Expert Consensus on Screening, Diagnosis, and Treatment of Perinatal Mental Disorders (Post-Print)

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Abstract

Perinatal mental disorders are among the common conditions during pregnancy and may lead to adverse outcomes for pregnant and postpartum women and their offspring. Currently, an increasing number of women may experience emotional problems such as anxiety and depression during the perinatal period, and women with a history of mental illness also face the risk of recurrence during pregnancy. Meanwhile, the lack of corresponding clinical guidelines for the diagnosis and treatment of perinatal mental disorders poses more severe challenges for clinicians in their practice. The consensus writing group has integrated cutting-edge evidence-based medical evidence and clinical practice from related fields both domestically and internationally; the consensus content covers the epidemiology and pathogenesis, clinical manifestations, clinical assessment, diagnosis, treatment, and management of perinatal mental disorders, which can provide reference and guidance for clinical practice. This consensus advocates comprehensive, whole-course, tiered, and multidisciplinary collaborative diagnosis and treatment, aiming to help frontline clinicians screen perinatal women as early as possible, conduct reasonable assessments, make clinical diagnoses, and provide them with necessary psychological interventions and clinical medication.

Full Text

Preamble

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Abstract: Perinatal mental disorders are among the most common conditions during pregnancy and may lead to adverse outcomes for both mothers and offspring. An increasing number of women currently experience emotional problems such as anxiety and depression during pregnancy and childbirth, and women with previous mental disorders also face relapse risks during pregnancy. Simultaneously, the lack of clinical guidelines for diagnosing and treating perinatal mental disorders has made clinicians' work even more challenging. The expert writing group integrated the latest evidence-based medical evidence and clinical practice from related fields domestically and internationally. The consensus covers the epidemiology and pathogenesis, clinical manifestations, clinical evaluation, diagnosis, treatment, and management of perinatal mental disorders, providing reference and guidance for practical clinical work. This consensus advocates comprehensive, whole-process, hierarchical, multidisciplinary collaborative diagnosis and treatment, aiming to help frontline clinicians screen perinatal women early, conduct rational assessments, make clinical diagnoses, and provide necessary psychological interventions and clinical medication.

Keywords: Mental disorders; Peripartum period; Screening; Evaluation; Diagnosis; Treatment; Expert consensus

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1 Epidemiology and Pathogenesis

A foreign meta-analysis showed that the incidence of depression during pregnancy ranges from 7.4% to 12.8% in the first trimester. Domestic epidemiological studies indicate that the incidence of perinatal depression is 3.8%-16.7%, perinatal anxiety is 6.1%-7.7%, obsessive-compulsive disorder is 1.2%-5.2%, perinatal phobia is 1.4%-9.1%, social anxiety disorder is 2.0%-6.4%, and postpartum psychosis is 0.1%-0.2%. The pathogenesis of perinatal mental disorders is associated with biological, psychological, and social factors. Hormonal influences, particularly estrogen, progesterone, and thyroid hormones, play important roles in mood regulation, while differences in serotonin sensitivity are also significant. Sleep deprivation and circadian rhythm disruption during late

pregnancy, childbirth, and newborn feeding, along with negative life events, contribute to emotional instability. Women with chronic diseases, smoking habits, substance abuse, poverty, or experiences of domestic violence face substantially increased risks of developing mental illness during the perinatal period.

2 Clinical Manifestations

2.1 Perinatal Depression

Perinatal depression includes prenatal depression and postpartum depression (PPD), representing common complications during pregnancy and the puerperium. Affected women exhibit loss of interest, low mood, poor concentration, sleep disturbances, and suicidal ideation, along with symptoms overlapping with pregnancy reactions such as somatic symptoms, fatigue, decreased energy, and changes in sleep and appetite. Depression is more common during the first and last three months of pregnancy. While most women' s postpartum depressive symptoms improve within 3–6 months after delivery, approximately 30% continue to experience symptoms for up to one year postpartum, and some may persist for several years. Predictive factors for persistent depressive symptoms include poor marital relationships, inadequate maternal care, sexual abuse, financial difficulties, and personality traits such as anxiety and low self-esteem.

2.2 Perinatal Anxiety

Perinatal anxiety primarily manifests as fear of the delivery process and concerns about the newborn, typically characterized by fears of causing harm to the patient, infant, or partner, with or without depressive symptoms. Clinical presentations include restlessness and excessive worry, inability to calm thoughts, fatigue, frequent headaches and gastrointestinal discomfort, and in more severe cases, panic attacks and poor nighttime sleep. Symptom duration ranges from several weeks to months or even longer.

