Social capital and antenatal depression among Chinese primiparas: A cross-sectional survey

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ABSTRACT

The aim of this study is to investigate the associations between social capital and antenatal depression among Chinese primiparas. A cross-sectional design was used and a questionnaire survey was conducted with 1471 participants using the intercept method at the provincial hospital in Zhejiang in 2016. Antenatal depression was evaluated using the Edinburgh Postnatal Depression Scale (EPDS) and social capital was assessed by the Chinese version of Social Capital Assessment Questionnaire (C-SCAQ). The prevalence of antenatal depression was assessed among Chinese primiparas in their third trimesters. The antenatal depression prevalence among subgroups with lower social trust (ST), social reciprocity (SR), social network (SN), and social participation (SP) were significantly higher than those among higher score sub-groups. In the fully adjusted model, primiparas’ antenatal depression was significantly associated with ST, SR, SN, and SP. Compared to the structural social capital, the cognitive social capital was a more crucial dimension to the prevalence of antenatal depression. For future community pregnancy health care management programs in China, it might be beneficial to add more social capital related intervention.

1. Introduction

Perinatal depression is a major health issue for women regardless of the cultural background, and was most often investigated in the postnatal rather than antenatal period (Vesile et al., 2011). However, antenatal depression is a common type of mental illnesses that can affect women during their pregnancy, and can be a precursor to postpartum depression if it is not properly treated (Couto et al., 2015). Any form of prenatal stress felt by the expectant mothers can have negative impacts over fetal development, which in turn could be harmful to the expectant mothers and their children. Previous studies suggested that if depression covers both the pregnancy and the postnatal periods, it can lead to greater infant growth impairment (Robert et al., 2013). The incidence of antenatal depression is as high as 20% during pregnancy (Olivier et al., 2015; Andrade, 2017). There have been a lot of studies among the western population, such as the study of Eastwood et al. (2017), where they investigated antenatal depression and its impact on perinatal outcomes in Australia; and Schwartz (2014) where he examined the prevalence of antenatal depression and determined the relationship between observed pregnancy complications and neonatal outcomes and major depression in Canada. In comparison, very few of such studies were conducted in China.

Devoting attention to antenatal depression and taking appropriate preventive measures are key to prenatal care of women. Usually, psychosocial and psychological interventions are used to prevent perinatal depression (Dennis, 2014). But it is worth noting that research from the 1970s had shown that social environment has a direct benefit to mental health and could prevent diseases (Kim et al., 2014). Social capital is associated with mental health according to scholars in western countries (Vesile et al., 2011; Wind and Komproe, 2012). According to Putnam (1993), social capital refers to “features of social organization, such as trust, norms and networks that can improve the efficacy of society by facilitating coordinated actions”. It has two categories, namely cognitive and structural components. The cognitive component involves internally subjective aspects that reflects people’s perceptions of the level of interpersonal trust, sharing, reciprocity and other norms (Murayama et al., 2012). The structural capital includes externally objective dimension and is featured by behavioural expression of social network and individual participation or community activities (Bassett and Moore, 2013).

Social capital plays a beneficial role in mental health. Shortage in social capital is associated with mental illness (Bouchard, 2013). The

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protective effects of social capital on mental health were increasingly reported in the recent years. The one-year cohort study conducted by George (from 24th week of gestation to 8–10th week postpartum) demonstrated that higher pregnancy and maternal social capital was associated with lower EPDS scores (George et al., 2013). Another cross-sectional study demonstrated that individual cognitive social capital is associated with reduced odds of common mental disorders across four low-income countries (Mary et al., 2007). The results for structural social capital are more mixed and culture-specific, with some aspects associated with increased odds of common mental disorders (Mary et al., 2007).

China is facing its fourth birth peak. It is expected that the number of reproductive women will increase by 2 million every year (Ding, 2015). Due to the family planning policy in our country, the first generation has reached the age of childbearing (Ding, 2015), and most of them will be mothers for the first time. Primiparas are prone to anxiety and depression, about 50–70% of them will experience a period of unstable mood and accompanied by varying degrees of physical symptoms (Cui, 2013). So they need more effective preventive strategies during pregnancy, especially in their third trimesters, to reduce the risk of depression. However, up till now, the majority of the studies in this area are focused on postpartum depression and its influencing factors (Katon et al., 2014; Clatworthy, 2012; Gaillard et al., 2014), and very few are on antenatal depression (Clatworthy, 2012), especially from the perspective of social capital. The purpose of this study is to examine the prevalence of antenatal depression, and the association between social capital and antenatal depression during the third trimesters of Chinese primiparas.

