



# Perspective View of Stress, Anxiety, and Depression among Pregnant Women: A Review

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## Abstract

The prevalence of depression, anxiety, and stress symptoms in pregnant women tends to be most pronounced during the initial trimester and thereafter diminishes over the course of pregnancy, reaching its lowest point during the postpartum phase. This review examines the frequency, determinants, and physiological and psychological consequences of stress, anxiety, and depression during pregnancy. This highlights the need to understand mental health in expectant women and the unique characteristics of anxiety and depression, and also examines the interaction between hormonal, biological, psychological, and environmental components, as well as the potential influence of previous trauma on mental health during pregnancy and the physiological impact of stress on the mother's body and the development of the fetus, emphasizing the possible outcomes for both the mother and the unborn child. The significance of the psychological consequences of anxiety and depression is underscored, emphasizing the imperative for timely identification and management. The review highlights the need to screen and evaluate stress, anxiety, and depression in expectant mothers, highlighting the necessity for a complete approach to maternal mental healthcare.

**Keywords:** Anxiety, Depression, Mental Health, Pregnancy, Stress

## 1. Introduction

Pregnancy initiates a transformative phase for women, bestowing upon them the title of “mother” and subjecting them to physiological and psychological alterations, as well as shifts in their familial and social roles. The majority of women experience various types and severities of mental problems throughout this era, with stress, anxiety, and depression being the most prevalent and often occurring comorbidities<sup>1</sup>. Mothers may begin to notice these changes as early as the first trimester of their pregnancy and continue into the postpartum phase. Every new mother is susceptible to fluctuating emotions and mental problems such as stress and/or anxiety-depressive symptoms. Physical difficulties for the infant may come from compromised mother mental health in the perinatal period<sup>2</sup>. Pregnancy problems such as hypertension, early delivery, and low birth weight have all been related

to maternal stress, as well as neonatal morbidity<sup>3</sup>. Prenatal anxiety and depression have also been linked to an increased risk of nausea and vomiting throughout pregnancy, increased childbirth-related dread, a higher number of visits to obstetrics and gynecology clinics, and poor sleep quality, according to many research<sup>4</sup>.

## 2. Overview of Stress, Anxiety, and Depression during Pregnancy

During pregnancy, a woman's body and mind undergo profound transformations in preparation for delivery and parenting. Although it is often a happy and exciting time, it may also bring up tension, worry, and despair for some people. Perinatal mood disorders are a catchall term for any of these illnesses that manifest during pregnancy.

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### 3. Stress during Pregnancy

Stress is an inherent and adaptive reaction that the body undergoes when confronted with demanding or menacing circumstances. The body's natural defense system is its reaction to a perceived threat or demand. When faced with stress, your body initiates the "fight or flight" reaction, which triggers a sequence of physiological and psychological alterations. From a physiological standpoint, stress induces the secretion of stress hormones, namely cortisol and adrenaline. These chemicals increase heart rate, boost energy, and sharpen focus to help the body be ready to respond to any perceived threat<sup>5</sup>. The experience of pregnancy can induce stress as a result of the multitude of physiological and psychological transformations taking place within the female body. Typical stressors may encompass apprehensions regarding the well-being of the infant, financial anxieties, relational challenges, trepidation surrounding the birthing process, and ambiguity regarding forthcoming circumstances. Although a certain degree of stress is considered typical, an excessive or persistent state of stress can yield adverse both for the expecting mother and the growing fetus. Elevated levels of stress experienced during early delivery, low birth weight, as well as developmental delays have all been linked to smoking during pregnancy challenges in offspring<sup>6</sup>.

### 4. Anxiety during Pregnancy

Symptoms of anxiety include uneasiness, fear, and horror. The pulse rate may get faster, feeling of tense and restless, and begin to sweat. It can be a common reaction to pressure.

Anxiety experienced during pregnancy encompasses heightened levels of concern, apprehension, and unease pertaining to diverse facets of the pregnancy process, labor, and delivery, as well as the role of motherhood. Certain individuals of the female gender may possess pre-existing anxiety disorders that have the potential to exacerbate during the period of pregnancy, whereas others may encounter anxiety symptoms for the first instance<sup>7</sup>. Frequent catalysts for pregnancy-related anxiety encompass apprehensions regarding the physical condition and welfare of the fetus, trepidation surrounding the process of childbirth, and anxieties pertaining to one's ability to fulfill the role of a competent mother. The absence of treatment for anxiety may have

a significant impact on the mother's general well-being, possibly impacting the child's developmental trajectory the baby as well<sup>8</sup>.

### 5. Depression during Pregnancy

Depression is a mental disorder characterized by a persistent state of low mood and lack of interest. Clinical depression, also known as major depressive disorder, affects an individual's cognition, emotions, and actions, leading to various psychological and medical complications.

