Abstract

Background: Postpartum depression is a significant mental health condition affecting an estimated 7% to 20% of women, with higher rates among individuals with increased risk factors. Most research on postpartum depression has focused on mothers, with less recognition of the mental health changes experienced by their partners. Research suggests almost 20% of partners may experience postpartum depression, yet our understanding is limited. An enhanced understanding of postpartum depression in a birthing person's partner is critical, given the mental and physical health sequelae associated with depression.

Purpose: The purpose of this review was to systematically examine the current tools available to assess partner postpartum depression.

Methods: We conducted a systematic review according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Eligible studies were identified using selected key terms in PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, and Ovid MEDLINE. Studies were included if they assessed partner depressive symptoms and identified the specified use of a tool or screening measure.

Results: Seventeen studies met inclusion criteria. Seven different measures were used to assess postpartum depression. The Edinburgh Postnatal Depression Scale (EPDS) was used in 16 out of the 17 studies for depression assessment.

Clinical Implications: Routine screening of partners for postpartum depression should be recommended as part of standard care. Nurses are critical liaisons for assessing risk and connecting relevant and timely resources to birthing people and their partners. Identifying the available screening tools may help to avoid adverse clinical outcomes associated with increased symptom severity and burden.

Key words: Depression; Fathers; Nurses; Postpartum; Postpartum period; Pregnancy; Screening.

SCREENING FOR PARTNER POSTPARTUM DEPRESSION: A SYSTEMATIC REVIEW

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In the United States, 1 in 10 women reports experiencing an episode of major depression during or after their pregnancy, with more than 20% experiencing depressive symptoms, including depressed mood, lack of energy, or poor concentration (Bains & Abdijadid, 2021). During the perinatal period, women undergo a myriad of physical, hormonal, and emotional changes that can affect their psychological state. Although pregnancy and postpartum are periods of heightened risk because of these factors, partners (i.e., fathers, spouses, significant others) are also at increased risk for depression during their partner's pregnancy and into the postpartum period (Kim & Swain, 2007). According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, postpartum depression (PPD) is defined as a major depressive episode during pregnancy or within 4 weeks after childbirth (American Psychiatric Association, 2013). Symptoms can occur within a few months to a year after childbirth (American Psychiatric Association, 2013; Anokye et al., 2018; O'Hara & McCabe, 2013).

Screening for PPD has been recommended by numerous organizations, including the American College of Obstetricians and Gynecologists (ACOG), the American Academy of Pediatrics, and the U.S. Preventive Services Task Force. According to ACOG (2018) recommendations, screening for PPD should occur at least once during the prenatal period and at the postpartum follow-up visit. If a patient screens positive for depression, additional follow-up should be provided with a close assessment and evaluation of the patient's symptoms (ACOG, 2018). One of the most commonly used measures for screening for depression is the Edinburgh Postnatal Depression Scale (EPDS). The EPDS is a 10-item self-report questionnaire that has been used worldwide through translation in over 50 languages (ACOG, 2018). The tool assesses mood, self-image, enjoyment, and stress that are intrinsic markers of depression within the last 7 days. Because of the short inventory of questions, the tool takes less than 5 minutes to complete and has a sensitivity of 59% to 100% and

specificity of 49% to 100% for detecting PDD in women (ACOG, 2018).

Approximately 8% of fathers experience depression within the 1-year postpartum period; prevalence estimates are lower during the second trimester and elevated within the 3- to 6-month postpartum period (Cameron et al., 2016). As partner depression is highly correlated with maternal depression, any deviation in the partner's psychological health could directly affect the mental and physical health of the mother (Wee et al., 2011). Parental mental health has short- and long-term implications for offspring health (Ramchandani et al., 2011; Walker et al., 2020). Although the EPDS is validated in some partner populations and has been used as part of standard care concerning maternal mental health, it has received less attention in its use and implementation for diagnosis for partners (Khanlari et al., 2019; Matthey & Agostini, 2017).

The purpose of this systematic review was to comprehensively search the published literature to identify tools used to assess partner PPD. Our objective is to report included studies' key characteristics and compare the screening tools used to assess depression in each study. We synthesize the most common assessment methods, concurrent surveys to address adjunct mood and social support, and the timing and frequency of screening. A perspective on how clinicians, particularly nurses, can leverage screening to identify partners at risk for depression is provided.

