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Sleep disturbance in the peripartum period: The role of non-pharmacological interventions

Perturbação do sono no período periparto: O papel das intervenções não farmacológicas

JUNHO, 2022

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SLEEP DISTURBANCE IN THE PERIPARTUM PERIOD: THE ROLE OF NON-PHARMACOLOGICAL INTERVENTIONS

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Sleep disturbance in the peripartum period: The role of non-pharmacological interventions

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Abstract

Introduction: During the peripartum period sleep cycle alterations are very common, either due to normal hormonal and physical changes of pregnancy, or, due to increased demands related to caring for a newborn. It is important that health professionals are able to detect and properly treat pregnant women and new mothers with impaired sleep cycles and related mental health signs and symptoms. Excessive loss of sleep hours in the peripartum is associated with postpartum depression and anxiety disorders such as obsessive-compulsive disorder, with potential negative consequences to the newborn and the whole family. Objective: This narrative review primarily aimed to explore which non-pharmacological therapies can be used to treat insomnia in the peripartum.

Methods: A bibliographic search was carried out on PubMed, Scopus and PsycINFO databases for original articles, reviews or meta-analyses, on non-pharmacological interventions targeting sleep deprivation in the peripartum period. The time limit for publication was since 1999 to 2022 and only articles written in English, Portuguese, Spanish and Italian were included. The following keywords were used: (“peripartum period”, “postpartum”, “puerperium”) and (“insomnia”, “sleep deprivation”, “Sleep disturbance”) and (“non-pharmacological treatment”, “non-pharmacological therapy”, “non-pharmacological intervention”).

Results: Nineteen studies were identified, investigating the following interventions: cognitive behavioral therapy for insomnia, interpersonal psychotherapy, supportive counseling, mother-infant psychotherapy and sleep hygiene programs. Positive results have been found for early intervention with psychotherapies, especially cognitive behavioral therapy for insomnia in the peripartum, with high insomnia remission rates.

Conclusions: Despite the positive results, future research is needed to enhance early detection of sleep disorders in the peripartum period and establish adequate treatments, particularly non-pharmacological interventions. The development of cost-effective psychological interventions specific to this population may have a positive impact on public health worldwide.

Keywords: Insomnia; sleep deprivation; peripartum period; non-pharmacological intervention; psychotherapy

1 Introduction

It is well known that the peripartum period is usually full of expectation of positive experiences and joy. However, there is a big gap when it comes to informing families and, especially, mothers-to-be, about the real impact of caring for a newborn, totally dependent on their caregiving during 24 hours a day. Sleep deprivation is a reality for many mothers, sometimes starting even during pregnancy and lasting up to several months after delivery. Lack of sleep and the interruption of sleep cycles greatly increase the risk of mental health problems. This is a particularly important issue during the peripartum period [1, 2].

1.1 Insomnia, peripartum depression and anxiety symptoms

Insomnia may be defined by the presence of a sleep problem despite adequate opportunities for sleep, according to the International Classification of Sleep Disorders [3].The *Diagnostic and Statistical Manual for Mental Disorders* (DSM) adds that insomnia is also defined by complaints of difficulty initiating or maintaining sleep for at least three days a week, associated with dissatisfaction with the quantity or quality of sleep that leads to impairments in social, occupational, educational, academic, behavioral, or other important functional areas [4].

Insomnia and depression, as well as anxiety symptoms can go hand in hand, and sometimes it is difficult to distinguish which starts first, since there is a bidirectional causality. It is easy to understand that in the postpartum period it is difficult to find adequate sleep opportunities, but the perpetuation of this situation and other predisposing factors for depression can lead to the development of chronic insomnia. On the other hand, postpartum depression can seriously aggravate previously existing sleep problems [4,5,6].