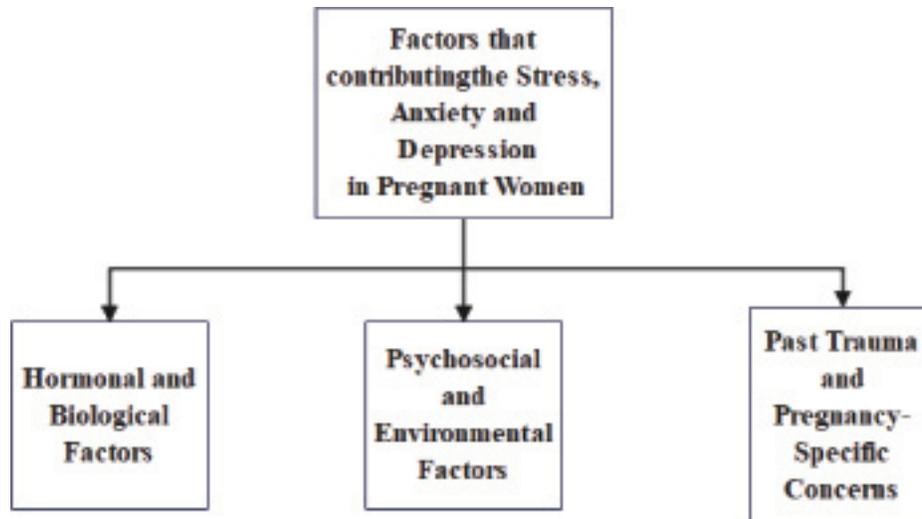
Antenatal or prenatal depression, commonly referred to as depression during pregnancy, is a recognized condition. It is a mood disorder that is distinguished by feeling despair, hopelessness, and a reduced ability to enjoy interest or enjoyment in a variety of activities. Hormonal fluctuations that occur during pregnancy have the potential to influence mood alterations, although depression surpasses the customary variations. Pregnant women who suffer from depression may encounter challenges in establishing a strong emotional connection with their infant and may encounter difficulties in attending to their own well-being and making informed choices<sup>9</sup>.

### 6. Factors that Contribute the Stress, Anxiety, and Depression in Pregnant Lady

There exist various elements that may have played a role in the development of anxiety, sadness, and stress in pregnant individuals. Therefore, the mentioned factors exhibit variability among individuals and their collective influence can interact to impact pregnant women's mental health. In this section, we will explore some of the factors.

#### 6.1 Hormonal and Biological Factors

Biological and hormonal changes during pregnancy have a significant impact on both the physical and mental health and well-being of pregnant women. The complex hormonal changes that take place during pregnancy are controlled by a number of endocrine systems, including the axis of the hypothalamic-pituitary and the placenta. These adjustments are necessary to assist the development of the fetus as well as the mother's body ready for birthing and nursing.



Human Chorionic Gonadotropin (HCG), progesterone, and estrogen production all rise significantly during pregnancy. The placenta, which develops following the implantation of the fertilized egg into the uterine wall, is responsible for producing the majority of these hormones. hCG is particularly crucial in the initial phases of pregnancy because it supports the corpus luteum, which generates progesterone until the placenta eventually takes over hormone synthesis. Progesterone and estrogen are essential for keeping the uterine lining healthy, promoting the fetus' development, and getting the breasts ready for nursing.

The importance of additional hormones, including oxytocin and cortisol, should not be disregarded in addition to the placenta and HPA axis. The "love hormone" or "bonding hormone", oxytocin, rises throughout pregnancy and plays a crucial role in encouraging maternal bonding, social interactions, and uterine contractions during labor. Cortisol, a stress hormone, also increases during pregnancy, although it is thought to be a normal response by the body to the strain of birthing.

Studies have shown how hormonal fluctuations affect the behavior and mental health of mothers. For instance, research indicated that variations in progesterone and estradiol levels during pregnancy were linked to alterations in mood and anxiety levels<sup>10</sup>. The same study showed that postpartum women who had greater prenatal progesterone levels showed more maternal sensitivity and response to their babies.

In addition to hormonal changes, biological aspects including genetic predisposition and alterations in the way the brain functions may increase a person's

sensitivity. Stress, anxiety, and sadness are common throughout pregnancy. According to study, women with a history of mental problems or depression in the family are more inclined to have prenatal depression this field by<sup>7</sup>. Additionally, prenatal mood disorders may be influenced by neurobiological variables, as shown by neuroimaging studies that showed changes in brain connections and structures in pregnant women with depressive symptoms.