2.3 Postpartum Obsessive-Compulsive Disorder

Postpartum obsessive-compulsive disorder refers to the first onset of obsessive thoughts or compulsive behaviors during pregnancy or within four weeks postpartum, which may be accompanied by depressive symptoms. Postpartum symptoms primarily involve compulsive checking behaviors (often excessive concern about infant health), particularly monitoring whether the infant is still breathing at night and obsessive worries about the baby ingesting dirt or bacterial contamination. Women with OCD experience distress from these thoughts and generally do not disclose them to others. Many may severely avoid their infants due to fear of causing actual harm.

2.4 Postpartum Post-Traumatic Stress Disorder (PPTSD)

PPTSD is a delayed psychopathological reaction following childbirth trauma. Core symptoms include intrusive symptoms (such as intrusive images of severe blood loss or emergency hospitalization), avoidance symptoms (avoiding hospital visits if delivery occurred in a hospital), negative alterations in cognition and mood (such as believing oneself responsible for the unplanned birth), and altered arousal and reactivity (such as hypervigilance to the infant's every movement). PPTSD patients may also exhibit various emotions including fear, anger, shame, or guilt. Influencing factors include prenatal susceptibility factors (such as history of depression and traumatic events), delivery risk factors (such as pregnancy complications and neonatal complications), and postpartum maintenance factors (such as inadequate postpartum social support and insomnia).

2.5 Postpartum Psychosis

Postpartum psychosis typically onset 1-4 weeks after delivery, accompanied by mental symptoms such as agitation, irritability, emotional instability, delusions, and behavioral disturbances. Patients usually lack insight into their illness/symptoms, and in severe cases may exhibit dangerous behaviors including homicide (particularly of infants) and/or suicide, requiring immediate medical intervention. Important risk factors include history of mental illness (such as schizophrenia, bipolar disorder) and sleep deprivation.

2.6 Alcohol and Other Substance Addiction

WHO has issued evidence-based guidelines on identifying and managing substance use during pregnancy, identifying substance use as an important factor contributing to increased mortality in the first year after childbirth. Alcohol consumption during pregnancy is associated with miscarriage, preterm birth, low birth weight, and developmental delays collectively known as fetal alcohol spectrum disorders (FASD). Studies show that perinatal use of psychoactive substances (PS) including alcohol, cannabis, cocaine, amphetamines, and opioids leads to multiple adverse outcomes for both mothers and offspring, such as maternal lethargy and apathy, weight gain, neurocognitive impairment, menstrual cycle disorders, Korsakoff syndrome, and dependence; and offspring outcomes including lower weight, malformations, and in severe cases, miscarriage/stillbirth and hemorrhage.

2.7 Perinatal Sleep Disorders

Perinatal sleep disorders are mostly accompanying symptoms of perinatal depression or anxiety, primarily manifested as late sleep timing, insufficient sleep duration, reduced sleep efficiency, and sleep disruption, which affect patients' quality of life and may be related to providing round-the-clock infant care. Most perinatal sleep disorders occur during the postpartum period, with sleep problems typically persisting and peaking in the first postpartum month, especially

among first-time mothers. Maternal sleep patterns during pregnancy may also affect infant sleep patterns, as maternal sleep disruption during pregnancy is associated with poor infant sleep quality, which in turn leads to postpartum maternal sleep disruption.

3 Clinical Assessment

3.1 High-Risk Populations Requiring Perinatal Mental Health Risk Assessment

High-risk populations include: (1) patients with traumatic experiences during pregnancy and childbirth; (2) patients with previous mental illness history or new-onset mental disorders; (3) patients experiencing psychological distress due to social factors such as marital disharmony, domestic violence, or spousal substance abuse during pregnancy; (4) childbirth-related events such as stillbirth or psychological distress related to infant gender; (5) patients with infants' medical conditions and those experiencing psychological distress due to mother-infant separation from neonatal intensive care unit (NICU) admission; and (6) patients who may experience mother-infant bonding disorders, postpartum blues, or PPD after delivery.

3.2 Perinatal Mental Disorder Assessment Process

Assessment of perinatal mental disorders currently relies primarily on detailed history collection, mental examination, and scale evaluation, supplemented by imaging and biochemical examinations to exclude organic diseases. For high-risk populations, screening is recommended once during early pregnancy and once during late pregnancy. While there is currently no unified standard for screening timing points, multiple screenings are recommended for pregnant women with high-risk factors under the collaboration of experienced psychiatrists and obstetricians. Early and effective mental disorder screening helps reduce the incidence of adverse perinatal events (such as maternal suicide and child harm) and improves maternal quality of life.

