

REVIEW PAPER

Pregnancy and postpartum depression (PPD): A non-systematic review assessing the current state of knowledge on PPD

Gravidez e depressão pós-parto (DPP): uma revisão não sistemática sobre o estado da arte do conhecimento da DPP

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Abstract

Objective: Pregnancy and motherhood, while rewarding, can be challenging and transformative. The gestational and postpartum periods may cause various changes, making women susceptible to mental disorders like Postpartum Depression (PPD). This review aimed to present the current state of knowledge on pregnancy and PPD, with a focus on PPD prevention in pregnant women aged 20-40, as well as PPD prevalence worldwide and in Portugal. **Methods:** A non-systematic search of the literature was conducted using four databases: B-on, Scielo, RCAAP, and Google Scholar. One hundred articles published from 2002-2022 were selected for analysis. **Results:** Articles were classified into nine topics: Cognitive-Behavioral Theory Approach; Risk and Protection Factors; Diagnosis; Breastfeeding; Multidisciplinary Teams; Demystification of Pregnancy; PPD's Impact on Mother-Infant Relationship; Covid-19 Influence; and Environmental Sustainability. The analysis revealed that prevention research is limited, with existing studies focusing on intervention and treatment and emphasizing nursing health professionals. **Conclusions:** The current literature overlooks the potential benefits of multidisciplinary teams for better prevention and support for at-risk pregnant women. More research is needed to improve PPD prevention strategies.

Keywords: Postpartum Depression; Pregnancy; Prevention; Non-Systematic Review.

Resumo

Objetivo: A gravidez e a maternidade, embora recompensadoras, podem ser desafiadoras e transformadoras. Os períodos gestacional e pós-parto podem causar várias mudanças, tornando as mulheres suscetíveis a transtornos mentais, como a Depressão Pós-Parto (DPP). Esta revisão teve como objetivo apresentar o estado atual do conhecimento sobre a gravidez e a DPP, com foco na prevenção da DPP em mulheres grávidas com idades entre 20 e 40 anos, bem como na sua prevalência em todo o mundo e em Portugal. **Métodos:** Foi realizada uma pesquisa não sistemática da literatura utilizando quatro bases de dados: B-on, Scielo, RCAAP e Google Acadêmico. Foram selecionados para análise 100 artigos publicados entre 2002 e 2022. **Resultados:** Os artigos foram classificados em nove tópicos: Abordagem da Teoria Cognitivo-Comportamental; Fatores de Risco e Proteção; Diagnóstico; Amamentação; Equipes Multidisciplinares; Desmistificação da Gravidez; Impacto da DPP na relação mãe-bebê; Influência da Covid-19; e Sustentabilidade Ambiental. A análise revelou que a pesquisa sobre prevenção é limitada, com estudos existentes focando em intervenção e tratamento, e ênfase nos profissionais de saúde da enfermagem. **Conclusões:** A literatura atual subestima os possíveis benefícios das equipes multidisciplinares para uma melhor prevenção e apoio às mulheres grávidas em risco. São necessárias mais pesquisas para melhorar as estratégias de prevenção da DPP.

Palavras-Chave: Depressão Pós-Parto; Gravidez; Prevenção; Revisão Não Sistemática.

Introduction

Pregnancy and motherhood have long been considered unique experiences, often pleasant and pleasurable. However, they also require adaptations to physical, psychological, social, and emotional levels for women (Guerra et al., 2014). Despite being a natural part of human development, the gestational period brings about changes in women's health and is often accompanied by uncertainties, fears, anxieties, concerns, and learning, particularly in pregnancies with complications (Cihan et al., 2017; Cunha et al., 2012).

In modern industrialized societies, people often prioritize education and careers, seeking stability before deciding to have children. Consequently, they tend to have fewer children later in life than in previous generations (Papalia et al., 2007). The arrival of a newborn marks a significant transition in parents' lives, eliciting strong emotions but also anxiety about childcare, time consumption, and long-term commitments. Pregnancy and recovery can impact the couple's relationship, either enhancing intimacy or creating barriers. Cox and Paley (2003) noted that postpartum relationships might become more traditional, with women frequently responsible for childcare and household duties (Papalia et al., 2007). The transition to motherhood, spanning from early pregnancy to the first months post-delivery, is considered a typical life cycle event (Fonseca & Canavarro, 2017). According to Papalia et al. (2007), this period usually occurs between ages 20 and 40 when individuals experience peak physical condition, lifestyle choices impact health, thoughts, and judgments grow more complex, personality traits stabilize yet remain influenced by life events, and decisions are made about intimate relationships and lifestyles, often leading to marriage and parenthood.

