affect their physical and mental health (Wu *et al*., 2020). In Indonesia, the prevalence of depression in pregnant women is recorded at 18.4%, with risk factors including low social support, a history of previous mental health problems, and difficult economic conditions. Globally, studies show that about 25% of pregnant women experience high levels of anxiety, which not only impacts their health but can also contribute to complications during pregnancy, such as premature labor and low birth weight. Research also shows that mothers who experience mental health problems are more likely to deal with emotional and behavioral problems in their children later in life, including developmental disorders. Complications such as unplanned pregnancies, significant hormonal changes, and social stress can worsen a mother's mental health condition (Steinberg & Rubin., 2024). Data from the World Health Organization (WHO) confirms that handling mental health problems during pregnancy is very important to prevent long-term negative impacts. It is important to identify and appropriately treat mental health problems in pregnant women through effective screening programs, psychosocial support, and appropriate interventions, so that more effective policies and programs can be designed to support maternal and infant mental health.

Mental health is defined as a state of well-being in which individuals can realize their potential, face the pressures of life, work productively, and contribute to the community (Huppert & Wittington., 2020). During pregnancy, a mother's mental health can undergo significant changes due to fluctuations in hormones, such as estrogen and progesterone, which affect mood, energy levels, and emotional balance (Harja *et* al., 2023). Many pregnant women experience drastic mood swings, which can trigger symptoms of anxiety or depression. Pregnancy-related worries, such as the baby's health, preparation for a new role as a parent, and physical changes that occur, can increase stress levels and make mothers feel depressed. External factors, such as low social support from a partner or family, difficult economic conditions, and traumatic

experiences, such as unplanned pregnancies or previous violence, also contribute to mental health problems. Research shows that mental health problems during pregnancy can have long-term impacts, not only for the mother, but also for the baby's development, including the risk of developmental and behavioral disorders later in life. Understanding that a pregnant woman's mental health is not static and can change over time is key to effective intervention. Proper identification and handling of these changes, through psychosocial support programs, counseling, and screening, is essential to maintain maternal mental health and support healthy and optimal infant development (Weitzman *et al*., 2020).

Pregnant women's mental health is affected by a variety of factors that interact with each other, including hormonal changes, stress levels, and social support. Hormonal fluctuations, such as estrogen and progesterone, during pregnancy can affect mood and emotions, often resulting in symptoms of anxiety, depression, and significant mood swings (Wings *et al*., 2020). These changes not only impact the mother's feelings, but can also contribute to physical health problems, such as insomnia and fatigue. Stress levels are a key factor that can affect mental health; Concerns about the baby's health, preparation for parenthood, and major changes in life routines can increase emotional distress. Pressures from the environment, such as job demands, financial problems, and conflicts in relationships, can also worsen the mother's mental health condition. Social support from your partner, family, and friends is crucial in maintaining mental health. Pregnant women who feel supported tend to be better able to deal with the emotional and physical challenges that arise, thus contributing to better mental health (Thoits., 2021). On the other hand, a lack of support can exacerbate feelings of isolation and increase the risk of mental disorders. Understanding the interaction between hormonal factors, stress, and social support is crucial to developing effective interventions to ensure maternal well-being and healthy infant development. Proper treatment of these factors is expected to help pregnant women live their pregnancies better and reduce the risk of mental health problems that can have long-term impacts.

Poor mental health in pregnant women can have a significant impact on fetal development. Mothers who experience mental disorders, such as depression or anxiety, are at higher risk of developing physical health problems, including hypertension, gestational diabetes, and other complications that can affect the fetus (Mauthner *et al*., 2020). Chronic stress experienced by mothers can disrupt the blood flow and nutrients that the fetus needs, potentially causing stunted growth. Poor mental health can also affect maternal behavior, such as unhealthy diet, lack of physical activity, and non-adherence to prenatal care, all of which can negatively impact fetal health. Research shows that babies born to mothers with major depression tend to have low birth weight, a higher risk of being born prematurely, and the possibility of developing developmental problems later in life. Stress and anxiety in the mother can trigger hormonal responses that affect fetal brain development, potentially leading to neurological developmental disorders and behavioral problems in the future (Lutarescu & Glover., 2020). It is important to identify and treat mental health problems in pregnant women early to prevent negative impacts on fetal development and ensure the health of the mother and baby. Appropriate interventions, such as psychosocial support and counselling, can help reduce this risk and support healthier pregnancies.