2. Methods

2.1. Settings

The study was carried out in Hangzhou, the capital of Zhejiang Province in China. Potential participants were recruited from The Women's Hospital School of Medicine Zhejiang University, due to its stable number of primiparas and its adequate samples representative of the provincial demography. Moreover, this hospital was responsible for guiding and monitoring the care management program of pregnant women in Zhejiang Province. This make is easier for us to collect data.

2.2. Participants

A cross-sectional survey was carried out from March to August 2016, and random sampling was used to select primiparas. The target population included primiparas that were: 1) in the hospital for the prenatal check-up, 2) 18 years old and above, 3) 30–36 weeks pregnant, 4) planning to give birth and attend postpartum follow up at the hospital, 5) willing to participate in the study, 6) literate in Chinese, and 7) not suffering from any cognitive disorder. In the end, 1471 subjects were recruited for the current study and all of them had signed the consent form. Participation was purely voluntary. Refusal to participate would not affect the care they receive from the hospital.

2.3. Measurements

2.3.1. Measurement of social capital

Social capital was measured using the Chinese version of Social Capital Assessment Questionnaire (C-SCAQ), which revised based on the World Bank's Social Capital Assessment Tool and Bian's Chinese position table (Christiaan and Thierry, 2002; Bian, 2004). In the previous study, the Cronbach’s α of C-SCAQ was 0.838 (Cao, 2014).

The C-SCAQ measures individual perceptions of primiparas’ social capital, which is assessed within cognitive and structural domains. Indicators of cognitive social capital include social trust (ST) and social reciprocity (SR). ST was assessed with eight items that enquire the generalized trust among colleagues, neighbours and strangers. SR was on a seven-item scale. It assesses the reciprocity among colleagues, neighbours and strangers. Each item of SR and ST were graded by a 5-point Likert scale from “1-strongly disagree” to “5-strongly agree”.

Structural social capital was assessed by social network (SN) and social participation (SP). SN was assessed by Bian's Chinese position table. Considering the unique social characteristics of the Chinese people, Lin suggested the use of the position generator method to measure China's SN. Based on this method, Bian developed the Chinese position table to measure SN. SN was calculated by three indicators, including network diversity (the number of different occupations of members from his/her SN), upper reach-ability (the highest prestige occupation scores of SN members), and network range (the highest prestige occupation scores minus the lowest score of SN members). The Chinese position table has 20 occupations. The network diversity score ranges from 0 to 20, upper reach ability score ranges from 0 to 95, and network range score ranges from 0 to 94. SP was assessed with eleven items, which included the activities types, motivation and involvement. The items of activities types and motivation were graded using a 5-point Likert scale from "1-passive participation/non-participation" to "5-active participation". The items of involvement were binary-coded with 0 representing “non-participation” and 1 representing “participation”. Since the internal measurement units are not uniform, the standardized score of SN and SP were used.

2.3.2. Measurement of depression

Depressive symptoms were measured using the Chinese version of Edinburgh Postnatal Depression Scale (C-EPDS). EPDS was the most widely used screening instrument for perinatal depression in international research (Vesile et al., 2011). C-EPDS was tested and validated among Chinese pregnant women (Zhao et al., 2015). With a Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) diagnosis of major depression as the reference, C-EPDS demonstrated good reliability with a cut-off point score of ≥ 9 (sensitivity 0.72, specificity 0.88) (Zhao et al., 2015). It has been used in other Chinese studies and has been found to be reliable in measuring prenatal and postnatal women's depression (Wu et al., 2014; Wu et al. 2014; Qu et al., 2012). The scale consists of 10 self-reported items and the scoring of each item ranges from 0 to 3. The range of the total score is between 0 and 30.

2.4. Covariates

Covariates in this study included age, character (introvert, extrovert), planned pregnancy (yes, no), district (urban, rural), education level (secondary school and below, senior high school, junior college, undergraduate college, master degree and above), monthly income (≤ 1500 CNY, 1501–3000 CNY, 3001–4500 CNY, ≥ 4500 CNY), and family conditions (good, fair, poor).

2.5. Data analyses

Data were processed by EpiData 3.1 and analysed by SPSS 20.0 (SPSS Inc., Chicago, IL, USA). The subject was described with respect to her socio-demographic characteristics. Antenatal depression was expressed through odds ratios and assessed using chi-squared tests. The associations between socio-demographic characteristics and social capital were expressed through mean ± SD and assessed using T/F tests. Social capital was divided into two categories, which are the high score (≥ average score) and the low score (< average score) subgroups. The high score sub-group was used as the reference category. Binary logistic regression models were used to assess the independent relationships between social capital and antenatal depression adjusting for covariates. The adjusted odds ratios and 95% CI were calculated for all variables. The probability level was set to p < 0.05 to ensure statistical significance.

Structural equation modelling was used to assess the standardized
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