As the pregnancy progresses, anxieties experienced by expectant mothers tend to shift with each trimester. During the first trimester, discomfort arises due to initial physical changes, fear of miscarriage, and increased irritability. In the second trimester, the growing baby's presence is more acutely felt, impacting the woman's emotions. In the third trimester, concerns and fears center around impending childbirth (Cunha et al., 2012). Sarmiento and Setúbal (2003, p. 264) emphasize the importance of

providing anticipatory guidance on pregnancy and childbirth progression, stating, "It is imperative to provide anticipatory guidance on the evolution of pregnancy and childbirth [...]. However, they should avoid excessive information, seeking to convey simple and clear guidance and observe its impact on each patient and their individuality." Prenatal care is crucial, as factors affecting the mother's body can influence the fetus's environment and development. Factors such as maternal nutrition, weight, physical activity, strenuous labor, substance use, and age can all contribute to the pregnancy's overall outcome (Papalia et al., 2007).

Given the significant changes, restructuring, and acquisition of new skills during pregnancy, it is crucial to evaluate this period with special attention, as it may impact the mother's mental health (Camacho et al., 2006; Canavarro, 2009). Papalia et al. (2007) emphasize that pregnancy brings about remarkable transformations, with no other life phase involving such rapid and extensive changes to the human body (Cunha et al., 2012). Although the birth of a baby is a culturally celebrated event often associated with happiness and satisfaction, motherhood also presents psychosocial stressors that can trigger mental disorders due to its demanding nature (Fonseca & Canavarro, 2017; O'Hara, 2009). The postpartum period can be challenging due to the emotional changes resulting from hormonal fluctuations, characterized by intense sadness, physical transformations, fear, and anxiety (Cunha et al., 2012). Furthermore, women must adapt to new demands, such as breastfeeding, while recovering from pregnancy and childbirth (Oliveira & Carvalho, 2017).

Zanotti et al. (2003, as cited in Fernandes & Cotrin, 2013) suggest that women are more vulnerable to developing mental disorders during this stage, as their physical and cognitive defenses are primarily focused on protecting and caring for the fragile newborn. Motherhood can sometimes be an emotionally challenging experience, marked by the desire and fear of being a mother, bodily changes, and new responsibilities (Hildebrandt, 2013). The woman embarks on a new routine, with new habits and duties, during a delicate phase of hormonal and emotional changes. This range of emotions may trigger the onset of mental health issues such as postpartum blues (also known as "baby blues"), postpartum depression (PPD), and postpartum psychosis (Menezes et al., 2012; Oliveira & Carvalho, 2017; Santos Júnior et al., 2009; Schmidt et al., 2005; Schwengber & Piccinini, 2003). Sadness is common in the postpartum period, making it crucial to differentiate between these three conditions for accurate PPD diagnosis and improved prevention (Felice, 2022). Postpartum blues, a common clinical condition affecting 40% to 80% of women, typically occurs in the first few days after delivery and lasts up to two weeks. Common symptoms include dysphoric mood, easy tearfulness, irritability, emotional instability, anxiety, and sleep disturbances. As it is frequent and considered part of the postpartum adjustment process, it is generally viewed as a normal reaction (Fonseca & Canavarro, 2017). Baby blues does not impair a woman's functionality and usually does not require professional treatment. However, if the situation persists, there is a heightened risk of developing PPD (Oliveira & Carvalho, 2017).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines PPD as a major depressive episode beginning in the peripartum (pregnancy and/or postpartum). According to the DSM-5, at least five symptoms must be present, with at least one of the first two being mandatory: (a) depressed mood,

(b) decreased interest or pleasure in activities, (c) weight loss or gain, (d) insomnia or hypersomnia, (e) psychomotor agitation or retardation, (f) fatigue or loss of energy, (g) feelings of uselessness or excessive guilt, (h) less ability to think or concentrate, and (i) thoughts of death or suicidal ideation ([American Psychiatric Association, 2014](#)). Other symptoms often associated with PPD include (a) irritability, insecurity, unpreparedness for caregiving, frequent crying, feelings of helplessness and hopelessness, loss of energy and motivation, guilt and inadequacy, sexual disinterest, eating and sleep disturbances, and difficulty coping with new situations, as well as psychosomatic complaints ([Klaus et al., 2000](#)). PPD is recognized as a disorder that typically begins after two weeks of delivery and can last up to the first six months, with varying intensity from mild and transient to severe, potentially progressing to psychosis ([Oliveira & Carvalho, 2017](#); [Santos Júnior et al., 2009](#)). Postpartum psychosis, a relatively rare clinical condition with an estimated incidence of 0.1% to 0.5% in women, usually occurs within the first two weeks after birth. It is characterized by a psychotic episode accompanied by disorganized thoughts, bizarre behaviors, lack of insight, delusions of reference, persecution, jealousy or grandiosity, sensory disturbances, and self-neglect ([Epperson & Ballew, 2006](#); [O'Hara, 2009](#)).