## 6.2 Psychosocial and Environmental Factors

The well-being of pregnant women is significantly impacted by psychosocial and environmental factors, which have a profound effect on both maternal health and fetal development. Extensive Pregnant women endure stress, according to a study on psychological variables, anxiety, and sadness. Premature delivery and other unfavorable pregnancy outcomes have been related to high levels of stress during pregnancy and reduced birth weight<sup>11</sup>. A meta-analysis was carried out that revealed a noteworthy correlation between maternal stress and an elevated likelihood of preterm birth. Likewise, there exists a correlation between Pregnancy anxiety and melancholy, as well as an increased vulnerability to postpartum depression as well as compromised maternal-infant bonding. Another longitudinal study<sup>12</sup> revealed indicates pregnant women who suffer from depression have an increased chance of encountering challenges in the mother-infant relationship during the postpartum phase.

Social support is a significant psychosocial determinant that can influence the well-being of pregnant women. According to research, adequate social support is critical in minimizing the negative effects of stress and anxiety promoting favorable outcomes during pregnancy. Pregnant women who possessed greater People with high amounts of interaction reported lower stress levels of stress and anxiety during their pregnancy<sup>13</sup>.

During pregnancy, maternal and fetal health can be influenced by various environmental factors, including but not limited to air pollution and exposure to toxins<sup>14</sup> conducted a study that demonstrated a positive correlation there is a link between pregnancy-related exposure to air polluting and a higher risk of premature birth and poor birth weight. Additionally, it has been established in previous research conducted by<sup>15</sup> that exposure to Environmental pollutants like mercury and lead insecticides is linked to developmental delays and cognitive impairments in the offspring.

Additionally, it is important to acknowledge that socioeconomic factors which have a significant impact in determining healthcare accessibility and the overall well-being of pregnant women. Women hailing from socioeconomically disadvantaged backgrounds may encounter obstacles in accessing prenatal healthcare services and obtaining sufficient nutritional support, thereby resulting in heightened vulnerability to pregnancy-related complications<sup>15</sup> conducted a study that revealed a correlation between socioeconomic disparities and disparities in birth outcomes. The study found that women with lower incomes had increased preterm birth along with low birth weight.

### 6.3 Past Trauma and Pregnancy-Specific Concerns

Women who have already suffered trauma may be more susceptible during pregnancy. The mental and emotional health of a pregnant woman might be significantly impacted by the terrible events she has had in the past, such as physical or sexual abuse, emotional trauma, or unhappy childhood circumstances.

According to research, pregnant women having previous experiences of trauma might be more prone to suffer worry and sadness. According to research by<sup>16</sup>, pregnant women Pregnant women with previous experiences of childhood trauma are significantly more

inclined than pregnant women without previous trauma experiences to experience anxiety and depression symptoms. Similarly<sup>17</sup> showed Women who have experienced intimate relationship abuse were more inclined to get pregnant with melancholy and anxiety.

Past trauma may also affect a woman's perspective on delivery and issues unique to pregnancy. According to 2020, Women who have experienced trauma are more prone to feel birthing anxiety and may have a less favorable overall opinion of their pregnant experience. Such worries may result in greater stress and trouble managing the demands of pregnancy, which may have an effect on both the well-being of the mother and the unborn baby's well-being, are at stake<sup>18</sup>.

To provide thorough it is critical to address the need for safe and effective prenatal care special requirements of expectant mothers who have experienced trauma. Implementing trauma- informed care strategies may aid medical professionals in identifying and addressing possible triggers and emotional difficulties that pregnant women who have experienced trauma may have. Healthcare providers can give these women the confidence to freely express their worries and get the help they need by fostering a safe and encouraging atmosphere.

Including mental health examination in normal prenatal care might help identify expectant mothers who may have pregnancy-specific issues linked to prior trauma. Pregnancy and postpartum mental health outcomes may be improved with early identification and prompt care. The potential advantages of tailored therapies were highlighted by a research<sup>19</sup>, which showed that pregnant women who got trauma-focused cognitive-behavioral therapy had fewer symptoms of despair and anxiety.

## 7. Importance of Understanding Mental Health in Pregnant Lady

The World Health Organisation (WHO) claims that "A state of mental well-being that enables people to learn and work well, realize their abilities, cope with life's stresses, and contribute to their community" is known as mental health.

It is crucial to comprehend for the health of the baby, pregnant women should avoid stress, worry, and

sadness for both the expecting woman and her unborn child. An important life event, pregnancy causes a number of physiological, psychological, and hormonal changes that may increase stress levels. Healthcare providers, family members, and the pregnant lady herself may better help her during this crucial time by recognizing and understanding these mental health difficulties<sup>20</sup>.