Methods

Our systematic review followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol guidelines (Page et al., 2021). We used the web-based tool, Covidence, to organize the relevant articles, perform the consensus procedures, execute the data extraction from the included studies, and implement a quality review.

Eligibility Criteria

Inclusion criteria for the review were the following: 1) studies that assessed partner depressive symptoms and 2) studies that included the specified use of a tool or screening measure. Exclusion criteria were: 1) studies in a language other than English, 2) studies that assessed other mood disorders such as anxiety, panic, or trauma, 3) studies that did not assess the partner for depression or depressive symptoms in relation to childbirth, 4) studies that assessed depression after bereavement or a neonatal intensive care unit admission, 5) studies that involved

Most studies (16 of 17) used the Edinburgh Postnatal Depression Scale as the primary tool for postpartum depression screening in individuals who identify as male and female.

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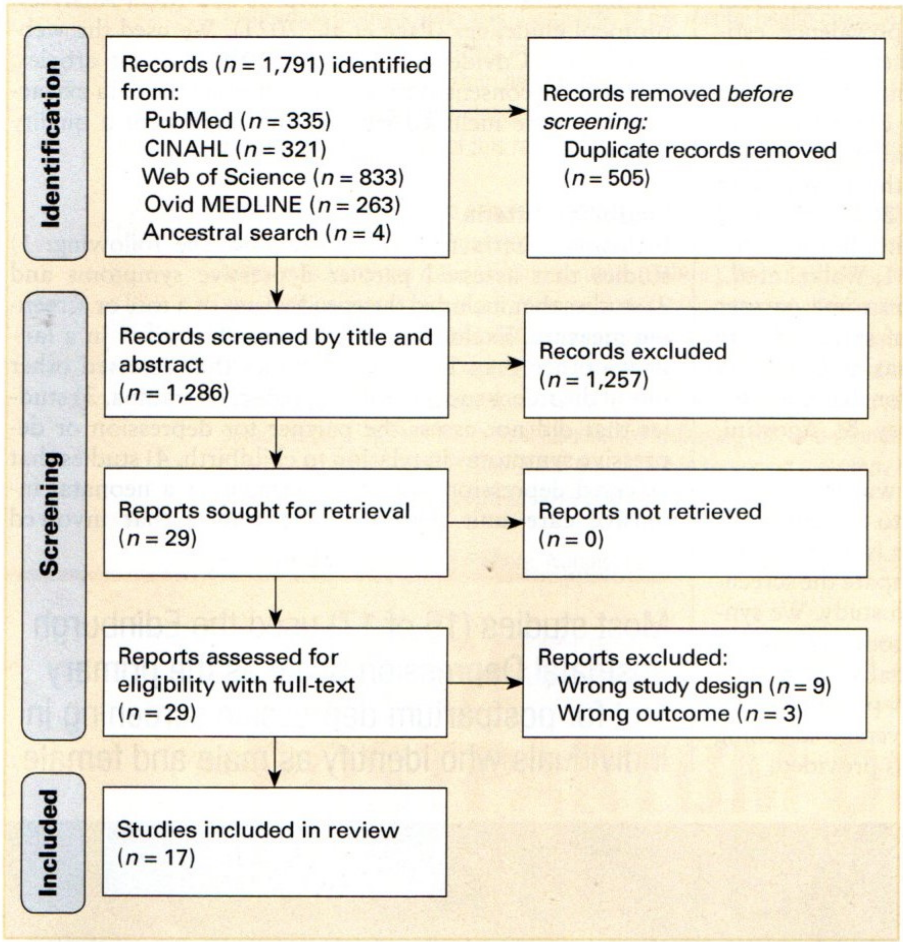
FIGURE 1. PREFERRED REPORTING ITEMS FOR SYSTEMATIC REVIEWS AND META-ANALYSES (PRISMA) FLOWCHART



participants who were recruited based on a psychiatric evaluation, 6) studies that examined depressive symptoms after an intervention, and 7) studies that were conducted for evaluating the psychometric properties of a screening tool.

Search Strategies

Peer-reviewed studies documenting depression in partners within the postpartum period were retrieved in a systematic search in PubMed, CINAHL, Web of Science, and Ovid MEDLINE databases. An ancestral hand search was also completed from relevant literature. The search was conducted in December 2022 for studies published between 2000 and 2022. Keywords used to search titles and abstracts included, 1) postpartum depression, 2) spouse, partner or paternal, and 3) screening, intervention, or assessment. All search keywords used medical subject headings (MeSH) terms, when available, to enhance the number of resulting studies. The articles accessed from the identified databases were uploaded into Covidence.