As previously mentioned, PPD does not have a unique set of symptoms resembling depression experienced during other life stages ([Milgrom & Gemmill, 2014](#)). It is crucial to prioritize women's mental health during the postpartum period, as this is the initial stage of contact between the baby and their environment, with the mother being the primary channel for communication. Consequently, a mother's physical and mental health is essential for the healthy development of her child's affective, social, motor, and cognitive abilities ([Cunha et al., 2012](#)). However, during the postpartum period, attention is often focused on the baby, causing the mother's needs to be overlooked by both herself and her support network ([Gomes et al., 2010](#)).

PPD has a significant global impact, affecting approximately 15% to 20% of women in the postpartum period ([Garfield et al., 2015](#)). In Portugal, PPD impacts between 10.6% and 23.3% of puerperal women ([Sousa, 2012](#); [Silva, 2021](#); [Ferreira et al., 2018](#)). PPD disproportionately affects less privileged social groups, warranting special attention ([Felice, 2022](#)). If left undiagnosed and untreated, PPD increases the risk of maternal suicide and may impair parenting abilities ([Bansil et al., 2010](#); [Carlesso et al., 2014](#); [Flores et al., 2013](#); [Goodman, 2007](#); [Lima & Tsunehiro, 2008](#); [Lucci et al., 2016](#)). In some cases, depressive symptoms may already be present during pregnancy, potentially contributing to the development of PPD postpartum. Arrais ([2005](#)) stresses that PPD occurs in women of all ages, social statuses, and school levels, a finding that has been further supported by subsequent research ([Arrais et al., 2014](#)). This disorder can occur in women who desire children and those who struggle to accept their pregnancies. A study reports that women with depressive symptoms during pregnancy often experience them during the postpartum period ([Fonseca & Canavarro, 2017](#)). Other studies have found that one in five pregnant women exhibits depressive symptoms in the third trimester ([Figueiredo & Conde, 2011](#); [Figueiredo et al., 2007](#)). Additionally, it has been reported that approximately 45% of first-time mothers develop PPD ([Mendes et al., 2019](#)).

Regarding the consequences of PPD for mothers, it is associated with various negative outcomes, such as heightened anxiety and psychiatric symptoms, diminished self-esteem, reduced confidence in parenting abilities, increased physical health issues, and a greater propensity for self-harming behaviors and inadequate self-care (Fonseca & Canavarro, 2017; O'Hara & McCabe, 2013; Tronick & Reck, 2009). Furthermore, PPD can compromise essential caregiving activities, including breastfeeding, establishing sleep routines, and providing proper healthcare for the child (Field, 2010; O'Hara & McCabe, 2013).

The role of fathers and partners is also crucial to consider, as research suggests that PPD can affect them as well, influencing their relationship with their wives and child and potentially leading to the development of their own postpartum depression (Felice, 2022). Postpartum Male Depression (PPMD) affects approximately 10.4% of fathers, peaking between the third and sixth month postpartum, during which its occurrence increases to 25% (Iaconelli, 2011). However, some specific symptoms may go unnoticed, such as overworking and engaging in activities to unconsciously escape domestic life (e.g., excessive TV watching or involvement in sports), resorting to excessive drinking and/or self-medication, experiencing frequent injuries or accidents, and exhibiting negative, aggressive, uncontrolled and/or impulsive behaviors, such as starting an extramarital affair or abandoning the family during the postpartum period (Iaconelli, 2011). Early diagnosis of PPD and PPMD is crucial, but it is equally important for healthcare professionals and family members to be attentive to the emotional state of both mothers and fathers during the postpartum period. By fostering awareness and providing support, the entire family's well-being can be better ensured.

Culturally, men often do not recognize when they are suffering, and they are expected to promote a state of well-being and fulfillment before the arrival of a child. However, the guilt associated with this societal expectation often makes it challenging to acknowledge feelings of suffering, fear, and doubts, delaying the search for help (Iaconelli, 2011). In addition, the sense of exclusion that fathers may experience during pregnancy contributes to the development of symptomatology because they might not have as much control or involvement in the routine as the mother has, for example, in breastfeeding (Buist et al., 2003; Goodman, 2005). With an increasing number of families having nuclear configurations, living farther from their extended families, and receiving little support from them, the father's role has become increasingly significant in this context (Silva & Piccinini, 2009).

