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ARTICLE TITLE: INSIGHTS ON POST-PARTUM DEPRESSION
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INSIGHTS ON POST-PARTUM DEPRESSION

ABSTRACT

Postpartum depression is a condition which a woman experiences after childbirth. It is a strong feeling of sadness, anxiety, mood swings, ideas of harming oneself and the baby. Postpartum depression is frequently misdiagnosed and untreated. Mental illness and delivery have a long history dating back thousands of years. Women's capacity to undergo treatment may be hampered by their unwillingness to travel for routine psychotherapy sessions and their concerns about giving antidepressant medication

to their unborn child if they are nursing. In the weeks and months after delivery, depression has garnered a lot of attention in both scientific and popular literature because of all of these variables as well as the perception that childbirth is a joyful life experience. Since its creation in 1952, major depression has been included in the Diagnostic and Statistical Manual of Mental Disorders (DSM); nevertheless, postpartum depression is not recognized as a distinct diagnostic category. The Diagnostic and Statistical Manual of Mental Disorders (DSM) has classified major depression since its inception in 1952; however, postpartum depression is not acknowledged as a separate diagnostic category. Stress and negative experiences from the past are the main risk factors for postpartum depression. If postpartum depression is not identified and treated, it can be quite hazardous. The Edinburgh Postnatal Depression Scale (EPDS) was introduced to aid medical personnel in identifying PPD-affected mothers; a troubling condition that lasts longer than the "blues". Postpartum depression has numerous causes, including hormonal shifts, bodily changes, and psychological issues. The patient can benefit from appropriate medicine, such as antidepressants, frequent psychiatrist appointments, medication adherence, and family support.

Keywords: Postpartum depression, Psychosis, Edinburgh postnatal depression scale.

INTRODUCTION

The postpartum blues, a widespread (incidence ~40% to 80%), mild, and transitory mood disorder that frequently occurs three to five days following labour, are usually recognised from postpartum depression. Additionally, PPD differs from postpartum psychosis, which is an uncommon (occurring 0.1% to 0.5%), acute, psychotic episode that typically starts in the first two weeks following birth.
Depressive episodes that are common after childbirth are referred to as postpartum depression (PPD). Even though depression is always a crippling illness, it can be particularly difficult for a new mother to manage her everyday responsibilities which may include working outside the home and taking care of older children while also taking care of a small infant. Furthermore, a large body of research shows that maternal depression has detrimental impacts on infants from the moment of delivery. Lastly, women's unwillingness to travel for routine psychotherapy treatments and their worries about passing antidepressant medication to their unborn child if they are nursing may hinder their ability to receive treatment. Due to all of these factors combined with the fact that childbirth is often viewed as a wonderful life experience, depression has received a lot of attention in both scientific and popular literature in the weeks and months following delivery. [1] Many times, postpartum depression goes undiagnosed and untreated. The history of mental illness and childbirth extends back thousands of years. [2] Results of treatment are still not ideal, nevertheless. There may be new therapy possibilities available due to recent scientific findings on the pathophysiology of PPD and the development of somatic therapies. [3] In spite of the negative effects on health, systematic PPD screening is not considered standard clinical practice in the United States. Referrals for assessment and treatment are hampered by the scarcity of mental health services. To confidently refer patients and suggest psychiatric care, nurses must be knowledgeable about the nature and effectiveness of PPD treatments. [4]

Incidence of Post-Partum Depression:

