



Expanding the international conversation with fathers' mental health: toward an era of inclusion in perinatal research and practice

Sheehan D. Fisher¹ · Jesus Cobo² · Barbara Figueiredo³ · Richard Fletcher⁴ · Craig F. Garfield⁵ · Jane Hanley^{6,7} · Paul Ramchandani⁸ · Daniel B. Singley⁹

Received: 16 April 2021 / Accepted: 2 August 2021 / Published online: 24 August 2021
© The Author(s), under exclusive licence to Springer-Verlag GmbH Austria, part of Springer Nature 2021

Abstract

Paternal mental health is beginning to be recognized as an essential part of perinatal health. Historically, fathers were not recognized as being at risk for perinatal mental illnesses or relevant to maternal and infant health outcomes. The purpose of this paper is to provide an overview of paternal perinatal mental health, leading tools to assess paternal depression and anxiety, the impact of paternal mental health on mother and child health, and future directions for the field. An international team of paternal perinatal mental health experts summarized the key findings of the field. Fathers have an elevated risk of depression and anxiety disorders during the perinatal period that is associated with maternal depression and can impact their ability to support mothers. Paternal mental health is uniquely associated with child mental health and developmental outcomes starting from infancy and continuing through the child lifespan. Tailored screening approaches for paternal mental health are essential to support fathers early in the perinatal period, which would offset health risks for the family. Recommendations on paternal mental health are provided on four key areas to support father perinatal mental health: (1) intervention research, (2) clinical training, (3) national policy, and (4) the inclusion of fathers in the focus of the International Marcé Society for Perinatal Mental Health.

Keywords Fathers · Perinatal mental health · Postpartum depression · Anxiety · Partners

✉ Sheehan D. Fisher
sheehan.fisher@northwestern.edu

- ¹ Department of Psychiatry and Behavioral Sciences, Northwestern University, Chicago, IL, USA
- ² Psychiatry Department, Corporació Sanitària Parc Taulí - CIBERSAM - I3PT - Universitat Autònoma de Barcelona (Sabadell, Barcelona), Barcelona, Spain
- ³ School of Psychology, University of Minho, Braga, Portugal
- ⁴ College of Health, Medicine and Wellbeing, The University of Newcastle, Callaghan, NSW 2308, Australia
- ⁵ Department of Pediatrics, Ann & Robert H. Lurie Children's Hospital of Chicago and Northwestern University Feinberg School of Medicine, Chicago, IL, USA
- ⁶ Perinatal MH Training CIC, Carmarthen, Wales, UK
- ⁷ Swansea University, Swansea, Wales, UK
- ⁸ PEDAL Research Centre, Faculty of Education, University of Cambridge, Cambridge, UK
- ⁹ The Center for Men's Excellence, San Diego, CA, USA

Paternal mental health is gaining attention in perinatal mental health research as fathers have become progressively more engaged and integrated into parenting. The transition to parenthood is a life-changing experience that can impact fathers' mental health and the health of the family, but this was not always recognized in perinatal research. Historically, maternal mental health was the primary focus when investigating the epidemiology, etiology, treatment, and outcomes of perinatal mental illness. Child outcomes from fetal development to infant mental and medical health outcomes were also studied in relation to maternal mental health. The emerging field of paternal perinatal mental health has shown that the exclusion of fathers neglects a key contributor to family perinatal health.

The objectives of this paper are to provide an overview of (1) paternal perinatal mental health, (2) assessment of paternal depression and anxiety, (3) the impact of paternal mental health on the mother and child, and (4) future directions for the field of paternal perinatal mental health based on recommendations from a team of international experts. Paternal depression and anxiety will be highlighted because

there is limited data on other mental illnesses (e.g., bipolar disorder) experienced by fathers.

Paternal perinatal mental illness

Depression occurs in 8–10% of men between the first trimester of pregnancy and the first year postpartum (Cameron et al. 2016; Paulson and Bazemore 2010; Rao et al. 2020), with the highest rate occurring 3 to 6 months postpartum. This rate is higher than the rate of the general public (~5%) who are of parenting age. The paternal depression rate is approximately half the rate of maternal postpartum depression (21.9% of mothers over the first postpartum year) (O'Hara and Swain 1996), which reflects the 1:2 ratio of depression in the general population of men and women (Eaton et al. 1997; Gelenberg 2010). Garfield et al. (2014) found that residential fathers had elevated depressive symptoms that extends through the first 5 years of fatherhood compared to the preceding years (Garfield et al. 2014). Fathers with moderate to severe depression tend to have a stable mood trajectory from pregnancy through 2 years postpartum (Kiviruusu et al. 2020). Several factors may contribute to the elevated rates of depression in fathers, including the comorbidity between paternal and maternal depression (Goodman 2004; Hanington et al. 2012; Paulson and Bazemore 2010; Ramchandani et al. 2008), hormonal changes (Saxbe et al. 2017), a history of depression that predicts perinatal depression and future depressive episodes (Fisher et al. 2015a, b; Hanington et al. 2012; Ramchandani et al. 2005, 2008), interparental relationship distress (Figueiredo et al. 2018; Sockol and Allred 2018; Tambelli et al. 2019), lack of social support, and stressful life events (Singley and Edwards 2015), all of which pose a risk for new onset, recurrent, and prolonged depressive symptoms. In addition, the prenatal period and childrearing can be positive but stressful life events due to the personal (e.g., role changes), contextual (e.g., low SES, health disparities), biological (e.g., sleep disruption), interparental (e.g., changes in the father-mother relationship), social (e.g., impact on extrafamilial relationships), and financial (e.g., childcare costs) stressors that have a negative impact on paternal mental health (Philpott et al. 2017).