Mental health problems in pregnant women can bring various health risks to the baby who is born. One significant potential risk is prematurity, where babies are born before sufficient gestational age, which can result in a variety of health complications, including respiratory distress, digestive problems, and difficulty maintaining body temperature. In addition, mothers who experience depression or severe anxiety during pregnancy tend to give birth to babies with low birth weight. Babies with low birth weight have a higher risk of short- and long-term health problems, such as growth disorders, neurological developmental problems, and an increased likelihood of chronic diseases later in life. There are several compelling reasons to integrate mental health services into routine maternal and child health services at LMICs. First, mental disorders in the perinatal period are common and disabling (Baron et al., 2016). Second, mental disorders in mothers are related to poor child development and health (Surkan et al., 2011). Third, maternal and child health services are a good entry point to identify and treat maternal mental disorders because of the relatively good utilization of antenatal services in LMICs. Fourth, treatments for maternal mental disorders have been evaluated as effective in several LMICs and existing treatment guidelines for non-specialty healthcare providers include specific recommendations for pregnant women (Rahman et al., 2013). The mother's mental health can also affect prenatal care behaviors, such as non-adherence to routine check-ups and poor nutritional intake, which contribute to the baby's health risks. Mothers who experience high stress or anxiety may not be able to provide a stable and healthy environment during pregnancy, which can have an impact on the baby's development. Therefore, it is important to identify and treat mental health problems in pregnant women early, in order to reduce these risks and ensure the health and well-being of the baby who will be born. Effective interventions, such as psychosocial support and counseling, can help create better conditions for both mother and baby.

The relationship between maternal stress and biological responses in babies is complex and involves a variety of biological mechanisms that can affect fetal development. Stress experienced by mothers can trigger the release of stress hormones, such as cortisol and adrenaline. Increased cortisol levels in the blood can affect blood flow and oxygen supply to the fetus, which has an impact on the development of the baby's organs and nervous system. Prolonged stress during pregnancy can lead to changes in fetal growth patterns, where babies exposed to high levels of stress in the womb may have a higher risk of developing neurological developmental disorders and behavioral problems later in life. Research shows that babies exposed to maternal stress during pregnancy may exhibit different physiological responses, such as increased heart rate and blood pressure, which indicate the presence of tension in the autonomic nervous system. Exposure to chronic stress in mothers can also affect the genetic and epigenetic interactions that determine fetal development, triggering changes that can impact the long-term health of the baby (Argyraki *et al*., 2019). Therefore, it is important for pregnant women to manage stress well, as their mental and emotional health not only impacts their own well-being, but also on the development and health of the baby who will be born. Appropriate interventions, such as psychosocial support and relaxation techniques, can help reduce stress and create a healthier environment for the fetus.

This study focuses on the influence of stress experienced by pregnant women on the biological response and development of the fetus (Mulder *et al*., 2022). High levels of stress during pregnancy, both due to psychological, social, and environmental factors, can trigger increased levels of stress hormones such as cortisol. High cortisol levels not only affect the mental health of the mother, but also have an impact on the blood flow and oxygen received by the fetus, thus interfering with the development process of organs and the nervous system. Various studies have linked maternal stress to health risks for babies, including low birth weight, prematurity, and neurological developmental disorders. Babies exposed to high levels of stress in the womb tend to experience greater behavioral and developmental problems after birth, such as learning difficulties and attention disorders (Kofman., 2022). Research also needs to explore the specific mechanisms underlying how maternal stress affects the baby's biological response, including the potential for epigenetic changes that could affect the genetic development of the fetus. The importance of social support and psychological interventions in reducing stress for pregnant women is also the focus of this study, as it can contribute to better health outcomes for babies. A deeper understanding of this relationship is expected to lead to the development of more effective support programs for pregnant women, thereby improving the well-being of mothers and babies and reducing the risk of future health problems.