Consensus, Selection of Articles, and Quality Review

From the 1,791 studies found using our search terms, 505 duplicates were removed in Covidence. One-thousand two hundred and eighty-six were subsequently screened by title and abstract, with 1,257 articles not meeting our inclusion and exclusion criteria. Twenty-nine full-text articles were reviewed for eligibility. Twelve studies were excluded at this phase (nine were the wrong study design and 3 did not assess partner PPD as the primary outcome). Two authors (JL and CD) completed the consensus at each phase to enhance the rigor of the systematic review. Discrepancies were resolved through thorough discussion and reexamination of the study. See Figure 1.

After completing the search, two reviewers (JL and CD) extracted key elements of each study for synthesis and performed a quality assessment of the included articles. Data from the selected studies were extracted and organized into a comprehensive table to visualize trends across studies. Examples of extracted elements include 1) study aim, 2) study design, 3) inclusion and exclusion criteria, 4) method of recruitment, 5) sample size, 6) description (age, gender, location, socioeconomic status), 7) screening tools used, 8) who was being screened, 9) prevalence of partner PPD, 10) setting of screening, 11) frequency of screening and intervention, 12) primary outcome measures, and 13) results. Quality of the articles was assessed using a critical appraisal tool from the Joanna Briggs Institute. Quality criteria included: whether the research or review question was clearly and explicitly stated, whether the inclusion and exclusion criteria were appropriate for the research question, whether the screening tool(s) used were validated in the study population, whether the statistics used were suitable to assess the primary outcome, whether reported data supported recommendations for policy and clinical practice, whether specific directives were appropriate for new research, and overall appraisal.

In our two-person review, calculated interrater reliability metrics indicated a 96.3% proportionate agreement rate for the title and abstract screening and an 82.8% agreement for the full text review. Our random agreement probability was 93.8% with a Cohen's Kappa of 0.396. These metrics indicate that both reviewers independently exhibited similar subjectivity inclinations upon their review of the selected literature. All of the included 17 articles met the quality review criteria with a "yes" response in each checklist item.

Results

Seventeen studies were included in this systematic review of the literature on screening tools for partner PPD. Included articles were published between 2013 and 2022, with over 70% (12 out of 17) of studies pub-

TABLE 1. STUDY CHARACTERISTICS

First Author and Year	Number of Participants	Person Screened	Depression Screening Tool	Concurrent Screening Tools	Prevalence of Partner PPD	Screening Setting	Screening Frequency	Screening Timing
Abdollahi (2021)	*N* = 1,318 (659 dyads)	Mother and partner	EPDS	Mothers: Obstetrics questionnaire Partners: Cohen's Perceived Stress Scale (PSS), Multidimensional Scale of Perceived Social Support (MSPSS), General Health Questionnaire-12 (GHQ-12)	15.7%	Primary health centers	1	Postpartum (not specific)
Agostini (2022)	*N* = 153	Partner	EPDS	Parenting Stress Index-Short Form (PSI-SF)	37.5%	University laboratory	3	3, 9, and 12 months postpartum
Cui (2021)	*N* = 212	Partner	EPDS	Vulnerable Personality Style Questionnaire (VPSQ), Social Support Rating Scale (SSRS)	24.1%	Postnatal clinic	1	Within 6 months postpartum
Da Costa (2019)	*N* = 622	Partner	EPDS	Pittsburgh Sleep Quality Index (PSQI), dyadic adjustment scale (DAS), modified MOS social support survey, financial stress item survey, parenting stress scale (PSS)	13.76% at 2 months; 13.60% at 6 months	Online or phone calls	2	2 and 6 months postpartum
Da Costa (2017)	*N* = 622	Partner	EPDS	PSQI, DAS, MOS social support survey, life stress event scale (modified), financial stress 4-item survey, international physical activity questionnaire short form	13.3%	Online	1	Prenatal, 28–36 weeks
deMontigny (2013)	*N* = 205	Partner	EPDS	DAS, parent expectations survey, paternal involvement questionnaire, single social support survey	8.2%	Home	1	8–16 months postpartum
Garthus-Niegel (2020)	*N* = 1,027	Partner	EPDS-German	Social support questionnaire	2%	Not specified	2	Prenatal and 8 weeks postpartum
Gawlik (2014)	*N* = 102	Partner	EPDS	State/Trait Anxiety Inventory, a self-constructed questionnaire for birth concerns, and Questionnaire of Partnership	7.8%	Prenatal clinic	1	4–6 weeks postpartum
Howarth (2020)	*N* = 116	Partner	EPDS	n/a	12%	Paper or online	4	24 weeks, 36 weeks, immediate postpartum, 6 months postpartum