The prevalence of depression in the peripartum period can be as high as one in seven women, across the social spectrum, but with more impact for the ones with worse socio-economic situations [7]. Sleep complaints are more often found in women than men and multifactorial causes are pointed out, such as hormonal changes, age-related physiological changes, physical, mental and social conditions. Adding to this, women in the peripartum period have an increased risk of suffering from insomnia, which is shown by evidence from both subjective and objective measurements that support the presence of sleep fragmentation, acute sleep deprivation during pregnancy and postpartum period [6, 8]. During this period, precipitating factors include physical changes in late pregnancy (fetus growth, hormonal changes, urination, and breathing difficulties) which are quickly replaced by infant nocturnal demands [9].

Approximately 50% of the individuals with insomnia symptoms during pregnancy, maintain clinically relevant symptoms two years after delivery [10]. These disturbances affect circadian rhythm and are correlated with depression at long term [11]. There are a number of prepartum predictors for postpartum sleep deprivation and among them should be highlighted: history of previous psychiatric illness, high levels of stress (particularly around the time of delivery), low levels of social support, education and relationship satisfaction [12, 13]. There is also a genetic/hereditary component that should be considered, with evidence pointing out that genetic factors can explain up to 38% of variance in postnatal depressive symptoms including insomnia (95% confidence interval 26-49%) [14]. Notwithstanding, no single gene has been identified as a predictor, thus heritability is hard to predict.

Available evidence indicates stress is a major determinant of women´s mental health during childbearing period and can invoke hormonal changes including increased activity of the hypothalamic–pituitary–adrenal axis, and reduced levels of norepinephrine, which can in turn trigger maternal depressive and anxiety symptoms [13]. In studies adjusting for the potential confounding effect of the previously described risk factors for depression, a direct association between sleep disturbances [diagnosed by the Pittsburgh Sleep Quality Index (PSQI)] and depression [identified by the Edinburgh Postnatal Depression Scale (EPDS)] was still found [5].

Pregnant women who develop insomnia report reduced quality of life [15], and are at increased risk of preterm birth, longer labor duration, instrumental deliveries, and unplanned cesarean sections. [15, 16] In cases of maternal depression, the child´s cognitive, emotional, and social development may be affected, since maternal-infant bonding suffers from these conditions. [1] Also, depressed women are less likely to breastfeed, which is advised for at least the first year of life, with known benefits for infant development [5,17].

1.2 Obsessive Compulsive Disorder (OCD) in the postpartum

The implications of maternal anxiety-related disorders, which include obsessive-compulsive disorder (OCD), are felt most strongly during this period. The average age of onset of OCD is 19.5 years and it is more prevalent in women. It also tends to cluster during the postpartum period (prevalence of up to 4.2% compared with 2.5% during pregnancy), due to the hormonal fluctuations of this period [18].

Health professionals may not be aware of the relationship between the postpartum period and the onset or exacerbation of obsessive-compulsive symptoms, which may lead to misdiagnose and undertreatment. It is also important to distinguish between this disorder and what are considered normal thoughts about ensuring adequate protection and well-being of newborns [19].

Women with a history of psychiatric illness, avoidant personality disorder or women that have had complications at birth, are more likely to develop OCD. Signs and symptoms of OCD in the postpartum period usually occur from 12 weeks onwards, but they can be present immediately after delivery. Obsessions seem to be more frequent than compulsions, ranging from extreme worries about the baby dying during sleep, to fear of directly or accidentally inflicting harm to the baby. Worries of cleanliness, symmetry, and precision are also common. Compulsions include constant controlling and checking the child, cleaning rituals, or avoidance of the infant due to impulse phobia [19, 20].

Postpartum OCD often appears with comorbidities such as depression or anxiety disorders. These conditions do not have homogeneouspresentation and so differential diagnosis can be challenging. However, it is important to distinguish the presentations of OCD from other postpartum psychiatric illnesses, such as postpartum psychosis, generalized anxiety disorder or postpartum depression. Women with postpartum OCD usually have insight of the pathological character of their obsessive thoughts and become anxious about it. This can help distinguish from postpartum psychosis, in which there is no insight about the illness [19,21].

