Postprint of a Meta-Analysis on the Prevalence of Postpartum Depression in Partners of Chinese Postpartum Women

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Abstract

Background Postpartum depression can occur not only in postpartum women but also in their spouses, which not only affects their quality of life and increases social and family economic burden, but is also detrimental to child growth and development. Early identification of its influencing factors is of great significance. Objective To determine the incidence rate of postpartum depression among spouses of postpartum women in China through Meta-analysis. Methods A computerized search was conducted in CNKI, Wanfang Data Knowledge Service Platform, VIP, Chinese Biomedical Literature Database, PubMed, Web of Science, CINAHL, Embase, and Cochrane Library for cohort studies, case-control studies, and cross-sectional studies on the incidence rate of postpartum depression among spouses of postpartum women in China, from database inception to March 19, 2024. Two researchers independently screened literature, extracted data, and assessed literature quality. Meta-analysis was performed using Stata 14.0 software. Results A total of 39 articles were included, with a total sample size of 12,162 cases. Meta-analysis results showed that the incidence rate of postpartum depression among spouses of postpartum women in China was 14% (95%CI=12%~17%). Subgroup analysis results showed that the incidence rate within 1 month postpartum was 17% (95%CI=13%~22%), and from 1 month to 1 year postpartum was 13% (95%CI=10%~15%); in inland areas it was 17% (95%CI=11%~23%), and in coastal areas it was 13% (95%CI=11%~16%); in studies using EPDS as the measurement tool, the incidence rate was 13% (95%CI=11%~16%), while with other tools it was 18% (95%CI=10%~29%); for spouses of primiparous women it was 15% (95%CI=11%~21%), and for spouses of multiparous women it was 14% (95%CI=11%~18%); for articles published from 2007-2016 it was 16% (95%CI=10%~22%), and for 2017-2023 it was 14% (95%CI=12%~16%). Sensitivity analysis was conducted by sequentially excluding individual studies, and the pooled effect size did not change significantly, indicating that the Meta-analysis results were relatively robust. The funnel plot

was basically symmetrical on both sides, and Egger's test results showed t=1.79, P=0.082, suggesting no significant publication bias. Conclusion The incidence rate of postpartum depression among spouses of postpartum women in China is relatively high, with an overall rate of 14%, reaching up to 17% within 1 month postpartum. Greater emphasis should be placed on early screening and prevention.

Full Text

Meta-analysis of the Incidence of Postpartum Depression among Maternal Spouses in China

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Abstract

Background: Postpartum depression may occur not only in mothers but also in their spouses, affecting their quality of life, increasing social and family economic burdens, and negatively impacting child development. Early identification of influencing factors is therefore crucial. **Objective:** To determine the incidence of postpartum depression among Chinese maternal spouses through meta-analysis. **Methods:** We systematically searched CNKI, Wanfang Data, VIP, CBM, PubMed, Web of Science, CINAHL, Embase, and Cochrane Library for cohort studies, case-control studies, and cross-sectional studies on the incidence of postpartum depression in Chinese maternal spouses from database inception to March 19, 2024. Two researchers independently screened literature, extracted data, and assessed study quality. Meta-analysis was performed using Stata 14.0 software. **Results:** Thirty-nine studies with a total sample size of 12,162 participants were included. The pooled prevalence of postpartum depression among maternal spouses in China was 14% (95%CI=12%-17%). Subgroup analyses revealed an incidence of 17% (95%CI=13%-22%) within one month postpartum versus 13% (95%CI=10%-15%) between one month and one year; 17% (95%CI=11%-23%) in inland regions versus 13% (95%CI=11%-16%) in coastal areas; 13% (95%CI=11%-16%) when measured with EPDS versus 18% (95%CI=10%-29%) with other instruments; 15% (95%CI=11%-21%) among spouses of primiparous women versus 14% (95%CI=11%-18%) among spouses

of multiparous women; and 16% (95%CI=10%-22%) for studies published 2007-2016 versus 14% (95%CI=12%-16%) for 2017-2023. Sensitivity analysis by sequential study removal yielded stable pooled estimates. The funnel plot showed symmetrical distribution, and Egger' s test (t=1.79, P=0.082) indicated no significant publication bias. **Conclusion:** The incidence of postpartum depression among Chinese maternal spouses is high at 14% overall, reaching 17% within the first postpartum month. Early screening and prevention efforts should be prioritized.