In light of the significant impact of Postpartum Depression (PPD) on women, their partners, and children, this review aimed to examine the existing literature on PPD in pregnant women aged 20 to 40 years, an age range characterized by decisions about intimate relationships and parenting (Papalia et al., 2007). By examining the available research on PPD during pregnancy and contrasting it with studies on PPD during motherhood, we sought to identify gaps and provide insights into what has been covered and what still requires further investigation. Our goal was to contribute to a better understanding of PPD and its prevention, emphasizing accessible knowledge for clinicians worldwide who may have limited access to paid scientific articles but can access open-access materials.

Methods

Selecting the approach

We have chosen to conduct a non-systematic review for our study. While systematic reviews offer benefits in adhering to strict guidelines, they may overlook relevant works or neglect to publish studies with non-statistically significant outcomes (Eva, 2008). In contrast, non-systematic reviews provide valuable insights into a topic, recognize trends, and support evidence-based interventions (Cook, 2019). In addition, non-systematic reviews can better capture the diversity of opinions and methods in a research area, as well as provide a more comprehensive overview of the field (Grant & Booth, 2009). We believe that this approach will give a better understanding of the topic's current state-of-the-art and contribute to the existing body of knowledge.

Search strategy

In this non-systematic review, the first author conducted a comprehensive search of national and international literature for scientific articles related to pregnancy and PPD. The research aimed to identify studies focusing on risk and protective factors and prevention strategies for PPD, with an emphasis on intervention programs during the gestational period and involving multidisciplinary teams. To align with the study objectives, the authors defined specific keywords: "Postpartum Depression," "Pregnancy," "Cognitive-Behavioral Theory," "Prevention," and "Risk Factors." Boolean operators "AND" and "OR" and truncation symbol "*" were used to enhance the search.

The search was carried out in four digital databases: B-on, Scielo, RCAAP, and Google Scholar. Eligible scientific articles had to be published in English or Portuguese between 2002 and 2022 and available for open access. Articles requiring payment for access were excluded from our review, as we uphold the availability of scientific knowledge to a global audience of clinicians who may not pay for scientific papers but would read open-access texts.

Data analysis

A total of 100 articles were considered for analysis within the scope of this non-systematic review. In addition, articles that were relevant to the topic and met the search criteria, but were not identified through the initial search, were also considered for inclusion in the analysis. These articles were identified through the authors' prior knowledge and by reviewing the reference lists of the initially identified articles. To enhance the analysis of review's results, we organized the results and discussion into nine main topics: Cognitive-Behavioral Theory Approach; Risk and Protection Factors; Diagnosis; Breastfeeding; Multidisciplinary Teams; Demystification of Pregnancy; Impact of PPD on the Mother-Infant Relationship; Influence of Covid-19; and Environmental Sustainability. These topics primarily emerged from our review of the articles and were arranged in order of the most frequently studied to the least.

Results and Discussion

Cognitive-Behavioral Theory Approach

Cognitive Behavioral Therapy (CBT) is a widely recognized and effective psychotherapeutic approach for addressing Postpartum Depression (PPD). As a short-term therapy, CBT combines cognitive therapy components, such as identifying and challenging distorted thoughts, with behavioral therapy focusing on learning techniques and skills to modify maladaptive behavioral patterns (Werner et al., 2015).

Recognizing the risk and protective factors of PPD is essential for planning and implementing preventive measures. As Milhorini Greinert and Milani (2015) concluded, prevention programs are necessary due to the factors that may contribute to the development of the disorder, which has been further supported by Arrais et al. (2018). Psychotherapy equips women with the tools to regain self-confidence, understand the processes they are experiencing, and manage the associated emotions. In this approach, women can better perceive their circumstances and adopt behaviors and actions that help them overcome challenges imposed by the disorder (Sampaio Neto & Alvares, 2013).

Evidence suggests that CBT for PPD should address specific postpartum themes and interpersonal relationships, including culturally prevalent beliefs about motherhood, the impact of pregnancy and childbirth on women's identity, changes associated with motherhood, and the promotion of social support (O'Mahen et al., 2012).

CBT aims to help women recognize dysfunctional beliefs and thoughts related to parental roles, childbirth, breastfeeding, sexuality, and their idealized model for their child (Barbosa, 2013; Melo-de-Aguiar et al., 2013; Oliveira & Carvalho, 2017).

Techniques commonly used in this psychotherapy for PPD encompass psychoeducation, cognitive restructuring, adaptive behavioral activation strategies, problem-solving training, and communication skills training (Fonseca & Canavarro, 2017; Wenzel & Kleiman, 2014).

