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REVIEWS

Maternal and Neonatal Risks of Untreated Major Depressive Disorder in Pregnancy

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Major depressive disorder (MDD) is reported in about 12.4% of pregnancies in the US and is a serious health problem for both pregnant women and the fetus. While many studies have been conducted to determine the risks associated with postpartum depression, few have investigated the effects of untreated antenatal depression in pregnancy on both the mother and child. This review aims to compile and examine the outcomes of these studies, emphasizing the importance of timely diagnosis and treatment to avoid adverse maternal and neonatal outcomes. After a thorough review of 29 studies, findings were consistent with negative physiological and psychological impacts of untreated antenatal depression, including increased prevalence of preterm birth, reduced fetal growth, and increased risk of postpartum depression, among others. When examining treatment options, research showed that antidepressants, though effective in managing symptoms in the mother, are associated with several risks to the developing fetus, such as fetal neurodevelopmental issues and preterm labor. Therefore, to improve maternal health without endangering fetal safety, more research must be done on the risk-benefit analysis of the use of pharmacotherapy and psychotherapy to treat major depressive disorder in pregnant women.

Introduction

Major depressive disorder (MDD) is widely acknowledged as a significant health issue on a global scale and is expected to be the primary cause of disease burden by 2030, according to the World Health Organization.[1] Characterized by enduring feelings of sadness, lack of interest in activities, and a range of cognitive symptoms, MDD significantly hinders day-to-day activities. More severe symptoms include lasting sorrow, tiredness, changes in sleep and appetite, feelings of worthlessness, and thoughts of suicide, distinguishing it from other forms of depression.[1] The prevalence of having MDD during pregnancy in the US is reported to be around 12.4%, though it is likely higher because many cases of depression go undiagnosed.[2] Overall depression rates vary depending on the stage of pregnancy, with a prevalence rate of 7.4% in the first trimester, 12.8% in the second trimester, and 12.0% in the third trimester.[3] Further research has also shown that there are marked differences in depressive episodes before, during, and after pregnancy. The

incidence of psychiatric inpatient admission for depressive disorder before pregnancy is higher than during pregnancy. However, there is an increase in outpatient psychiatric treatment during the first two trimesters. Furthermore, the incidence of outpatient treatment decreases in the third trimester. Finally, after childbirth, there is an increase in both first-time and recurrent psychiatric inpatient admissions, marking the postpartum period as particularly vulnerable for pregnant mothers.[4] Due to the heterogeneity of MDD symptoms, a detailed approach is necessary for diagnosing and treating MDD, including the use of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V)* criteria, making it a focal point for both research and clinical practice.[2]

The treatment approaches for MDD are varied, encompassing both medication and therapy to target the symptoms and root causes of the condition. Common first-line medications include Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors, which are favored for their effectiveness and relatively mild adverse effects.[5] These drugs work by adjusting the levels of neurotransmitters in the brain, which are often unbalanced in individuals experiencing depression. For example, SSRIs boost serotonin levels, while serotonin-norepinephrine reuptake inhibitors increase both serotonin and norepinephrine levels, providing a dual approach that can be especially beneficial for severe depression cases.[5]

Psychotherapy is also an essential form of treatment for MDD. Cognitive behavioral therapy and interpersonal therapy are two of the most prominent forms of psychotherapy and show the most effectiveness in addressing MDD.[6] Cognitive behavioral therapy helps in recognizing and modifying thought patterns and behaviors, whereas interpersonal therapy focuses on enhancing connections and communication areas significantly impacted by depression. These therapies can be used in conjunction with medication to offer a combined treatment approach that addresses both the biological and psychosocial aspects of the disorder.[6]

When depression occurs during pregnancy (antenatally), treatment becomes more nuanced because it is crucial to consider the health of both the mother and the developing child. Many people with MDD discontinue antidepressant medications during pregnancy out of fear of harming the developing fetus, yet in doing so, they ignore the effects that stopping antidepressants can have on the mother.[7] A controversial but necessary discussion entails determining whether the potential risk to the fetus outweighs the potential risk to a pregnant woman who stops her medications. While postpartum depression is well-studied, there is a paucity of literature on the direct impact of untreated antenatal depression on maternal and

neonatal outcomes. The purpose of this review was to assess the maternal and neonatal implications of untreated antenatal depression and evaluate existing treatment approaches.