Keywords: Postpartum; Depression; Spouse; China; Incidence; Meta-analysis

Introduction

Postpartum depression (PPD) is a common mental disorder characterized by sadness, anxiety, and irritability [1], which seriously threatens patients' physical and mental health, reduces quality of life, affects marital relationships [2], and increases the risk of emotional and behavioral problems and psychiatric morbidity in children [3]. Research indicates that maternal spouses may also experience postpartum depressive symptoms, which tend to last longer and are more difficult to recover from compared to mothers [4]. Currently, paternal postpartum depression has garnered widespread attention from scholars both domestically and internationally. Multiple studies have investigated its prevalence among Chinese maternal spouses, but reported rates vary substantially from 4.10% to 49.49% [5-6] due to differences in survey regions and sample sizes. A systematic review found only one meta-analysis [7] summarizing literature published before 2016, which has limitations in reflecting current trends. Therefore, this study aims to update the evidence on paternal postpartum depression incidence in China using meta-analysis to provide reliable reference data for clinical prevention and treatment. This study was registered with PROSPERO (registration number: CRD42024543947).

Methods

1.1 Search Strategy

We systematically searched CNKI, Wanfang Data, VIP, CBM, PubMed, Web of Science, CINAHL, Embase, and Cochrane Library using a combination of subject headings and free text terms from database inception to March 19, 2024. Chinese search terms included "postpartum," "depression," and "husband/spouse/father," while English terms included "paternal/father/husband/spouse," "postpartum depression/depressive disorder," "China/Chinese," and "prevalence/epidemiology." The specific PubMed search strategy is shown in Table 1 .

1.2 Inclusion and Exclusion Criteria

Inclusion criteria: (1) Study design: cohort studies, case-control studies, or cross-sectional studies; (2) Participants: Chinese maternal spouses aged $ $18 years; (3) Outcomes: reported incidence of paternal postpartum depression or provided calculable data; (4) Assessment period: from birth to one year postpartum. **Exclusion criteria:** (1) Duplicate publications; (2) Unavailable full text or unextractable data; (3) Conference abstracts or reviews; (4) Low-quality studies; (5) Non-Chinese or non-English publications; (6) Special populations (e.g., spouses with prior psychiatric illness or fathers of ill newborns).

1.3 Literature Screening and Data Extraction

Two researchers independently conducted literature searches and screening according to the inclusion and exclusion criteria, with disagreements resolved by consultation with a third researcher. Extracted data included first author, publication year, sample size, number of depression cases, and survey region.

1.4 Quality Assessment

Two researchers independently assessed study quality using the Newcastle-Ottawa Scale (NOS) [8] for cohort and case-control studies (scores 1-3: low quality; 4-6: moderate; 7-9: high) and the 11-item criteria recommended by the Agency for Healthcare Research and Quality (AHRQ) [9] for cross-sectional studies (scores 0-3: low quality; 4-7: moderate; 8-11: high).

1.5 Statistical Analysis

We performed meta-analysis using Stata 14.0 software, reporting pooled incidence rates and 95% confidence intervals. Heterogeneity was assessed using I^2 statistics and Q tests. An $I^2<50\%$ with $P>0.1$ indicated low heterogeneity, warranting a fixed-effects model; otherwise, a random-effects model was used. Subgroup analyses explored sources of heterogeneity and compared incidence across subgroups. Sensitivity analysis was conducted by sequential study removal to assess result stability. Publication bias was evaluated using funnel plots and Egger' s test. Statistical significance was set at $P<0.05$.

Results

2.1 Literature Search Results

The initial search yielded 5,264 records. After removing duplicates and screening titles, abstracts, and full texts, 39 studies [5-6,10-46] were included. The screening process is illustrated in Figure 1 [Figure 1: see original paper].

2.2 Characteristics of Included Studies

The 39 included studies comprised 26 Chinese-language [6,10-11,13,16-17,19-21,24-34,36-37,39,41-43,45] and 13 English-language publications [5,12,14-15,18,22-23,32,35,38,40,44,46] published between 2007 and 2023, with a total sample of 12,162 participants and 1,709 depression cases. Reported incidence ranged from 4.10% [5] to 49.49% [6]. Detailed characteristics and quality assessment results are presented in Table 2 .

