



Review

Maternal anxiety during pregnancy and adverse birth outcomes: A systematic review and meta-analysis of prospective cohort studies



Xiu-Xiu Ding^{a,b,1}, Yi-Le Wu^{c,1}, Shao-Jun Xu^{a,b,*}, Ruo-Ping Zhu^{a,b}, Xiao-Min Jia^{a,b}, Shi-Fen Zhang^d, Kun Huang^{a,b}, Peng Zhu^{a,b}, Jia-Hu Hao^{a,b}, Fang-Biao Tao^{a,b}

^a Department of Maternal, Child and Adolescent Health, School of Public Health, Anhui Medical University, No. 81 Meishan Road, Hefei 230032, Anhui, China

^b Anhui Provincial Key Laboratory of Population Health & Aristogenics, Hefei 230032, Anhui, China

^c Department of Epidemiology and Statistics, School of Public Health, Anhui Medical University, No. 81 Meishan Road, Hefei 230032, Anhui, China

^d Department of Obstetrics and Gynecology, Maternal and Child Health Hospital of Anhui Province, Hefei 230001, Anhui, China

ARTICLE INFO

Article history:

Received 10 September 2013

Received in revised form

11 February 2014

Accepted 12 February 2014

Available online 26 February 2014

Keywords:

Anxiety

Birth weight

Pregnancy

Preterm

ABSTRACT

Background: Previous studies concerning the association between maternal anxiety during pregnancy and adverse birth outcomes have provided controversial findings.

Methods: In this systematic review, a meta-analysis was utilized to investigate the association between maternal anxiety and preterm birth (PTB) and/or low birth weight (LBW). Literature was searched until June 2013. Only prospective cohort studies that reported data on maternal anxiety during pregnancy with PTB and/or LBW were included. Pooled relative risks (RRs) with 95% confidence intervals (CIs) were calculated using fixed or random effects models depending on the size of heterogeneity.

Results: Twelve studies totaling 17,304 pregnant women reported PTB data; and six studies totaling 4948 pregnant women reported LBW data. Maternal anxiety during pregnancy was associated with significant increased risk of PTB (pooled RR=1.50, 95% CI=1.33–1.70) and LBW (pooled RR=1.76, 95% CI=1.32–2.33).

Limitations: Potential moderators could not be adequately considered due to insufficient information. In addition, the effects of different types of anxiety disorder on the risk of these adverse birth outcomes could not be investigated.

Conclusions: The results suggested that maternal anxiety during pregnancy was positively related to an increased risk of PTB and LBW. Healthcare providers should give close attention to anxiety in pregnant women and provide appropriate mental health support in order to improve outcomes for both mothers and infants.

© 2014 Elsevier B.V. All rights reserved.

Contents

1. Introduction	104
2. Method	104
2.1. Identification and selection of studies	104
2.1.1. Search strategy	104
2.1.2. Inclusion and exclusion criteria	104
2.2. Data extraction	105
2.3. Assessment of study quality	105
2.4. Statistical analysis	105
3. Results	106
3.1. Study characteristics	106
3.2. Quantitative synthesis	106

* Corresponding author at: Department of Maternal, Child and Adolescent Health, School of Public Health, Anhui Medical University, No. 81 Meishan Road, Hefei 230032, Anhui, China. Fax: +86 551 63869179.

E-mail address: xushaojun@ahmu.edu.cn (S.-J. Xu).

¹ Xiu-Xiu Ding and Yi-Le Wu contributed equally to this work.

3.2.1.	Prenatal anxiety and risk of preterm birth	106
3.2.2.	Prenatal anxiety and risk of low birth weight	107
3.3.	Sensitivity analyses	108
3.4.	Bias diagnostics	108
4.	Discussion	108
5.	Conclusions	109
	Role of funding source	109
	Conflict of interest	109
	Acknowledgments	109
	References	109

1. Introduction

Globally, an estimated 14.9 million babies are born preterm annually yielding an 11.1% prevalence of preterm birth (PTB) (Blencowe et al., 2012), which is the leading cause of neonatal morbidity and mortality (Zhu et al., 2010). In the United States, PTB occurs in 12–13% of all pregnancies (Goldenberg et al., 2008). In China, the prevalence of PTB is approximately 5–15% (Zhu et al., 2010). Furthermore, more than 20 million infants worldwide, representing 15.5% of all births are born with low birth weight (LBW) (Wardlaw et al., 2004). Also, LBW is an important factor that increases the risk of infant mortality and morbidity (Valero De Bernabé et al., 2004). Therefore, major public health concerns have been focusing on PTB and LBW until now. Numerous evidences have indicated that birth outcomes may be affected by various factors such as toxicant exposure, maternal habits, occupational hazards, psychosocial factors, socioeconomic status, racial disparity, chronic stress, and infection (Weck et al., 2008).

