Heliyon 9 (2023) e20958

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

Psychiatric illness and pregnancy: A literature review

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ARTICLE INFO

Keywords:
Psychatric illness
Preterm delivery
Anxiety
Depressive disorders
Neonatal hypoxia
Foetal distress

ABSTRACT

Background: Women of reproductive age frequently suffer from psychiatric disorders. The risk of developing anxiety, bipolar, and depressive disorders is especially significant during the perinatal period.

Objectives: This article aims to identify and discuss the different psychiatric conditions that might affect pregnant women and update the mother's carers about the recent and updated bidirectional relationship between psychiatric disease and adverse pregnancy outcomes, As well as the most updates in diagnostic and management strategies.

Methods: A thorough analysis of the literature was conducted using database searches in EMBASE, Science Direct, Google Scholar, Scopus, and PubMed to obtain the objectives and aim of the study.

Results: The presence of maternal mental illness during pregnancy has been linked to preterm delivery, newborn hypoglycemia, poor neurodevelopmental outcomes, and disturbed attachment. Placental anomalies, small-for-gestational-age foetuses, foetal discomfort, and stillbirth are among more undesirable perinatal outcomes.

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https://doi.org/10.1016/j.heliyon.2023.e20958
Received 21 July 2023; Received in revised form 9 October 2023; Accepted 12 October 2023
Available online 20 October 2023

Conclusions: Pregnancy-related psychiatric disorders are frequent. The outcomes for pregnant women, infants, and women's health are all improved by proper diagnosis and treatment of psychiatric problems.

1. Introduction

Pregnancy is a potential danger element for a new mental health condition [1,2], especially when there have been unanticipated outcomes such as unexpected caesarean deliveries [3], unplanned pregnancies [4], miscarriages [5], and the experience of a traumatic or unpleasant delivery experience have all been linked to significant harm of developing depression after delivery [6]. The likelihood of developing an acute mental illness during the puerperium, such as a psychotic episode or bipolar disorder relapse, is significantly higher [7]. The reproductive years are the most likely times for women to experience the most prevalent psychiatric illnesses, like anxiety and mood disturbance, and at least 15 % of women of childbearing period receive prescriptions for antidepressants, a subgroup of psychotropic drugs and the rate is even higher when additional mood stabilizers and antipsychotic drugs are taken [8]. Again, there is a substantial risk of maternal mental illnesses during the perinatal period, including major depressive disorder (MDD), bipolar disorder, and anxiety disorders. 20 % of all maternal deaths occur within the first year following delivery are due to suicide, which continues to be a prominent cause of postpartum mortality [9]. Negative neurodevelopmental consequences, premature birth, neonatal hypoglycemia, disrupted attachment, have all been linked to maternal mental illness during pregnancy. Placental anomalies, small-for-gestational-age foetuses, foetal distress, preterm delivery, and neonatal hypoglycemia are some additional unfavourable perinatal outcomes [9–11]. Untreated mental illness among pregnant women increases their risk for high-risk behaviors like promiscuity, exposure to STDs, smoking, drinking, and drug use, as well as receiving inadequate prenatal care and malnutrition [12]. Assessment and treatment of perinatal psychiatric diseases result in better results for the mother, her child/infant, and her family [13]. An evidence-based strategy for treating peripartum depression includes both medication and psychotherapy. But because there isn't enough information to support treatment, pregnant women have been dubbed "the last therapeutic orphans" in terms of pharmacology [14].

1.1. An overview of pregnancy-associated psychiatric illness

Depressive and anxiety disorders are common in pregnancy [15]One in seven women is expected to experience peripartum depression at some point during their pregnancy or in the first few weeks following childbirth, according to estimates [16]. The majority (40 %) of depressive episodes that are recognized after birth start early postpartum—within 4–6 weeks of delivery—with many episodes starting before or during pregnancy (26.5 %) or during pregnancy [16]. Pregnancy increases the risk of depression reoccurring, especially for women who stop taking antidepressants close to conception [13]. Pregnant women were more likely to relapse if they stopped taking their antidepressants than those who continued (68 % vs. 26 %, respectively) [17]. Relapses started to occur quickly; 90 % had occurred by the end of the second trimester, with 50 % occurring in the first trimester [17]. Genetic factors, earlier mental illness (and, in particular, depression during pregnancy), negative life events, a lack of social support, are the main risk factors for postnatal depressive disorders [18]. Perinatal anxiety disorders are common, with a 15.2 % total pregnancy prevalence and a 9.9 % postpartum prevalence [19].