Perinatal mental illness in fathers may be underestimated because men are more likely to underreport the traditional symptoms of depression (e.g., sadness) due to the cultural conceptions of masculinity and stigma, men may express or experience depression differently (Blair-West and Mellsoy 2001; Cochran and Rabinowitz 2003), and men tend to engage in avoidant, escape, or numbing behaviors such as aggression, suicide, and substance use to express and cope with their emotional distress (Brownhill et al. 2005). Screening of paternal depression with traditional measures may

present an inaccurate depiction of paternal mental health. In addition, paternal perinatal anxiety is understudied, but there is evidence that anxiety is elevated in new fathers and impacts the family health (Figueiredo and Conde 2011; Philpott et al. 2019), and fathers are particularly vulnerable to developing postpartum anxiety in response to relationship distress that can worsen during the child's early development (Figueiredo et al. 2018). A meta-analysis by Leach et al. (2016) revealed that 4.1–16% of fathers had a prenatal anxiety disorder and 2.4–18% had a postpartum anxiety disorder.

Measuring and screening paternal depression and anxiety

The importance of screening fathers has generally been ignored or framed as optional, although various health organizations including the American College of Obstetrics and Gynecologists, the American Academy of Pediatrics, and the United States Preventive Services Task Force have provided guidelines regarding the need for depression screening and early treatment in the perinatal period. Common depression screening measures used during the perinatal period include the Edinburgh Postnatal Depression Scale (Cox and Holden 2003) and the Patient Healthcare Questionnaire—2 or -9 (Kroenke et al. 2003; Sidebottom et al. 2012). Measures of masculine depression to consider when screening fathers include the Gotland Male Depression Scale (Zierau et al. 2002) and Masculine Depression Scale (Magovcevic and Addis 2008). In addition, the GAD-7 (Löwe et al. 2008) and Pregnancy-Related Anxiety Scale (Cameron et al. 2021) can be effective in screening for anxiety symptoms. Stress is a risk factor for mood disorders so measures that incorporate an assessment of stress like the Depression, Anxiety and Stress Scale—21 Items (DASS-21; Antony et al. (1998) can be clinically useful. Another approach suggested by Fisher et al. (2012) includes having mothers attending medical visits complete the Edinburgh Postnatal Depression Scale—Partner on their observation of the father's depression, and in the case of elevated scores, the clinician can work to follow-up directly with the father for assessment and intervention.

Measuring and screening father involvement

Because volumes of research have shown a strong correlation between perinatal depression/anxiety and diminished/problematic involvement with their infants (Galbally and Lewis 2017; Lovejoy et al. 2000), clinicians may need to conduct secondary screening of the quality and quantity of father involvement. The vast majority of early research

addressing fathers' involvement with their babies relied on unidimensional constructs such as time spent with the baby, provision of material resources, or living with the child and/or the mother. The Lamb et al. (1985) tripartite formulation of accessibility, responsibility, and engagement as fundamental aspects of paternal involvement informs many current efforts to assess how—and how much—fathers engage with their children. The Parental Responsibility Scale (PRS; (McBride and Mills 1993) is a 14-item self-report scale that reflects the dimension of paternal responsibility via responses to 14 items regarding childcare tasks for 1-year-olds. An example of an observational assessment approach is Volling and Belsky (1991) measure of “observed father-infant interaction” which involves trained raters coding the frequency of responding, stimulating or arousing, caregiving, and expressing positive affection toward the child in either laboratory or naturalistic settings. The Paternal Involvement with Infants Scale (PIWIS; Singley et al. (2018) is a 35-item self-report scale which has been shown to yield reliable, practical information regarding the extent to which fathers are involved with their infants aged 0–12 months in different areas including warmth and attunement, positive engagement, and indirect care. The Father Involvement in Health—Preschool (FIH-PS; Garfield et al. (2019)) is a 20-item self-report scale which takes a multidimensional approach to assessing key factors of how fathers participate in their young children's health care including the domains of acute illness, general well-being, emotional health, and role modeling. Finally, the Paternal Adjustment and Paternal Attitudes Questionnaire (PAPA; Pinto et al. (2017)) was designed to assess paternal adjustment and paternal attitudes during the transition to parenthood.