Since the earliest attempts to gather statistical data regarding the prevalence of mental diseases were made in the 1800s, depression—formerly known as melancholia—has been recognised as a mental ailment. The Diagnostic and Statistical Manual of Mental Disorders (DSM) was created in 1952, and since then, major depression has been included in it; nevertheless, postpartum depression is not acknowledged as a separate diagnostic category. As a subtype of major depression, postpartum depression was first listed in the DSM-IV as "Major Depressive Disorder, with Postpartum Origin," but it is now listed in the DSM-5 as "Major Depressive Disorder, with Peripartum Origin," since approximately one-third of patients with postpartum depression experience symptom manifestations during pregnancy. [5] The four-week timeframe is still debatable in some circles. [6] and a move to

extend this period to six months after delivery has been made. Interestingly yet, genetic research suggests that familiarity is only evident in depressive episodes that start in the first four weeks following birth. [7,8] Becoming a mother brings with it social and psychological changes. These alterations could be connected to PPD, along with clinical history and obstetrical factors. Self-worth, life stress, childcare stress, marriage relationship stress, social support, infant temperament, marital status, socioeconomic status, and unwanted or unexpected pregnancy, prior psychological illness, [9,10] delivery technique and past abortion are the key discoveries related to PPD.

TYPES OF POSTPARTUM DEPRESSION

Depression that develops after childbirth is known as postpartum depression (PPD). Not only can postpartum depression impact the individual giving birth. It may also have an impact on foster parents and surrogates. Following child birth, people experience hormonal fluctuations, bodies, feelings, economics, and social lives. Symptoms of postpartum depression may arise from these changes.

Mainly there are three types of postpartum depression

1)Baby or Postpartum blues
2)Postpartum depression
3)Postpartum psychosis [11]

1) Baby or Postpartum Blues

Within a week of giving birth, between 50 and 75 percent of new mother's experience "postpartum blues," a syndrome marked by anxiety, sleeplessness, irritability, and a generalised sad mood. By definition, baby blues (BB) are transient conditions that don't necessarily need to be treated because they go away in a few days. Even while the majority of BB instances go away in the first two postpartum weeks, some women may still have mood disorders after that time.

Sexual hormones, such as progesterone and oestrogen, surge to previously unheard-of levels during pregnancy. After delivery, their levels decrease sharply and stay extremely low for at least the first seven days. It is believed that a specific neurochemical dysregulation is connected to this phase based on these hormonal alterations. For example, there have been suggestions that the postpartum mood alterations are influenced by ovarian hormone insufficiency and monoamine-lowering processes, which are associated to the first few weeks following birth. Reduced progesterone secretion during pregnancy and the postpartum phase has been linked to increased depression ratings 12 weeks following childbirth. [12]

2) Postpartum Depression

At least 1 in 7 new parents undergo postpartum depression, which is more complicated than the baby blues. If patients have a past history of postpartum depression, the chance increases to 30% with every pregnancy. In addition to regret, panic, and not being able to look after yourself or child, you might also experience mood swings, incessant weeping, irritation, and exhaustion. From modest to severe indications may start within 7 days post-delivery or develop progressively over the course of up to a year. Antidepressants and psychotherapy are very effective forms of treatment, even if symptoms can linger for several months.

3) Postpartum Psychosis

The deadliest and least known perinatal psychiatric disease is postpartum psychosis. [13,14] Just 1 in 1,000 people will have this very uncommon illness after delivery. Usually starting soon after delivery, the symptoms are severe and persist anywhere from a few weeks to several months. Profound agitation, disorientation, hopelessness, guilt, insomnia, paranoia, delusions or hallucinations, hyperactivity, fast speech, or manic episodes are among the symptoms. Because postpartum psychosis increases the risk of suicide and injury to the unborn child, it needs to be treated medically very away. Typically, hospitalization, psychotherapy, and medication are part of the treatment plan. [11]

CAUSES AND RISK FACTORS OF POSTPARTUM DEPRESSION

The development of PPD may be predicted by a number of potential psychosocial and obstetric factors, however the results of these studies have been inconsistent and have not been able to accurately identify women who may be at risk. One established risk factor for PPD is the blues, but little is known about other risk factors that can point to an individual's particular hormonal sensitivity. This particular hormonal sensitivity has been linked to conditions like PMS and PPD, as well as suggested to be a depression that happens throughout the perimenopause. One theory is that women with putatively hormone-related mood disorders other than PPD who exhibit sensitivity to the mood-destabilising effects of hormonal fluctuations may also be at risk for developing PPD. [15] To ascertain the connection between depression and the abrupt decrease in hormones following birth, more research is required. Oestrogen and progesterone levels double while in the phase of pregnancy and quickly fall down after giving birth. These hormones' levels come back to prior to becoming pregnant by 3 days post-delivery. Postpartum depression is more likely to occur in addition to these biological changes because of the social and psychological changes that come with becoming a parent. Physical alterations to your body, sleep deprivation, concerns about raising children, or changes in your relationships are a few examples of these changes. [11]