- Understanding the mental health conditions of pregnant ladies enables healthcare professionals to take early action, offering suitable tools and assistance to help control stress levels and encourage a healthy pregnancy.
- The mother's mental condition may have an impact on the state of wellness of the developing fetus. Low birth weights and preterm birth have been associated to poor pregnancy outcomes, such as high levels of increased stress and anxiety throughout pregnancy<sup>21</sup>. Additionally, a baby's future emotional health and neurodevelopment might be impacted by the mother's mental health. Understanding how stress, anxiety, and depression may affect the developing fetus emphasizes the need for early identification and intervention in order to reduce any dangers and guarantee a better start to life.
- By comprehending stress, anxiety, and depression during pregnancy, society may eliminate the stigma associated with mental health problems at this crucial time. Because being pregnant is often depicted as a time of pleasure and happiness, some women may be afraid to share their bad feelings or ask for support for fear of being judged<sup>22</sup>. Women are more likely to feel comfortable seeking assistance from healthcare professionals, support groups, or their loved ones if talks about mental health during pregnancy are normalized.

Furthermore, giving pregnant women who are stressed, anxious, or depressed the help they need may have good long-term implications for both their child and the fetus. Early detection of these mental health issues enables prompt interventions, counseling, or other suitable therapies. These therapies may help the expecting mother's mental health as well as provide coping mechanisms that may carry over into her postpartum and beyond<sup>23</sup>.

## 8. Prevalence and Risk Factors

### 8.1 Prevalence of Stress, Anxiety, and Depression in Pregnant Lady

The incidence of prenatal anxiety disorders varies among research and assessments. Pregnancy-related anxiety is widespread; 54% of women report having anxiety during at least one trimester, according to recent research anxiety levels are estimated to be 6.6% to 15% lower during the second period of pregnancy when comparing the initial and third-trimester trimesters of pregnancy to the second trimester, the first and third seem to have greater anxiety levels. In fact, it has been noted that women experience anxiety in a non-linear fashion, with the first and third trimesters of pregnancy being particularly high-risk. Midway during pregnancy is when males report the most anxiety (18%) and it gradually reduces once the baby is born. Adding another kid to the family is an environmental stressor, and there is some evidence that being a multiparous woman increases the likelihood of experiencing high levels of anxiety during pregnancy. However, there isn't universal agreement on this, and most relevant research has excluded males<sup>24</sup>.

Pregnancy seems to be a period when a woman becomes more prone to have mood issues as at other times. Pregnancy feels to be linked to a higher incidence of depressive disorders than after delivery. In a recent cohort research, 13.5 percent of the women were depressive at 32 weeks during pregnancy and 9.1% suffered from depression at 8 weeks postpartum<sup>25</sup>. Many mothers who suffer from postpartum depression also struggle with depression throughout their pregnancies. Pregnancy seems to have a beneficial effect on depression rates. Pregnancy-related depression had a frequency of 15.5% during the first and next trimesters, 11.1% during the third trimester, and 8.7% after delivery.

There is greater evidence available, at least for certain groups of women, that they were exposed to high levels of stress throughout their pregnancies conducted research on a multicultural metropolitan population and found that 78% of participants reported mild to severe prenatal psychological stress, with 6% reporting high levels<sup>26</sup>. Low financial resources, unfavorable job situations, significant family and domestic obligations, strain in personal relationships, and pregnancy problems were all cited as potential causes of maternal distress. According

to<sup>27</sup>, maternal stress is widespread and has been linked to negative pregnancy outcomes including low birth weight.

Anxiety and depressive symptoms usually occur together and have been observed by pregnant women<sup>28</sup> discovered that over half A significant percentage of clinically depressive pregnant and postpartum women additionally experienced clinically severe anxiety, and<sup>29</sup> found that 20.5% of pregnant women who were diagnosed with a mental condition during the second trimester also exhibited comorbid anxiety and depressive symptoms. One risk factor for postpartum depression is experiencing both anxiety and despair during pregnancy.

## 8.2 Risk Factors for Mental Health Issues During Pregnancy

Some research suggests that a woman's age does not affect her risk of developing postpartum depression<sup>30</sup>. In studies that identified an association between age and depression, moms less than 20 years old<sup>31</sup> or, on the other end of the spectrum, the oldest pregnant women had the greatest risk of depression. Several factors like lack of education, low salary, substandard housing, and other financial difficulties are often cited as causes of depression in pregnant women. Furthermore, having a partner throughout pregnancy seems to be crucial<sup>32</sup>.

Many studies have shown that a lack of support from a spouse during this big life change is a significant risk factor for depression<sup>33,34</sup>. However, the quality of connection, rather than just being in one, has been emphasized as a protective factor in some research<sup>35</sup>. An individual's susceptibility to the depressive effects of stress depends on their unique set of resources and coping strategies. The loss of a career, a lover, or a marriage is all example. The pathophysiology of the central nervous system is profoundly impacted by sexual abuse, particularly if it occurs in childhood. Women who endure this sort of trauma have their stress response systems damaged, which causes issues with their sympathetic nervous system and serotonin levels<sup>36</sup>.