The impact of fathers' mental health on the mother

Fathers are typically major sources of practical and emotional support for mothers as the family manages the transition to caring for a new baby (Cheng et al. 2016; Stapleton et al. 2012). Fathers as supports influence mothers' ability to cope with exhaustion and to interact positively with their infant and not only reduce the likelihood of maternal postnatal depression, but to also assist in reducing effects such as intrusive, or hostile parenting behaviors (Dennis and Ross 2006; Gillis and Roskam 2019; Lovejoy et al. 2000; Vakrat et al. 2018). While fathers may vary in their capacity to offer support, having an untreated mental illness such as depression or anxiety will likely reduce the extent and effectiveness of practical support, for example, in sharing the care of a new baby (Psouni and Eichbichler 2020; Sethna et al. 2015).

Because partner support and relationship satisfaction are key factors in the development of maternal and paternal

depression as well as involvement with their infant (Don and Mickelson 2012; Figueiredo et al. 2018), it is not surprising that fathers' and mothers' depression is moderately correlated and that fathers' reaction to common parenting tasks such as dealing with unsettled infants may result in frustration and lead to depressive symptoms (Cook et al. 2017; Paulson and Bazemore 2010; Pinheiro et al. 2006). Paternal mental illnesses with externalizing behaviors, such as agitated unipolar depression, untreated bipolar disorder, or substance abuse, may influence the mother's well-being directly, through their erratic or antisocial behavior, and indirectly through their impact on family living circumstances such as reduced income and poor housing (Fletcher et al. 2013). For example, paternal binge-drinking is associated with increased risk of intimate partner violence (IPV), which is linked to increased maternal depression and impaired parenting (Bailey 2010; Black 2011; Mumford et al. 2018). Risk of fathers as both perpetrators and victims of IPV could be greater due to the specific challenges of parenthood, with higher rates perpetrated by men. Rates of perinatal IPV toward women range from 3.7 to 9%, but there have not been studies on perinatal IPV toward men. Clinicians have to be proactive in these area in detecting women and men at risk for IPV and offering specific treatment for IPV. Clearly, a father who is mentally well can be a key resource for the family. Identifying and supporting fathers with mental illness may be an effective way to offer support to the mother and promote the well-being of all family members.

The impact of fathers' mental health on the child

Parent-infant interactions starting as early as at birth are essential to many aspects of child development, so the mental health of the parent plays a role in the well-being of the child. However, unlike maternal mental health which has been the focus of decades of study, paternal mental health is often overlooked as a factor influential on overall child health. Evidence now points to depression during fatherhood being associated with decreases in the prevalence of positive father-child interactions such as play and infant-parent reading (Davis et al. 2011). Fewer father-child interactions are also associated with a negative impact on child development, including delayed neuromuscular maturation in the first 6 months of an infant's life, and decreased expressed vocabulary in the child's first 2 years (Paulson et al. 2009; Sethna et al. 2018). Paternal depression has been found to adversely impact infant mental health as well as infant affect. The impact of a father's mental health on their children, however, is not limited to the first years of life; in fact, paternal depression in the postnatal period may predict future father depression,

which may be associated with child long-term outcomes. Reported depression in early fatherhood, for example, is also a predictor of emotional and behavior problems at 4–5 years of age for the child (Fletcher et al. 2011). Fathers' postpartum depression is associated with toddler internalizing and externalizing behaviors through future paternal depression 3 years later, after accounting for mothers' postpartum and future depression (Fisher et al. 2015a, b). This suggests that if maternal depression is solely treated, children are still at risk for mental illness from exposure to paternal depression. In addition, research also suggests that paternal anxiety not only increases the risk of a child developing an anxiety disorder (Ramchandani and Psychogiou 2009), but may also lead to adverse impacts on future mental health outcomes (Fisher 2016; Liber et al. 2008; Rapee 2000). Therefore, paternal perinatal mental illness has the potential to be sustained throughout the child's lifespan creating a long-term impact on the child's mental health and development. However, there is also evidence that fathers can be a buffer between maternal depression and negative child mental health outcomes (Hossain et al. 1994; Vakrat et al. 2018).

Future directions for the inclusion of fathers in perinatal health

This brief overview of the paternal perinatal mental health literature highlights that there is evidence of the importance of fathers' own experience during this transition to parenthood and the relevance of their mental health in relation to mother and infant/child health outcomes, but this field of study is still in an infancy stage. If the goal is to improve perinatal mental health outcomes and family health, then a holistic approach is needed to understand the contribution of each family member to the overall family well-being. In addition, although the discussion has focused on how fathers' mental health impacts mothers, children, and family functioning, research needs to treat paternal depression as a dependent variable and worthy outcome for the fathers' own sake in addition to how he can impact or benefit the family. Even if paternal mental health is not one's specialty or focus for research or clinical practice, an understanding of fathers' significant contribution to one's area of study will provide a more comprehensive picture. Neglecting fathers from the formulation will likely not account for a consequential portion of the variance of the problem being solved. The following recommendations address four key areas to support father perinatal mental health: (1) intervention research, (2) clinical training, (3) national policy, and (4) the inclusion of fathers in the focus of the International Marcé Society for Perinatal Mental Health.