1.3 Sleep interventions

Those who suffer from sleep disorders often seek help through pharmacological treatments. However, sleep promoters such as benzodiazepines or antihistamines, are not considered very safe during pregnancy or breastfeeding, involving risks for the development of the babies. Some antihistamines can be prescribed during pregnancy for the treatment of allergies and nausea, however, there are not enough randomized clinical trials supporting the use of these drugs for the treatment of sleep disorders during the peripartum period. Benzodiazepines, besides the aforementioned risks for the babies, also carry the downside of altering sleep stages, inducing an increase in the duration of the light sleep stages while decreasing the duration of the deep sleep stages, negatively impacting the regulation and maintenance of the sleep cycle and therefore the circadian rhythm. In this way, benzodiazepines induce a false sense of increased sleep time, while creating pharmacological dependence and being potentially harmful for pregnant women and fetus. Nevertheless, a high percentage of mothers self-treat their insomnia symptoms with pharmaceutical treatment [22, 23].

Despite the incredibly high rates of sleep deprivation-related symptoms consistently reported by women in the peripartum period and the lack of good pharmacological treatments, there is a large gap when it comes to non-pharmacological interventions research, therefore limiting the approach to treating peripartum insomnia [23]. Possible interventions among non-pharmacological treatments are psychotherapy, like cognitive behavioral therapy for insomnia, inter-personal therapy, counseling, sleep enhancement therapies, sleep hygiene information and infant sleep interventions. In this work, we aim to explore the available evidence regarding these interventions.

2 Methods

For this narrative review, a bibliographic search was carried out on PubMed, Scopus and PsycINFO databases for original articles, reviews or meta-analyses, on non-pharmacological interventions targeting sleep deprivation in the peripartum period.

The time limit for publication was since 1999 to 2022 and only articles written in English, Portuguese, Spanish and Italian were included. The following keywords were used: (“peripartum period”, “postpartum”, “puerperium”) and (“insomnia”, “sleep deprivation”, “Sleep disturbance”) and (“non-pharmacological treatment”, “non-pharmacological therapy”, “non-pharmacological intervention”).

The initial selection was based on title and abstract screening, followed by a full text analysis of selected articles. Snowballing process and grey literature search were also performed.

3 Results

Three randomized controlled trials (RCTs), one meta-analysis of RCTs, one quasi-experimental study, five cross-sectional studies, four longitudinal studies, three prospective cohorts, one retrospective study and eight narrative reviews were identified and included in the present review. Table 1 summarizes the main characteristics of the aforementioned studies. In the following sections the main non-pharmacological interventions identified are described and analyzed.

3.1 Cognitive behavioral therapy for insomnia (CBTI)

Cognitive behavioral therapy for insomnia (CBTI) is a skill based nonpharmacological treatment, recommended by international guidelines for the treatment of insomnia and is considered to have superior benefits compared to pharmacotherapy. [2] Recent studies have demonstrated the effectiveness of this therapy for women in the peripartum period and it is considered by women to be safer, when compared to pharmacological therapies. An open label trial demonstrated large effects on reducing sleep latency and waking after sleep onset, demonstrating the efficacy of cognitive behavioral therapy for insomnia in a group of pregnant women who completed a 5-week therapy program [24].

Other randomized clinical trials also support the efficacy of CBTI for this target population. Treatment protocols included general education about the sleep cycle and sleep during pregnancy, sleep hygiene information, sleep restriction therapy modified for pregnancy, stimulus control, strategies to reduce somatic and cognitive hyperarousal and relapse prevention [2]. This therapy also includes education about infants' sleep progression and tips to improve sleep in postpartum. Participants who received cognitive behavioral therapy achieved significant reductions in the Insomnia Severity Index (ISI) rating, which was the primary outcome of the study and a high remission rate of insomnia was also observed at the last observation of the study [1,2].