With rates continuously higher in low- and middle-income countries, obsessive-compulsive disorder and panic disorder may be more common during pregnancy than at other times.

[20]. There is still a dearth of information regarding the precise risk factors for perinatal anxiety disorders, but a recent systematic review identified low educational attainment, living with extended family, multiparity, family history of psychiatric disorder, hyperemesis gravidarum, comorbid sleep disorders, as newly emerging risk factors, along with antenatal oxytocin exposure [21]. It can be particularly difficult to provide anaesthesia care for some anxiety disorders. Poor patient participation and a rise in the need for general anaesthesia may be two effects of needle phobia. Tokophobia, a morbid fear of being pregnant and/or giving birth, is thought to affect 14 % of people globally, while individual estimates might vary widely because there is no universal agreement on how to define the condition. Caesarean section deliveries could increase as a result [22]. Although somatic symptoms (such as fatigue and sleep disturbance) must be separated from typical pregnancy-related changes, perinatal depression and anxiety symptoms are not significantly different from non-childbearing presentations [15]. Most research supports the use of cognitive-behavioral or interpersonal therapy for postnatal depression as a psychological treatment for anxiety and depressive disorders, however, there is rising evidence to the contrary. of prenatal efficiency [23,24]. Additionally, Therapy can be altered, as evidenced by research, to be internet- or self-directed while still maintaining their efficacy [25,26]. Postnatal depression can be avoided with the use of psychological therapies [24]. and are efficient when used to treat prenatal anxiety problems [23,25].

After giving birth, 1–2 out of every 1000 women are diagnosed with postpartum psychosis and bipolar affective disorder, which calls for rapid care—typically in patient care [27]. A variety of symptoms, many of which are affective in nature (such as mood elevation, depression, or mixed states), as well as psychotic experiences—often characterised by marked perplexity and behavioural disturbance—are characteristics of postpartum psychosis, which typically manifests in the first two weeks after giving birth. About 50 % of women will first experience postpartum psychosis as a psychiatric condition. Women with a history of bipolar disorder or postpartum psychosis are most at risk, it is plainly clear, for the cases that remain [28]. Although postpartum recurrence rates for women who have previously experienced postpartum psychosis or bipolar disorder are comparable, those who have previously

experienced postpartum psychosis are more likely to have more severe disease [28]. Women with bipolar illness who have type-1 (psychotic symptoms present) as opposed to type-2 (hypomanic or non-psychotic depressive episodes) condition are more likely to experience an early postpartum severe relapse [29]. While some women may experience more severe depressive symptoms, most women who receive the right treatment soon recover from the acute phase. A significant risk of recurrence exists in following postnatal periods, and women who have experienced their first episode of postpartum psychosis are also more likely to experience subsequent bipolar episodes outside of the perinatal period. Bipolar disorder during pregnancy often necessitates continuing therapy to prevent relapse, which is very difficult as some of the mood-stabilizing drugs may have teratogenic consequences. Unless there has been a long time of stability and past indicators of well-being without medication [15].

Schizophrenia has been linked to lower fertility relative to the normal population, however this is more prominent in males than in women. Women with prior schizophrenia exhibit a higher attrition into illness over the course of the first postnatal year, though in a more gradual manner comparable to bipolar disorder's typical dramatic early onset manifestations. This is in contrast to the frequently spectacular early-onset presentations of bipolar disorder [30]. Women with schizophrenia are more prone than the general population to encounter a number of unfavourable pregnancy outcomes, such as pre-eclampsia, thromboembolic disease, premature birth, and abnormalities in the growth of the foetus. Lifestyle factors (such as increased drinking, drug use, and smoking), increased comorbidity (such as obesity, hypertension, and diabetes mellitus), severe social adversities, insufficient prenatal care, underlying illness, and/or pharmacological side effects may all contribute to this [31]. Although women may choose to stop taking antipsychotics during pregnancy, doing so significantly raises their chance of relapse. In general, the hazards of stopping antipsychotics during pregnancy outweigh any potential benefits [15].