Perinatal interventions for fathers

The greatest barrier facing fathers with mental health problems in most countries is a lack of access to effective evidence-based treatments and other appropriate services. The second major issue is that the available treatments are not tailored to the father experience. There is very little research specifically addressing the effectiveness of treatments for men with mental illnesses in the perinatal period (Goldstein et al. 2020), although there are evidence-based treatments for the general lifespan of men and treatment studies designed for perinatal women that can be utilized. Broadly speaking, the psychological interventions that work at other times will usually also work for men in the perinatal period because many of the core symptoms and problems that men encounter in the perinatal period share similarities with experiences at other times, but the unique experiences of the transition to parenthood need to be accounted for. In general, men are entering a new developmental phase that requires support to understand the psychological transition into fatherhood, including the impact of how they were parented by their father and mother on their own parental identity, their personal values of who they want to be as a father, active development of emotional attachment to the child during the prenatal period despite the limitations of not carrying the fetus, and preparation for an evolution of relationships with oneself, the mother, social supports, and employment (Deave and Johnson 2008). For fathers with mood and anxiety disorders, established interventions would include psychotherapies like cognitive behavior therapy and interpersonal psychotherapy that require some adjustments to properly address the complexities of fatherhood. For instance, fathers can develop symptoms of PTSD from witnessing their partner having a traumatic birth and other perinatal traumas (Daniels et al. 2020), so adaptations to behavioral interventions to target the paternal experience would be beneficial. In addition, interventions need to expand to address substance abuse, personality disorders, risk for perpetrating IPV, and other externalizing behaviors. Innovation in the administration of assessments and psychotherapy treatments is needed to ensure access, including information technology screening/treatment that have had promising results in fathers and mothers (Fletcher et al. 2017; Martínez-Borba et al. 2018). Psychotropic medication may be warranted to treat fathers' perinatal mental illness, but considerations on stigma, the impact on sexual functioning including for future pregnancies, and potential for prescription abuse for certain medications need to be considered.

While research on developing new therapy and psychiatric interventions is encouraged, the greater challenge is fathers accessing treatment. There are several barriers worldwide to fathers receiving treatment: (1) recognition of mental health problems by men, (2) men identifying and seeking

professional support, (3) access to perinatal psychiatric clinics that accept fathers, and (4) access to psychiatric services that effectively assess and treat paternal perinatal mental health, and retain fathers in treatment. In addition to the national level of concerns, investigation of cultural barriers to men engaging in treatment is needed in subpopulations of a nation. Research needs to be genuinely inclusive of fathers from diverse racial, ethnic, and linguistic backgrounds to ensure the findings are generalizable.

Training practitioners to work with fathers

Training mental health practitioners to work effectively with men during the transition to fatherhood is an area with little study and much room to grow. While different approaches to training parents (including fathers), such as the National Family Preservation Network's Basic and Advanced Trainings (Martens et al. 2004) and the Positive Parenting Program (Sanders 2012), have received empirical support as programmatic interventions, there are not any curricula existing for the training of mental health clinicians providing care for fathers experiencing paternal perinatal mental health issues. CBT, IPT, ACT, and EMDR have received the most attention in the reproductive research with mothers (Morrell et al. 2011), so focusing research on the effectiveness of these approaches with perinatal fathers has intuitive appeal in terms of clinical training.

Education and training are necessary across multiple tiers of the healthcare system. Administrators benefit from information showing the prevalence and impact of paternal mental illness along with information regarding programmatic approaches to implement gender-inclusive mental health training and culture shift within their organizations. Health care providers including psychiatrists, obstetricians, mental health clinicians, and supporting medical professionals will benefit from training that focuses on raising awareness of the high prevalence of mental illness in perinatal fathers, how to screen them, and how to make appropriate referrals for treatment as needed. For mental health clinicians, it is important to remember that for every two mothers at risk of depression, one father will also develop depression (Cameron et al. 2016; O'Hara and Swain 1996; Paulson and Bazemore 2010; Rao et al. 2020), which points to the need for training to address ways to better involve fathers and partners in treatment as well as to gain experience and continuing education regarding the common mental health issues that new and expectant fathers commonly experience. Paternal perinatal mental illness should be included in the educational curricula of the perinatal mental health graduate, postdoctoral, and continuous education programs. Future research on effective training of mental health practitioners in working with fathers' experience of mood, anxiety, substance, and relationship issues during the perinatal period is warranted.

Future policies to support paternal mental health

While a growing number of countries worldwide acknowledge the impact of paternal mental health on the overall well-being of the family, very few countries have policies in place to reflect the latest research. The UK is one of the few countries that draws attention to the issue of paternal mental health. The National Health Service is including mental health checks and treatment for new and expectant fathers, which will be implemented in their long-term plan by 2023 (Darwin et al. 2021). The Australian government has promised millions of dollars to support the social and emotional well-being of men in Australia. A portion of the allocated money will go toward an initiative to support Aboriginal and Torres Strait Islander males, an especially marginalized Australian population. Part of the initiative includes workshops on mental health and 1-on-1 support for father's suffering from mental illness. In the last 10 years, Sweden's parental leave reform has brought to light the correlation between synchronous parental leave and better maternal mental health outcomes (Duvander et al. 2020). Knowing that there is a link between maternal and paternal mental health, there may be an opportunity to modify maternal health policies to better serve fathers (Matthey et al. 2000). For example, postpartum depression screenings could be expanded to include screening all parents at routine visits. Routine screening would help provide early treatment to those in need and potentially decrease the negative impact on current and future child health (Connell and Goodman 2002). In addition, fathers whose partners have perinatal depression can be provided tools to support mothers' mental health and receive aid to address their own mental health while bolstering their family (Mayers et al. 2020). Combining the growing foundational research with the levers for change represented by policy makers, international legislative bodies have an opportunity to improve identification, evaluation, and treatment of paternal mental health to benefit fathers, children, and families.