Risk and protection factors

Pregnancy and postpartum periods are critical for women's mental health and well-being (Arrais et al., 2018; Felice, 2022; Freitas et al., 2016). Various studies have identified risk and protective factors that influence pregnant and postpartum women. Risk factors can be categorized into five main categories: psychological/psychiatric factors, social support and interpersonal relationships, sociodemographic and contextual factors, physical and hormonal factors, and physical/obstetric risk factors (Arrais et al., 2018; Oliveira & Carvalho, 2017; Santos & Serralha, 2015; Silva et al., 2021).

Psychological and psychiatric risk factors include a history of depressive episodes before pregnancy, stress during pregnancy, gestational anxiety, gestational depression, previous PPD, personal psychiatric history, idealization of motherhood, dissatisfaction with pregnancy, and family history of mental pathologies.

Social support and interpersonal relationship factors encompass low social and family support, conflict and marital dissatisfaction, lack of partner support, lack of social support, exposure to intimate partner violence during pregnancy or puerperium, and family conflict.

Sociodemographic and contextual risk factors involve low educational status, unemployment or underemployment, being single, and maternal age.

Physical and hormonal risk factors include a history of premenstrual syndrome, hormonal dysregulation, and early postpartum anemia.

Finally, physical and obstetric factors consist of medical complications during pregnancy, unplanned or unwanted pregnancy, cesarean delivery, history of miscarriage, non-breastfeeding, lack of gynecological and prenatal follow-up, and problems during delivery (Arrais et al., 2018).

Protective factors identified in the literature include attending courses on parenthood preparation, engaging in moderate physical activity, establishing trust with healthcare professionals, and preparing for the tasks involved in the new role. Other protective factors include identifying a social support network, encouraging the father's involvement in pregnancy monitoring and childcare, conducting home visits during the puerperium, maintaining healthy eating habits, receiving paternal support, and involving the father in parenting tasks. Additional factors are optimism, high self-esteem, physical and psychological preparation for motherhood-related changes, feelings of security, breastfeeding, cultural factors (values and customs), high education levels, vaginal delivery, and self-monitoring of depressive conditions (Arrais et al., 2014; Felice, 2022; Freitas et al., 2016; Guerra et al., 2014; Oliveira & Carvalho, 2017; Santos & Serralha, 2015; Silva et al., 2021).

Diagnosis

Diagnosing PPD can be challenging due to the variety of symptoms typically experienced during the postpartum period (Cantilino et al., 2010). One factor complicating PPD recognition is the difficulty in reaching a consensus on defining the pathology (Sampaio Neto & Alvares, 2013). This issue is linked to specialized mental health care, which may not always result in accurate diagnoses for pregnant women. However, some self-administered instruments can help characterize PPD when applied by healthcare team members with the necessary knowledge and training. For instance, the Edinburgh Postpartum Depression Scale is a screening tool for identifying women at higher risk of developing PPD (Schardosim & Heldt, 2011). Optimal screening for this condition occurs between two weeks and six months postpartum but can also be applied during the prenatal period (Urdaneta et al., 2011).

Given the challenges in diagnosing PPD and its potentially devastating consequences, professionals emphasize that prevention is the most effective method for reducing the risk of developing this disorder and avoiding related personal and family issues (Viana et al., 2020). Studies suggest that assessing PPD during both gestational and postpartum can help prevent symptom worsening and protect the mother-child bond, as early diagnosis leads to more effective intervention (Feitosa et al., 2019). Upon formulating a diagnosis, healthcare professionals should adequately explain the patient's situation, addressing any

doubts or concerns she and her family may have, and reducing any feelings of guilt the woman might experience (Sampaio Neto & Alvares, 2013).

The literature indicates that women often underutilize professional help for PPD due to limited knowledge about the disorder's symptoms and treatment, the associated stigma, and practical barriers such as difficulty accessing healthcare services, lack of childcare, and work obligations (Fonseca et al., 2015).

Breastfeeding

The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of the baby's life (WHO, 2007). Despite this recommendation and a high breastfeeding rate immediately after birth, the number of breastfeeding mothers declines in the first few weeks postpartum (Figueiredo et al., 2013). Breastfeeding is associated with numerous benefits for both mother and child, providing psychological and physiological advantages. For the baby, breastfeeding reduces the risk of infectious diseases, obesity, high blood pressure, elevated cholesterol levels, and promotes motor and cognitive development (Horta et al., 2007; Kramer et al., 2008; Sacker et al., 2006; Shields et al., 2006). For the mother, breastfeeding positively affects physical and mental health by reducing blood pressure, decreasing the risk of breast and ovarian cancer, improving sleep, and moderating stress responses (Doan et al., 2007; Figueiredo et al., 2013; Gay et al., 2004; Tu et al., 2006).