Research has explored the link between pregnant women's stress and baby health risks, but there are some gaps that need to be filled in in this literature (Dunkel., 2021). Many studies focus on the quantitative relationship between stress levels and infant health outcomes, but few delve into the specific biological mechanisms underlying the relationship, especially regarding how stress hormones such as cortisol affect fetal development epigenetically. Research on the effectiveness of different types of psychological interventions and social support in different cultural contexts is also lacking. The need to explore how factors such as economic background, education, and social status affect maternal stress levels as well as the baby's biological response is essential. Stress measurements that often use self-report approaches can be influenced by subjective bias, so further research using objective measurement methods, such as biomarker analysis, can provide more accurate insights (O`Donohue *et al.,* 2021). In addition, longitudinal studies that follow pregnant women and their babies from pregnancy to childhood are also needed to explain the long-term effects of maternal stress on child development. Identifying and addressing these gaps can help provide a more comprehensive understanding of the relationship between maternal stress and biological responses in babies and formulate more effective interventions to improve maternal and child health.

METHODOLOGY

Research methods that examine mental health management strategies in pregnant women and their impact on baby health can be carried out through systematic literature studies. This study aims to identify and analyze findings from various studies related to the mental health of pregnant women, psychological interventions, and their impact on baby development. The first step is to conduct a comprehensive literature search through databases such as PubMed, Google Scholar, and ProQuest using keywords such as "pregnant women's mental health," "postpartum depression," "pregnancy

psychological intervention," and "infant health" (Austin & Priest, 2005; Mikulincer & Florian, 1999). Inclusion criteria included studies published in the last 10 years, using Indonesian or English, and focusing on perinatal mental health and infant health topics. After the screening process, relevant articles were analyzed in depth to evaluate the interventions used, applied measuring tools such as the Edinburgh Postnatal Depression Scale (EPDS), and infant health outcomes such as birth weight and cognitive development. Data from selected articles were analysed using thematic analysis to identify patterns and key findings related to effective interventions in managing maternal mental health and their impact on infants. In addition, this method also allows comparisons between different types of interventions, such as cognitive behavioral therapy, social support, and routine health monitoring, as well as socio-economic conditions that affect the mental health of pregnant women. Ethics in literature studies are maintained by respecting copyright and providing proper references to all sources used. The results of this literature study are expected to provide a comprehensive picture of effective strategies in managing the mental health of pregnant women and support the development of better public health policies for mothers and babies.

RESULT AND DISCUSSION

The changing times of the increasingly modern era have caused many individuals to experience symptoms such as stress, anxiety, and anxiety. Despite this, many people still think that stress and depression are not manifestations of diseases that can have an impact on physical health ((Cohen *et al*., 2020). If we compare it to AIDS (Acquired Immune Deficiency Syndrome), stress and depression turn out to have a significant role in the development of various diseases and can be one of the causes of death. The relationship between negative feelings and the onset of illness is very often seen in a person's daily life. A study conducted in the United States found that 28 out of 32 patients experienced stress, which resulted in their immune systems not functioning properly, as well as contributing to the tragic situation experienced before they were exposed to the disease. These problems are not only personal, but also influenced by less supportive environmental conditions, which are a major factor in the development of stress and depression in individuals (Parkes *et al*., 2021). This shows the importance of paying attention to environmental aspects in an effort to support the mental and physical health of the community. Women who experience mental health disorders tend to be trapped in negative mindsets (Scattolon & Stoppard., 2019). In the face of symptoms of stress and depression, they often neglect their appearance and body health. Their main focus shifts to finding solutions, while unwanted thoughts keep popping up. As a result, other body systems are disrupted, making it more difficult for them to switch to positive thinking. Everything that is thought about in a state of stress risks turning positive aspects of themselves into scary things.