Policies addressing parental leave during the postpartum period and even pregnancy are necessary first to support mothers through the early development of the child, but also need to include fathers to support father involvement, the father-child bond, and equitable parenting rather than the historical overburdening of mothers. Policies offering parental leave to both mothers and fathers have led to positive outcomes, including better infant/child health outcomes (e.g., lower mortality rates), fathers' likelihood of taking time off from work to engage in childrearing, and increased duration of breastfeeding (Brown and Davies 2014; Nandi et al. 2018). Recently, New Zealand unanimously approved a policy to provide three days of paid leave to both mothers and fathers who have lost a child through miscarriage. Forward-thinking policies that support parents coping with

the transition to parenthood or the loss of their child would support perinatal mental health on a national scale.

The International Marcé Society for perinatal mental health and the inclusion of fathers

This past year celebrated the 40th year of the inception of the Marcé Society. During this time, it has expanded from a small group of clinicians and researchers to a global entity. A collection of psychiatrists, psychologists, social workers, obstetricians, pediatricians, and other practitioners and researchers who work with parents and their infants during the perinatal period are now a part of the Marcé Society and take an active part in the biennial scientific meetings and online forums. It was decided many years ago to concentrate on the mental health and well-being of the mother, as the infant's mental health was covered by the World Association for Infant Mental Health (WAIMH). That did by no means preclude the importance of the infant, and indeed the infant was and remains an integral part of the work of the Marcé Society. The last 10 years have seen a significant expanding interest into the father's perinatal mental health and as a consequence the research and inclusion in clinical practice has increased substantially.

The Marcé Fathers Special Interest Group (SIG) was started in the summer of 2019 with the agenda to unite perinatal father researchers and practitioners worldwide and guide the field to progress toward a deeper inclusion of fathers. Since then, the Fathers SIG has promoted International Fathers' Day, sponsored a symposium at the international conference, hosted a roundtable at the conference to gather other father specialists and provide education, and expanded their membership worldwide with the support of the Marcé Society. Following its success, the Fathers SIG committee has advocated for the Marcé Society to consider the integral inclusion of fathers' mental health alongside maternal perinatal mental health to have a comprehensive picture of the family environment that affects the mother, father, and infant.

Fathers' mental health can no longer be missing from the conversation, and as the Marcé Society continues to grow, so do the avenues of exciting research and clinical work. As currently there is no global organization dedicated to paternal mental health, the Marcé Society has the ability to attract researchers and clinicians who would not normally consider being a member. We encourage researchers and clinicians who specialize in fathers and anyone interested in learning how fathers can influence their work with mothers and/infants to join the Fathers SIG group so that we can optimize our support of perinatal families. Our aim is to have diverse, global representation so that our recommendations and initiatives are representative of all fathers. It is important to appreciate that our understanding of perinatal mental

health and its impact on child/family health is incomplete without the inclusion of father (or partner) mental health. Even beyond fathers, this mission needs to expand to other partners and family dynamics including perinatal LGBTQ couples. The inclusion of paternal mental health within the Marcé Society can promote a positive global impact ensuring fathers worldwide have the joy of fatherhood they deserve.

Declarations

Research involving human participants and/or animals Not applicable.

Informed consent Not applicable.

Conflict of interest The authors declare no competing interests.

References

- Antony MM, Bieling PJ, Cox BJ, Enns MW, Swinson RP (1998) Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychol Assess* 10(2):176
- Bailey BA (2010) Partner violence during pregnancy: prevalence, effects, screening, and management. *Int J Womens Health* 2:183
- Black MC (2011) Intimate partner violence and adverse health consequences: implications for clinicians. *Am J Lifestyle Med* 5(5):428–439
- Blair-West GW, Mellsoop GW (2001) Major depression: does a gender-based down-rating of suicide risk challenge its diagnostic validity? *Aust N Z J Psychiatry* 35(3):322–328. <https://doi.org/10.1046/j.1440-1614.2001.00895.x>
- Brown A, Davies R (2014) Fathers' experiences of supporting breastfeeding: challenges for breastfeeding promotion and education. *Matern Child Nutr* 10(4):510–526
- Brownhill S, Wilhelm K, Barclay L, Schmied V (2005) 'Big Build': hidden depression in men. *Aust N Z J Psychiatry* 39(10):921–931. <https://doi.org/10.1080/j.1440-1614.2005.01665.x>
- Cameron EE, Sedov ID, Tomfohr-Madsen LM (2016) Prevalence of paternal depression in pregnancy and the postpartum: an updated meta-analysis. *J Affect Disord* 206:189–203
- Cameron EE, Giesbrecht GF, Tomfohr-Madsen LM (2021) Psychometric properties of the Pregnancy-Related Anxiety Scale for use with fathers during pregnancy. *Psychol Men Masculinities* 22(1):26
- Cheng ER, Rifas-Shiman SL, Perkins ME, Rich-Edwards JW, Gillman MW, Wright R, Taveras EM (2016) The influence of antenatal partner support on pregnancy outcomes. *J Womens Health* 25(7):672–679
- Cochran SV, Rabinowitz FE (2003) Gender-sensitive recommendations for assessment and treatment of depression in men. *Prof Psychol Res Pract* 34(2):132–140. <https://doi.org/10.1037/0735-7028.34.2.132>
- Connell AM, Goodman SH (2002) The association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems: a meta-analysis. *Psychol Bull* 128(5):746–773. <https://doi.org/10.1037/0033-2909.128.5.746>
- Cook F, Giallo R, Petrovic Z, Coe A, Seymour M, Cann W, Hiscock H (2017) Depression and anger in fathers of unsettled infants: a community cohort study. *J Paediatr Child Health* 53(2):131–135