Post-traumatic stress disorder may be brought on by present trauma, such as violent encounters, mishaps, or losses, or it may be related to previous trauma, such as pregnancy or delivery experiences. Negative events during pregnancy or delivery can potentially re-trigger post-traumatic stress disorder, which is caused by prior traumas. Between 4 % and 6 % of women have it during the perinatal period, however it is more prevalent in high-risk populations including those who have had psychiatric issues in the past or experienced problems during pregnancy. Naturally, rates are considerably greater among those who have stillbirths or neonatal deaths. In the first to sixth months following delivery, prevalence might rise [32]. It may result in women avoiding maternity care, especially if it's connected to unpleasant past maternity experiences [15]. Trauma-focused psychological therapies are among the effective remedies, however, general counseling or debriefing, a systematic intervention that encourages memory soon after a traumatic occurrence, therapy or reliving the incident have not been proven to be effective [15].

Of all mental illnesses, eating disorders have the highest death rate among all mental diseases. Pregnancy prevalence was determined to be 1.47 % in a recent study of inner-city women in the UK, although maternity professionals had low detection rates [33]. Evidence suggests that unhealthy eating habits may improve during pregnancy but relapse after delivery. Low birth weight and miscarriage are just two of the bad delivery outcomes that may be linked to severe dietary restriction, malnourishment, and binge-eating behaviours. Electrolyte imbalances could result from self-induced vomiting and purging [15].

Because personality disorders are deeply rooted and persistent patterns of behaviour, they produce rigid responses to a wide range of social and personal settings. They may be present in as much as 6 % of pregnant women. The type of personality disorder that is most frequently detected is the emotionally unstable one, in young females. Dysphoria, self-image problems, impulsivity, emotional instability, a feeling of constant emptiness, self-destructive behaviour, such as drug and alcohol misuse, and recurring self-harm. Its origins are better understood in the context of continuously unpleasant and abusive behaviour. childhood memories. There is evidence that personality disorders are associated with worse obstetric outcomes, including as premature birth, low birth weight, and a low Apgar score [34].

Agitation, which is characterised by combative and aggressive behaviour, physical restlessness, or excessive irritability, can manifest as an emergency in pregnant women. Similar to psychosis, there are several potential causes of agitation, including psychiatric (such as a fresh start or mental health that is getting worse disease), medication withdrawal, drug intoxication or withdrawal, delirium, or medical ailment (i.e.hyperthyroidism). The most crucial step in putting a successful treatment into action is figuring out the cause of the agitation [35]. Due to worries about foetal risk, abrupt withdrawal of psychiatric medications, illicit drugs, and alcohol is frequently seen during pregnancy. Antidepressant medications, such as SSRIs (such as sertraline and escitalopram), serotonin-norepinephrine reuptake inhibitors (such as venlafaxine), and tricyclic antidepressants (such as amitriptyline and nortriptyline) can result in nausea, headache, lethargy, anxiety, and agitation that start within a week of stopping the medication and last for up to two weeks. usually last for around a month [36]. Resuming mental health treatment reduces withdrawal symptoms and may prevent mood or anxiety from growing worse. A risk-benefit analysis must be performed prior to a patient restarting their prescription. Diphenhydramine and antimuscarinic drugs can provide symptom alleviation for patients who choose not to continue taking their medicine. The knowledge that a patient's symptoms are self-limited and will rapidly go away is comforting [35]. The physiological effects of stopping alcohol use after prolonged use range from modest to severe and include tachycardia, hypertension, convulsions, hyperthermia, restlessness, tremor, hallucinations, and death [37]. Alcohol withdrawal's physiological stress is associated with an increased risk of preterm birth and low birth weight [38]. Treatment for withdrawal and avoiding negative effects on the mother and foetus require detoxification with benzodiazepines are used as the first line of treatment for alcohol detoxication in non-pregnant individuals and are not linked to serious congenital defects during pregnancy [35]. Anticonvulsants like gabapentin are among the less well-known alternative pharmacotherapies for alcohol detoxification that have teratogenic consequences. Repeated opiate intoxication and withdrawal during pregnancy, like alcohol abuse, results in foetal distress and can lead to pregnancy issues such placental insufficiency, premature labour, and intrauterine growth restriction. It is appropriate to give buprenorphine and methadone at this time to maintain opioidlevels. Buprenorphine is preferred due to its more advantageous effects on the foetus, including a decreased risk of preterm birth and low birthweight, as well as a larger head circumference [39].