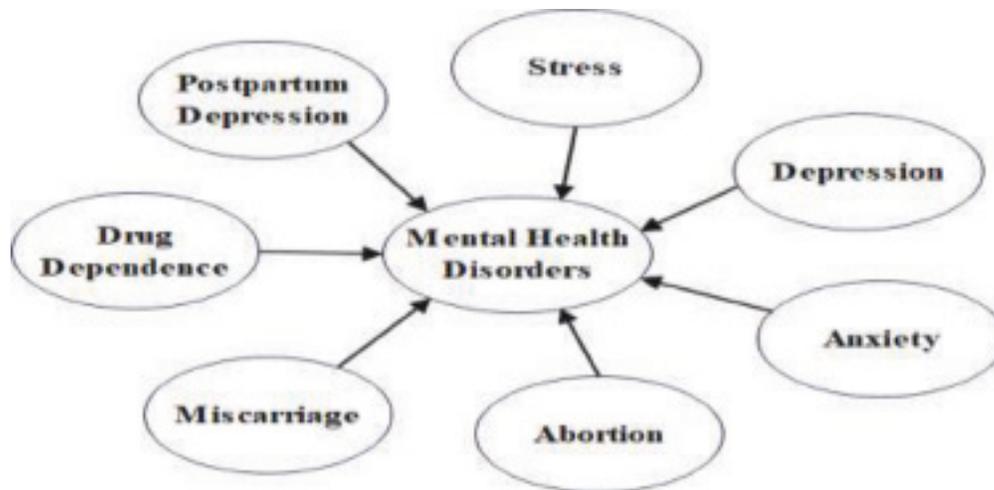
Most occurrences of mental disease appear to be significantly influenced by one's physical condition. Depression after childbirth has been linked to both gestational diabetes and pre-existing Type I or Type II diabetes<sup>37</sup>. Pregnancy-related hyperglycemia and insulin resistance raise levels of stress chemicals such as cortisol, which then worsen depressive symptoms. Fear of the problems of pregnancy and birth that are common in women with gestational diabetes is cited as a cause of

sadness. Neither thyroid dysfunction nor L-thyroxine use during pregnancy has been linked to an increased incidence of postpartum depression. Depressive illnesses were more prevalent in women who smoked before becoming pregnant.

Anxiety and depression were studied in relation to the mother's obstetric history. In most cases, the rate of depression was not affected by the number of prior pregnancies. According to research, Postpartum Depression is most common during the third trimester and least common during the first<sup>38</sup>. Women who give birth through cesarean section had the same rate of depression as those of normal delivery. Numerous obstetric difficulties, including those experienced during delivery, intrauterine fetal death, and pregnancy losses, seem to trigger depressive symptoms in subsequent pregnancies. The World Health Organization advises waiting 6 months following a miscarriage to have another child. This is to reduce the likelihood of experiencing mental health problems.

Numerous studies reveal that Women who are depressed when pregnant are more inclined to miscarry give birth prematurely and have babies with a lower birth weight<sup>39</sup>. Previous experience with mental health difficulties, particularly depression and anxiety disorder, remains the most significant and best-established depression risk factor at present. Half of all pregnant women who have been diagnosed with depression have also experienced a severe depressive episode in the past<sup>40</sup>. If a woman has had depression before becoming pregnant, she is more likely to continue experiencing symptoms after giving birth, which raises her chance of developing postpartum depression.

Abortion and miscarriage both have the potential to create long-term psychological damage. Anxiety, despair, and other mental illnesses and drug misuse are the most prevalent. In the sensationalist literature that has focused on the use of prescriptions, the potential effects of the drugs have often been disregarded. It is clear that some amount of exposure to medicine (whether it is therapy or illness) consistently occurs when Data from humans and laboratories on mental health and stress throughout pregnancy and early post-pregnancy period are taken into account. The primary goal of risk-benefit analysis in mental health care at these times is to assist patients and their families in making the safest possible decisions about potential exposure. The goal of this option is to limit the number of times a developing fetus is exposed to harmful substances<sup>41</sup>.



**Figure 1.** Risk factors related to maternal health issues adapted from (Chauhan A, 2022)<sup>42</sup>.

## 9. Physiological and Psychological Impact of Mental Health Issues in Pregnancy Effects of Stress on Maternal Physiology and Fetal Development