- Cox J, & Holden J (2003) Perinatal mental health: a guide to the Edinburgh Postnatal Depression Scale (EPDS): Royal College of Psychiatrists
- Daniels E, Arden-Close E, Mayers A (2020) Be quiet and man up: a qualitative questionnaire study into fathers who witnessed their partner's birth trauma. *BMC Pregnancy Childbirth* 20:1–12
- Darwin Z, Domoney J, Iles J, Bristow F, McLeish J, & Sethna V (2021) Involving and supporting partners and other family members in specialist perinatal mental health services. *Good practice guide*
- Davis RN, Davis MM, Freed GL, Clark SJ (2011) Fathers' depression related to positive and negative parenting behaviors with 1-year-old children. *Pediatrics* 127(4):612–618
- Deave T, Johnson D (2008) The transition to parenthood: what does it mean for fathers? *J Adv Nurs* 63(6):626–633
- Dennis CL, Ross L (2006) Women's perceptions of partner support and conflict in the development of postpartum depressive symptoms. *J Adv Nurs* 56(6):588–599
- Don BP, Mickelson KD (2012) Paternal postpartum depression: the role of maternal postpartum depression, spousal support, and relationship satisfaction. *Couple Family Psychol Res Pract* 1(4):323
- Duvander A-Z, Lappegard T, & Johansson M (2020) Impact of a reform towards shared parental leave on continued fertility in norway and sweden. *Popul Res Policy Rev* 1–25
- Eaton WW, Anthony JC, Gallo J, Cai G, Tien A, Romanoski A, ... Chen L-S (1997) Natural history of Diagnostic Interview Schedule/DSM-IV major depression: The Baltimore epidemiologic catchment area follow-up. *Arch General Psychiatry* 54(11):993–999
- Figueiredo B, Conde A (2011) Anxiety and depression in women and men from early pregnancy to 3-months postpartum. *Arch Womens Mental Health* 14(3):247–255
- Figueiredo B, Canário C, Tendais I, Pinto TM, Kenny DA, Field T (2018) Couples' relationship affects mothers' and fathers' anxiety and depression trajectories over the transition to parenthood. *J Affect Disord* 238:204–212
- Fisher SD (2016) Paternal mental health: why is it relevant? *Am J Lifestyle Med*. <https://doi.org/10.1177/1559827616629895>
- Fisher SD, Kopelman R, O'Hara MW (2012) Partner report of paternal depression using the Edinburgh Postnatal Depression Scale-Partner. *Arch Womens Mental Health* 15:283–288. <https://doi.org/10.1007/s00737-012-0282-2>
- Fisher SD, Brock RL, O'Hara MW, Kopelman R, Stuart S (2015a) Longitudinal contribution of maternal and paternal depression to toddler behaviors: interparental conflict and later depression as mediators. *Couple Family Psychol Res Pract* 4(2):61
- Fisher SD, Brock RL, O'Hara MW, Kopelman R, Stuart S (2015b) Longitudinal contribution of maternal and paternal depression to toddler behaviors: interparental conflict and later depression as mediators. *Couple Family Psychol Res Pract* 4(2):61
- Fletcher RJ, Feeman E, Garfield C, Vimpani G (2011) The effects of early paternal depression on children's development. *Med J Aust* 195(11–12):685–689
- Fletcher RJ, Maharaj ONN, Fletcher Watson CH, May C, Skeates N, Gruenert S (2013) Fathers with mental illness: implications for clinicians and health services. *Med J Aust* 199(3):S34–S36
- Fletcher R, Kay-Lambkin F, May C, Oldmeadow C, Attia J, Leigh L (2017) Supporting men through their transition to fatherhood with messages delivered to their smartphones: a feasibility study of SMS4dads. *BMC Public Health* 17(1):1–10
- Galbally M, Lewis AJ (2017) Depression and parenting: the need for improved intervention models. *Curr Opin Psychol* 15:61–65
- Garfield CF, Duncan G, Rutsohn J, McDade TW, Adam EK, Coley RL, & Chase-Lansdale PL (2014) A longitudinal study of paternal mental health during transition to fatherhood as young adults. *Pediatrics*. <https://doi.org/10.1542/peds.2013-3262>