(Continues)

TABLE 1. STUDY CHARACTERISTICS *(CONTINUED)*

First Author and Year	Number of Participants	Person Screened	Depression Screening Tool	Concurrent Screening Tools	Prevalence of Partner PPD	Screening Setting	Screening Frequency	Screening Timing
Massoudi (2016)	*N* = 1,716 (858 dyads)	Mother and partner	EPDS	Swedish Parental Stress Questionnaire (SPSQ), Kendler survey, Eberhard-Gran survey	6.3%	Postal response	1	3 months postpartum
Matthey (2020)	*N* = 145 Italian fathers; *N* = 185 Australian fathers	Partner	EPDS	Matthey Generic Mood Questionnaire (MGMQ)	36.4% Australian; 13.6% Italian	Not specified	1	Prenatal (weeks not specified)
Nishigori (2020)	*N* = 2,114 (1,057 dyads) at 1 month postpartum; *N* = 2,722 (1,361 dyads)	Partner	EPDS-Japanese	n/a	12.0%	Postal response	2	1 and 6 months postpartum
Philpott (2018)	*N* = 100	Partner	EPDS	n/a	12%	Primary care center	1	Within 12 months postpartum
Psouni (2017)	*N* = 447	Partner	Beck Depression Inventory-II (BDI-II), EPDS, Gotland Male Depression Scale (GMDS)	n/a	28%	Online	1	Not specified
Suto (2016)	*N* = 215	Partner	EPDS	n/a	16.7%	Postal response	5	Within 3 days postpartum, 2 weeks, 1 month, 2 months, 3 months postpartum
Zhang (2016)	*N* = 360 (180 dyads)	Partner	EPDS	Parenting Sense of Competence Scale (PSOC), Kansas Marital Satisfaction Scale (KMSS)	21.1% at 3 days; 20.4% at 2 weeks; 13.6% at 6 weeks	In-person	3	3 days, 2 weeks, and 6 weeks postpartum
Zheng (2022)	*N* = 908 (454 dyads)	Mother and partner	EPDS	PSOC, SSRS	7.5%	Regional teaching hospital	1	2–3 days postpartum

Note. EPDS = Edinburgh Postpartum Depression Scale

lished in the last 5 years. Table 1 outlines the study characteristics including the primary depression screening tool, concurrent survey measures, the prevalence of partner PPD, and the setting and timing of screening. Across the included studies, the average prevalence of partner PPD was 14.8% (range 7.5%–37.5%).

Depression-Specific and Concurrent Screening Tools

Included studies used multiple tools to comprehensively assess a participant's physical, emotional, and mental health state. Seven screening tools were identified for the purposes of assessing for partner PPD (Beck Depression Inventory [BDI, BDI-II], EPDS [EPDS translated into ap-

propriate language], Gotland Male Depression Scale [GMDS], Kessler-10 [K-10], Kessler-6 [K-6], and the Inventory to Diagnose Depression [IDD]). The depression-specific screening tool information is provided in Table 2. All of the included studies except one (Psouni et al., 2017) used the EPDS for the primary screening measure for PPD.

The concurrent surveys used in the included studies assessed six different domains, 1) *parenting competence and bonding* (Swedish Parental Stress Questionnaire [SPSQ], Parenting Stress Index [short form] [PSI-SF], Parenting Sense of Competence Scale [PSOC], Parenting Stress Scale [PSS]), 2) *social support* (Social Support Rating Scale [SSRS], Multidimensional Scale of Perceived Social Support [MSPSS], Maternity Social Support Scale [MSSS], Medical Outcomes Study [MOS], social support survey, modified MOS social support survey, single social support scale, social support questionnaire), 3) *physical health unrelated to depression* (General Health Questionaire-12 [GHQ-12], Pittsburgh sleep quality index [PSQI], International Physical Activity Questionnaire, self-constructed questionnaire for birth concerns, Patient Health Questionnaire-9 [partner report] [PHQ-9], General Health Questionnaire [GHQ]), 4) *other mental health concerns* (Cohen's Perceived Stress Scale [PSS], Vulnerable Personality Style Questionnaire [VPSQ], Eberhard Gran Stressful Life Events Scale, Kendler Scale for history of depression, life stress event scale [modified], State/Trait Anxiety Inventory [STAI], Matthey Generic Mood Questionnaire [MGMQ]), 5) *relationships with partners* (Dyadic Adjustment Scale [DAS], Questionnaire of Partnership, Kansas Marital Satisfaction Scale [KMSS]), and 6) *financial burden* (financial stress 4-item survey, financial stress item survey).