Maternal Outcomes of Untreated Antenatal Depression

Psychological Risks

MDD in pregnancy is proven to be associated with adverse consequences for both the mother and child.[8] Despite this fact, in a study completed by Martini et al., up to 51% of pregnant women participating in a longitudinal study in Germany reported that they did not receive any mental health treatment during their pregnancy.[8] During the prenatal period, most women frequently visit their healthcare professionals. This raises the question of why these women did not receive proper medical care for their mental health. Potential explanations for this may include financial restrictions, lack of social support, low self-esteem, and bias among medical professionals.[8,9] It appears that further attention to women's mental health and satisfaction with their care is needed. A specific focus on the psychological risk predisposing a woman to antenatal depression is a crucial first step in addressing this patient population. In literature, psychological risk for antenatal depression refers to any mental condition experienced before gestation.

The misnomer that pregnancy is a period of emotional well-being and that it provides protection against mental disorders can often lead those with diagnosed psychiatric disorders, such as MDD, to alter their medication regimens.[10] Whether that entails altering the dose, changing medications, or stopping medications altogether, there is a direct correlation between antenatal depression and having a prior diagnosis of depression.[9,10] In a prospective longitudinal study, Cohen et al[10] captured the impacts of medication changes in pregnant women diagnosed with MDD. In the study, 201 pregnant women with a prior diagnosis of MDD were analyzed across 4 groups: those who increased their dose, decreased their dose, stayed at the same dose, or discontinued their medication.[10] The results showed that relapse of MDD can be related to gestational time and medication status, as 43% of women in the study by Cohen et al[10] relapsed, with 50% of those relapses occurring during the first trimester. Of those who maintained their antidepressant regimens, only 26% relapsed, whereas 68% of women who discontinued their medications relapsed.[10] The results suggest that the use of continued antidepressant medications during pregnancy will result in the lowest risk of MDD relapse. These data refute the notion that pregnancy is mentally protective. However, encouraging the continuation of antidepressants during pregnancy is a controversial position considering the effects antidepressants can have on fetal development.

Beyond medication changes, the period of relapse, when viewed in comparison with the rate of relapse, is interesting, as additional studies have shown the likelihood of a major depressive event relapse peaks between 2 to 28 weeks gestation, with a mean gestational age of 15.23 weeks.[11] While the exact period of recurrence is not currently known, for women with a prior diagnosis of MDD who had 1 or more depressive events during pregnancy, 33% of episodes occurred in the first trimester, 42% in the second trimester, and 25% in the third trimester.[11] Given that both the mother's medication status and relative progression through gestation can affect her chances of relapsing, it is possible that selectively treating pregnant mothers with MDD at specific times during their pregnancy could mitigate their risk of relapse and minimize any incurred risk to the fetus. It should be noted that in the study by Cohen et al,[9] no women at less than 16 weeks' gestation were included in the study, nor were women who were actively suicidal, or who "met the *[DSM-IV]* criteria for one of the following disorders: organic mental disorders; substance abuse disorders; bipolar disorder; schizophrenia; delusional disorder; or current psychological disorders," reaffirming that only mothers with MDD were evaluated.[10] As previously earlier, the discontinuation of antidepressants is associated with a higher risk of MDD relapse. Therefore, the termination of medications that were suppressing their depression would logically result in the resumption of MDD symptoms and, hence, trigger a depressive relapse. The relapse of their MDD, in combination with the hormone changes frequently seen in pregnancy, could explain why, on occasion, the MDD relapses are more severe at specific points. A study by Trifu et al. revealed how increasing levels of sex hormones, estrogen and progesterone, along with cortisol spikes have been associated with higher rates of depressive symptoms during pregnancy.[12] These endocrine findings support the risk of MDD relapses in pregnant women and provide a possible explanation.