Different types of jobs, from business executives to firefighters, have a significant risk of developing health problems due to stress (Igboanugo *et al*., 2021). When a woman also plays the role of a housewife after hours, the level of stress faced can increase drastically. According to the American Institute of Stress, this combination of roles makes career women more likely to be more susceptible to stress. Housewives who do not work formally are not spared from the same problem, especially when facing pressure in daily life. The impact of mental health disorders not only affects cognitive

performance, but can also have an impact on the body's movement and metabolic systems (Vanyman & Gomez., 2021). In a state of stress, many women lose their appetite and get stuck in their thoughts about the problem at hand, resulting in a decrease in the functioning of the metabolic system. This leads to a decline in physical health, thereby increasing the likelihood of various diseases, such as gastric disorders, anemia, and reproductive health problems. Prolonged stress can create a negative cycle that is difficult to break; When physical health declines, the ability to handle stress also decreases, creating conditions that get worse. This situation can affect not only the quality of life of the individual, but also relationships with family and co-workers (Md & Ismail., 2020). Therefore, it is important to develop effective stress management strategies, both through social support, relaxation techniques, and professional interventions, to maintain mental and physical health. Creating a supportive environment for women in carrying out this dual role is very important so that they can live a more balanced and healthy life.

The mental health of pregnant women has a vital role in determining maternal well-being, fetal development, and future mother-child relationships. Pregnancy is often a vulnerable period for the emergence of mental disorders, especially depression and anxiety. About 10–20% of pregnant women experience significant depressive episodes, and this prevalence increases to 50% if mild anxiety disorders and minor depression are included (Fawcett *et al*., 2019). In addition to depression and anxiety, more severe disorders such as schizophrenia and bipolar are also found, with a greater risk of obstetric and neonatal complications, such as premature birth, congenital malformations, and perinatal death. Several factors play a role in the increased risk of mental disorders during pregnancy. Among them are a history of previous mental disorders, limited social support, poor socio-economic conditions, and an unhealthy lifestyle, including substance abuse and poor diet. Inequalities in access to mental health services are also a major barrier, especially for mothers from vulnerable communities. Research shows that resource limitations and social stigma lead to low levels of use of mental health services, worsening maternal conditions and impacting children. Mental health during pregnancy not only affects the mother, but also has a direct impact on the development of the fetus and baby (Van *et al*., 2020). For example, maternal stress can activate the hypothalamic-pituitary-adrenal (HPA) axis, which increases cortisol levels and inhibits fetal growth and increases the risk of premature birth. After giving birth, mothers with depression or anxiety tend to have difficulty building strong emotional bonds with their babies, which can hinder the child's emotional and social development later in life. Children of mothers with mental disorders are more prone to experiencing problems with emotional regulation, learning difficulties, and behavioral problems, even into adulthood.

Prevention and early intervention efforts are key steps in reducing the negative impact of mental disorders during pregnancy. Regular mental health screening programs in prenatal and postnatal services help detect at-risk mothers and allow for early intervention (Austin & Priest., 2023). The use of psychological therapies, such as cognitive-behavioral therapy, has been shown to be effective in dealing with mild to moderate depression and anxiety. Meanwhile, for more severe cases, the use of

antidepressant medications such as selective serotonin reuptake inhibitors (SSRIs) can be considered carefully, especially regarding the effects on the baby and the mother's choice to breastfeed. Medical interventions, social and community support are essential in the recovery of pregnant women with mental disorders. Family involvement, especially couples, as well as counseling services that are culturally based and focus on reproductive justice, can increase maternal involvement in care and improve mother-child relationships. Educational programs that increase public awareness about the importance of mental health during pregnancy are also needed to reduce stigma and facilitate access to health services (Corrigan *et al*., 2024). Overall, the mental health of pregnant women plays an important role in the well-being of mothers and children. Therefore, a holistic approach that includes psychological interventions, social support, and public policies is needed that ensures equitable access to mental health services for all pregnant women (Ogbe *et al*., 2022). The implementation of this policy is expected to reduce the risk of mental health disorders and provide a healthy environment for children's development in the future.

Handling the mental health of pregnant women requires a comprehensive approach that includes prevention, early detection, medical and psychological interventions, and social support. Education and counseling about mental health need to be provided from the beginning of pregnancy to increase the awareness of pregnant women and their families regarding signs of depression and anxiety (Parcells., 2020). Health workers also need to be trained to be able to identify the risk of mental disorders with a sensitive and empathetic approach. In addition, parenting programs that are educational and focus on increasing mother-child attachment can help mothers face emotional challenges and strengthen relationships with their babies. It is important to implement regular mental health screening in antenatal and postnatal care using tools such as the Edinburgh Postnatal Depression Scale (EPDS) to detect early symptoms of depression and anxiety (Kingston *et al*., 2024). Risk-based screening can also be used to identify mothers with a history of mental disorders or minimal social support. Multidisciplinary collaboration between doctors, psychologists, and social workers is needed to ensure that pregnant women get the right referrals and care according to their needs.