The three classes of medications that are most frequently used to treat agitation are benzodiazepines (such as lorazepam), first-generation antipsychotics (such as haloperidol and perphenazine), and second-generation antipsychotics (such as olanzapine and aripiprazole). A pregnant or lactating woman must select a pharmaceutical intervention that is both calming and beneficial. a post-partum patient once the underlying aetiology has been taken into consideration. The ideal medicine selection will also reduce the number of medication exposures to the foetus or breastfed child. Few drugs have strict contraindication for the treatment of agitation in pregnancy or in women who are breastfeeding due to the primary safety concerns for the mother and/or newborn. Due to the known risk of neural tube abnormalities, valproic acid is contraindicated during pregnancy and should not be taken. Lithium and lamotrigine, two mood stabilisers that do not provide immediate relief from symptoms, are also poor choices [35].

In the United States, the risk of suicide during the perinatal period ranges from 1.6 to 4.5 per 100,000 live births [40]. The rates of perinatal suicide worldwide, which include the UK, Canada, and Sweden, range similarly between 1.27 to 3.7 [41,42,43]. Although there is a substantial risk of suicide during the first year after giving birth, studies frequently do not take suicides that occur after the first six months into consideration, and suicide is underreported on death certificates, thus maternal suicide rates are probably greater [35]. Suicidal ideation, or having thoughts of taking one's own life, is a risk factor for both suicide and postpartum depression [44]. 2.7 % of pregnant women who seek care for their pregnancy support thinking about suicide [44]. Estimates of suicidal thoughts in perinatal women seeking mental health care range from 5 to 14 % [45]. Suicidality during pregnancy is at risk if there is a history of mental illness. In comparison to women with unipolar depression, those who have been diagnosed with bipolar illness are at an increased risk of suicide and are more likely to commit suicide while they are pregnant [46]. The risk of suicide is also higher in women who have attempted suicide in the past, who abruptly stopped taking psychiatric drugs while pregnant, who experienced postpartum sleep problems, who experienced violence from an intimate partner, and who had stillbirths [47–51]. Gaining knowledge of the patient's functional capacity and suicide risk requires assessment of the patient's fundamental self-care, interactions with the newborn and family, and treatment compliance. Anhedonia (lower drive and pleasure) and a lack of self-care are suicide risk factors that can manifest as a patient's lack of interest in bonding with her child, trouble keeping up with daily cleanliness, or disregard for medical needs [52]. The cultural context must be considered when estimating the suicide risk. Among women who had completed depression screening, the risk of suicide during the antepartum and postpartum periods was higher among younger, single, non-white, non--English-speaking, publicly insured, and those with a history of psychiatric diagnosis. If they were partnered, patients who did not speak English were more likely to have suicidal thoughts. Furthermore, suicidal ideation and suicide are more common in societies that denigrate unmarried pregnant women [53,54]. The risk of suicide must be assessed to decide whether a patient needs emergency hospitalisation or may continue receiving outpatient care [35].

1.2. Psychiatric illness and adverse pregnancy outcomes

Birth defects, with an estimated baseline rate of 3–5% among the general population [13,55,56]. was found to be higher in women taking antidepressants(Aps) in pregnancy as in Huybrechts et al.'s study (2014)where they reported that in utero exposure to an antidepressant was associated with a 25 % increased risk of developing a cardiac defect (OR 1.25, 95 % CI 1.15–1.36) [57]. In comparison to untreated women, treated women had greater absolute risks for congenital abnormalities per 1000 live births: 38.2 (95 % CI, 26.6–54.7) for those treated with typical APs and 44.5 (95 % CI, 40.5–48.9) for those treated with atypical APs [58]. The same study's researchers found that atypical APs had a greater overall risk of malformations than typical APs based on unadjusted analyses. (RR, 1.17; 95 % CI, 0.81–1.68), respectively. The risk ratio (RR) for atypical APs was reduced to 1.05 (95 % confidence interval [CI], 0.96–1.16]), and for typical APs to 0.90. (CI, 0.62–1.31). Similar judgments were made for heart abnormalities. Among the several drugs studied, risperidone was found to have a marginally higher incidence of total malformations (RR, 1.26; 95 % CI, 1.02–1.56) and cardiac malformations (RR, 1.26; 95 % CI, 0.88–1.81). The examined covariates had no impact on this increase in risk [58].