3.3 Selection of Perinatal Mental Disorder Screening Scales

Commonly used clinical screening scales for perinatal mental disorders are presented in Table 1 .

4 Special Assessment of Suicide and Harmful Behaviors in Perinatal Women

Perinatal mental disorder patients often present risks of self-harm and harm to others, necessitating risk assessment including suicide risk, infanticide risk, and risk of harming others. Detailed history inquiry should be conducted for any pregnant or postpartum women with suicidal thoughts, plans, or intentions,

and the Suicide Risk Assessment Scale (NGASR) can be used to evaluate suicide risk. Patients with postpartum psychosis (such as manic episodes) may have infanticidal ideation and risk of harming infants, even committing infanticide. The Edinburgh Postnatal Depression Scale (EPDS) or Patient Health Questionnaire-9 (PHQ-9) are recommended to assess perinatal depression, with the Mood Disorder Questionnaire (MDQ) added to screen for bipolar disorder.

5 Diagnosis of Perinatal Mental Disorders

Due to the lack of characteristic physical manifestations, laboratory, and imaging findings, diagnosis of perinatal mental disorders relies primarily on detailed history collection, mental examination, psychological assessment, and other laboratory examinations. Diagnosis is established based on symptomatology, severity, disease course, and exclusion of other diseases, combined with domestic and international diagnostic standards. This consensus adopts relevant disease diagnostic criteria from the International Classification of Diseases, 11th Revision (ICD-11). The detailed screening process is shown in Figure 1 [Figure 1: see original paper].

6 Treatment

6.1 General Principles

Treatment of mental disorders in perinatal women should consider both disease severity and impact on maternal and fetal health. The current treatment principle advocates "comprehensive, whole-process, hierarchical, multidisciplinary collaborative diagnosis and treatment to ensure maternal and fetal safety."

6.2 General Guidelines

(1) For mild to moderate episodes of perinatal depression, anxiety, postpartum OCD, and PPTSD, the principle is to treat with non-pharmacological means only. If anxiety or depressive symptoms persist, recur, or worsen in severity, or if response to psychotherapy alone is poor, medication may be used. (2) Severe perinatal mental illness, typically with sudden onset, severe psychotic symptoms, and risks of suicide and harm to others, recommends second-generation antipsychotics (SGA). (3) Due to significant emotional fluctuations, perinatal women are prone to dependence on tobacco, alcohol, and cannabis, and abuse and addiction to these substances should be prevented.

6.3 Non-Pharmacological Treatments

Non-pharmacological treatments include social intervention, social support, psychotherapy, and physical therapy.

6.3.1 Social Intervention Social intervention includes prenatal/postnatal health education. Standardized pregnancy health education can enhance pregnant women' s self-care awareness and self-monitoring capabilities, develop scientific parenting concepts and skills, and thereby ensure the health and safety of pregnant women, fetuses, and newborns.

6.3.2 Social Support Good interpersonal relationships provide positive emotional support, information sharing, material assistance, and value transmission. Appropriate social support is a key factor in individuals' adaptation to stressful events and is closely related to mental health, mitigating the negative impact of stressful events on mental health. Pregnant women should be encouraged and taught to develop positive social networks to improve social support.

6.3.3 Psychotherapy Selection of psychotherapy for perinatal patients should evaluate and weigh the influence of specific symptoms and interpersonal factors, recognizing that not all psychotherapies are effective for all patients. (1) Cognitive Behavioral Therapy (CBT): Focuses on identifying and modifying negative or dysfunctional thinking patterns and should be the initial treatment for mild to moderate depression during pregnancy. Exposure-Response Prevention (ERP), a form of CBT, has clinical efficacy rates of 70%–80% for non-postpartum OCD adult patients, reducing symptoms in 50%–60% of patients, though research on its effectiveness for postpartum OCD is limited. (2) Computerized CBT (CCBT): An emerging psychotherapy model using human-computer interaction. (3) Interpersonal Psychotherapy (IPT): Proven effective for treating postpartum depression and equally effective for perinatal PTSD. (4) Group Therapy: Helps postpartum women overcome common difficulties including infant sleep and feeding problems, marital and family relationships. Cognitive-behavioral group therapy effectively improves anxiety and related symptoms in women with perinatal anxiety disorders. (5) Family Therapy: Improves patients' family and interpersonal relationships, eliminates barriers among family members, and enhances mutual understanding to help patients improve depressive mood.

6.3.4 Repetitive Transcranial Magnetic Stimulation (TMS) TMS can avoid pharmacological effects on the fetus and is significantly less invasive than other available neurostimulation methods such as electroconvulsive therapy and vagus nerve stimulation. TMS is a viable option for pregnant or postpartum depressed patients, with clinical efficacy comparable to medication.