Empirical evidence suggests that breastfeeding can protect against PPD by improving the mother's well-being and promoting greater emotional involvement with the child. These lead to enhanced mother-infant interaction, secure bonding, increased attention to child stress, and protection against child neglect (Figueiredo et al., 2013). Skin-to-skin contact before breastfeeding has been shown to be vital in reducing stress levels (Handlin et al., 2009).

Breastfeeding is less common among mothers with depressive symptoms, even though their children can benefit from it. Women with higher depression levels during pregnancy are less likely to intend to breastfeed their babies (Insaf et al., 2011). Depression levels in the third trimester have been found to be the best predictors of shorter breastfeeding duration (Figueiredo et al., 2013). The data indicate a link between not breastfeeding and both gestational depression and PPD. Furthermore, depression during pregnancy is a risk factor for not breastfeeding, while breastfeeding acts as a protective factor against PPD (Figueiredo et al., 2013).

Multidisciplinary teams

Training a multidisciplinary team is essential for providing care to women during their lives' vulnerable pre- and postpartum stages (Schmied et al., 2013). The team is responsible for recognizing symptoms, guiding patients to specialized care, offering psychological support, assisting the family, promoting coping strategies, and educating expectant mothers and their partners about potential complications (Silva, 2021).

In the structure and functioning of a multidisciplinary team, the psychologist plays a critical role in helping other professionals address the emotional factors involved in PPD (Sampaio Neto & Alvares, 2013).

From a preventive standpoint, psychologists should collaborate with physicians to identify PPD risk factors. Early diagnosis and adequate guidance enable a multi-professional approach, avoiding exacerbating mild conditions (Sampaio Neto & Alvares, 2013). According to Szejer and Stewart (1997, as cited in Cunha et al., 2012), most pregnant women at their first appointment with numerous doubts and fears, such as concerns about confirming their pregnancy, their body's suitability for pregnancy, and the well-being of their baby. Establishing a trusting relationship between women and their physicians, psychologists, nurses, and other professionals is essential for a healthy pregnancy (Cunha et al., 2012). During follow-up appointments, the team should provide guidance and clarification on PPD, as well as identify women with risk factors (Viana et al., 2020). Nurses play a critical role in detecting such cases, referring patients to specialized professionals, and being present throughout pregnancy planning, follow-up, and postpartum care. Relevant topics, such as childbirth, should be discussed to foster a better understanding among pregnant women (Viana et al., 2020). Byatt et al. (2012) and Guerra et al. (2014) emphasize that inadequate team training diminishes can undermine women's confidence and willingness to tackle problems.

It is crucial for professionals to possess competencies such as intuition, dynamism, critical judgment, and autonomy. They should also respect women's integrity, self-care, beliefs, values, and individuality (Alves et al., 2007). According to Simonetti (2004), the psychologist's role is to gain a broader understanding of the processes that influence PPD. Health professionals avoid adopting a judgmental or labeling perspective on the pathology. Instead, they should offer a supportive environment that allows pregnant women to feel valued, respected, and supported (Gomes et al., 2010). Implementing a postpartum screening program requires educational initiatives for the team to address potential factors and concerns, further preventing the development of PPD (Monteiro et al., 2020).

Demystification of pregnancy

During the pre- and postpartum periods, it is common for mothers to experience sadness and a diminished capacity to feel pleasure and joy (Arrais et al., 2014). This contrasts with the widespread belief that pregnancy is a joyful period for all women (Azevedo & Arrais, 2006; Tostes, 2012). Arrais (2005) note that society still perceives motherhood as instinctive, implying that women are born with maternal behaviors and knowledge. This belief suggests that women inherently know how to perform complex maternal roles due to their "feminine and maternal nature." Such ideology can lead many women to doubt their abilities as mothers.

Arrais (2005, p. 120) suggests that PPD may be linked to "disappointment in the face of a promised paradise." Mothers may feel frustrated, disillusioned, and responsible for their perceived failure, believing they should inherently know how to give birth, breastfeed, care for, and be good mothers (Arrais et al., 2014). Unfortunately, it is often only in the postpartum period that they realize motherhood is not

as easy as expected, wishing they had been better prepared and sought help (Arrais et al., 2014). These mothers suffer greatly under the weight of these expectations and demands, unable to fulfill their idealized maternal roles. Thus, it is essential to recognize that women are not born as mothers but become them.