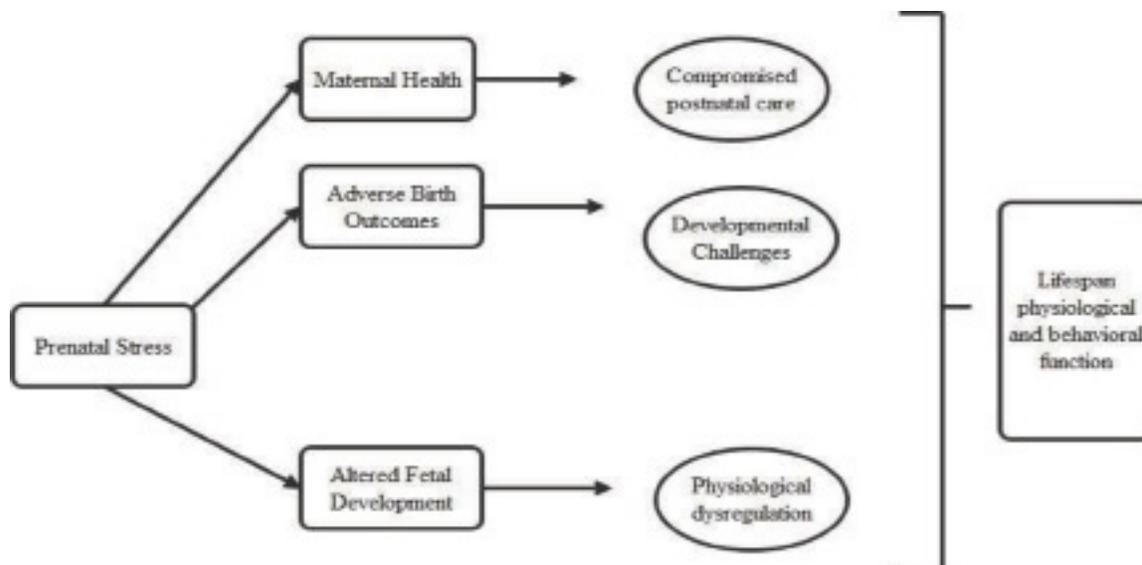
Human and animal research shows that prenatal stress may impact offspring's well-being, growth, and long-term performance via either direct or indirect pathways (Figure 2). Stress during pregnancy is linked to major health and developmental implications and may have an indirect impact on the well-being and development of the unborn child by raising the likelihood of unfavorable birth outcomes.

By raising the likelihood of unfavorable pregnancy outcomes, which are in turn indicative of considerable and continuing issues for impacted children, Stress during pregnancy may have an effect on the baby's development and health (Figure 3). The impact of extreme stress on childbirth results seems to be highest in the first trimester of pregnancy<sup>43</sup>.

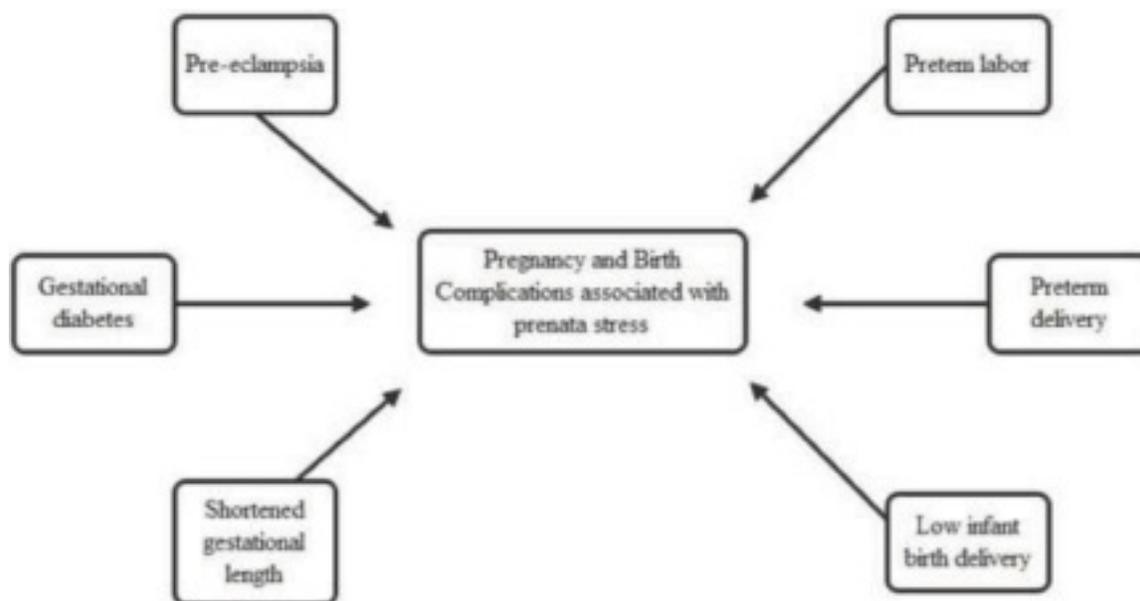
Several studies have connected moderate gestational stress to the etiology of PTB and LBW, whereas less severe kinds of tension (perceived stress, pregnancy-specific pain, and anxiety) seem to have a more significant impact and dramatic influence<sup>44-46</sup>. Negative effects on an infant's behavioral and physiological growth and function may come from PTB and LBW regardless of the underlying reason. Children born prematurely or at a low birth