6.4 Pharmacological Treatment

In drug selection, the principle of "single medication" should be followed as much as possible, choosing drugs with evidence-based research confirming minimal risk to mother and infant, higher efficacy, and higher protein binding efficiency. The lowest effective dose should be given intermittently, and arbitrary drug changes

or combinations should be avoided. Patients should be informed about potential teratogenicity, drug efficacy, and non-pharmacological options; the fetus should be closely monitored (with appropriate fetal screening and monitoring); maternal disease severity and its impact on personal, social, and occupational functioning should be assessed; and drug risks, maternal disease risks, and treatment guidelines should be well understood, as shown in Tables 2 and 3 .

7 Treatment of Specific Conditions

7.1 Perinatal Depression

Treatment recommendations for acute PPD involve combining antidepressant medication with psychosocial interventions. Common antidepressants include selective serotonin reuptake inhibitors (SSRI), serotonin-norepinephrine reuptake inhibitors (SNRI), tricyclic antidepressants, and other antidepressants. In 2019, the U.S. Food and Drug Administration (FDA) approved brexanolone for treating PPD, though it has not yet been introduced in China. Drugs such as bupropion, trazodone, venlafaxine, and mirtazapine have limited reproductive safety research and should be avoided during pregnancy. If postpartum depression is accompanied by psychotic symptoms, postpartum psychosis, or suicidal behavior, antipsychotic medications or modified electroconvulsive therapy are needed in addition to antidepressants and/or mood stabilizers, depending on the exact nature of the illness. Currently, most pregnant patients tend to prefer SSRIs, but first-trimester exposure to SSRIs may increase the risk of fetal congenital malformations (especially cardiac problems with paroxetine) and requires caution. Fluoxetine is relatively safe, with approximately two-thirds of experts listing it as first-line medication, and some experts consider sertraline as a preferred option as well.

7.2 Perinatal Anxiety

Psychotherapy that poses no harm to the fetus or infant should be the first choice for treating anxiety disorders in perinatal women. If clinical symptoms require urgent management or if psychotherapy does not achieve ideal results, short-term pharmacological treatment may be considered, such as common antidepressants like sertraline and fluoxetine. Benzodiazepines are generally not recommended as monotherapy or adjunctive therapy, as their use during pregnancy may be associated with higher NICU admission rates and smaller neonatal head circumference. Currently, there is insufficient data on the efficacy and risks of buspirone use during pregnancy, so it should be avoided.

7.3 Obsessive-Compulsive Disorder Emerging in the Perinatal Period

Treatment principles are basically consistent with general OCD. In most cases, SSRI treatment is effective, with fluvoxamine maleate as the first choice, supplemented with small doses of atypical antipsychotics if necessary. Breastfeeding should be avoided during medication administration.

7.4 PPTSD

Psychotherapy should be the first choice for PPTSD treatment. If patients have indications for medication, such as severe PTSD and/or ineffective psychotherapy, or comorbid depression/suicidality, SSRI drugs (such as fluoxetine, sertraline, citalopram) are preferred to improve common symptoms including anxiety, insomnia, excessive startle response, intrusive trauma-related memories, emotional numbness, and avoidance behaviors. For flashbacks and frequent intrusive trauma, atypical antipsychotics (such as olanzapine, risperidone, aripiprazole) may be added. Every suspected PTSD patient should be referred to local psychiatric services for evaluation and treatment.

7.5.1 Schizophrenia

For schizophrenia treatment, single-agent antipsychotic therapy is preferred, usually with SGA as first choice. First-generation antipsychotics (FGA) or long-acting injectable antipsychotics (LAI) are not recommended for schizophrenia during pregnancy due to limited evidence-based safety data. If patients respond well to FGA and changing medication poses relapse risk, the decision to continue should be made after informing the patient of the risks. If pregnancy occurs during LAI treatment, considering the long metabolic cycle of LAI in the body, discontinuation may not immediately reverse adverse drug effects. Most antipsychotics are compatible with breastfeeding, but clozapine is contraindicated.

7.5.2 Bipolar Disorder

In bipolar disorder, some patients may require mood stabilizers. Valproate and carbamazepine should be avoided during pregnancy due to risks of congenital malformations and neurodevelopmental disorders. Clinically, mood stabilizers for perinatal bipolar patients primarily consider lithium or lamotrigine. Low-dose lamotrigine (<325 mg/d) carries relatively low teratogenic risk and may be continued after excluding contraindications and obtaining informed consent. Patients requiring lithium treatment may use it after excluding contraindications and obtaining informed consent.