Likewise, untreated antenatal depression results in a statistically significant increase in the incidence of postpartum depression.[13] In an analysis of a small cohort of 73 women diagnosed with depression during pregnancy, 52 received no treatment for their depression, while 21 did.[13] Of the treated women, none developed postpartum depression, whereas 92% of the women in the untreated group developed postpartum depression.[13] The observed link between antenatal depression and postpartum depression introduces new opportunities for innovation because postpartum depression is a common complication of pregnancy that can be debilitating for some new mothers. The notion that antenatal depression and postpartum depression are separate entities should be abandoned because it is proven that the two are, in fact, linked. These results, in addition to the studies showing that pregnant women who maintain their antidepressant regimens during pregnancy are less likely to have an MDD relapse, call into question the safety of taking these medications during pregnancy. According to the American College of

Obstetricians and Gynecologists, antidepressants can safely and effectively be used during pregnancy.[14] In other words, women currently taking these medications should not automatically discontinue use upon finding out they are pregnant. Instead, women should make an appointment with their health care professional as soon as possible for what will most likely be a dose adjustment or switch to an alternative medication.

In addition to the increased risk of relapse and postpartum depression in women with untreated antenatal depression, it is important to recognize that diagnosis of conditions such as anxiety and depression before pregnancy greatly increases the mother's risk of antenatal depression, which in turn increases their risk for postpartum depression should they elect not to accept antidepressant therapy. Additionally, social stressors such as sexual trauma, marital dysfunction, stress, low socioeconomic demographics, an MDD diagnosis of greater than 5 years, medication change, and a history of recurrence all have statistically significant correlations with increased incidence of MDD and MDD relapse in pregnancy.[9-11] Alternatively, not only does the fetal age (ie, gestational progression) influence the relative risk, but the mother's age and participation in healthy relationships do as well. Mothers older than 32 years old have been shown to have a 60% reduction in relapse regardless of prior MDD status, and women who are in happy marriages tended, on average, to be "somewhat protected against relapse compared with single parents."[9] In essence, many different psychological aspects influence the severity of depression. However, one point is clear: those who have untreated MDD are at greater risk of psychological complications during and following pregnancy.

Physiological Risks

Untreated MDD in pregnant women not only leads to psychological complications, but has detrimental physiological effects as well. A population-based cohort study in Ghana's Kintampo Health Research Centre conducted with 20679 pregnant women revealed a plethora of physiological complications.[15] Of these women, 2032 (9.8%) had *DSM-IV* antenatal depression (comprising both major and minor depressive disorders). Every four weeks, local field workers would visit these women in their homes and ask a series of questions, depending on the stage of pregnancy that the women were in. Categories of outcomes assessed included adverse birth outcomes, adverse maternal outcomes, and the use of healthy newborn care practices. Specific outcomes included premature deliveries, nonvaginal deliveries, more than 24 hours of labor, peripartum complications (vaginal tearing/bleeding, loss of consciousness, womb surgery, hemotransfusion), and postpartum complications (vaginal bleeding/blood clots, high body temperature, vaginal odorous discharge, leaky urine/feces, inflammation of breasts). Antenatal depression was found to be associated with a greater prevalence of assisted/nonvaginal delivery, a 25% increase in more than 24 hours of labor, an 11%

increase in peripartum complications, and a 27% increase in postpartum complications. Antenatal depression was only marginally associated with premature delivery.[15] This is a compelling and effective study, and thus, convincingly contributes to an argument that mothers with untreated antenatal depression experience significant physiological complications. This study, which focused on Ghanaian women in a rural, low-income setting, may not directly translate to other populations, such as US women in an urban, high-income setting. The study results, however, are especially compelling due to its large sample size of 20,679 women. Due to its sample size, the study had an effect size of 1.23 with 80% power and 95% confidence intervals.[15] Furthermore, the study controlled for socioeconomic status among the participants, suggesting that the correlation between antenatal depression and adverse physiological outcomes cannot be explained by socioeconomic status alone. As such, the study findings that antenatal depression was associated with assisted/nonvaginal delivery, an increase in extended labor, an increase in peripartum complications, and an increase in postpartum complications credibly contribute to the argument that untreated MDD in pregnant women can lead to a host of physiological complications.