Treatment outcomes with in-person cognitive behavioral therapy are superior for women who receive it from a maternal and child sleep specialist, however, digital CBTI with follow-up at postpartum may be a good cost-effective alternative and one of the most accessible for women living in regions where there is a lack of cognitive behavioral therapy specialists [23].

3.2 Sleep enhancement training

Sleep enhancement training for pregnant women is a cognitive behavioral intervention with evidence-based protocols that promote relaxation and hyperarousal reduction. They have been derived from programs that were used effectively to treat chronic insomnia in adults and shift workers and proved to be feasible and effective in a 4-week home-based intervention, mainly by increasing the total sleep time of postpartum women by about an hour compared to the control [16].

3.3 Infant sleep Interventions

Recent studies evaluating infants' sleep show us that newborns sleep approximately 16 to 17 hours in a 24-hour period (where the maximum duration of sustained sleep is approximately 4 to 6 hours). Videosomnography suggests that one month old infants wake up approximately four times a night, in which 28% of these awakenings don´t need the support of caregivers to get back to sleep.

At twelve months of age, they experience an average of two to three awakenings per night, of which 45% are able to go back to sleep on their own, suggesting that infants' capacity for self-soothing increases with maturity. Therefore, providing information about typical sleep patterns of new parents and infants to normalize some sleep loss, giving opportunities for infants to transition between sleep cycles without parental intervention, and reducing wakefulness that is unrelated to feeding demands, are adequate early interventions during pregnancy and the first 6 months postpartum. This prevents mothers from developing chronic insomnia [25].

3.4 *Other psychotherapy modalities, counseling and sleep education*

A meta-analysis comparing psychological interventions such as interpersonal psychotherapy and counseling with treatment-as-usual controls, reported that only Interpersonal psychotherapy showed to be an effective intervention for the prevention and treatment of psychological distress in women during peripartum period, reducing symptoms of depression and anxiety as well as improving social support and relationship quality satisfaction [6,26].

Interpersonal psychotherapy and mother-infant psychotherapy group showed to be superior to care-as-usual group in the treatment of postpartum depressive symptoms, including insomnia. Mother's perceptions of their infants and adaptability were improved, increasing mother´s positive affect and verbalization with their infants [27].

In experimental studies that confirmed the positive effect of cognitive behavioral therapy for insomnia in pregnant women, with evaluation of postpartum outcomes, a sleep education program was used as an active control, that caused improvement in sleep patterns over no intervention. Even so, results were inferior to the CBTI intervention group. Primary prevention in form of sleep education includes information about the basic principles of sleep regulation, infant sleep cycles and promoting reassuring routines for sleep [16,23,25].

4 Discussion

Recently, there has been a growing attention from the scientific community to sleep related problems during the peripartum period. Despite the limited body of evidence available nowadays, it is possible to do some significant inferences regarding sleep disturbances and their treatment in pregnant women and new mothers. It is undeniable that perinatal insomnia is associated with important negative conditions, such as postpartum depression, generalized anxiety disorder, and obsessive-compulsive disorder. Empirically supported therapeutic options, particularly non-pharmacological interventions, are lacking.

Among the main non-pharmacological interventions identified, the importance of cognitive behavioral therapy is noteworthy, as it constantly obtains favorable results, especially if started early during pregnancy, producing positive effects in increasing the hours of sleep of women both pre and postpartum. Therefore, an efficient screening for insomnia in midpregnancy, detecting women with insomnia criteria from that moment on, can have an added value as a preventive intervention. Knowing that women with insomnia since prepartum period have increased levels of psychiatric disorders, antenatal insomnia should be an important point of concern for health-care workers who monitor these women. Protecting mother´s from sleep deprivation means improving their health and quality of life, affecting the overall family, and fostering the healthy, physical, cognitive and emotional development of the child.