7.6 Alcohol and Other Substance Use

Alcohol should be prohibited. For patients with alcohol addiction, professional alcohol withdrawal intervention is recommended. Mothers with alcohol dependence and significant withdrawal symptoms may receive short-term benzodiazepine treatment. For severe withdrawal symptoms, lorazepam or diazepam may be considered. Additionally, cannabis use is associated with increased risks of mood disorders, autism spectrum disorders, and attention deficit hyperactivity disorder in offspring. Smoking (including passive smoking) is associated with risks of preterm birth, low birth weight, oral and lip malformations, and maternal hemorrhage during delivery, so tobacco use should be reduced or prohibited during pregnancy.

7.7 Perinatal Sleep Disorders

Common treatment approaches for perinatal sleep disorders include psychological intervention, educational intervention, and lifestyle intervention. Psychological interventions are therapies based on psychological theories aimed at changing cognition, attitudes, or emotions. Educational interventions focus on providing participants with practical information and strategies to improve or support mood and sleep. Lifestyle interventions include various methods such as yoga, massage, listening to music, and drinking herbal teas. Additionally, light therapy as a treatment modality can help regulate individual biological rhythms to improve sleep.

8 Treatment During Lactation

During lactation, the lowest effective dose of medication should be used, preferably with single-agent therapy. Drugs with low relative infant dose (RID) (preferably <10%) are compatible with breastfeeding. Since drugs reach steady-state levels after several days of treatment, breastfeeding does not need to be stopped for hours after each dose, and on-demand feeding is recommended. Infants should be monitored for signs of drug-related toxicity, such as excessive sedation, weakness, respiratory depression, cyanosis (with sedatives), excessive crying, irritability, diarrhea, nervousness, seizures (with antidepressants), and rigidity, poor sucking, feeding difficulties, or irritability (with antipsychotics). If any signs of toxicity appear, medication should be reviewed and breastfeeding stopped immediately. For premature infants, low birth weight infants, or infants with medical/surgical conditions, pediatric consultation should be sought regarding breastfeeding safety. One concern with psychotropic medication use is potential developmental delay in infants, but such delays are usually mild and reversible, with infants catching up with peers after weaning and discontinuation of psychotropic exposure.

In summary, perinatal mental disorders are common conditions during pregnancy that have attracted clinical attention. Psychiatrists and psychosomatic medicine specialists in general hospitals need to collaborate with obstetricians: on one hand, obstetricians encounter many pregnant women with previous or current mental illnesses (as advances in mental illness treatment enable many affected women to have normal pregnancies); on the other hand, psychiatrists and psychosomatic medicine specialists frequently receive referrals of perinatal women requiring evaluation and treatment. Psychotropic medication use during pregnancy remains an ongoing challenge for clinicians and women with mental health problems. This expert consensus aims to provide practical recommendations for obstetric, psychosomatic medicine, and psychiatric clinicians regarding mental health screening, rational assessment, clinical observation, psychological intervention, and medication use (general principles of perinatal medication, benefits and risks of individual drugs, and treatment recommendations for specific conditions) for perinatal women. However, current clinical recognition and treatment rates for perinatal mental disorders remain low, necessitating active

feedback from clinicians in relevant departments on screening, diagnosis, and comprehensive treatment of perinatal mental disorders to further improve and enrich this consensus.

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References: [1] World Health Organization. Guide for integration of perinatal mental health in maternal and child health services[R]. Geneva: World Health Organization, 2022. [2] World Health Organization. World mental health report: transforming mental health for all[R]. Geneva: World Health Organization, 2022. [3] NICE. National clinical guideline number 192: antenatal and postnatal mental health clinical management and service guidance updated edition[EB/OL]. (2020-01-11)[2023-01-05]. https://www.nice.org.uk/guidance/CG192. [4] WAQAS A, KOUKAB A, MERAJ H, et al. Screening programs for common maternal mental health disorders among perinatal women: report of the systematic review of evidence[J]. BMC Psychiatry, 2022, 22(1): 54. DOI:10.1186/s12888-022-03694-9. [5] BENNETT H A, EINARSON A, TADDIO A, et al. Prevalence of depression during pregnancy: systematic review[J]. Obstet Gynecol, 2004, 103(4): 698-709. DOI:10.1097/01.AOG.0000116689.75396.5f. [6] FENG Y J, SHEN K. Obstetrics and gynecology[M]. 2nd ed. Beijing: People' s Medical Publishing House, 2010. [7] UGUZ F, AKMAN C, KAYA N, et al. Postpartum-onset obsessive-compulsive disorder: incidence, clinical features, and related factors[J]. J Clin Psychiatry, 2007, 68(1): 132-138. DOI:10.4088/jcp.v68n0118. [8] WENZEL A, STUART S. Anxiety in childbearing women: diagnosis and treatment[M]. Washington: American Psychological Association, 2011. [9] SIT D, ROTHSCHILD A J, WISNER K L. A review of postpartum psychosis[J]. J Womens Health (Larchmt), 2006, 15(4): 352-368. DOI:10.1089/jwh.2006.15.352. [10] YONKERS K A, WISNER K L, STOWE Z, et al. Management of bipolar disorder during pregnancy and the postpartum period[J]. Am J Psychiatry, 2004, 161(4): 608-620. DOI:10.1176/appi.ajp.161.4.608. [11] Obstetrics Group, Chinese Society of Obstetrics and Gynecology, Chinese Medical Association. Expert consensus on screening, diagnosis and treatment of perinatal depression[J]. Chinese Journal of Obstetrics and Gynecology,