Another cohort study of 394 pregnant women referred to prenatal care was conducted at the Al-Zahra Hospital (affiliated with Guilan University of Medical Sciences) in Rasht, Iran.[16] The inclusion criteria for the study were 15- to 45-year-old Iranian women having a singleton pregnancy (pregnant with only 1 fetus), having a gestational age of 20 to 28 weeks, not using any drugs, and not having a history of mental illness. The exclusion criteria were having a history of premature delivery, abortion, stillbirths, or infertility and having any diagnosed complications during the pregnancy. Of the 394 pregnant women included in the study, 182 did not have depression, 139 had mild depression, and 73 had severe depression. This study found that pregnant women with depression had higher rates of intrauterine fetal growth restriction/death, cesarean deliveries, premature delivery, premature membrane rupture, and preeclampsia.[16] This is a compelling study that further supports the notion that untreated antenatal depression causes physiological complications in pregnant mothers. The study's sample size is relatively small and restricted to Iranian women, so generalizing the study results to a broader population may be challenging. Despite these limitations, the study provided compelling evidence that untreated MDD correlates with negative physical/physiological effects on pregnant women. This is because the study found that pregnant women with severe depression had a significantly higher occurrence of intrauterine fetal death ($P < .01$), intrauterine restriction on fetal growth ($P < .001$), premature delivery ($P < .04$), cesarean delivery ($P < .02$), premature membrane rupture ($P < .01$), and preeclampsia ($P < .01$) than pregnant women without depression.[16]

Furthermore, the stringent inclusion and exclusion criteria, while hampering generalizability, are key strengths of the study because they limit confounding variables and thus increase the strength of the results.

Another prospective longitudinal study examined the effects of MDD on antenatal inflammatory biomarkers and the hypothalamic-pituitary-adrenal (HPA) axis in 106 pregnant women, of whom 49 had MDD and 57 were healthy controls.[17] Inflammatory markers, including interleukins (ILs), tumor necrosis factor (TNF), and vascular endothelial growth factor (VEGF), as well as cortisol levels, were compared between the groups at a single point during the early third trimester of pregnancy. Effect sizes (δ) and P values were determined using various statistical tests to compare the differences in inflammatory marker levels between the experimental and control groups. Compared with pregnant women without MDD, pregnant women with MDD had significantly higher IL-6 levels ($\delta = 0.53$, $P = .03$), IL-10 levels ($\delta = 0.53$, $P = .04$), TNF-α levels ($\delta = 0.90$, $P = .003$), VEGF levels ($\delta = 0.56$, $P = .008$), daytime cortisol levels ($\delta = 0.89$, $P = .006$), and evening cortisol levels ($\delta = 0.64$, $P = .004$). Additionally, pregnant women with MDD had a significantly dampened cortisol awakening response ($\delta = 0.70$, $P = .020$) and a significantly shorter gestation time of 8 days ($\delta = 0.70$, $P = .005$).[17] Though this study had a limited sample size that may have affected its generalizability to the broader population, the study results are supported by existing knowledge that the HPA axis is a major player in the physiology of pregnancy. For example, cortisol levels of the HPA axis determine fetal maturation and the timing of parturition. The study showed that pregnant women with MDD have higher levels of inflammatory markers and cortisol than their counterparts without MDD, indicating that MDD is associated with more stress.[17] Thus, if women with MDD undergo more stress than women without MDD, it makes sense that women with MDD have shorter gestation durations on average. These intuitive study results confirm existing physiological knowledge, further supporting the evidence that untreated MDD is associated with physical and physiological complications in pregnant women.

Risks of Untreated Depression During Pregnancy: Pediatric Outcomes

Beyond being detrimental to the mother's physical and mental health, untreated MDD in pregnancy may also have significant effects on the children both immediately following birth and throughout their lives. The main variables that have been found in the literature to be correlated with untreated antenatal depression include risk of preterm birth, low birth weight, abnormal fetal heart rate variability (FHRV), attention-deficit/hyperactivity disorder (ADHD), and other developmental delays.

Some studies have found a correlation between antenatal depression and both gestational age at birth and fetal size globally. One prospective cohort study by Chang et al[18] of 691 pregnant women in Korea found that children born to mothers with antenatal depression had lower gestational age (odds ratio [OR] for 1-week increase in gestational age: 0.66 [95% CI, 0.47-0.93]) than those born to women without depression. These findings are clinically significant because preterm birth complications are the leading cause of mortality among children younger than five years of age, and 13.4 million infants were born preterm in 2020 alone.[19] Chang et al[18] also found that children of mothers with antenatal depression were more likely to have low birth weight than those of women without depression, but this association was offset when adjusted for gestational age. However, a separate prospective longitudinal study of 80 pregnant women with diverse demographics found that infants born to mothers with antenatal depression had a 13% greater incidence of preterm birth (OR = 2.61, 95% CI = 0.73-9.32) and a 15% greater incidence of low birth weight (OR = 4.75, 95% CI = 0.94-23.99) than infants born to women without antenatal depression.[20] The authors of this study suggested that these outcomes could be attributed to higher prenatal maternal cortisol levels (P = .006).[20] As previously mentioned, this is supported by scientific literature explaining that cortisol stimulates a cascade of events via the HPA axis, leading to increases in estrogen and oxytocin, two key hormones involved in the initiation of contractions during labor.[21] The correlation between untreated MDD, increased cortisol levels, and low birth and fetal size suggests that maternal antenatal depression alters the typical development of the fetus, therefore predisposing the children of mothers with clinical depression to a plethora of ailments associated with stunted development. This emphasizes the importance of determining how to effectively treat depression in mothers while avoiding harm to the fetus.