Setting and Timing of Postpartum Depression Screening

Of the included studies, 14 screened for depressive symptoms solely in the partner (Agostini et al., 2022; Cui et al., 2021; Da Costa et al., 2017, 2019; Demontigny et al., 2013; Garthus-Niegel et al., 2020; Gawlik et al., 2014; Howarth & Swain, 2020; Matthey & Della Vedova, 2020; Nishigori et al., 2020; Philpott & Corcoran, 2018; Psouni et al., 2017; Suto et al., 2016; Zhang et al., 2016) and 3 screened both the birthing person and partner (Abdollahi et al., 2021; Massoudi et al., 2016; Zheng et al., 2022). The most common timing of screening administration was within 12 weeks postpartum (Agostini et al., 2022; Gawlik et al., 2014; Howarth & Swain, 2020; Massoudi et al., 2016; Nishigori et al., 2020; Suto et al., 2016; Zhang et al., 2016; Zheng et al., 2022).

Discussion

We reviewed existing tools available to assess partner PPD. Literature over the last 2 decades showed a substantial increase in available research, potentially due to increased public interest in mental health (Soreni et al., 2019). Overall, the EPDS was used as the primary screening tool in all but one of the studies included in this review. Though the EPDS was commonly used for screening partners for PPD, there are other available tools such as the BDI. However, the BDI was insensitive to cognitive

TABLE 2. DEPRESSION-SPECIFIC SURVEY INFORMATION

Survey	Assessment Category	Assessment Criteria	Number of Items	Validation Status in Partners/Men
Beck Depression Inventory (BDI)	Depression	Measures characteristic attitudes and symptoms of depression (American Psychological Association, 2020)	21	Yes
Beck Depression Inventory-II (BDI-II)	Depression	Measures characteristic attitudes and symptoms of depression (American Psychological Association, 2020)	21	Yes
Edinburgh Postnatal Depression Scale (EPDS)	Depression	Possible depression during pregnancy and the postpartum period	10	Yes
Gotland Male Depression Scale (GMDS)	Depression	A measurement with improved recognition of major depression in males (Zierau et al., 2002)	96	Yes
Inventory to Diagnose Depression (IDD)	Depression	An instrument designed to diagnose a history of DSM-III major depressive disorder (Zimmerman & Coryell, 1987)	22	Yes
Kessler Psychological Distress (10-item) (K-10)	Depression	Depressive symptoms in the past month	10	Yes
Kessler Psychological Distress (6-item) (K-6)	Depression	Depressive symptoms in the past month	6	Yes

Note. Only screening tools that were used two or more times were included in this table.

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Average reported prevalence of partner postpartum depression was 14.8% (range 7.5%–37.5%).

and affective symptoms, with the questions primarily assessing physical and emotional changes during postpartum (Conradt et al., 2012).

The EPDS may not be sensitive to potential gender differences in the characteristics of depression. This is important to consider because partners may express different symptoms than the birthing mother (Romans et al., 2007). Where both men and women exhibit common depression symptomatology, such as feeling of sadness that is unable to be assuaged, hopelessness for the future, decreased self-confidence, and more, women specifically displayed increased appetite, being tearful, had a loss of interest, and had suicidal thoughts and symptoms (Romans et al., 2007). Individuals who identify as men tend to exhibit higher levels of self-reported severe depression and suicidal compared to women (Shi et al., 2021). Traditional societal values, in the United States, discourage men to be open about their symptoms of depression, whereas women are generally more open to seeking treatment for their symptoms (Kato et al., 2018). As a result, if using the EPDS in the clinical setting, partners may require a higher cut-off score of 10 on the scale (Edmondson et al., 2010).