- Garfield CF, Fisher SD, Barretto D, Rutsohn J, Isacco A (2019) Development and validation of a father involvement in health measure. *Psychol Men Masculinities* 20(1):148
- Gelenberg AJ (2010) The prevalence and impact of depression. *J Clin Psychiatry* 71(3):e06. <https://doi.org/10.4088/jcp.8001tx17c>
- Gillis A, Roskam I (2019) Daily exhaustion and support in parenting: impact on the quality of the parent–child relationship. *J Child Fam Stud* 28(7):2007–2016
- Goldstein Z, Rosen B, Howlett A, Anderson M, Herman D (2020) Interventions for paternal perinatal depression: a systematic review. *J Affect Disord* 265:505–510
- Goodman JH (2004) Paternal postpartum depression, its relationship to maternal postpartum depression, and implications for family health. *J Adv Nurs* 45(1):26–35
- Hanington L, Heron J, Stein A, Ramchandani P (2012) Parental depression and child outcomes—is marital conflict the missing link? *Child* 38(4):520–529
- Hossain Z, Field T, Gonzalez J, Malphurs J, Valle CD, Pickens J (1994) Infants of “depressed” mothers interact better with their nondepressed fathers. *Infant Ment Health J* 15(4):348–357
- Kiviruusu O, Pietikäinen JT, Kylliäinen A, Pölkki P, Saarenpää-Heikkilä O, Marttunen M et al (2020) Trajectories of mothers' and fathers' depressive symptoms from pregnancy to 24 months postpartum. *J Affect Disord* 260:629–637
- Kroenke K, Spitzer RL, & Williams JB (2003) The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care* 1284–1292
- Lamb ME, Pleck JH, Charnov EL, & Levine JA (1985) Paternal behavior in humans. *Am Zool* 25(3):883–894. Retrieved from <http://www.jstor.org.ezproxy.bu.edu/stable/3883043>
- Leach LS, Poyser C, Cooklin AR, Giallo R (2016) Prevalence and course of anxiety disorders (and symptom levels) in men across the perinatal period: a systematic review. *J Affect Disord* 190:675–686
- Liber JM, van Widenfelt BM, Goedhart AW, Utens EM, van der Leeden AJ, Markus MT, Treffers PD (2008) Parenting and parental anxiety and depression as predictors of treatment outcome for childhood anxiety disorders: Has the role of fathers been underestimated? *J Clin Child Adolesc Psychol* 37(4):747–758
- Lovejoy MC, Graczyk PA, O'Hare E, Neuman G (2000) Maternal depression and parenting behavior: a meta-analytic review. *Clin Psychol Rev* 20(5):561–592
- Löwe B, Decker O, Müller S, Brähler E, Schellberg D, Herzog W, & Herzberg PY (2008) Validation and standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the general population. *Med Care* 266–274
- Magovcevic M, Addis ME (2008) The Masculine Depression Scale: development and psychometric evaluation. *Psychoneuroendocrinology* 9:117–132. <https://doi.org/10.1037/1524-9220.9.3.117>
- Martens P, Kirk RS, Reed-Ashcraft K (2004) National Family Preservation Network. Director 888:498–9047
- Martínez-Borba V, Suso-Ribera C, Osma J (2018) The use of information and communication technologies in perinatal depression screening: a systematic review. *Cyberpsychol Behav Soc Netw* 21(12):741–752
- Matthey S, Barnett B, Ungerer J, Waters B (2000) Paternal and maternal depressed mood during the transition to parenthood. *J Affect Disord* 60(2):75–85
- Mayers A, Hambidge S, Bryant O, Arden-Close E (2020) Supporting women who develop poor postnatal mental health: what support do fathers receive to support their partner and their own mental health? *BMC Pregnancy Childbirth* 20(1):359. <https://doi.org/10.1186/s12884-020-03043-2>
- McBride BA, Mills G (1993) A comparison of mother and father involvement with their preschool age children. *Early Childhood Res Q* 8(4):457–477