Many women experience feelings that contradict the romanticized image of a calm, understanding, nurturing mother who makes great (Azevedo & Arrais, 2006). An idealized image of a healthy and perfect baby is often formed, but mothers may need to adjust their expectations when complications arise during pregnancy. This can threaten their self-esteem, leading to guilt, insecurity, and negative thoughts (Arruda & Marcon, 2007). The birth of a baby also represents the end of one life chapter and the beginning of another, causing significant intra- and interpersonal changes (Moraes & Crepaldi, 2012).

Research suggests that there is a low demand for help, which may be attributed to feelings of shame and failure, overwhelming family responsibilities, lack of knowledge about available resources, social stigma, time constraints, and doubts about treatment options and their effectiveness (Boyd et al., 2011). Group interventions for pregnant women can help demystify motherhood, reducing feelings of alienation in response to negative sensations that contradict the idealized image of motherhood sold by society. This image rarely aligns with the reality faced by new mothers (Arrais et al., 2014).

Impact of PPD on the Mother-Infant Relationship

The consequences of PPD can affect the child during pregnancy, after birth, and throughout their early years. Maternal depressive symptoms experienced in the first few months postpartum can compromise the child's development, particularly cognitive development (Fonseca & Canavarro, 2017). Evidence also suggests that PPD is associated with the child's physical health impairment, including poor cardiovascular functioning and frequent respiratory and gastrointestinal infections (O'Hara & McCabe, 2013). The child's exposure to maternal symptomatology plays a significant role in determining these consequences (O'Hara & McCabe, 2013). However, not all children exposed to maternal PPD exhibit developmental problems, as some factors, including routine, the presence of the father, and social support, can have a protective effect (Oliveira & Carvalho, 2017).

Carifete (2009) identifies several main consequences of PPD on child development, which Fernandes and Cotrin (2013) elaborate on behavioral problems (e.g., sleep disorders, anger attacks, aggressive attitudes, attention deficits, hyperactivity, malnutrition); delays in cognitive development (e.g., speaking and walking later than usual, difficulties in school learning); socialization issues (e.g., difficulties in establishing stable affective relationships, difficulties in making friends); and emotional problems (e.g., low self-esteem, anxiety, greater dependence, more passive, higher rate of developing depression).

The mother-baby interaction is essential for both parties, characterized by a context in which the mother and baby interact, exhibiting behavioral responses to each other. These responses are usually evaluated by the mother's sensitivity and responsiveness to the baby's cues (Brummelte & Galea, 2016). When healthy and appropriate, these behavioral responses promote exploration of the environment and the formation of affective bonds and interpersonal relationships (Alvarenga et al., 2018).

The mother-child relationship is fundamental for both the mother and the child. The mother satisfies her maternal instinct, and the child relies on the parent for survival. However, PPD can alter how the mother cares for the baby and her dedication to it, causing complications for both (Deziderio & Milani, 2013). The postpartum period is critical for establishing the relationship and building intimacy between mother and baby, which can be difficult for some mothers. These difficulties are defined by the failure of communication, as the mother cannot interpret the baby's needs, leading to mood changes, hostility, and rejection (Borsa et al., 2007).

With PPD, parenthood, and the mother-infant relationship may be impaired, as mothers with PPD exhibit lower positive emotions, greater hostility and irritability, less emotional involvement in interactions, and alternation between distance and intrusiveness in their relationship with the child. They also have less contingency in response to the child, fewer face-to-face interactions, and less involvement in enriching activities with the child compared to mothers without symptoms (Field, 2010; O'Hara, 2009). Some mothers also struggle to maintain breastfeeding, with a higher likelihood of discontinuing it and an increased risk of neglecting or even abusing the baby (Freitas et al., 2016).

Mothers with depressive symptoms often view themselves as less competent, less emotionally connected to their children, less confident and satisfied with motherhood, and more dependent and socially isolated (Schwengber & Piccinini, 2003). The child's attitudes can trigger maternal PPD; for example, a constantly restless child may make the mother nervous, while a quiet child may help the mother feel calmer. Aggravation can occur if the mother's efforts and care do not result in the baby's satisfaction and positive emotions, intensifying the mother's sense of incompetence (Santos & Serralha, 2015). Babies can understand affection and proximity to caregivers from birth, but the care provided by a mother with PPD can generate an insecure bond, predicting future development issues child (Gonçalves, 2009). Babies with mothers exhibiting depressive symptoms often show less optimism, lower activity levels, reduced vocalization and attention, increased annoyance and intense protests, more expressions of sadness and anger, less interest, a more depressing appearance, and frequent avoidance of eye contact (Schwengber & Piccinini, 2003).