2.3 Meta-analysis Results

2.3.1 Overall Incidence Meta-analysis of all 39 studies using a random-effects model (I^2=93.28%, P<0.01) revealed a pooled paternal postpartum depression incidence of 14% (95%CI=12%-17%), as shown in Figure 2 [Figure 2: see original paper].

2.3.2 Subgroup Analysis Subgroup analyses showed significant heterogeneity within each subgroup (I^2>50% and P<0.1), necessitating random-effects models. Incidence was 17% (95%CI=13%-22%) within one month postpartum versus 13% (95%CI=10%-15%) between one month and one year; 17% (95%CI=11%-23%) in inland regions versus 13% (95%CI=11%-16%) in coastal areas; 13% (95%CI=11%-16%) when measured with EPDS versus 18% (95%CI=10%-29%) with other instruments; 15% (95%CI=11%-21%) among spouses of primiparous women versus 14% (95%CI=11%-18%) among spouses of multiparous women; and 16% (95%CI=10%-22%) for studies published 2007-2016 versus 14% (95%CI=12%-16%) for 2017-2023. Detailed results are presented in Table 3 .

2.3.3 Sensitivity Analysis Sequential removal of individual studies did not substantially alter the pooled effect size, indicating robust meta-analysis results, as illustrated in Figure 3 [Figure 3: see original paper].

2.3.4 Publication Bias The funnel plot showed symmetrical distribution of studies, and Egger' s test yielded t=1.79, P=0.082, suggesting no significant publication bias, as shown in Figure 4 [Figure 4: see original paper].

Discussion

3.1 Overall Incidence of Paternal Postpartum Depression

As China' s fertility policies continue to optimize and modern concepts of marriage and childbearing evolve, increasing attention is being paid to the physical and mental health of mothers and their spouses. This meta-analysis synthesized 39 studies from 22 regions across China over nearly 16 years, revealing an overall paternal postpartum depression incidence of 14% (95%CI=12%-17%). Wang et al. [7] reported a pooled incidence of 13.6% in their meta-analysis of 14 studies,

while Rao et al. [47] reported a global prevalence of 8.75% (95%CI=6.68%-11.07%), and rates in developed countries range from 8.5% to 13.76% [48-49]. These comparisons indicate that paternal postpartum depression is a significant concern in China.

Research shows that low mood and negativity are the most common manifestations [50], often accompanied by feelings of helplessness, anger, and frustration [51]. While mothers and newborns typically receive considerable attention, spouses' emotional needs may be overlooked [45]. Spouses face sudden increases in pressure from caring for both mother and infant while balancing work and family responsibilities, making them vulnerable to depression [31,39].

3.2 Subgroup Analysis of Paternal Postpartum Depression

The incidence measured within one month postpartum (17%) was higher than that measured between one month and one year (13%), consistent with Chen et al. [52]. During the early postpartum period, spouses must assume dual caregiving responsibilities, rapidly adapt to their new role, and confront financial pressures, leading to increased physiological and psychological stress [31,39]. When stress increases without adequate social support and psychological resources, depression becomes more likely [53]. Healthcare providers should monitor the psychological status of both mothers and spouses, guide families to attend to spouses' emotional needs, encourage spouses to express themselves, and reduce their caregiving psychological burden.

The incidence in inland regions (17%) exceeded that in coastal areas (13%), showing marked regional disparities similar to Wang et al. [7]. These differences may relate to uneven economic development, cultural variations, and imbalanced healthcare resources and service functions across regions [38]. Local healthcare centers should attend to spouses' physical and mental health while focusing on maternal and neonatal health.

Studies using the Edinburgh Postnatal Depression Scale (EPDS) reported lower incidence (13%) than those using other instruments (18%). Research demonstrates that EPDS is applicable for assessing perinatal depression in maternal spouses with good reliability and validity [14,54], whereas the Beck Depression Inventory (BDI), Self-Rating Depression Scale (SDS), Patient Health Questionnaire-9 (PHQ-9), and General Health Questionnaire (GHQ), while widely used for self-reported depressive symptoms, lack established specificity and sensitivity for detecting paternal postpartum depression.

