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Stress in fathers in the perinatal period: A systematic review

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ABSTRACT

Background: despite the evidence that fatherhood has a long-term positive and protective effect on men's health, there is also evidence that fatherhood in the perinatal period can be complex and demanding. Due to the potential increase in stressors in the perinatal period, there is reason to hypothesise that it is a time of increased stress for fathers. However, it is not clear how significant a problem stress is for fathers during this stage of life. This is in part, due to the fact that the available research has not been systematically reviewed.

Purpose: the purpose of this systematic review was to critically appraise the empirical evidence that examined stress in fathers in the perinatal period.

Design: systematic review.

Methods: a systematic review protocol was developed and registered with PROSPERO (Reference number: CRD42016035821). The review was guided by the PRISMA reporting process. Electronic databases Medline, CINAHL, the Cochrane Library, PsycARTICLES, PsycINFO, Psychology and Behavioural Sciences Collections were searched to identify studies that met the inclusion criteria. Studies that researched fathers in the perinatal period were included if stress was the principal focus of the research, if stress was in the title and/or aim of the study or if stress was an outcome or dependent variable. Data were extracted and presented in narrative form including tables and figures.

Findings: eighteen studies met the inclusion criteria. The findings indicate that fathers experience stress in the perinatal period, particularly at the time of birth. Stress levels were found to increase from the antenatal period to the time of birth, with a decrease in stress levels from the time of birth to the later postnatal period. There are a number of factors that contribute to stress in fathers in the perinatal period and these included negative feelings about the pregnancy, role restrictions related to becoming a father, fear of childbirth and feelings of incompetence related to infant care. The review found that stress has a negative impact on fathers, with higher stress levels contributing to mental health issues such as anxiety, depression, psychological distress and fatigue.

Key conclusion: during the perinatal period fathers experience stress and face unique stressors that can impact negatively on their health and social relationships.

Introduction

The perinatal period, which covers the time when a man's partner becomes pregnant through to the first year after birth is marked by significant change and the absence of routine (Wilson, 2008; Leach et al., 2014). While most of these changes are expected and welcome, others can be unanticipated (Paulson and Bazemore, 2010). Fatherhood, even when it is desirable and planned, can be complex and demanding and can have a negative impact on men's mental health, resulting in stress, anxiety and increased risk of depression (Pollock et al., 2005; Kim and Swain, 2007; Veskrna, 2010; Leach et al., 2016).

Over the last three decades, researchers have investigated the mental health of fathers in the perinatal period, with the majority of studies focusing on depression. Paulson and Bazemore (2010) undertook a meta-analysis of 43 studies that assessed paternal postnatal depression (PPND) and reported a prevalence of 10.4%. Cameron et al. (2016) in their meta-analysis of 74 studies reported a prevalence of 8.4%. These rates of depression are above those seen in the general male adult population which are estimated at 4.7% (National Institute

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of Mental Health, 2015). Stress has been identified as a critical risk factor for the development of depression (Cohen and Janicki-Deverts, 2012) and there is evidence that the onset and duration of depression is strongly linked to stress (Cohen et al., 2007).

Stress is associated with the development of anxiety (Wee et al., 2015) which is more common than depression in the general population (Wittchen et al., 2011; Bandelow and Michaelis, 2015) and among fathers in the perinatal period (Leach et al., 2016). A systematic review by Leach et al. (2016) indicated that between 4% and 16% of fathers experience anxiety during the prenatal period, while between 2% and 18% experiencing anxiety during the postnatal period. Perinatal anxiety is associated with negative outcomes such as fear of childbirth (Hall et al., 2009), low levels of self-confidence (Reck et al., 2012), increased fatigue (Taylor and Johnson, 2013) and impaired paternal/infant interactions (Bögels and Phares, 2008).

Stress has been identified as a very broad term (Darabi et al., 2016). Lazarus and Folkman (1984) in their classic stress model distinguished between predecessors of stress and consequences of stress. They defined stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus and Folkman, 1984, p.19). This model refers to stress as a transaction between an individual (father) and the environment (stressors e.g. lack of sleep, work-family conflict), in which stress is seen as an adaptive response to an event (fatherhood) that may have positive or negative implications for well-being (Cronin and Becher, 2015).