Influence of COVID-19

The COVID-19 pandemic brought about restrictive measures such as social isolation and the need for reorganizing daily life habits, causing widespread uncertainty. Humans are inherently social beings, and social support plays a crucial role in their evolution. The presence of other caregivers besides the mother has been associated with the well-being of both the mother and baby (Liang et al., 2020; Oskovi-Kaplan et al., 2021).

Social isolation during the pandemic not only separated mothers from their family members, who would typically be part of their support network during postpartum, but also limited their face-to-face contact with healthcare professionals, leisure activities, and opportunities for maternal self-care. The general population experienced a significant increase in mental health complaints, particularly among new mothers (Gutierrez et al., 2022). In some studies, mothers identified the absence of a companion during

childbirth and the lack of in-person professional guidance on breastfeeding as factors that aggravated their pre-existing mental conditions (An et al., 2021; Liang et al., 2020; Oskovi-Kaplan et al., 2021). In addition to these specific challenges, the fear of infection and death, economic uncertainties, job loss, and concerns surrounding vaccination were all factors that threatened women's mental health during this time (An et al., 2021; Oskovi-Kaplan et al., 2021; Spinola et al., 2020).

Environmental Sustainability

Research has demonstrated the significant influence of pregnancy and postpartum experiences on fetal development. Consequently, pregnant women are warned about potential threats that may impact gestational development. Among these threats are external environmental factors, including air pollution, chemicals, radiation, extreme heat, and humidity (Papalia et al., 2007). Pregnant women who regularly breathe air containing high levels of fine particles related to combustion are at a higher risk of giving birth to premature, smaller-than-average babies, which can subsequently lead to complications, or having babies with chromosomal abnormalities (Bocskay et al., 2005; Parker et al., 2005).

Similarly, pregnant women exposed to high concentrations of disinfectant by-products are likelier to experience low birth weight, delayed fetal growth and have twice the rate of spontaneous abortions (Hinckley et al., 2005; Papalia et al., 2007). Access to green spaces and engaging in group activities, such as walking, can help promote mental health and improve symptoms of various psychological and physical conditions (Monsell et al., 2021).

Nutrition during pregnancy is another critical factor to consider, as the food a pregnant woman consumes directly affects the fetus (Papalia et al., 2007). Therefore, offering healthy and sustainable food options would be a step forward in improving pregnant women's diets, enabling them to gain the necessary and healthy weight for optimal fetal development while feeling good about themselves and enjoying the benefits of a nutritious diet (Monsell et al., 2021).

Limitations

Despite the valuable insights provided by this non-systematic review, several limitations must be acknowledged:

1. **Selection bias:** Due to the non-systematic nature of this review, there might be a risk of selection bias, as the literature search was not exhaustive and lacked predefined inclusion and exclusion criteria. Consequently, some relevant studies may have been overlooked, potentially affecting the comprehensiveness of the findings.
2. **Lack of reproducibility:** The review's search strategy was not detailed and structured, which could make it difficult for other researchers to replicate the search and obtain the same set of articles. This limitation may impact the reproducibility and validity of the findings.
3. **Absence of quality assessment:** This review did not include a formal evaluation of the quality of the included studies. Consequently, some studies with methodological weaknesses might have been included, potentially influencing the overall conclusions.

4. Risk of subjective interpretation: The non-systematic nature of this review increases the susceptibility to the authors' subjective interpretation of the included studies. The absence of predefined guidelines or criteria for data synthesis and analysis may have influenced the conclusions and recommendations drawn from the review.

Future research could consider conducting a systematic review following a pre-specified protocol, employing a comprehensive search strategy, and using established tools for quality assessment and data synthesis to strengthen the overall findings and address these limitations.

Conclusion

Pregnancy and postpartum are periods of vulnerability for women, during which they may experience emotional, physical, and psychological changes. This study highlights the prevalence of postpartum depression (PPD), affecting 10% to 20% of women worldwide. Despite the potential negative consequences of PPD on mothers, babies, and families, there is a lack of comprehensive prevention and intervention plans.

The complexity of PPD diagnosis, as well as the difficulties in distinguishing it from other conditions, such as Baby Blues, can exacerbate the problem. Timely and accurate identification of PPD is essential for effective prevention and treatment. However, current research tends to focus more on nursing health professionals' intervention and treatment rather than involving multidisciplinary teams that could contribute to better prevention and management of PPD.

In conclusion, there is a need for more research on PPD prevention and the development of holistic intervention plans. This would require the collaboration of multidisciplinary teams to ensure the well-being of mothers and their families during this critical period.

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