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Research paper

Postnatal paternal involvement and maternal emotional disturbances: The effect of maternal employment status

Wan-Chien Lin[a], Shin-Yow Chang[b], Yi-Ting Chen[c], Hsin-Chien Lee[d,e,f], Yi-Hua Chen[a,*]

[a] School of Public Health, College of Public Health, Taipei Medical University, Taipei, Taiwan
[b] Department of Living Science, National Open University, Taipei, Taiwan
[c] Department of Educational Psychology and Counseling, National Taiwan Normal University (Doctoral Student), Taiwan
[d] Department of Psychiatry, Shuang Ho Hospital, Taipei Medical University, Taipei, Taiwan
[e] Department of Psychiatry, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan
[f] Research Center of Sleep Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

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ABSTRACT

Background: Recently, studies have begun emphasizing paternal involvement during the perinatal period and its impact on maternal health. However, most studies have assessed maternal perception and focused on adolescents or minority groups in Western countries. Therefore, the current study investigated the association between paternal involvement and maternal postnatal depression and anxiety, along with the effects of maternal job status in the Asian society of Taiwan.

Methods: This study recruited pregnant women in the first trimester of pregnancy as well as their partners on prenatal visits from July 2011 to September 2013 at four selected hospitals in metropolitan areas of Taipei, Taiwan. In total, 593 parental pairs completed the first interview and responded to the follow-up questionnaires until 6 months postpartum. Self-reported data were collected, and multiple logistic regression models were used for analyses.

Results: Lower paternal childcare and nursing frequency was independently associated with an increased risk of maternal postpartum depression (adjusted odds ratio (OR) = 4.33, 95% confidence interval (CI) = 1.34–13.98), particularly among unemployed mothers. Furthermore, among unemployed mothers, the risk of postnatal anxiety was 3.14 times higher in couples with fathers spending less time with the child, compared with couples with fathers spending more time (95% CI = 1.10–8.98). However, no significant findings were obtained for employed mothers.

Conclusions: The high prevalence of maternal postnatal emotional disturbances warrants continual consideration. Higher paternal involvement in childcare arrangements should be emphasized to aid in ameliorating these maternal emotional disturbances, particularly among unemployed mothers.

1. Introduction

Pregnancy and childbirth are crucial stages in women's lives. Women are confronted with changes in their physical, psychological, and social roles, which can easily result in perinatal mental illnesses (O'Hara and Wisner, 2014; Razurel et al., 2011). Perinatal mental illnesses, including depression and anxiety, frequently occur during pregnancy and within 12 months postpartum (O'Hara and Wisner, 2014). Because postnatal depression and anxiety are critical public health problems, many studies have focused on such problems (Wynter et al., 2013). The worldwide prevalence of postnatal depression is 9.1–50.5% (Alharbi and Abdulghani, 2014; Escriba-Aguir and Artazcoz, 2011; Gausia et al., 2009; Grant et al., 2012; Ho et al., 2013; Kerstis et al., 2012; Serhan et al., 2013) and that of postnatal anxiety is 6.4–31.8% (Grant et al., 2012; Martini et al., 2013; Paul et al., 2013; Teng et al., 2005), based on different assessment instruments used in different populations and areas. Numerous studies have indicated that maternal perinatal mental health not only affects the mother herself but also the entire family, including the effects on marital relationships and on the emotional, cognitive, and behavioral development of children (Fihrer et al., 2009; Mamun et al., 2009; Murray et al., 2011; Parfitt et al., 2013). Numerous risk factors have been reported for postnatal emotional status, including marital problems (Escriba-Aguir and Artazcoz, 2011; Savarimuthu et al., 2010), lack of support (Meltzer-

* Corresponding author.
E-mail address: yichen@tmu.edu.tw (Y.-H. Chen).

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Brody et al., 2013; Sawyer et al., 2010; Serhan et al., 2013; Xie et al., 2009), previous emotional problems (Escriba-Aguir and Artazcoz, 2011; Gausia et al., 2009), higher parenting stress (Glavin et al., 2010), poor lifestyle (Burgut et al., 2013; Farr et al., 2014), and other maternal and infantile social demographic variables (Burgut et al., 2013; Kirpinar et al., 2010; Paul et al., 2013; Savarimuthu et al., 2010).

The importance of the fathers during perinatal periods has been increasingly emphasized as cumulative evidences reported of paternal perinatal mental health and its impact on maternal depression (Ballard et al., 1994; Goodman, 2004; Paulson and Bazemore, 2010) and child behavioral and emotional developmental outcomes (Ramchandani et al., 2005; van den Berg et al., 2009). Recent studies have further stressed the prominence of paternal involvement specifically during the perinatal period; for example, fathers are encouraged to engage in childcare and to offer instrumental support to mothers (Smith and Howard, 2008). Paternal involvement can positively affect child growth and development (Salihu et al., 2014) as well as the marital relationship (Mehall et al., 2009). Paternal disengaged interactions with their infants are associated with early behavioral problems in children (Herring et al., 2006; Ramchandani et al., 2013). Furthermore, paternal involvement is an essential source of support for mothers. Studies have indicated that maternal postpartum depression was associated with less involvement of the father (Meltzer-Brody et al., 2013) or his instrumental support (Smith and Howard, 2008). Redshaw and Henderson (Redshaw and Henderson, 2013) reported that multiparous women whose partner took no paternity leave were significantly more likely to report depression during 1–3 postnatal months than do women whose partners took the standard 2-week leave.