Spouses of primiparous women showed higher incidence (15%) than those of multiparous women (14%), consistent with Jia et al. [32]. This may relate to higher postpartum depression rates among primiparous women themselves [55] and the positive correlation between maternal and paternal postpartum depression [7]. Additionally, spouses of multiparous women have more caregiving experience and adapt more quickly to postpartum role transitions [32]. Healthcare workers should enhance attention to postpartum depression in both mothers and

spouses and provide appropriate health education and puerperal care guidance.

The incidence was higher in studies published 2007-2016 (16%) than 2017-2024 (14%), possibly reflecting socioeconomic development and increased proportion of multiparous spouses following fertility policy adjustments [56]. Furthermore, evolving concepts of marriage and childbearing and changing family structures have led to increased paternal involvement in childcare, yielding greater self-efficacy and social recognition [57] and reducing depression risk. Healthcare providers should strengthen continuous care for mothers and infants to provide more medical support.

Limitations

This study has several limitations. First, substantial heterogeneity remained despite subgroup and sensitivity analyses, possibly due to variations in measurement tools and other study characteristics. Second, most included studies were cross-sectional, limiting causal inference. Third, sample sizes and results varied considerably across studies. Future large-scale, high-quality cohort studies are needed to further investigate factors influencing paternal postpartum depression in China.

Conclusion

The incidence of postpartum depression among Chinese maternal spouses is 14%, varying by measurement timing, region, instrument, parity, and publication year. These findings suggest that healthcare policymakers should allocate medical resources more equitably, and clinical staff should particularly focus on spouses' mental health during the first postpartum month, strengthen health education through multiple approaches, encourage spouses to seek social support, and guide families to attend to paternal psychological well-being to prevent postpartum depression.

References

[1] BELL A F, ANDERSSON E. The birth experience and women' s postnatal depression: a systematic review[J]. Midwifery, 2016, 39:112-123. DOI:10.1016/j.midw.2016.04.014.
[2] JOHANSSON M, BENDERIX Y, SVENSSON I. Mothers' and fathers' lived experiences of postpartum depression and parental stress after childbirth: a qualitative study[J]. Int J Qual Stud Health Well-being, 2020, 15(1):1722564. DOI:10.1080/17482631.2020.1722564.
[3] HUANG X H, WANG Y, WANG Y Q, et al. A prospective cohort study on the current status and characteristics of depression during pregnancy among pregnant women in Southwest China[J]. Nursing Research, 2024, 38(9):1516-1523. DOI:10.12102/j.issn.1009-6493.2024.09.002.
[4] ZHANG Y F, SUN H W, LI W G, et al. Maternal and paternal depression during pregnancy in China: prevalence, correlates, and network analysis[J].