Although the exact causes of postpartum depression are unknown, knowing which people are more likely to experience it can help. Depression from a previous pregnancy or postpartum period, symptoms beginning during the pregnancy, extreme sorrow, anxiety, repeated crying, mood changes, anger, sensing too much, altered sleep patterns, stress from the father's absence during pregnancy, after giving birth, being by yourself, and inadequate family assistance are the most common disorders seen. A severe depressive disorder's symptoms are often accompanied by anxieties and anxiety related to becoming a mother. Numerous studies have shown that postpartum depression is more common in moms with a variety of issues, but it is most common in those who had depression throughout pregnancy and did not receive treatment. Additionally, it has been noted that reproductive hormone levels drop quickly after delivery, which may contribute to the development of depression in moms who are vulnerable to it. Hormonal fluctuations most likely contribute to many variables that cause postpartum depression. Depression can also result from other pregnancy-related illnesses, such as preterm birth (before 34 weeks of gestation) or having a child with a congenital abnormality. Insecurities relating to the present pregnancy, such as an unwanted pregnancy or considering an abortion, can also cause this illness. [16]

GENETICS

Among psychopathologies, postpartum depression is one of the most common. Its estimated prevalence ranges from 10% to 15%. Even though the disorder's aetiology is complex, genetics is known to have a significant part in its development. The association between genetic variables and the development of postpartum depression was the subject of several investigations using various approaches. Does postpartum depression have a stronger genetic or polymorphism association than others? What significance do they have? Postpartum depression and Major Depression (MD): Are they two distinct disorders or are they the same? Is PPD limited to an MD temporal variant? Understanding the idea of Single Nucleotide Polymorphisms (SNPs) is crucial because a lot of research has been done to confirm the significance of the type of genetic variation in PPD. Single nucleotide polymorphisms (SNPs) impact a single base pair within the DNA sequence. The way that each person reacts to illnesses, bacteria, viruses, chemicals, and medications can be influenced by these differences in DNA sequence. For a variant to be classified as an SNP, it must be present in a minimum of 1% of the population. [17]

The most researched genes and polymorphisms were 5 HTT and 5HTTLPR, respectively. Postpartum depression is linked to 5 HTTLPR (PPD). [18,19, 20,21,25,26,27,29] Peripartum depression and polymorphisms in TPH1 and TPH2 are linked. [24,28,29,30]. MAOA and COMT polymorphisms were additional PPD risk factors. [18,21,30] The SNPs of PER2, CYP2D6, and MTHFR were unrelated to this

mood illness. Positive correlations were found between PPD and the polymorphisms of the oxytocin, steroids, and oestrogen genes. [20,22,23]

THE ROLE OF EXTRASYNAPTIC GABA RECEPTORS AND STEROID HORMONES IN POSTPARTUM DEPRESSION:

Recent research has indicated a strong correlation between postpartum depression and GABA receptors, particularly extra synaptic receptors. Though GABA is the primary medium for information transmission, different types of receptors have diverse functions due to the wide variety of their shapes. [31]

By using Western blot analysis of total hippocampus membrane protein, potential changes in GABA(A)Rs during pregnancy were found. This region is assumed to be implicated in the presentation of mood disorders and has been demonstrated to show neurosteroid sensitive plasticity. [32] Shown that variations in progesterone levels are connected with cyclic changes in the composition of the GABA(A) receptor subunit during the ovarian cycle. It is yet unknown, nevertheless, if hormones directly control this physiological modulation of GABA(A)Rs. Here, we demonstrate that GABA(A)Rs can be reorganised by ovarian and stress hormones through the effects of neurosteroid metabolites. [33]