Maternal job status is another crucial factor influencing maternal postnatal emotional status. Compared with unemployed mothers, employed mothers were significantly associated with a reduced risk of postpartum depression (Miyake et al., 2011), and the partners of mothers with full-time jobs showed higher involvement with their babies (Maroto-Navarro et al., 2013). Both employed and unemployed mothers may have various needs and expectations of paternal involvement during the perinatal period.

Although some studies have explored the relationship between paternal involvement and maternal postnatal depression, these have focused mainly on adolescent mothers or minority groups (Cox et al., 2008; Fagan and Lee, 2010; Gee and Rhodes, 2003; Smith and Howard, 2008), with most assessments of paternal involvement being recorded from maternal reports. Moreover, these studies have lacked investigation on the general population to examine the self-reported paternal involvement status and its association with maternal postnatal emotional status. Compared with postnatal depression, anxiety is a less noted but equally essential concern. In addition, the effects of maternal job status on this association have not been emphasized sufficiently. Moreover, previous studies have mostly been implemented in Western countries, seldom focusing on Asian cultures, particularly East Asian culture, where the behavior patterns as well as family and community structures are greatly influenced by Confucianism, Taoism, and Buddhism (Huang et al., 2012). Western fathers tend to actively participate in family life and activities, whereas Asian fathers tend to still regard childcare as the mothers' obligation (Tseng and Verklan, 2008).

The present study investigated the current picture of paternal involvement and maternal emotional disturbances, including depression and anxiety, at 6 months postpartum in the Asian society of Taiwan. The effects of paternal involvement on maternal postnatal depression and anxiety were examined, along with the potential modifying effects of maternal job status on this association. We hypothesize that mothers whose partner is less involved in childcare during 6 months postpartum have higher levels of maternal depression and anxiety symptoms, even controlling for the major covariates, and that this effect is stronger in unemployed mothers.

2. Methods

2.1. Study design and study sample

This study used data of the Longitudinal Examination Across Prenatal and Postpartum Health in Taiwan (LEAPP-HIT) project. In total, 593 pregnant mothers in the first trimester of pregnancy as well as their partners were consecutively recruited during their prenatal visits from July 2011 to September 2013 at four selected hospitals in Taipei City and New Taipei City in Taiwan. They were followed up until 6 months postpartum. The recruitment criteria were as follows: (1) mothers who were at or approaching the 16th gestation week, (2) mothers and fathers who could read Chinese, and (3) mothers and fathers who both consented to participate until at least 6 months postpartum. All participants (mothers and fathers) completed a self-reported questionnaire five times, from pregnancy (first, second, and third trimesters) to 6 months postpartum (1 and 6 months postpartum). These questionnaires were used for further analysis. Responses obtained at 6 months postpartum, rather than 1 month postpartum, were used to examine the association between paternal involvement and maternal emotional status, because postnatal care arrangements and maternal emotional status may be more stable and less transitional at 6 months postpartum compared with those shortly after childbirth. Written informed consent was obtained before the interview. Ethical approval for this study was obtained from the institutional review boards of the study hospitals.

2.2. Data collection

The parents were initially contacted in the outpatient center of the hospitals during their prenatal visit during the early stages of pregnancy. Trained interviewers explained the study, obtained informed consent, and distributed questionnaires for both mothers and fathers to answer. The participants were followed using postal mail. We maximized the responses through telephone reminders. The follow-up response rate was 79.9%. In total, 474 couples were finally considered valid for analysis.

2.3. Instruments and measures

Herein, the terms "depression" and "anxiety" denote higher depression and anxiety levels, respectively, based on the participants' self-reported symptoms, but these do not indicate clinical diagnosis. The assessments are described as follows.

2.3.1. Depression

The Edinburgh Postnatal Depression Scale (EPDS) was used to assess perinatal depression (Cox et al., 1987). It is a 10-item, 4-point scale, with a score range of 0–3 for each question (0 = normal, 3 = most severe). The Chinese version of the EPDS has adequate validity and reliability (Lee et al., 1998). Its Cronbach's alpha in this study was 0.86 and 0.75 for mothers and fathers, respectively. Mothers with EPDS scores ≥ 13 were considered to have higher perinatal depression levels (Serhan et al., 2013; Su et al., 2007). The cut-off value of ≥ 13 had suitable sensitivity and specificity (i.e., 83% and 89% in pregnant Taiwanese women, respectively) (Su et al., 2007). In addition, at the cut-off value of 10, the EPDS scale had high sensitivity and specificity in fathers (Edmondson et al., 2010).

2.3.2. Anxiety

The State-Trait Anxiety Inventory-State scale (STAI-S) was used to assess maternal and paternal perinatal anxiety, with specific emphasis on the feelings of worry, tension, nervousness, and apprehension as anxiety regarding a temporary condition during the perinatal period (Spielberger et al., 1970). The STAI-S contains 20 items rated on a 4-point scale, with a total score range of 20–80. Higher scores indicate