Due to the potential increase in stressors in the perinatal period, it can be hypothesised that this period is a time of increased stress for fathers. However, it is currently not known how common a problem stress is for fathers during this life stage. Up to this point there has been no attempt to systematically review studies that have examined stress in fathers in the perinatal period. A systematic review will give a better understanding of stress in fathers during this life stage. Analysing factors that contribute to stress will help identify risk populations of fathers, inform service planning and lead to more targeted interventions to support fathers during the perinatal period. It will also provide researchers with an opportunity to identify areas where future research is needed. Given the lack of clarity around the current knowledge and the potential impact of stress, a systematic review is both timely and warranted.

The aim of this review was to systematically review evidence from studies that explored stress in fathers in the perinatal period. The objectives for this review were to identify: a) how stress was measured; b) the levels of stress among fathers in the perinatal period; c) the factors contributing to stress; d) interventions and strategies used to manage stress; and g) the impact of stress on fathers in relation to their health and social relationships.

Methods

A systematic review was conducted. The PRISMA statement was used to guide the reporting of this review (Moher et al., 2009).

Search strategy

A systematic review protocol was developed and registered with PROSPERO (Reference number: CRD42016035821). Electronic databases Medline, CINAHL, the Cochrane Library, PsycARTICLES, PsycINFO, Psychology and Behavioural Sciences Collections were searched to identify studies potentially eligible for inclusion based on pre-determined criteria. The reference lists of all papers that met the inclusion criteria were scanned to identify further relevant studies. The search strategy included the Boolean terms "OR"/ "AND," Medical Subject Headings (MeSH), CINAHL headings and truncation "*". Keywords and their synonyms were combined (father* OR paternal OR dad* OR male OR men) AND (prenatal OR prepartum OR antenatal OR antepartum OR perinatal OR peripartum OR postnatal OR postpartum OR preg* OR childbirth OR birth OR labour OR labor) AND (stress* OR distress). Studies for inclusion were quantitative designs of any type, published in English from May 2001 to May 2016. Studies that researched fathers' during the perinatal period were included, if stress was the principal focus of the research, with reference to stress in the title and/or aim of the study, or if stress was an outcome or dependent variable. Studies that reported stress in couples were included provided that the data specific to men and women were reported separately. Exclusion criteria were studies reporting psychological distress expressed as depression, anxiety, posttraumatic stress disorder or pathological mental health disorders. Other studies excluded were those that reported findings from fathers whose infants were preterm, admitted to the neonatal unit, or had a perinatal diagnosis of a birth defect or who experienced perinatal loss of an infant through stillbirth, miscarriage, or neonatal death. The reason for excluding these studies was that fathers may experience may experience additional stressors in these circumstances. Studies were excluded if the method of conception was by assisted reproductive technology (ART) because most births are associated with naturally conceived pregnancies (Zhu et al., 2016) and ART is associated with additional stressors beyond normal pregnancy (An et al., 2013).

Study selection

The electronic search strategy yielded a total of 4487 records. These records were exported to EndNoteX7 and duplicates were deleted. The authors paired to independently screen the titles and abstracts of papers from the Medline, and CINAHL database and Cochrane library searches (LP & ES), and from the PsycARTICLES, PsycINFO, and Psychology and Behavioural Sciences Collections databases searches (PL-W & SF). In total, 3450 papers were excluded, leaving 62 papers for full text review. The full text papers were divided in two and allocated to paired authors (PL-W & SF; LP & ES). The authors in each pair independently read the full text papers. Eighteen papers were identified to include for review, and a further 4 papers were identified from screening the reference lists of included papers. Therefore, the final search output was 22 papers which reported on 18 studies. The selection process and output is presented in Fig. 1.

Data extraction and analysis

An extraction table was developed and piloted before the final version was adopted. One author (LP) extracted the relevant data from the 18 studies which were: author names and country, year of publication, study setting, study aims, sample size and demographic data of the study sample (mean age, marital and employment status, education level and parity), stress scores, measurement tools and time points, factors contributing to stress, and the impact of stress on fathers. Data extraction was independently cross-checked by two co-authors (ES, SF). Discrepancies were resolved by consensus. Data extraction is presented in Table 1.

Risk of bias assessment

All observational studies (i.e. cross-sectional, longitudinal) were assessed for risk of bias using criteria based on guidelines for 'STrengthening the Reporting of OBservational Epidemiological' (STROBE) studies which Sanderson et al. (2007) reported as incorporating the key principal sources of bias. These criteria are: selection bias; measurement bias; design specific bias; confounding bias; statistical method bias; and conflict of interest or funding sources. For randomised controlled trials (RCTs), the Cochrane Collaboration Risk of Bias tool was used to assess for bias relating to selection, performance, detection, attrition, reporting, and other bias evident (Higgins et al., 2013). The assessment of both observational and RCT studies involved