Progesterone and corticosterone are examples of steroid hormones that are known to have a wide range of effects through both nongenomic and genomic pathways. Neurosteroid metabolites primarily act on GABAA receptors through their activation of nuclear hormone receptors. Which of these pathways, though, is responsible for the variations in GABAARs induced by variations in steroid hormone levels is still unknown. [34] When progesterone levels rise during the reproductive cycle, GABAA receptors rearrange themselves to reduce neuronal excitability. The periaqueductal grey matter has similar changes in GABAAR expression associated to the reproductive cycle. The main query following the detection of any CNS changes associated with steroid hormones is whether the various steroid hormone metabolites' actions or the direct activation of steroid hormone receptors cause the alterations, also known as neurotoxins, that the brain synthesises locally. Regulating the composition of the GABAAR subunit has great therapeutic potential for treating a variety of neurological diseases. [35]

Physical changes

Postpartum depression may be exacerbated by a sharp decrease in the concentrations of the hormones progesterone and oestrogen in your body succeeding labour. Your thyroid gland's production of other hormones may also drastically decline. — It may cause you to feel worn out, lethargic, and sad.

Emotional issues

When you're stressed out and lacking in sleep, you can find it difficult to handle even small issues. You could be worried about whether you'll be able to raise a new-born.

It's possible that you feel less appealing, have trouble defining yourself or believe you have no influence over your life. Any one of these problems may have an impact on postpartum depression.

SYMPTOMS OF POSTPARTUM DEPRESSION

Depression symptoms, following delivery differ and might be moderate to intense.

Baby blues symptoms

Signs of the baby blues — they are just a few days long a week or two following the birth of your child—may consist of:

- Mood changes
- Uncertainty
- Grief

- Anger
- Sensing too much
- Crying
- Absence of mind
- Issues with Hunger
- Disturbed sleep pattern

Postpartum depression symptoms

At first, postpartum depression may be confused with the baby blues—however, the symptoms are more severe and persistent. These could gradually get in the way of your capacity to look after your child and do other daily duties. Specifically, symptoms appear in the beginning some days after childbirth. However, they might start earlier, when expecting or later a year or more following birth.

Postpartum depression symptoms may include:

- low spirits or extreme emotional fluctuations
- Frequent crying
- Connection with your baby is difficult
- Staying away from relatives and friends
- Decreased hunger or eating a lot than usual
- Not able to sleep, or too much sleeping
- Overwhelming tiredness or decreased energy
- Decreased enthusiasm and enjoyment of the things you used to love
- Extreme agitation and fury
- Despondency
- Depressive feelings, guilt or insufficiency
- Decreased capacity for clear thought, focus or make choice
- Feeling uneasy
- Idea to hurt oneself or to baby
- Repeated idea of death or self-harming
- fear of not being a suitable mommy

Unattended, postpartum Depression might continue for several weeks or more.

Postpartum psychosis

With postpartum psychosis —an uncommon disorder that typically appears in the first week following birth —The signs and symptoms are intense. Symptoms may include:

- Feeling disoriented and perplexed
- Enduring compulsive ideas regarding your infant
- Perception of hallucinating
- Having trouble falling asleep
- Having high energy and feeling agitated
- Feeling suspicious
- Deciding to harm yourself or your baby

Postpartum psychosis may cause a patient to have life-threatening thoughts or behaviours and needs immediate treatment. [36]

Your baby may be impacted by postpartum depression. Receiving medical attention is crucial for the mother and the child.

Postpartum depression can affect baby in the following ways:

- You struggle to form a bond with your child and don't build an attachment with them.
- Your child may have behavioural or educational issues.
- You might neglect your appointments with the paediatrician of your child.
- Your child can have trouble eating and sleeping.