Postpartum can include challenging transitions including unfamiliarity of parenthood, financial constraints, societal pressures, and emotional demands that might not have been recognized prenatally (Genesoni & Tallandini, 2009; McHale, 2007). Supplemental tools such as a financial stress survey used with depression-specific tools allowed for a more holistic view of social and economic constraints for the birthing person and their partner. These additional surveys provided more insight into the patient beyond the snapshot of the current clinical setting, identifying possible obstacles to care into the patient's past and future, such as financial burden and other mental health conditions such as anxiety.

Participant characteristics of the studies included in the review were skewed as most participants were White, middle-class individuals in their early- to midthirties, and studies were mainly conducted in Europe. This finding is unsurprising as Europe has a strong history of progressive child care assistance policies within the last decade (Ruhm, 2011). Countries like Sweden and Denmark promote substantial parental leave to allow parents to care for their children under age three (Ruhm, 2011). In contrast, policies in the United States make it difficult for families with young children to have a work–family balance, especially in the early postpartum period (Ruhm, 2011).

Due to the homogeneity in sample characteristics for the included studies, underrepresented groups such as those from lower socioeconomic backgrounds and the LGBTQIA+ community who are known to be at higher risk for depression were not represented (Bostwick et al., 2010; Cochran et al., 2007). Though nonheterosexual partners are included in some studies not meeting the inclusion and exclusion criteria for this review (Boyd et al., 2011; Ross, 2005), there is generally a lack of research understanding the potentially unique care needs of these groups. Knowing the strong relationship between adverse pregnancy outcomes and PPD (Accortt et al., 2015), more studies are needed to explore how survey tools could be adapted for optimal care support and intervention before developing overt PPD.

Almost half (7 of 17) of the included studies only screened for depressive symptoms in the postpartum period at a single visit. During the first months and year of the novel Coronavirus pandemic starting in early 2020, partners, family, or visitors were restricted into clinic appointments because of the additional exposure risk to patients and health care workers. Although important in the early and unknown periods of the pandemic, the restrictions likely contributed to a lack of adequate assessment for partners, leaving a substantial gap in care delivery (Altman et al., 2021). More research needs to be done to quantify those gaps, and practice changes should be implemented immediately to intervene where appropriate. Large cohort studies like Pregnancy Risk Assessment Monitoring System (PRAMS) and the National Institutes of Health's All of Us Research Program could be avenues for scaling actionable research in PPD.

The most substantial limitation of our systematic review is the rigorous exclusion criteria to identify validat-

CLINICAL IMPLICATIONS

- Postpartum depression is a significant mental health condition affecting an estimated 7% to 20% of women, with higher rates among individuals with increased risk factors.
- Screening for postpartum depression in partners is not often part of routine care.
- Early identification of depressive symptoms and subsequent intervention are essential aspects of safe care for partners and their families.
- Prevalence rates of depressive symptoms, and a subsequent diagnosis of PPD, was almost 40% in the included studies.
- Screening in the antenatal period can help providers identify risk factors for PPD earlier and allow partners for more guidance throughout the process, ultimately decreasing the potential severity of subsequent mental health exacerbations.
- Nurses are critical liaisons for matching patients and family members with proper referrals and available resources.
- Nurses are adept at identifying early concerns and promoting information and education that could prepare families for potentially challenging emotions during pregnancy and postpartum.

ed screening tools. Our search did not yield studies that reflect the socioeconomic and social diversity of childbearing families. Our review is limited in the scope outside of confirming the ubiquitous use of the EPDS. However, comprehensive assessment of PPD is critical, and this review attempts to extend the current literature by providing a review of the complementary survey tools to address PPD in partners.

Clinical Implications

Early identification of depressive symptoms and subsequent intervention are essential aspects of safe care for partners and their families (Walsh et al., 2020). Prevalence rates of depressive symptoms, and with a subsequent diagnosis of PPD, of almost 40% in the included studies is a call to action for clinicians working with birthing families. Screening in the antenatal period can help providers identify risk factors for the condition earlier in the perinatal period and allow partners more guidance throughout the process, ultimately decreasing the potential severity of subsequent mental health exacerbations.

Segre et al. (2010) found that patients interviewed about PPD screening felt it acceptable for nurses to lead mental health screening and counseling practices. Nurses, in both inpatient and ambulatory settings, are critical liaisons for matching patients and family members with proper referrals and available resources (Yazdanpanahi et al., 2022). Nurses are adept at identifying early concerns and promoting information and education that could prepare families for potentially challenging emotions during pregnancy and postpartum. ✣

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