Preterm birth has been linked to both depression and antidepressants; preterm birth is defined as birth before 37-0 weeks of gestation. Patients with major depressive disorder (MDD) have greater rates of premature birth (23 % vs. 21 %, respectively) than women without MDD or receiving antidepressant therapy (6 % preterm birth) [59]. A comprehensive review and meta-analysis of preterm birth and antidepressant use discovered a pooled adjusted OR for the risk of preterm birth following antidepressant exposure in pregnancy (OR1.61 p = 0.039; 95 % CI: 1.26–2.05) [60]. The use of selective serotonin reuptake inhibitors (SSRI) was linked to a significantly lower rate of late preterm birth (OR = 0.84, 95 % CI, 0.74–0.96), very preterm birth (OR = 0.52, 95 % CI,0.37–0.74), and caesarean section (OR = 0.70, 95 % CI, 0.66–0.75), in contrast to people with psychiatric disorders who were not taking an antidepressant. This data could be explained by the protective effects of effective depression treatment, however, depressive symptoms were not measured, thus this explanation is speculative [61]. These findings imply that separating the effects of pharmaceutical exposure from those from disease exposure is difficult when attempting to determine the connection between antidepressant exposure and preterm birth [13].

Neonatal adaptation syndrome (NAS) describes symptoms displayed by a newborn who was exposed in utero to an SSRI. For SSRI-associated NAS, no measuring method or agreed definition has been devised. Symptoms include respiratory, gastrointestinal, neuromuscular, and central nervous system issues. Malm et al. (2015) discovered that SSRI exposure increased the likelihood of neonatal issues, such as the risk for lower Apgar scores (OR = 1.68, 95 % CI, 1.34–2.12) and admission to the neonatal intensive care unit.(OR = 1.24, 95 % CI, 1.14–1.35) [62]. Infants exposed to antidepressants in utero have a NAS incidence rate of 0–30 % [63]. This extremely fluctuating rate is a sign that the mechanism underlying the condition is poorly understood and that it is difficult to measure and describe. Compared to newborns exposed to other serotonergic antidepressants, it happens more frequently in those exposed to fluoxetine, venlafaxine, and paroxetine. Venlafaxine has a well-known withdrawal syndrome, fluoxetine and its active metabolite have extended half-lives, which tax the newborn's metabolic capacity, and paroxetine has a high anticholinergic effect [13] The probability

of developing NAS symptoms increases when benzodiazepines and serotonergic antidepressants are concomitantly used during pregnancy, and some of these symptoms still exist 30 days after delivery in some cases [64].

Developmental outcomes were compared between infants exposed to SSRI in utero, infants exposed to maternal depression (without antidepressant treatment), and infants who were not exposed to either antidepressants or maternal depression using serial assessments using the Bayley Scale of Infant Development at 12, 26, 52, and 78 weeks of age. Significantly worse psychomotor development scores were observed in newborns exposed to SSRIs at 26 and 52 weeks of age compared to those exposed to depression or no exposure. At the 78-week examination, the psychomotor function between the groups was no longer different. In terms of cognitive development, there were no differences between the groups, and evidence from numerous research have confirmed this finding [65–69]. There are no discernible differences between those exposed to SSRI and those who are not, according to standardized tests of intelligence quotient(IQ) and behavioral symptoms in children aged 3 to 7^{70}. When compared to children whose mothers had a history of maternal psychiatric problems without receiving antidepressant medication, in-utero antidepressant exposure was linked to greater rates of speech and language difficulties in early adolescent studies [70]. It has also been discovered that the degree of mother depression throughout pregnancy and childhood predict internalizing and externalizing tendencies in kids; however, SSRI exposure in utero was not connected to these behavioural issues [71]. Teenagers who had a history of being exposed during pregnancy to antidepressant medicines have been found to have a greater prevalence of depression, and this association remained significant even after measures were used to account for the degree of the mother's depression. Moreover, after adjusting for the mother's psychiatric disease, there was no connection between in-utero exposure to antidepressants and the later development of attention-deficit/hyperactivity disorder (ADHD) or autistic spectrum disorder [72].