- Your child may be more susceptible to obesity or abnormalities in development.
- You can put off taking care of your child's care or not be aware of their illness.
- Your baby's social skills could be lacking. [11]

DIAGNOSIS OF POSTPARTUM DEPRESSION:

The diagnosis standards for a Major Depressive Episode (MDE) according to the definition provided by the Diagnostic and Statistical Manual (DSM-IV) remains the same in the postpartum period comparatively, and comprise a minimum of two weeks of consistent melancholy or anhedonia, along with a minimum of four of the subsequent: heightened or lowered hunger, altered sleep, mental restlessness or inertia, decreased energy, sense of unworthiness, decreased concentration, and thoughts of suicide.[37] There are several resources available for Postpartum depression screening. The often-used tool is the Edinburgh Postnatal Depression Scale (EPDS), that detects extremely perceptive and detailed postpartum depression. This simple-to-read survey identifies the patient's disposition throughout the previous seven days. The 10-question form, which requests that responders select from a predetermined list of options, merely take a few minutes to finish and score. Every response receives a number between 0 and 3. A overall score higher than 12 or other favourable reaction to the item "the thought of harming myself has occurred to me" will lead to a additional thorough evaluation for depression. You may view the questionnaire online and is most frequently given during the mother's 6-week postpartum visit or the 2-month well-child check-up. [38] Additional verified screening instruments includes the Centre for Epidemiologic Studies of Depression instrument (CES-D), the Patient Health Questionnaire (PHQ-9), and the Postpartum Depression Screening Scale (PDSS). These tools are beneficial for examining, however, these shouldn't be the only tools utilised to diagnose PPD. [39] A large number of postpartum serious depressive women possess no history of mental illness and could be hesitant to disclose symptoms or to ask for assistance. It is critical to talk about symptoms, like compulsive thoughts and suicidal thoughts, with these patients. Among mothers suffering from postpartum severe depression, up to 60% report having obsessive thoughts about being aggressive toward the baby. It is important to inquire about previous manic episodes from patients diagnosed with postpartum severe depression. A history of mania or hypomania may be a sign of bipolar disorder, which calls for a particular prescription regimen. Bipolar disorder is also linked with an increased chance of mood swings after delivery. It is advised to ask these two questions to check for prior manic states: "Have you ever had four continuous days when you were feeling so good, high, excited, or hyper that other people thought you were not your normal self or you got into trouble?" and "Have you experienced four continuous days when you were so irritable that you found yourself shouting at people or starting fights or arguments? "Positive answers imperative psychiatrist's recommendation. [40] Creating a 10-item Self-Report Measure (EPDS)in order to look for A description of postpartum depression in the community is given. Following in-depth pilot interviews Using the Research Diagnostic Criteria for depressed illness derived from Goldberg's Standardised Psychiatric Interview, a validation study with 84 moms was conducted. It was discovered that the sensitivity and specificity of the EPDS were adequate I and was also aware of how the intensity of depression changed over time. The scale features a straightforward scoring system and can be finished in roughly five minutes. It is described how to use the EPDS to prevent postpartum depression in a secondary manner.

EDINBURGH POSTNATAL DEPRESSION SCALE

The Edinburgh Postnatal Depression Scale (EPDS) was introduced to aid medical personnel in identifying PPD-affected mothers; a troubling condition that lasts longer than the "blues" (which may happen during the first week following delivery). The Scale has ten succinct statements. A mother selects one response out of four options that most closely matches her emotions over the past week. Most of the mothers can easily complete the scale in less than five minutes. Responses are given a score of 0, 1, 2, or 3 according to how significant the symptom is. Out of 10, 3 are scored in reverse. (i.e., 3, 2, 1, and 0). The total of each person's score yields the final ratings for every one of the ten

things. Mothers who score more than 12 or 13 are most often depressed and need to get medical help. A thorough clinical assessment by a medical expert is required to determine a course of treatment and validate a diagnosis. The Scale represents the mother's emotional state over the preceding week, and it could be beneficial to do the scale again in two weeks. [41]