Despite the positive results found, there is still a lack of professionals specialized in psychotherapy for insomnia, in the peripartum period. Additionally, specialists with these skills tend to be located in larger urban centers, thus further affecting access. A cost-effective option could be digital sleep enhancement programs with 3D sound technology and video-based cognitive behavioral therapy.

Finally, during the peripartum period, women are also more isolated, with less sharing of tasks among family members, which can make their mental health more vulnerable. Therefore, social and health organizations should implement measures to minimize these effects and promote social and psychological support to women and families during this period.

5 Conclusion

This narrative review highlights the importance of early detection and treatment of insomnia in the peripartum period. It links the high prevalence of insufficient sleep in the peripartum with symptoms of impaired mental health, which in some cases can become chronic, affecting women's quality of life and consequently infant´s development. Psychological interventions, such as psychotherapy and sleep education, are effective in the prevention and treatment of insomnia and other mental health related symptoms, with effects lasting long after birth and impacting not only the new mothers and their babies but the entire families. Health professionals should then focus on better identifying, preventing and treating sleep related problems in pregnant women and new mothers.

Future research, such as large longitudinal prospective studies and randomized controlled trials, should focus on enhancing early detection of sleep disorders in the peripartum period and establish adequate treatments, particularly exploring non-pharmacological interventions. This could greatly impact public health worldwide, with repercussions extending further to the economic and social sectors.

Declarations

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Conflict of Interest
The authors declare that they have no conflict of interest.

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Table 1 | Overview of the included studies

Author/Country/Year	Title	Study design	No. of Participants	Setting	Intervention of interest Timing of the Intervention	Scales	Conclusions
Tikotzky L, et al. / Israel / 2022 [9]	A longitudinal study of the links between maternal and infant nocturnal wakefulness. Sleep Health	Longitudinal prospective cohort	191	Community	Observational study without intervention Postpartum	- Number of night-waking (NW) - Length of nocturnal wakefulness (WASO).	Infant and maternal sleep are strongly intertwined, especially during the first 6 months.
Sivertsen B, et al./ Norway/ 2015 [10]	Trajectories of maternal sleep problems before and after childbirth: a longitudinal population-based study.	Longitudinal prospective cohort	1480	Community	Observational study without intervention Pre-partum and Postpartum	- Sleep: BIS and PSQI - Depression: Edinburgh Postnatal Depression Scale	Both insomnia and short sleep duration were found to be very common both before and after pregnancy
Britton JR. / USA / 2008 [12]	Maternal anxiety: course and antecedents during the early postpartum period	Longitudinal	296	Medical records	Observational study without intervention Postpartum	Scales of the State Trait Anxiety Inventory (STAI)	Women with high trait anxiety, low education, a history of depressed mood, and perception of high peripartum stress are at risk for experiencing anxiety at this time.

Table 1 | Overview of the included studies(continued).

Ahmed A, et al./ Canada / 2019 [13]	Trajectories of maternal depressive and anxiety symptoms from pregnancy to five years postpartum and their prenatal predictors.	Longitudinal epidemiologic	615	Community	Observational study without intervention Prepartum and Postpartum	- Perinatal depressive symptoms - EDPS - Perinatal anxiety symptoms - EDPS-A	Past psychiatric illness and increased stress during pregnancy are significant perinatal risk factors for maternal depression
Treloar SA, et al./ Australia / 1999 [14]	Genetic influences on postnatal depressive symptoms: findings from an Australian twin sample.	Retrospective	838	Community	Observational study without intervention Postpartum	- Postnatal depressive symptoms - Neuroticism and lifetime major depression occurring postnatally	Modest genetic influences on major depression occurring postnatally
Dørheim SK, et al./ Norway/ 2009 [5]	Sleep and depression in postpartum women: a population-based study.	Cross-sectional	2830	Population-based-hospital admission	Descriptive study without intervention Postpartum	- Sleep measurements - PSQI - Depression symptoms - EPDS	Poor sleep was associated with depression independently of other risk factors
Zambaldi, C.F, et al.. / Brasil / 2009 [20]	Postpartum obsessive-compulsive disorder: prevalence and clinical characteristics.	Cross-sectional	400	Community	Descriptive study without intervention Postpartum	- OCD- MINI - Types of OCD- YBOCS	Women have increased risk of OCD or obsessive-compulsive symptoms in the postpartum period

Table 1 | Overview of the included studies(continued).