weight (PTB) are at a higher risk for developing asthma and allergies and may be more at risk for developing more serious health concerns that need continued medical care throughout childhood and, in some cases, into adulthood<sup>47</sup>. Considering the fact that the types of psychosocial stress outlined above have been linked to an increased risk of preterm birth and Low Birth Weights (LBW), there is mounting evidence that pregnancy-specific stresses also play a role in determining pregnancy outcomes. For example, stress and concern for Preterm birth and other pregnancy problems have been linked to smoking during pregnancy. Higher incidences of PTB, LBW, and unexpected cesarean sections are connected with both generalized as well as pregnancy-related anxiety and stress. Physical and cognitive deficits are more prone to develop later in life for babies who make it through the perinatal period<sup>48</sup>.

Research shows that mothers who experience Women who experience high amounts of stress all through the course of their pregnancy are more inclined to produce infants with health issues. Preterm birth, a small birth weight, and births that are premature (born before the 40th week of gestation) are all increased hazards that have been linked to increased endocrine and immune system activity in the mother during pregnancy. Lymphocytes from preterm birth mothers also generate more inflammatory cytokines in culture, which is consistent with the observation women who experienced preterm labor exhibited higher amounts of cytokines associated with inflammation than mothers who delivered



**Figure 2.** Diagram illustrating the direct and indirect mechanisms by which perinatal stress may impact the development and well-being of human offspring adapted from (Coussons- Read, 2013)<sup>50</sup>.



**Figure 3.** Summary of pregnancy and birth complications associated with prenatal stress adapted from (Coussons- Read, 2013)<sup>50</sup>.

normally. Stimulated lymphocytes from pregnant women who report intermediate or high-stress levels release higher cytokines of inflammation (interleukin-6 and interleukin-1) Inflammatory cytokines (interleukin-6 as well as tumor necrosis factor-a) are more prevalent in

pregnant women’s cells than in less stressed women’s cells, and both psychological strain along with pregnancy-specific discomfort are associated with higher blood levels of inflammatory cytokines (interleukin-6 as well as tumor necrosis factor-a)<sup>49</sup>.

## 10. Impact of Anxiety and Depression on Mental Health/ Mental well-being

The psychological consequences of Anxiety and sadness in pregnant women may be dangerous and significant, encompassing not only their mental well-being but also the welfare of their developing fetus. A plethora of studies have underscored the correlation between maternal mental well-being and outcomes during pregnancy, underscoring the significance of addressing these concerns throughout the gestational period.

Anxiety and depression have been found to have a significant psychological effect on pregnant mothers, as they are associated with a heightened susceptibility to developing prenatal and postpartum depression. According to a study conducted by<sup>39</sup>, it was identified that pregnant women with high levels of anxiety in their second trimester had an increased likelihood of developing postpartum depression. According to research done by<sup>51</sup>, it was discovered that prenatal depression exhibited a significant correlation with a two-fold rise in the likelihood of experiencing postpartum depression. The aforementioned results emphasize the importance of early detection and treatment of depression and anxiety in pregnant women individuals, in order to mitigate the progression of mental health concerns into the postpartum phase.

Furthermore, it should be noted that parental anxiety and sadness have the ability to have an impact on both the mother-child bond and the neurodevelopment of the child. According to a study conducted by<sup>52</sup>, it was shown that there is a link between pregnant mother worry and delayed cognitive development in infants under the age of two. In a recent long-term investigation done by<sup>53</sup>, it was determined indicates there is a significant link between mother prenatal depression symptoms and an elevated likelihood of emotional and behavioral challenges in offspring at the ages of three and five. The findings of this research demonstrate that maternal depression and anxiety may be treated during pregnancy not only yield advantages for the psychological well-being of the mother but also contribute to the favorable advancement of the offspring.

Moreover, the presence of anxiety and depression may have a profound influence impacts pregnant women's overall health and condition of living. Pregnant women

suffering from anxiety and depression had lower levels of physical and emotional well-being; heightened Stress levels have increased, as has social support. The weakened condition of well-being experienced by women can have a significant impact on their capacity to effectively manage the challenges associated with pregnancy. Consequently, this can result in an elevated likelihood of engaging in unhealthy coping mechanisms or receiving insufficient prenatal care<sup>54</sup>.

## 11. Screening and Assessment of Stress, Anxiety, and Depression in Pregnant Women

The use of scales, inventories, and other psychometric tools is one method of assessing emotional health that helps to characterize symptoms and enable prevention and therapy. Specific components of the instruments allow for the measurement of latent variables, which are present in unobservable notions like anxiety, stress, and depression. As a result, they enable the characterization of the strength and frequency of certain symptoms or indicators, assisting in therapy, monitoring, and intervention.