In the treatment of mental disorders, cognitive-behavioral therapy (CBT) and psychological counseling can help with mild to moderate depression and anxiety. For more severe cases, the use of antidepressant medications such as selective serotonin reuptake inhibitors (SSRIs) may be considered, but should be done carefully, considering the benefits and risks for the mother and baby, as well as the mother's preferences regarding breastfeeding. Community-based interventions that focus on empowerment and reproductive justice are essential to improve access to health services for vulnerable groups. Social support from spouses and families has an important role in helping mothers cope with emotional distress during pregnancy and postpartum. Family relationship counseling programs can also improve the quality of interaction in the household, creating an environment conducive to children's development. In addition, communities need to play an active role in supporting pregnant women from low economic backgrounds or marginalized groups by providing culturally based and needs-sensitive services.

Inclusive public policies are also needed to ensure equitable access to mental health services for all pregnant women. The implementation of this evidence-based policy is expected to be able to minimize the negative impact of mental disorders of pregnant women on the development of babies and improve the quality of life of mothers and children in the future. The mental health of pregnant women has a significant impact on the physical, emotional, and cognitive development of the baby, both during pregnancy and after birth (Cafiero & Zabala., 2024). Mental disorders such as depression and anxiety experienced by mothers during the perinatal period increase the risk of babies being born low or premature. Activation of the hypothalamic-pituitary-adrenal (HPA) axis due to stress experienced by mothers has the potential to increase cortisol levels, which inhibits fetal growth and has an impact on the child's neurological development (Austin & Reily., 2020). Disturbances in maternal mental health can affect the emotional attachment between mother and child or maternal-infant bonding. This low quality of attachment has an impact on children's ability to regulate emotions and build social relationships. Babies who do not get good emotional attachment from their mothers are at risk of having difficulty interacting socially and increased aggressive or anxious behavior as they enter childhood. Children who grow up in this condition are also more susceptible to emotional and mental disorders, such as depression or anxiety, as adults.

The quality of child care is also influenced by the mother's mental health. Depression and anxiety can cause mothers to have difficulty meeting their baby's basic needs, such as diet, sleep patterns, and adequate health care. This increases the risk of infection, malnutrition, and delayed physical growth in children. Babies born to mothers with severe mental disorders, such as schizophrenia or bipolar, have a higher risk of developmental delays, congenital defects, and perinatal death (Pugliese *et al*., 2019). Research shows that the negative impact of maternal mental health is not only limited to infancy, but can also continue into adulthood. Children who are exposed to maternal stress during pregnancy are more likely to experience behavioral problems and learning difficulties in the long term (Van *et al*., 2020). Thus, efforts to handle the mental health of pregnant women are very important to ensure optimal development of children. Ongoing mental health support during the perinatal period can improve the quality of the relationship between mother and child and reduce the risk of developmental disorders in children in the future.

CONCLUSSION

The mental health of pregnant women has a crucial role in ensuring maternal well-being and optimal development of the baby, as disorders such as depression, stress, and anxiety during pregnancy can trigger complications such as premature birth, low birth weight, and impaired emotional and cognitive development in the child. Appropriate coping strategies include psychological therapies such as cognitive behavioral therapy (CBT) to manage stress and anxiety, social support from families and communities to create a conducive environment, and medical interventions in the form of intensive

health monitoring and supervised use of medication when needed. Education about the importance of mental health for mothers and families is also needed to raise awareness and reduce the stigma that often hinders the search for help. Regular assistance from health workers helps in the early detection and treatment of mental problems during pregnancy. The positive impacts of effective treatment include better maternal readiness for labor and postpartum, strengthening the emotional bond between mother and baby, and supporting the child's social and emotional development. Babies born to mothers with maintained mental health have a lower risk of developmental disorders and tend to grow optimally physically and psychologically. The implementation of this strategy requires continuous support from the government and health services so that pregnant women can get appropriate and integrated mental management, thereby creating a healthy and developing generation holistically.

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