2021, 56(8): 521-527. DOI:10.3760/cma.j.cn112141-20210115-00022. [12] LONG X Y, LU Z. Assessment and intervention of common mental health problems in perinatal women[J]. Journal of Psychiatry, 2015, 28(4): 317-320. DOI:10.3969/j.issn.2095-9346.2015.04.025. [13] SUN S Y, LE T, BAO C Q, et al. Study on the correlation between perinatal depression and changes in day length[J]. Chinese Journal of Nervous and Mental Diseases, 2020, 46(4): 234-239. DOI:10.3969/j.issn.1002-0152.2020.04.009. [14] ROCHAT T J, TOMLINSON M, BÄRNIGHAUSEN T, et al. The prevalence and clinical presentation of antenatal depression in rural South Africa[J]. J Affect Disord, 2011, 135(1/2/3): 362-373. DOI:10.1016/j.jad.2011.08.011. [15] BIAGGI A, CONROY S, PAWLBY S, et al. Identifying the women at risk of antenatal anxiety and depression: a systematic review[J]. J Affect Disord, 2016, 191: 62-77. DOI:10.1016/j.jad.2015.11.014. [16] VLIEGEN N, CASALIN S, LUYTEN P. The course of postpartum depression: a review of longitudinal studies[J]. Harv Rev Psychiatry, 2014, 22(1): 1-22. DOI:10.1097/HRP.0000000000000013. [17] WOOLHOUSE H, GARTLAND D, MENSAH F, et al. Maternal depression from early pregnancy to 4 years postpartum in a prospective pregnancy cohort study: implications for primary health care[J]. BJOG, 2015, 122(3): 312-321. DOI:10.1111/1471-0528.12837. [18] FALAH-HASSANI K, SHIRI R, DENNIS C L. The prevalence of antenatal and postnatal co-morbid anxiety and depression: a meta-analysis[J]. Psychol Med, 2017, 47(12): 2041-2053. DOI:10.1017/S0033291717000617. [19] HUDAK R, WISNER K L. Diagnosis and treatment of postpartum obsessions and compulsions that involve infant harm[J]. Am J Psychiatry, 2012, 169(4): 360-363. DOI:10.1176/appi.ajp.2011.11050667. [20] ZHANG D, XU C. Research status of perinatal post-traumatic stress disorder[J]. Journal of Wuhan University (Medical Edition), 2018, 39(5): 846-849. DOI:10.14188/j.1671-8852.2017.0845. [21] PENG Y, ZHAO H P. Research progress on postpartum post-traumatic stress disorder[J]. Nursing Research, 2017, 31(3): 274-276. DOI:10.3969/j.issn.1009-6493.2017.03.007. [22] BROWNE P D, BOSSEN-BROEK R, KLUFT A, et al. Prenatal anxiety and depression: treatment uptake, barriers, and facilitators in midwifery care[J]. J Womens Health (Larchmt), 2021, 30(8): 1116-1126. DOI:10.1089/jwh.2019.8198. [23] CHANAL C, MAZURIER E, DORAY B. Use of psychoactive substances during the perinatal period: guidelines for interventions during the perinatal period from the French national college of midwives[J]. J Midwifery Womens Health, 2022, 67(s1): 17-37. DOI:10.1111/jmwh.13419. [24] SHAKESPEARE J, KNIGHT M. The confidential enquiry into maternal deaths 2015: lessons for GPs[J]. Br J Gen Pract, 2017, 67(658): 233-234. DOI:10.3399/bjgp17X690845. [25] KANG A W, PEARLSTEIN T B, SHARKEY K M. Changes in quality of life and sleep across the perinatal period in women with mood disorders[J]. Qual Life Res, 2020, 29(7): 1767-1774. DOI:10.1007/s11136-020-02437-1. [26] FACCO F, KRAMER J, HO K H, et al. Sleep disturbances in pregnancy[J]. Obstet Gynecol, 2010, 115: 77-83. DOI:10.1097/AOG.0b013e3181c4f8ec. [27] FIELD T, DIEGO M, HERNANDEZ-REIF M, et al. Sleep disturbances in depressed pregnant women and their newborns[J]. Infant Behav Dev, 2007,