- Morrell CJ, Ricketts T, Tudor K, Williams C, Curran J, Barkham M (2011) Training health visitors in cognitive behavioural and person-centred approaches for depression in postnatal women as part of a cluster randomised trial and economic evaluation in primary care: the PoNDER trial. *Primary Health Care Res Dev* 12(1):11–20
- Mumford EA, Liu W, Joseph H (2018) Postpartum domestic violence in homes with young children: the role of maternal and paternal drinking. *Violence Women* 24(2):144–162
- Nandi A, Jahagirdar D, Dimitris MC, Labrecque JA, Strumpf EC, Kaufman JS, ... Earle A (2018) The impact of parental and medical leave policies on socioeconomic and health outcomes in OECD countries: a systematic review of the empirical literature. *Milbank Q* 96(3):434–471
- O'Hara MW, Swain AM (1996) Rates and risk of postpartum depression—a meta-analysis. *Int Rev Psychiatry* 8:37–54. <https://doi.org/10.3109/09540269609037816>
- Paulson JF, Bazemore SD (2010) Prenatal and postpartum depression in fathers and its association with maternal depression: a meta-analysis. *J Am Med Assoc* 303:1961–1969. <https://doi.org/10.1001/jama.2010.605>
- Paulson JF, Keefe HA, Leiferman JA (2009) Early parental depression and child language development. *J Child Psychol Psychiatry* 50(3):254–262
- Philpott LF, Leahy-Warren P, FitzGerald S, Savage E (2017) Stress in fathers in the perinatal period: a systematic review. *Midwifery* 55:113–127
- Philpott LF, Savage E, FitzGerald S, Leahy-Warren P (2019) Anxiety in fathers in the perinatal period: a systematic review. *Midwifery* 76:54–101
- Pinheiro R, Magalhães P, Horta B, Pinheiro K, Da Silva R, Pinto R (2006) Is paternal postpartum depression associated with maternal postpartum depression? Population-based study in Brazil. *Acta Psychiatr Scand* 113(3):230–232
- Pinto TM, Samorinha C, Tendais I, Nunes-Costa R, Figueiredo B (2017) Paternal adjustment and paternal attitudes questionnaire: antenatal and postnatal Portuguese versions. *Assessment* 24(6):820–830
- Psouni E, Eichbichler A (2020) Feelings of restriction and incompetence in parenting mediate the link between attachment anxiety and paternal postnatal depression. *Psychol Men Masculinities* 21(3):416
- Ramchandani P, Psychogiou L (2009) Paternal psychiatric disorders and children's psychosocial development. *Lancet* 374(9690):646–653
- Ramchandani P, Stein A, Evans J, O'Connor TG (2005) Paternal depression in the postnatal period and child development: a prospective population study. *Lancet* 365:2201–2205. [https://doi.org/10.1016/S0140-6736\(05\)66778-5](https://doi.org/10.1016/S0140-6736(05)66778-5)
- Ramchandani PG, Stein A, O'Connor TG, Heron J, Murray L, Evans J (2008) Depression in men in the postnatal period and later child psychopathology: a population cohort study. *J Am Acad Child Adolesc Psychiatry* 47(4):390–398
- Rao W-W, Zhu X-M, Zong Q-Q, Zhang Q, Hall BJ, Ungvari GS, Xiang Y-T (2020) Prevalence of prenatal and postpartum depression in fathers: a comprehensive meta-analysis of observational surveys. *J Affect Disord* 263:491–499
- Rapee RM (2000) Group treatment of children with anxiety disorders: outcome and predictors of treatment response. *Aust J Psychol* 52(3):125–129. <https://doi.org/10.1080/00049530008255379>
- Sanders MR (2012) Development, evaluation, and multinational dissemination of the Triple P-Positive Parenting Program. *Annu Rev Clin Psychol* 8:345–379
- Saxbe DE, Schetter CD, Simon CD, Adam EK, Shalowitz MU (2017) High paternal testosterone may protect against postpartum depressive symptoms in fathers, but confer risk to mothers and children. *Horm Behav* 95:103–112
- Sethna V, Murray L, Netsi E, Psychogiou L, Ramchandani PG (2015) Paternal depression in the postnatal period and early father–infant interactions. *Parenting* 15(1):1–8
- Sethna V, Murray L, Edmondson O, Iles J, Ramchandani PG (2018) Depression and playfulness in fathers and young infants: a matched design comparison study. *J Affect Disord* 229:364–370
- Sidebottom AC, Harrison PA, Godecker A, Kim H (2012) Validation of the Patient Health Questionnaire (PHQ)-9 for prenatal depression screening. *Arch Womens Mental Health* 15(5):367–374
- Singley DB, Edwards LM (2015) Men's perinatal mental health in the transition to fatherhood. *Prof Psychol Res Pract* 46(5):309
- Singley DB, Cole BP, Hammer JH, Molloy S, Rowell A, Isacco A (2018) Development and psychometric evaluation of the Paternal Involvement With Infants Scale. *Psychol Men Masculinity* 19(2):167
- Sockol LE, Allred KM (2018) Correlates of symptoms of depression and anxiety among expectant and new fathers. *Psychol Men Masculinity* 19(3):362
- Stapleton LRT, Schetter CD, Westling E, Rini C, Glynn LM, Hobel CJ, Sandman CA (2012) Perceived partner support in pregnancy predicts lower maternal and infant distress. *J Fam Psychol* 26(3):453
- Tambelli R, Trentini C, Trovato A, Volpi B (2019) Role of psychosocial risk factors in predicting maternal and paternal depressive symptomatology during pregnancy. *Infant Ment Health J* 40(4):541–556
- Vakrat A, Apter-Levy Y, Feldman R (2018) Sensitive fathering buffers the effects of chronic maternal depression on child psychopathology. *Child Psychiatry Hum Dev* 49(5):779–785
- Volling BL, & Belsky J (1991) Multiple determinants of father involvement during infancy in dual-earner and single-earner families. *J Marriage Family* 461–474
- Zierau F, Bille A, Rutz W, Bech P (2002) The Gotland Male Depression Scale: a validity study in patients with alcohol use disorder. *Nord J Psychiatry* 56(4):265–271

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.