Neuropsychiatr Dis Treat, 2021, 17:2269-2280. DOI:10.2147/NDT.S321675.
[5] ZHENG J, GAO L L, LI H B, et al. Postpartum depression and social support: a longitudinal study of the first six months as parents[J]. J Clin Nurs, 2023, 32(11/12):2652-2662. DOI:10.1111/jocn.16351.
[6] JIN L, FANG M L, LOU F L. Analysis of mental health status and correlation between primiparous women and their spouses[J]. Journal of Nursing Science, 2008, 23(8):62-63. DOI:10.3969/j.issn.1001-4152.2008.08.034.
[7] WANG T T, XU Y, LI Z Z, et al. Meta-analysis of the incidence of postpartum depression among Chinese maternal spouses and its relationship with maternal postpartum depression[J]. Journal of Central South University: Medical Edition, 2016, 41(10):1082-1089. DOI:10.11817/j.issn.1672-7347.2016.10.012.
[8] STANG A. Critical evaluation of the Newcastle-Ottawa scale for the assessment of the quality of nonrandomized studies in meta-analyses[J]. Eur J Epidemiol, 2010, 25(9):603-605. DOI:10.1007/s10654-010-9491-z.
[9] ZENG X T, LIU H, CHEN X, et al. Meta-analysis series part four: Quality assessment tools for observational studies[J]. Chinese Journal of Evidence-Based Cardiovascular Medicine, 2012, 4(4):297-299. DOI:10.3969/j.1674-4055.2012.04.004.
[10] MAO Q, CHEN W F, SU X Y, et al. Correlation study between depression status and stress, social support in spouses of primiparous women[J]. Chinese Journal of Behavioral Medical Science, 2007, 16(7):606-607. DOI:10.3760/cma.j.issn.1674-6554.2007.07.012.
[11] LI Y H, FU S L, XIE L F, et al. Investigation on depression status of puerperal women and their spouses[J]. Acta Universitatis Medicinalis Anhui, 2009, 44(4):506-508. DOI:10.19405/j.cnki.issn1000-1492.2009.04.025.
[12] GAO L L, CHAN S W C, MAO Q. Depression, perceived stress, and social support among first-time Chinese mothers and fathers in the postpartum period[J]. Res Nurs Health, 2009, 32(1):50-58. DOI:10.1002/nur.20306.
[13] LI Z M, LIU X Q, CHEN Y P, et al. Study on depressive mood status of primiparous women and their spouses after delivery[J]. The Journal of Practical Medicine, 2010, 26(17):3244-3246. DOI:10.3969/j.issn.1006-5725.2010.17.077.
[14] LAI B P, TANG A K, LEE D T, et al. Detecting postnatal depression in Chinese men: a comparison of three instruments[J]. Psychiatry Res, 2010, 180(2/3):80-85. DOI:10.1016/j.psychres.2009.07.015.
[15] MAO Q, ZHU L X, SU X Y. A comparison of postnatal depression and related factors between Chinese new mothers and fathers[J]. J Clin Nurs, 2011, 20(5/6):645-652. DOI:10.1111/j.1365-2702.2010.03542.x.
[16] CHEN X R, GAO Y J, LUO C Y, et al. Study on health status and related factors of parents of high-risk infants[J]. Journal of Medical Research, 2013, 42(4):103-107. DOI:10.3969/j.issn.1673-548X.2013.04.030.
[17] XU W Q, CHEN C, TANG Y P, et al. Investigation and analysis of related factors of depression status of perinatal women and their spouses[J]. Zhejiang Medical Education, 2014, 13(2):51-52,60. DOI:10.3969/j.issn.1672-0024.2014.02.018.
[18] KOH Y W, CHUI C Y, TANG C S, et al. The prevalence and risk factors of

paternal depression from the antenatal to the postpartum period and the relationships between antenatal and postpartum depression among fathers in Hong Kong[J]. Depress Res Treat, 2014, 2014:127632. DOI:10.1155/2014/127632.
[19] WANG J N, YANG L. Analysis of sociodemographic factors affecting depression in spouses of primiparous women[J]. Medical Information, 2015, 28(23):11-12. DOI:10.3969/j.issn.1006-1959.2015.23.015.
[20] ZHANG L L, ZHANG Y P, LEI C M, et al. Investigation on parenting sense of competence and depression status of neonatal fathers[J]. Chinese Journal of Modern Nursing, 2015, 21(7):777-780. DOI:10.3760/cma.j.issn.1674-2907.2015.07.007.
[21] LAI M H, WEN X, LI W S, et al. Study on the current status and influencing factors of postpartum depression in neonatal fathers[J]. Chinese Journal of Nursing, 2015, 50(5):546-551. DOI:10.3761/j.issn.0254-1769.2015.05.007.
[22] NGAI F W, NGU S F. Predictors of maternal and paternal depressive symptoms at postpartum[J]. J Psychosom Res, 2015, 78(2):156-161. DOI:10.1016/j.jpsychores.2014.12.003.
[23] ZHANG Y P, ZHANG L L, WEI H H, et al. Post partum depression and the psychosocial predictors in first-time fathers from Northwestern China[J]. Midwifery, 2016, 35:47-52. DOI:10.1016/j.midw.2016.01.005.
[24] LUO L B, WANG P H, DENG L L, et al. Study on the current status and influencing factors of postpartum depression in neonatal fathers during puerperium[J]. Journal of Nursing Science, 2017, 32(4):84-87. DOI:10.3870/j.issn.1001-4152.2017.04.084.
[25] WENG T T, YAN S Q, WANG Q Y, et al. Correlation study between parental postpartum depression and infant temperament[J]. Chinese Journal of Woman and Child Health Research, 2018, 29(3):254-258. DOI:10.3969/j.issn.1673-5293.2018.03.002.
[26] NIE M, JIAN F P. Occurrence and related factors of postpartum depression in spouses of primiparous women[J]. Nursing Practice and Research, 2018, 15(10):10-12. DOI:10.3969/j.issn.1672-9676.2018.10.004.
[27] LI F. Study on postpartum depression and its influencing factors in high-risk pregnant women and their spouses in a general hospital[D]. Guangzhou: Guangdong Pharmaceutical University, 2018.
[28] LUO G, DENG Y G, MENG C X. Analysis of incidence and related factors of postpartum depression in spouses of puerperal women[J]. Nursing Practice and Research, 2018, 15(2):1-4. DOI:10.3969/j.issn.1672-9676.2018.02.001.
[29] HE M Z. A longitudinal study on perinatal psychological status of pregnant women and their spouses with scarred uterus after cesarean section[D]. Hangzhou: Zhejiang Chinese Medical University, 2017.
[30] LU Y N. Study on mental health status and influencing factors of second-child parents during perinatal period[D]. Xianyang: Shaanxi University of Chinese Medicine, 2019.
[31] BAO Y M, CHENG H Y, OUYANG X P, et al. Analysis of current status and influencing factors of postpartum depression in spouses of second-child women[J]. Journal of Nursing, 2019, 26(17):73-76. DOI:10.16460/j.issn1008-9969.2019.17.073.