30(1): 127-133. DOI:10.1016/j.infbeh.2006.08.002. [28] BHARADWAJ B, ENDUMATHI R, PARIAL S, et al. Management of psychiatric disorders during the perinatal period[J]. Indian Journal of Psychiatry, 2022, 64(s2): 414-428. DOI:10.4103/indianjpsychiatry.indianjpsychiatry_{{{12}}_{{22}}}. [29] HARRISON J E, WEBER S, JAKOB R, et al. ICD-11: an international classification of diseases for the twenty-first century[J]. BMC Med Inform Decis Mak, 2021, 21(s6): 206. DOI:10.1186/s12911-021-01534-6. [30] ORNOY A, WEINSTEIN-FUDIM L, ERGAZ Z. Antidepressants, antipsychotics, and mood stabilizers in pregnancy: what do we know and how should we treat pregnant women with depression[J]. Birth Defects Res, 2017, 109(12): 933-956. DOI:10.1002/bdr2.1079. [31] MA Y, LI Z J, XU Z Y, et al. Effect of cognitive behavioral therapy on coping styles of patients with schizophrenia[J]. Chinese Journal of Clinical Psychology, 2013, 21(3): 455-457. DOI:10.16128/j.cnki.1005-3611.2013.03.041. [32] LIU X Y, XU J H, SUN C, et al. Relationship between social support and perinatal depression[J]. China Journal of Health Psychology, 2022, 30(2): 318-320. DOI:10.13342/j.cnki.cjhp.2022.02.033. [33] BARKIN J L, OSBORNE L M, BUOLI M, et al. Training frontline providers in the detection and management of perinatal mood and anxiety disorders[J]. J Womens Health, 2020, 29(7): 889-890. DOI:10.1089/jwh.2019.8287. [34] BEDASO A, ADAMS J, PENG W B, et al. The relationship between social support and mental health problems during pregnancy: a systematic review and meta-analysis[J]. Reprod Health, 2021, 18(1): 162. DOI:10.1186/s12978-021-01179-4. [35] MOLENAAR N M, KAMPERMAN A M, BOYCE P, et al. Guidelines on treatment of perinatal depression with antidepressants: a systematic review[J]. Aust N Z J Psychiatry, 2018, 52(12): 1141-1155. DOI:10.1177/0004867418762057. [36] SIMOS G, HOFMANN S. CBT for anxiety disorders: a practitioner book[M]. New York: John Wiley & Sons, 2013. [37] STUART S. Interpersonal psychotherapy for postpartum depression[J]. Clin Psychol Psychother, 2012, 19(2): 134-140. DOI:10.1002/cpp.1778. [38] GREEN S M, DONEGAN E, MCCABE R E, et al. Cognitive behavioral therapy for perinatal anxiety: a randomized controlled trial[J]. Aust N Z J Psychiatry, 2020, 54(4): 423-432. DOI:10.1177/0004867419898528. [39] CHEN L X. Effect of family therapy on mental health and sleep in patients with postpartum depression[J]. Chinese Journal of Women and Children Health, 2022, 13(2): 57-60. DOI:10.19757/j.cnki.issn1674-7763.2022.02.012. [40] RASMUSSEN K G. Some considerations in choosing electroconvulsive therapy versus transcranial magnetic stimulation for depression[J]. J ECT, 2011, 27(1): 51-54. DOI:10.1097/YCT.0b013e3181da84c6. [41] VOICULESCU S E, ZYGOUROPOULOS N, ZAHIU C D, et al. Role of melatonin in embryo fetal development[J]. J Med Life, 2014, 7(4): 488-492. [42] BAN L, WEST J, GIBSON J E, et al. First trimester exposure to anxiolytic and hypnotic drugs and the risks of major congenital anomalies: a United Kingdom population-based cohort study[J]. PLoS One, 2014, 9(6): e100996. DOI:10.1371/journal.pone.0100996. [43] ABRAMOWICZ M, ZUCCOTTI G, PFLOMM J. Brexanolone (zulresso) for postpartum depression[J]. JAMA, 2019, 322(1): 1-2. DOI:10.1001/jama.2019.8730. [44] HAO W, YU X. Psy-