Assessment tools however, it cannot be used as a clinical diagnostic in the realm of emotional health, but rather as a complement to it, unlike diagnostic interviews. Due to the ability to influence choices and behaviors based on the diagnosis, their usage facilitates the standardization of language across healthcare practitioners. When selecting to utilize these measures, healthcare professionals should be contextualized in relation to the individual being examined<sup>55</sup>.

Recent research has emphasized the need to assess pregnant women's stress, depression, and anxiety levels because these symptoms can be mistaken for typical physiological pregnancy symptoms like sleep or breathing problems, extreme weariness, irritability, muscular weakness, and gastrointestinal problems are all possible. Pregnancy-related illnesses are often overlooked by medical professionals and pregnant women themselves, which frequently results in negative effects such as perinatal and/or postpartum depression.

Depressive and anxiety disorders are two prevalent, incapacitating mental conditions that are often treated

utilizing rating scales. Although anxiety is a natural part of being human, excessive amounts may cause diseases. Over the years, a number of kinds of anxiety have been proposed<sup>56</sup>.

The stress that people experience while facing changes in their setting, particularly if these changes have a detrimental influence on them, is another significant emotional alteration that occurs during pregnancy. Since a woman's life undergoes significant changes throughout pregnancy, it's important to examine how she views and responds to stressful events. The Perceived Stress Scale (PSS), one of many tools that might be used, it has been presented as significant in the assessment of symptoms in pregnant women<sup>57</sup>. Its application is quick and easy (14 self-administered activities with scores ranging from 1 to 4).

Depressed Rating scales were developed in the last decade of the 1950s as a consequence of breakthroughs in psychotropic medical research, notably antidepressants. Due to its multifaceted character, the Beck Depression Inventory (BDI-II) is a measure of depression is one of the most extensively used measures today. It is the only scale which has been translated and adapted into Portuguese, and it contains directions for its management, validity, and dependability in various investigations. The BDI-II is acknowledged as an acceptable tool for identifying both somatic and non-somatic disease symptoms in pregnant women, hence aiding in illness prevention such as postpartum depression<sup>58</sup>.

Author in<sup>59</sup> created the scale for Depression, Anxiety, and Stress (DASS-21) to assess anxiety, stress, and depression allowing for the simultaneous assessment of symptoms of stress, anxiety, and depression. It comes in two widely used variations, one with 42 things and the other, which is shorter, with just 21 items. The DASS-21 is divided into three subscales, each with seven categories (seven of which are for anxiety, seven for depression, as well as seven for stress). Each is scored using a Likert-type scale with a range of it ranges from 0 to 4 points and is related to the amount of symptom observation throughout the previous week. It is utilized in clinical as well as non-clinical environments with adults and adolescents, and it is simple to administer<sup>60</sup>. The DASS-21 has been widely utilized in the worldwide literature in the wider community of pregnant women, linking stress, sadness, and anxiety components with biological pregnancy traits and corresponding with the heightened level of emotional indicators that the instrument aims to analyze. According

to research that employed a significant number of pregnant women from many countries, including Iran, the United States of America, and Peru, the DASS-21 seemed to be sufficient for measuring and distinguishing indications of stress, depression, and anxiety in perinatal populations<sup>61</sup>.

There is still a severe lack of instruments that evaluate anxiety, stress, and depression all at once, such as the DASS-21, even though the three constructs are stacked on one another. Especially in the population of pregnant women, scales that measure the three components might be useful since they shorten the application process. Furthermore, the majority of these lack the necessity of particular psychometric data to determine the demographics of pregnant women is emphasized. Despite significant advances in the application of techniques for emotional evaluation during the prenatal as well as puerperal periods, eras, this remains the case.

## 12. Conclusion

Pregnancy is an important stage in the lives of women which may be both thrilling and difficult. Anxiety, depression, and stress are frequent among pregnant women as well as must be handled since these conditions have a significant both the pregnant mom and the developing baby is affected. The significance of anxiety, depression, and stress in mothers' mental health and the worrisome rates at which pregnant women experience mental health disorders were emphasized by these findings, highlighting the critical need for intervention and assistance. The intricacy of the situation and the necessity for individualized therapy were identified as indicators that during pregnancy, there is an increased chance of mental health problems. Biological and psychological implications of mental health disorders during pregnancy revealed the possibility of bad results for the mom as well as the baby, emphasizing the need for prompt detection and care. The complex nature of prenatal stress, anxiety, and depression has been uncovered, calling for diverse approaches to prevention and treatment. Thus, screening and evaluation are essential to identify those who are at risk and to help them overcome their problems. Therefore, this research emphasizes the need to identify and manage mental health difficulties during pregnancy, since they have significant repercussions for both the mother's and child's long-term well-being and development.

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