Antidepressants were found to be transferred to newborns through breastfeeding; however, the relative exposure is significantly lower than in utero exposure, and routine paediatric practise monitoring is appropriate for healthy, full-term infants receiving breastmilk from women who are taking antidepressants [73] with sertraline is the most researched antidepressant in breastfeeding and has a low breastmilk transfer rate, making it well tolerated by nursing infants [74]. Compared to other SSRI drugs, fluoxetine is more concentrated in breast milk, and the infant's relative dose can be as high as 12 % of the mother's. However, most infants can endure it [73]. There is currently a paucity of information on the interactions between SSRI drugs and preterm infants who are breastfed. There is only one case report of a late preterm newborn who developed serotonin syndrome after his mother took fluoxetine 60 mg both throughout pregnancy and while nursing the baby. The infant's symptoms did, however, eventually go away after moving to formula [75].

1.3. Analysis of psychiatric therapies in the perinatal period

Antidepressant medications were more evaluated during pregnancy for their adverse effects on the foetus rather than for their clinical efficacy, even though their therapeutic benefit is well-proven outside pregnancy, including the postnatal period [76]. The most popular antidepressants in primary and secondary care, selective serotonin reuptake inhibitors have been associated with a rise in foetal heart defects. Several more current studies with controls for no discernible increase in factors related to depression [77]. yet the evidence is still inconclusive [15]. In a similar vein, when newer approaches are applied, past findings of a rise in rates of persistent pulmonary hypertension in newborns are either not confirmed or only reveal a very slight absolute increase in risk [78]. The incidence of postpartum haemorrhage has been associated with the use of prescribed selective serotonin reuptake medications. Even if the findings were still ambiguous, as per one systematic review, the absolute risk would still be negligible. Recent cohort research using a national registration found that in comparison to healthy, untreated women with no past mental history, women with prior odds ratios for mental illness were 1.09 (95%CI: 1.04–1.14) and 1.34 (95 % CI: 1.24–1.44). respectively [79]. Earlier gestational ages at birth, premature deliveries, and lower Apgar scores may also be linked to antidepressants during pregnancy, however the clinical effects may be minimal. According to a recent meta-analysis, antidepressants have a fivefold increased risk of poor neonatal adaption compared to infants who are not exposed to them. This is true of other psychiatric medications as well [80]. Uncertainty still exists regarding the clinical significance of these results and the extent to which the underlying sickness may be blamed for them. Furthermore, when more relevant comparison groups are included, a recent suggestion of a link between antidepressant usage during pregnancy and childhood autism spectrum condition seems to diminish or vanish [81]. A novel GABA-A positive neuromodulator, brexanolone is an antidepressant medication. It is backed by specific research on postpartum depression, which shows recovery at the 30-day mark [82]. However, due to the administration method (infusion over 60 h) and the requirement for additional study, its practical usage is constrained. Although it is currently not licensed in the UK or the European Union, it was approved for use in the USA in 2019 [15].

Catatonia, protracted, severe mania, severe non-psychotic depression, or psychotic disorders are common candidates for electroconvulsive therapy, especially when the illness is life-threatening, no other treatments are working, or a quick response is required. Although the database in the perinatal age is less developed and there is substantial evidence of efficacy in non-perinatal settings, there is some indication that perinatal disorders respond favourably, supporting clinical experience [83]. An analysis of existing research on the safety of electroconvulsive therapy during pregnancy revealed significant methodological flaws [84]. A recent narrative review found that electroconvulsive therapy is a typically safe and effective treatment for pregnant women with psychiatric disorder and that the greatest risk to the mother is early labour and preterm contractions [85].