High levels of cortisol in pregnant women with depression have also been found to affect FHRV, an important measure of central nervous system development in the fetus. Hunter et al[22] found that prenatal maternal depression was associated with lower FHRV, as mediated by increased maternal cortisol levels. Lower FHRV was then further associated with increased newborn sensory gating deficits, indicating poorer development of cerebral inhibition and poorer infant behavior regulation.[22] Another prospective cohort study of 1,225 mothers and their children found that exposure to antenatal maternal depression was correlated with poorer behavioral executive functions and higher levels of behavioral difficulties in children as measured by the Behavioral Rating Inventory of Executive Function which showed a 2.44 point higher score in exposed children (95% CI, 0.00-4.88) and a 1.79 point increase in the Strengths and Difficulties Questionnaire (95% CI, 0.43-3.14).[23] These studies, therefore, emphasize

the significant role of antenatal depression in childhood development and highlight the importance of treating depression to prevent developmental delays or deficits in children.

Further, untreated MDD during pregnancy has been found to be correlated with higher rates of mental disorders in children, including ADHD and depression.[24] In a retrospective cohort study of 5635 pregnant women and their children, Nidey et al[24] found that children born to mothers with perinatal depression were more than 3 times more likely to be diagnosed with ADHD (hazard ratio, 3.16 [95% CI, 2.35-4.23]). As mentioned in previous studies, cortisol levels are responsible for impacting fetal development through the HPA axis. It is, therefore, possible that cortisol levels in these women with prenatal depression contribute to the rise of neurocognitive disorders such as ADHD later in life. In a separate study investigating the rates of adolescent depression among 16-year-olds, it was found that children who were exposed to maternal antenatal depression were 4.7 times (95% CI, 1.60-13.86) more likely to be diagnosed with adolescent depression than those who were not exposed to maternal antenatal depression.[25] The finding that children born to mothers with depression are at an increased risk of developing depression themselves illuminates an almost cyclic pattern of MDD in pregnancy. If a pregnant mother gives birth to a female child, and that child gives birth to yet another female child, the cycle of MDD is perpetuated, with each generation having an increased risk of depression and MDD-associated pregnancy complications. It is important to note that there is a familial association between both depression and ADHD, which may serve as a confounding factor in both studies mentioned above.[25] However, Pawlby et al[25] found that initial exposure to maternal depression during any developmental period other than the antenatal period was not associated with adolescent depression in the child, providing some mitigation of the confounding familial variable. Overall, these studies suggest a need for diagnosing and treating antenatal depression to prevent the possible development of mental health disorders in the offspring.

Issues With Current Treatment of Antenatal Depression

Given the significant effects of untreated depression on both the mother and child as discussed, it is important to consider available treatment options and whether their adverse effects outweigh the complications of leaving depression untreated. Furthermore, even when numerous different treatment options are available to patients, many still struggle with adhering to their treatment plans.

Many patients with MDD end up stopping their medication prematurely.[7] Their reasons for discontinuing medication include adverse effects, doubts about the effectiveness of the treatment, societal stigma surrounding health care, and a common tendency for patients to stop taking medication once

they start feeling better.[7] Physiological adverse effects experienced by those taking medication include nausea, weight gain, and sexual problems.[7] These can all impact a patient's decision to discontinue treatment. Moreover, psychological barriers, such as stigma, can also play a role in discouraging individuals from continuing their medication-focused treatment. Some patients may view taking medication as a sign of weakness or worry about becoming reliant on it. When coupled with not seeing improvements within expected time frames, these factors contribute significantly to the rates of treatment discontinuation among patients.[7] Possible future strategies to discourage patients from discontinuing treatment involve enhanced patient education and communication, integration of psychosocial support, personalized treatment approaches, and use of pharmacogenetics. Additionally, nonpharmacological methods such as lifestyle changes—including exercise and dietary adjustments—have proven effective in alleviating symptoms of depression and enhancing overall treatment results.[26,27]

