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Review article

Prevalence of paternal depression in pregnancy and the postpartum: An updated meta-analysis

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ABSTRACT

Background: Research in paternal prenatal and postpartum depression has nearly doubled since prevalence rates were last meta-estimated in October 2009. An updated meta-analysis allows additional questions to be answered about moderators that influence risk.
Methods: Studies reporting paternal depression between the first trimester and one-year postpartum were obtained for the period from January 1980 to November 2015. In total 74 studies with 41,480 participants were included, and data was extracted independently by two authors. Moderator analyses included measurement method, timing of assessment, study location, publication year, age, education, parity, history of depression, and maternal depression.
Results: The meta-estimate for paternal depression was 8.4% (95% confidence interval [CI], 7.2–9.6%) with significant heterogeneity observed among prevalence rates. Prevalence significantly varied based on publication year, study location, measurement method, and maternal depression. Prevalence was not conditional on paternal age, education, parity, history of paternal depression, and timing of assessment.
Limitations: Analyses were limited by variability in assessment measures, countries from which studies were available, extant data for the first trimester and 6- to 9-month postpartum, and method of reporting sociodemographic information.
Conclusions: Paternal depression was present in 8% of men in the included studies. Future screening policies and interventions should consider moderating risk factors for depression throughout the transition to parenthood.

Contents

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1. Introduction

Depression is a serious mental health concern for fathers during the transition to parenthood, with prevalence rates estimated to range from 1% to 46% depending on the mental health of the man's partner, sample size from which incidence was drawn, and measure used to assess prenatal and postpartum depression (Dudley et al., 2001; Goodman, 2004; Skari et al., 2002). Paternal depression is negatively associated with intimate relationship satisfaction (Don and Mickelson, 2012; Wee et al., 2011), parenting practices (Paulson et al., 2006; Wilson and Durbin, 2010), and emotional and behavioural outcomes in children including later psychopathology (Ramchandani et al., 2008; Ramchandani et al., 2005). Paternal depression is also highly correlated with maternal depression (Paulson and Bazemore, 2010; Wee et al., 2011) with an increase in depression in one partner potentially leading to an increased risk in the other (Wee et al., 2011). This relationship poses a further risk to the child for future psychopathology as exposure to two parents with depression is exponentially worse than exposure to only one (Foley et al., 2001; Goodman et al., 1993). Due to the significant consequences of paternal prenatal and postpartum depression, research attention in the area has recently increased substantially.

Prevalence estimates of paternal depression during the transition to parenthood range widely due to the heterogeneity of assessment time points, methods used, and populations assessed (Paulson and Bazemore, 2010). To date, only one review has quantitatively evaluated the prevalence of paternal prenatal and postpartum depression in the available literature (Paulson and Bazemore, 2010). Paulson and Bazemore (2010) reported a meta-estimate of paternal depression of approximately 10% based on 43 studies published from 1980 to 2009. The meta-analysis also indicated that there was a relatively higher rate of depression in the 3- to 6-month postpartum period (Paulson and Bazemore, 2010). Due to small sample sizes in the first trimester and 9–12 months postpartum, Paulson and Bazemore (2010) created discrete categories of 0–6 months gestation (i.e., first and second trimester) and 6–12 months postpartum, which may not accurately represent the rate of risk during these periods. Narrowing the time periods to more specific ranges could assist health care providers in applying screening procedures during the critical months during the transition to parenthood. Similarly, when comparing rates of depression in different study locations, the review's sample sizes limited the extent of these analyses leading to a dichotomous comparison of the United States and International countries (Paulson and Bazemore, 2010). Identifying continents with higher risks of depression may inform priority areas for implementation of screening and intervention procedures for paternal prenatal and postpartum depression. Lastly, risk factors for paternal depression during the transition to parenthood have been reported to include paternal age, education, psychiatric history, and maternal depression (Ballard and Davis, 1996; Schumacher et al., 2008; Wee et al., 2011). However, to date there has been no meta-analysis that has investigated the moderation of paternal demographics and maternal depression on rates of paternal prenatal and postpartum depression.

Since the previous review was conducted in 2009, the number of published studies on this subject has nearly doubled rendering an updated and inclusive meta-estimate necessary. An increasing number of available studies means that there is room for further synthesis and clarification of moderators of prevalence rates. Meta-analysis is an ideal method to quantitatively answer questions about prevalence rates and associated moderators in the literature. Thus, the current study provides a meta-estimate of prevalence rates of paternal prenatal and postpartum depression with attention paid to conditional effects of assessment method, time of measurement, study location, publication year, age, education, parity, history of depression, and maternal depression.

2. Method

A meta-analysis of peer-reviewed articles of prenatal and postpartum correlates and predictors of paternal depressive symptoms in male human participants was conducted. Published literature analyzing depression prevalence in fathers was reviewed with specific attention paid to the methodology and time points of assessment, measures used to assess depression, location of study, paternal sociodemographic information, maternal depression, and inclusion and exclusion criteria outlined. This meta-analysis is reported according to the PRISMA Statement guidelines (Liberati et al., 2009; Moher et al., 2015) and was registered with PRISMA through the Centre for Reviews and Dissemination (Registration No. CRD42015027815).

2.1. Search strategy

Four electronic databases (i.e. CINAHL with Full Text, PsycINFO, Medline, Health Source: nursing/academic edition) were searched for articles published from January 1980 to November 2015 using the search terms *paternal* or *father(s)* or *fatherhood* or *dads, postpartum* or *perinatal* or *antenatal* or *prenatal* or *postnatal* or *pregnancy* or *birth* or *childbirth* or *gestation,* and *depression* or *depressive*. The first author (EC) performed all database searches. The search was limited to papers that were written in English, published in the specified time range from scholarly (peer-reviewed) journals, contained the search terms within the title or abstract of the article, and included male participants. As a supplement to the electronic search, the reference lists of both included studies and recent reviews were evaluated for inclusion.

2.2. Study selection

Two authors (EC and IS) independently determined the eligibility of the retrieved studies. Disagreements about the inclusion of a study were resolved through discussion with the senior author (LT). The titles and abstracts of retrieved studies were reviewed and coded as either “no,” “yes,” or “maybe” to determine eligibility. The studies marked “no” were excluded while those marked “yes” or “maybe” were thoroughly reviewed for inclusion. If inclusion/exclusion criteria restrictions were not met, those articles were omitted from the meta-analysis.