Antipsychotics during pregnancy, with the exception of risperidone, were proved by recent research not associated wtih clinically significant increase in congenital abnormalities in children born to mothers who used first- or second-generation antipsychotics during pregnancy [86]. Studies that take other factors into account have shown little evidence to support earlier claims of an increased risk of gestational diabetes mellitus, particularly with second-generation antipsychotics [87].

Even if the effect is less pronounced than previously believed, using lithium during the first trimester may increase the chance of

heart deformity. Risk might also be dose-related [88]. On the other hand, a meta-analysis of cohort studies discovered an increase in overall malformations but a non-significant increase in heart malformation [89]. The possibility of Ebstein's anomaly has already received special attention. Despite the fact that some studies have revealed indications of a little increase, a recent surveillance analysis discovered that lithium exposure is less probable than maternal mental health concerns in general to be the cause [89]. Lithium levels in blood are likely linked to negative effects on the foetus, and maternal levels are closely related to these levels as well during birth. Given the high amounts of the drug in breast milk and the potential for toxicity, lithium is one of the few drugs for which nursing is not advised [90]. Lithium needs more frequent monitoring when it is prescribed during pregnancy (serum levels every month and weekly from 34 weeks). The neuromuscular blocking effects of some medications may be enhanced by lithium. The standard recommendation is to stop taking lithium at the beginning of labour and start it again once the baby is delivered. This, however, has been contested in recent assessments as putting women at more risk at a period when relapse is more likely [91].

Antiepileptic medication use for treating epilepsy is the source of the vast majority of data about its safety during pregnancy. Major malformations including as craniosynostosis, oral cleft, hypospadias, polydactyly, and atrial septal abnormalities are all significantly more common in those who use valproate [90]. Although the risk is lesser than it is for valproate, carbamazepine has also been connected to neural tube abnormalities and other deformities. There is currently substantial evidence linking valproate to long-term neurodevelopmental impacts, including an elevated risk of intellectual disability and autistic spectrum disorder. Although less frequently than with valproate, carbamazepine has been connected to intellectual disability [92]. There is still debate regarding carbamazepine's potential association with autism spectrum disorder [15]. Major malformations, intellectual disability, or autism spectrum condition have not been definitively linked to lamotrigine, a medication also used to stabilise mood [15]. Only if a pregnancy prevention programme is in place should valproate be given to women who are of reproductive potential. Currently, it is advised against giving valproate to expectant mothers in order to treat bipolar disorder [15].

3. Conclusions

Women of reproductive age frequently suffer from psychiatric disorders. The risk of developing anxiety, bipolar, and depressive disorders is especially significant during the perinatal period.

Maternal mental illness during pregnancy has been associated to a number of unfavourable outcomes including preterm delivery, neonatal hypoglycemia, poor neurodevelopmental outcomes, and disturbed attachment. Additional negative perinatal outcomes

Include stillbirth, small-for-gestational-age foetuses, foetal distress, and placental anomalies. Pregnancy is a significant risk factor for developing a new mental health condition, especially when there have been unanticipated outcomes such as unexpected caesarean deliveries, unintended pregnancies, miscarriages, and the perception of a traumatic or unpleasant birth experience have all been linked to an increased risk of developing depression after delivery. The likelihood of developing an acute mental illness during the puerperium, such as a psychotic episode or bipolar disorder relapse, is significantly higher. Maternal mental illness during pregnancy has been associated to a number of unfavourable outcomes including preterm delivery, neonatal hypoglycemia, poor neurodevelopmental outcomes, and disturbed attachment. Other adverse perinatal outcomes include placental abnormalities, small-for-gestational-age foetuses, foetal distress, preterm delivery, and neonatal hypoglycaemia. Untreated mental illness among pregnant women increases their risk for high-risk behaviors like promiscuity, exposure to STDs, smoking, drinking, and drug use, as well as receiving inadequate prenatal care and malnutrition. Better outcomes for the mother, her foetus/infant, and her family arise from the assessment and treatment of perinatal psychiatric illnesses.

Areas for further research

The authors recommend further primary research in this area of pregnancy-associated comorbidity.

Data availability statement

- Data associated with the study has NOT been deposited into a publicly available repository.
- Data will be made available on request.

CRediT authorship contribution statement

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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