Additionally, the effects of SSRI use during pregnancy reach beyond the management of maternal depression and may pose some risks to the developing fetus. A study by El Marroun et al[28] showed a complex view of these risks. This research, which is part of the large-scale Generation R Study, followed fetal growth with ultrasonography across the different stages of pregnancy in a cohort of nearly 7700 women. The study concluded that SSRIs did not significantly affect the whole-body size of the fetus. However, those women who took antidepressants during the early period of pregnancy had infants with smaller heads at birth, which can be a sign of poor cognitive and neurological development.[28] Furthermore, this study indicated a 2-fold increase in preterm labor among infants exposed to SSRIs.[28] This fact demonstrates the double-edged sword that is SSRI use during pregnancy: it both alleviates depression of expecting mothers and, at the same time, poses a danger to the fetus. The intricacy of this relationship illustrates the need for constant research and careful clinical decision-making, in which a delicate balance between the mother's mental health needs and the potential fetal risks must be maintained.

Another insightful study expanded on a range of associated adverse effects of antidepressant use during pregnancy. This study showed that the elevated risk of preterm birth is a major threat to the pregnancy and is consistent with other studies that suggest the existence of altered timing of fetal development, which might make these infants susceptible to various health complications later in life.[29] Furthermore, the study emphasized the need for a well-thought-out evaluation of antidepressant treatment plans, advocating for a detailed assessment of both the benefits to the mother and the risks to the fetus.[29] This individualized approach could assist clinicians and help patients make informed decisions that maximize the chances of both maternal mental health and proper fetal development.

Conclusions

Untreated MDD leads to a variety of adverse psychological and physiological effects in pregnant women and their children. This review, however, does have some limitations. For example, some of the studies outlined in the review were conducted on specific populations (Turkish, Iranian, Ghanaian, and Korean) or with small sample sizes. Despite the regional differences, all studies showed similar results of MDD on pregnancy. Furthermore, ethical constraints, such as experimenting on expectant mothers and possibly endangering developing fetuses with unknown pharmacological experimentation, prevent the ability to establish causation because they limit randomized clinical trials—the criterion standard of proving causation. Therefore, although the studies reviewed demonstrate a significant association between untreated antenatal depression and a variety of negative psychological and physiological outcomes, it cannot be stated, with the highest degree of certainty, that untreated MDD causes these adverse outcomes.

Understandably, it is challenging and unethical to conduct randomized clinical trials on pregnant women because researchers would not solely be risking the health of the mother, but also the unborn fetus. For example, we cannot, in good conscience or scientific practice, recommend or condone a clinical trial where mothers with MDD are either given a placebo or antidepressant in hopes of determining the direct causative effects of antidepressants and MDD on pregnancy. That said, analysis of longitudinal studies, as reviewed in this article, allows medical professionals and researchers alike an opportunity to glean the correlatory effects of MDD on pregnancy. This correlation is likely clinically significant because it is evident that changes in the current state of clinical practice are in the best interest of these patients and their children.

As previously stated, the societal belief that antidepressants are harmful to a developing fetus frequently leads expectant mothers to discontinue their medication regimens; however, this belief fails to address the direct effects medication discontinuation has on maternal mental health and overall well-being. The vast list of complications, including but not limited to depression relapse, postpartum depression, prolonged labor, preterm birth, and increased cortisol levels, all suggest that the potential complications of antidepressant discontinuation are much more impactful on the mother and, by association, the fetus than initially thought. Analysis of the risks and benefits is needed to properly gauge potential outcomes and provide expectant mothers with the most up-to-date, evidence-based information. A possible remediation includes treating MDD during specific windows during pregnancy when the effects of the antidepressants will have minimal impact on the developing fetus. This appears promising because there appears to be a correlation between gestational time and MDD. Further research is needed into how we, as medical professionals, can care for pregnant women with MDD in order to

minimize the complications that face this vulnerable population. Until then, those who have MDD are at greater risk of preventable complications that unnecessarily impact the mother, child, and their families.

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