Osnes RS, et al./ Norway / 2020 [18]	Mid-pregnancy insomnia is associated with concurrent and postpartum maternal anxiety and obsessive-compulsive symptoms: A prospective cohort study.	Prospective cohort	530	Hospital birth records and postpartum follow up appointments	Observational study without intervention Pre-partum and postpartum	- Insomnia - BIS - Anxiety- HSC - OCD- MINI	Mid Pregnancy insomnia is a marker for postpartum anxiety and increases the risk of developing OCD symptoms.
Sedov ID et al. / 2017 [22]	Insomnia Treatment Preferences During Pregnancy.	Cross-sectional	187	Medical consultation	Descriptive study without intervention Prepartum	Expert-validated descriptions of CBT-I, pharmacotherapy, and acupuncture.	CBT-I was preferred for insomnia during pregnancy
Felder JN et al./ USA / 2022 [23]	Randomized controlled trial of digital cognitive behavior therapy for prenatal insomnia symptoms: effects on postpartum insomnia and mental health.	Randomized controlled trial	208	Hospital healthcare system	Cognitive Behavioral Therapy for Insomnia Pre-partum and postpartum	- Primary outcome: Insomnia symptom severity - ISI and PSQI - Secondary outcome: depression - EPDS - Nocturnal cognitive arousal: PSAS-C	CBTI is efficacious for improving sleep during pregnancy, which has longer term benefits for the postnatal period but perhaps to a lesser extent. There is efficacy when CBTI is delivered through a fully automated digital intervention, although treatment outcomes may be superior when CBTI is given from a specialist with expertise in maternal and infant sleep.

Manber R et al. / USA./ 2019 [2]	Cognitive Behavioral Therapy for Prenatal Insomnia: A Randomized Controlled Trial	Randomized controlled trial	179	Community	Cognitive Behavioral Therapy for Insomnia Pre-partum	- Primary outcome - ISI score > 14 - Secondary outcomes - *remission of insomnia (ISI score < 8) *Objectively measured and self-reported time awake (ie, total wake time) * Depression - EPDS	Cognitive behavioral therapy for insomnia is an effective nonpharmacologic treatment for insomnia during pregnancy Remission of insomnia attained by 64% women in the CBTI group
Lee KA, et al./ USA / 2016 [16]	Sleep Enhancement Training for Pregnant Women.	Quasi-experimental	149	Community	Home-based cognitive behavioral training program Pre-partum and postpartum	Intervention group (3D living sound technology) was compared with 2 control groups from two randomized clinical trials of sleep interventions	Home-based cognitive-behavioral intervention demonstrates promise for promoting sleep in late pregnancy and early postpartum. It has high potential as a convenient, low-cost alternative to more resource-intensive group-based or professionally-administered interventions.

Table 1 | Overview of the included studies(continued).

Tomfohr-Madsen LM, et al./ Canada / 2017 [24]	Sleeping for Two: An Open-Pilot Study of Cognitive Behavioral Therapy for Insomnia in Pregnancy.	Longitudinal	13	Community	Cognitive Behavioral Therapy for Insomnia Pre-partum	Study investigated the effectiveness of group cognitive behavioral therapy for insomnia (CBT-I)	Significant reductions in insomnia symptoms and increases in subjective sleep quality were observed
Quin N, et al. / Australia / 2022 [25]	Preventing postpartum insomnia by targeting maternal versus infant sleep: a protocol for a randomized controlled trial (the Study for Mother-Infant Sleep "SMILE")	Randomized controlled trial	114	Community	1-Infant sleep booster 2-Cognitive behavioral therapy for insomnia 3-Sleep hygiene program Pre-partum and postpartum	Comparing Infant sleep intervention with Maternal sleep intervention and control condition - primary outcome: ISI - secondary outcomes: *Sleep quality *Sleep-related impairment *Mother-infant relationship *Mental health *Relationship satisfaction *Health-related quality of life *Memory	Ongoing study