chiatry[M]. 7th ed. Beijing: People' s Medical Publishing House, 2013. [45] GUO S J. 'Birth' and 'Communication' : Migrant ethnic Chinese mothers' intercultural communication experiences with their maternity-care and health providers in New Zealand[D]. Hamilton: University of Waikato, 2013. [46] ANGELOTTA C, WISNER K L. Treating depression during pregnancy: are we asking the right questions[J]. Birth Defects Res, 2017, 109(12): 879-887. DOI:10.1002/bdr2.1074. [47] FREEMAN M P, GÓEZ-MOGOLLÓN L, MCINERNEY K A, et al. Obstetrical and neonatal outcomes after benzodiazepine exposure during pregnancy: results from a prospective registry of women with psychiatric disorders[J]. Gen Hosp Psychiatry, 2018, 53: 73-79. DOI:10.1016/j.genhosppsych.2018.05.010. [48] THORSNESS K R, WATSON C, LARUSSO E M. Perinatal anxiety: approach to diagnosis and management in the obstetric setting[J]. Am J Obstet Gynecol, 2018, 219(4): 326-345. DOI:10.1016/j.ajog.2018.05.017. [49] MULCAHY M, LONG C, MORROW T, et al. Consensus recommendations for the assessment and treatment of perinatal obsessive-compulsive disorder (OCD): a Delphi study[J]. Arch Womens Ment Health, 2023, 26(3): 389-399. DOI:10.1007/s00737-023-01315-2. [50] HUDAK R, WISNER K L. Diagnosis and treatment of postpartum obsessions and compulsions that involve infant harm[J]. Am J Psychiatry, 2012, 169(4): 360-363. DOI:10.1176/appi.ajp.2011.11050667. [51] LI L J, YU X. Guidelines for prevention and treatment of post-traumatic stress disorder[M]. Beijing: People' s Medical Publishing House, 2010. [52] REINSTEIN S A, COSGROVE J, MALEKSHAHI T, et al. Long-acting injectable antipsychotic use during pregnancy: a brief review and concise guide for clinicians[J]. J Clin Psychiatry, 2020, 81(6): 20ac13597. DOI:10.4088/JCP.20ac13597. [53] COSTE J, BLOTIERE P O, MIRANDA S, et al. Risk of early neurodevelopmental disorders associated with in utero exposure to valproate and other antiepileptic drugs: a nationwide cohort study in France[J]. Sci Rep, 2020, 10(1): 17362. DOI:10.1038/s41598-020-74409-x. [54] TOMSON T, BATTINO D, PERUCCA E. Teratogenicity of antiepileptic drugs[J]. Curr Opin Neurol, 2019, 32(2): 246-252. DOI:10.1097/WCO.0000000000000659. [55] HOWARD L M, KHALIFEH H. Perinatal mental health: a review of progress and challenges[J]. World Psychiatry, 2020, 19(3): 313-327. DOI:10.1002/wps.20769. [56] SWEENEY S, MACBETH A. The effects of paternal depression on child and adolescent outcomes: a systematic review[J]. J Affect Disord, 2016, 205: 44-59. DOI:10.1016/j.jad.2016.05.073. [57] AYERS S, BOND R, WEBB R, et al. Perinatal mental health and risk of child maltreatment: a systematic review and meta-analysis[J]. Child Abuse Negl, 2019, 98: 104172. DOI:10.1016/j.chiabu.2019.104172. [58] LADYMAN C, SWEENEY B, SHARKEY K, et al. A scoping review of non-pharmacological perinatal interventions impacting maternal sleep and maternal mental health[J]. BMC Pregnancy Childbirth, 2022, 22(1): 659. DOI:10.1186/s12884-022-04982-1. [59] LEE S Y, AYCOCK D M, MOLONEY M F. Bright light therapy to promote sleep in mothers of low-birth-weight infants: a pilot study[J]. Biol Res Nurs, 2013, 15(4): 398-406. DOI:10.1177/1099800412445612. [60] MCALLISTER-WILLIAMS R H, BALDWIN D S, CANTWELL R, et al. British Association

for Psychopharmacology consensus guidance on the use of psychotropic medication preconception, in pregnancy and postpartum 2017[J]. J Psychopharmacol, 2017, 31(5): 519-552. DOI:10.1177/0269881117699361.

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Note: Figure translations are in progress. See original paper for figures.