The vast majority of women experiences pregnancy at least once in their lives (Ventura et al., 2004). Pregnancy can be viewed as a period of transition and adaptation as women undergo physical, physiological, social and emotional changes (Yali and Lobel, 1999; Yuksel et al., 2014). While some women may perceive pregnancy as a source of joy, satisfaction, maturity, self-realization and happiness, many others may experience somewhat anxiety (Yuksel et al., 2014). Anxiety symptoms and disorders are becoming important issues in research of perinatal populations (Meades and Ayers, 2011). Prenatal anxiety has gradually been recognized as a potential etiology that may lead to PTB and LBW (Nasreen et al., 2010; Loomans et al., 2013; Sanchez et al., 2013). The earliest study which focused on the potential etiologic roles of prenatal anxiety for PTB and LBW could be traced to 1974 (Gorsuch and Key, 1974). However, findings on this topic have shown a relatively incongruent picture during the last decades. Some studies reported that maternal anxiety during pregnancy was significantly associated with adverse birth outcomes such as PTB and LBW (Dole et al., 2003; Orr et al., 2007; Maina et al., 2008; Nasreen et al., 2010). On the contrary, others suggested that there is no such significant association between maternal anxiety and these adverse birth outcomes (Field et al., 2003; Andersson et al., 2004; Berle et al., 2005). These conflicting results may be related to differences in sample sizes, study design, socioeconomic status, ethnicity, the extent of controlling for confounding factors and the timing, frequency, and type of prenatal anxiety assessment. Given the inconsistent results of previous studies, a systematic review and meta-analysis was performed to quantify the strength of the association between maternal anxiety during pregnancy and PTB/LBW.

Studies including one meta-analysis indicated that depression during pregnancy was linked to increased risks of PTB and LBW (Li et al., 2009; Neggers et al., 2006; Grote et al., 2010). Unfortunately, the evidence is relatively limited in the field of prenatal anxiety compared to prenatal depression. Although the prevalence of

maternal anxiety during pregnancy is heterogeneous, anxiety symptoms and disorders are common in the perinatal period (Meades and Ayers, 2011; Ross and McLean, 2006; Giardinelli et al., 2012). This paper is aimed to provide evidence on whether maternal anxiety during pregnancy is associated with the risk of adverse birth outcomes such as PTB and LBW. It may help clinicians determine whether pregnant women should be screened for anxiety and help anxious pregnant women to manage their emotions through psychotherapy, as well to weigh the benefits and risks of pharmacological treatment when psychotherapy is not available, and fundamentally to improve outcomes for both mothers and infants. Moreover, the modificatory effect of country location was examined in this meta-analysis. It should be expected that women with prenatal anxiety in developing countries would show a higher probability of adverse birth outcomes because of their more limited access to adequate prenatal and mental health services, compared with women in developed countries such as United States. In addition, the timing of prenatal anxiety assessment as a potential moderator on the correlations between anxiety and adverse birth outcomes was examined. Finally, the difference between the effect of anxiety symptoms and anxiety disorder on adverse birth outcomes was also explored in this meta-analysis.

2. Method

The preferred reporting items for systematic reviews and meta-analysis (PRISMA) statement was consulted to report this review (Moher et al., 2009).

2.1. Identification and selection of studies

2.1.1. Search strategy

Two investigators (Ruo-Ping Zhu, Xiao-Min Jia) performed comprehensive literature searches independently on PubMed, EMBASE, CINAHL, PsycINFO, Chinese Biomedical Database (CBM), VIP (Chinese) database, Chinese National Knowledge Infrastructure (CNKI), Wanfang (Chinese) database and www.google.com up to June 2013. We used the following search strategy ('antenatal' or 'prenatal' or 'pregnancy') and 'anxiety' and ('birthweight' or 'birth weight' or 'preterm birth' or 'prematurity' or 'adverse birth outcome' or 'adverse pregnancy outcome') or relevant Chinese technical terms for the Chinese databases to search for eligible articles. Also, other relevant studies were identified by a search of the references of retrieved articles. Studies published in English and Chinese were included, while abstracts and review articles were excluded.

2.1.2. Inclusion and exclusion criteria

The following criteria were used to include published studies: (a) prospective cohort studies; (b) anxiety symptoms or anxiety disorder assessed in all pregnant women by means of self-reported questionnaire or structured psychiatric interview at least

Download English Version:

<https://daneshyari.com/en/article/4186036>

Download Persian Version:

<https://daneshyari.com/article/4186036>

[Daneshyari.com](https://daneshyari.com)