Valla L et al. / Norway / 2022 [15]	Factors associated with maternal overall quality of life six months postpartum: a cross sectional study from The Norwegian Mother, Father and Child Cohort Study.	Cross-sectional	86.724	Community	Descriptive study without intervention Postpartum	- Maternal QoL- SWLS - Joy and anger- DES - Mothers' mental health- EPDS - Satisfaction with relationship- RSS - Child temperament- ICQ	Joy of motherhood, relationship satisfaction and infant sleep are the most important factors for mothers 'overall QoL 6 months after birth
Cuijpers, P, et al. /UK/ 2021 [6]	Psychological treatment of perinatal depression: A meta-analysis	Randomized controlled trials Meta-analysis	6270	Community	Cognitive behavioral therapy, Interpersonal Psychotherapy, Supportive counseling, Other non-specified therapies Pre-partum and postpartum	Comparison between psychotherapy and control condition - Depressive symptoms: BDI, BDI-II and HMD-17	Psychological interventions are probably effective in the treatment of perinatal depression, with effects lasting up to 6 to 12 months and probably also have effects on social support, anxiety, functional impairment, parental stress and marital stress

Table 1 | Overview of the included studies(continued).

Kalmbach DA,et al. / USA / 2022 [1]	DSM-5 insomnia disorder in pregnancy: associations with depression, suicidal ideation, and cognitive and somatic arousal, and identifying clinical cutoffs for detection.	Cross-sectional	99	Community	Descriptive study with no intervention Prepartum	- Sleep evaluation: DSM-5 criteria ISI PSQI PSASC PSASS - Depression: EPDS	Insomnia disorder affects a large segment of pregnant women (rate 19.2%), it was associated with depression, suicidality, nocturnal cognitive and somatic arousal and daytime sleepiness.
Clark R, et al. / USA / 2003 [27]	Psychotherapy for postpartum depression: a preliminary report	Clinical trial	39	Community	Mother-infant Psychotherapy And Interpersonal Psychotherapy Postpartum	Depressive symptoms clinical evaluation Postpartum	Mother-infant psychotherapy and Interpersonal psychotherapy were superior to a waiting list comparison group in reducing maternal depressive symptoms
Bright K, et al. /Canada/ 2020 [26]	Interpersonal psychotherapy to reduce psychological distress in perinatal women: A systematic review	Systematic review	45 (studies)	Community	Interpersonal Psychotherapy Pre-partum and postpartum	EPDS, HAM-D Pre-partum and postpartum	Interpersonal is an effective intervention for the prevention and treatment of psychological distress in women during peripartum period

BIS - Bergen Insomnia Scale
EPDS - Edinburgh Postnatal Depression Scale
PSQI - Pittsburgh Sleep Quality Index
MINI - Mini International Neuropsychiatric Interview
YBOCS- Yale Brown Obsessive-Compulsive Scale
HSC- Hopkins Symptom Checklist
SWLS - Satisfaction with Life Scale
DES - Differential Emotional Scale
RSS - Relationship Satisfaction Scale
ICQ - Infant Characteristics Questionnaire
DSM-5 - Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition

ISI - Insomnia Severity Index
PSAS-C - Pre-Sleep Arousal Scale's Cognitive
PSASS - Pre-Sleep Arousal Scale's Somatic
CBTI - Cognitive Behavior Therapy for Insomnia
BDI - Beck Depression Inventory
HAMD-17 - Hamilton Rating Scale for Depression