1. I have been able to laugh and see the funny side of things □ As much as I always could □ Not quite so much now □ Definitely not so much now □ Not at all	6. * Things have been getting on top of me □ Yes, most of the time I haven't been able to cope at all □ Yes, sometimes I haven't been coping as well as usual □ No, most of the time I have coped quite well □ No, I have been coping as well as ever
2. I have looked forward with enjoyment to things □ As much as I ever did □ Rather less than I used to □ Definitely less than I used to □ Hardly at all	7. * I have been so unhappy that I have had difficulty sleeping □ Yes, most of the time □ Yes, sometimes □ Not very often □ No, not at all
3. * I have blamed myself unnecessarily when things went wrong □ Yes, most of the time □ Yes, some of the time □ Not very often □ No, never	8. * I have felt sad or miserable □ Yes, most of the time □ Yes, quite often □ Not very often □ No, not at all
4. I have been anxious or worried for no good reason □ No, not at all □ Hardly ever □ Yes, sometimes □ Yes, very often	9. * I have been so unhappy that I have been crying □ Yes, most of the time □ Yes, quite often □ Only occasionally □ No, never
5. I have felt scared or panicky for no very good reason □ Yes, quite a lot □ Yes, sometimes □ No, not much □ No, not at all	10. * The thought of harming myself has occurred to me □ Yes, quite often □ Sometimes □ Hardly ever □ Never

Table 1: Edinburgh Post-Natal Depression Scale [42]

TREATMENT

Once PPD is diagnosed, quickly starting a treatment program is crucial. Without immediate medical attention, Patients may experience a protracted sickness that can result in decreased functionality, increasing severity of symptoms, Suicide and resistance to therapy. Comparable to the treatment of serious depression aside from having children, the cornerstones of evidence based PPD treatments are targeted counselling and the use of antidepressants [43]

NON-PHARMACOLOGICAL TREATMENT

Psychotherapy, either individual or group, is a useful therapy for mild to moderate major depression following childbirth. Another usage for psychotherapy is as an adjuvant therapy taking medicine for serious depression that ranges from moderate to severe postpartum. The therapeutic modalities most frequently employed are Cognitive behavioural treatment and interpersonal therapy. Both approaches have been demonstrated as a successful treatment for postpartum severe depression in both individual and group settings. No evidence of light treatment has been demonstrated to be beneficial in individuals suffering from significant depression after childbirth. Acupuncture, yoga, and exercise

have not been studied sufficiently. However, physical exercise, sufficient exposure to morning sunlight, and other people's assistance is encouraged. [44]

PHARMACOLOGICAL TREATMENT

ANTIDEPRESSANT THERAPY:

Antidepressants are effective in treating PPD. It was found fluoxetine (20 mg/day) was a great deal more successful than a placebo. Sertraline was given at a dose of 50–200 mg/day and brought about abatement (HRSD ≤7) in 14/21 (66%) of individuals who finished an eight-week experiment. An 80% remission percentage was achieved with venlafaxine (75–225 mg/day). Among women with PPD, the sole randomised comparative trial involving antidepressant use, Patients gave similar responses to therapy with sertraline, a serotonin reuptake inhibitor, and the tricyclic drug nortriptyline. Most individuals needed to take doses of sertraline >100mg every day or nortriptyline ≥75 mg daily to receive a complete response. One factor in the treatment of PPD is the transmission of antidepressants through breast milk. Less or unidentifiable most antidepressant levels have been detected in new-born sera, no mention of any developmental issues. The finest information for choosing a treatment is given by the patient's reaction to earlier clinical experiments. Guidelines regarding the clinical supervision of diseases related to childbirth and a strategy for making decisions that weighs the advantages and disadvantages of antidepressant therapies. [45]

TREATMENT ALGORITHM

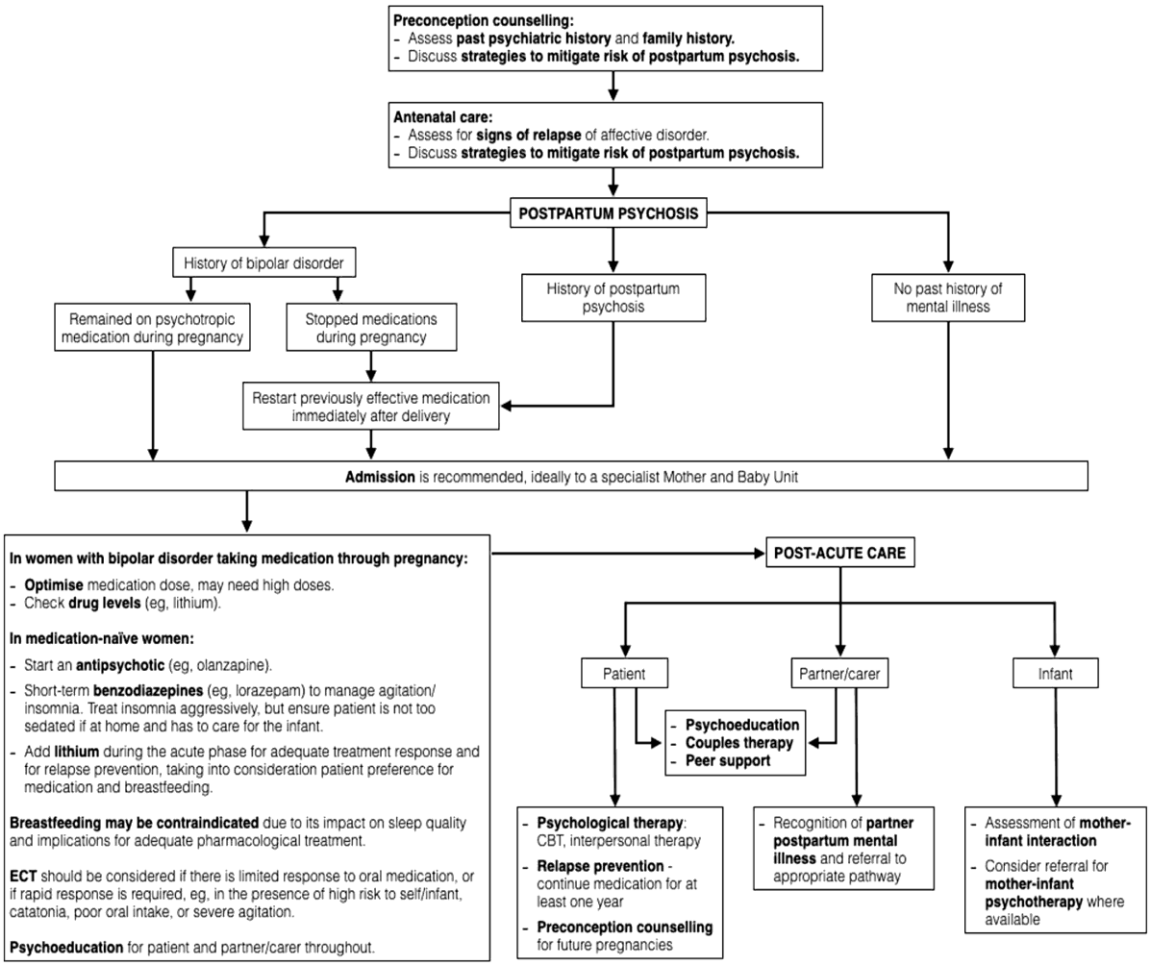

Image 1: TREATMENT ALGORITHM FOR PPD [46]

CONCLUSION

The major risk factors associated with postpartum depression are stress and previous life's adverse events. Postpartum depression is very dangerous if it is left undiagnosed and untreated. Many causes such as hormonal changes, physical changes, and psychological reasons are the main cause of postpartum depression. Proper screening of the depression must be done in order to save mother and child from the depression. Proper medications such as antidepressants, regular psychiatric visits, medication adherence, family support can help the patient.

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