[32] JIA L, JI F Y, WU J, et al. Paternal depressive symptoms during the early postpartum period and the associated factors following the implementation of the two-child policy in China[J]. Arch Psychiatr Nurs, 2020, 34(2):43-49. DOI:10.1016/j.apnu.2020.02.007.
[33] WU J M, WANG H, WU J Y. Study on the current status and influencing factors of male postpartum depression in Ningbo City[J]. Modern Vocational Education, 2020(24):48-49.
[34] CHENG X. Current status and influencing factors of perinatal depression in pregnant women and their husbands under the background of second-child policy[D]. Beijing: Peking Union Medical College, 2020. DOI:10.27648/d.cnki.gzxhu.2020.000620.
[35] DUAN Z Z, WANG Y Y, JIANG P, et al. Postpartum depression in mothers and fathers: a structural equation model[J]. BMC Pregnancy Childbirth, 2020, 20(1):537. DOI:10.1186/s12884-020-03228-9.
[36] YUAN X H, FENG X. Influencing factors of postpartum depression in spouses of primiparous women[J]. Journal of Reproductive Medicine, 2021, 30(1):35-40. DOI:10.3969/j.issn.1004-3845.2021.01.007.
[37] ZHOU Y, TANG S Y. Analysis of occurrence status and influencing factors of postpartum depression in spouses of second-child women during puerperium[J]. Journal of Hunan Institute of Science and Technology: Natural Sciences, 2021, 34(2):42-46. DOI:10.16740/j.cnki.cn43-1421/n.2021.02.010.
[38] Prevalence and factors associated with male postnatal depression in China[J]. J Men' s Health, 2020. DOI:10.31083/jomh.v17i1.324.
[39] ZHAO L H, LU H, LIU X, et al. Study on current status and related factors of postpartum depression in second-child women and their spouses[J]. Journal of Nursing Management, 2022, 22(8):607-612. DOI:10.3969/j.issn.1671-315x.2022.08.015.
[40] ZHENG J, SUN K, AILI S, et al. Predictors of postpartum depression among Chinese mothers and fathers in the early postnatal period: a cross-sectional study[J]. Midwifery, 2022, 105:103233. DOI:10.1016/j.midw.2021.103233.
[41] WANG X X, JI C F, CHAO L H, et al. Investigation on current status and influencing factors of postpartum depression in husbands of puerperal women in Suzhou City[J]. Chinese General Practice Nursing, 2023, 21(23):3280-3284. DOI:10.12104/j.issn.1674-4748.2023.23.030.
[42] JIANG L L, XIE J S, XIAO Y Y, et al. Current status of postpartum depression in neonatal fathers in Guangming District of Shenzhen City and its impact on family function[J]. China Contemporary Medicine, 2023, 30(28):129-134. DOI:10.3969/j.issn.1674-4721.2023.28.030.
[43] FENG J, LI L L. Analysis of current status and related influencing factors of postpartum depression in spouses of primiparous women[J]. Shanghai Medical & Pharmaceutical Journal, 2023, 44(4):14-18. DOI:10.3969/j.issn.1006-1533.2023.04.005.
[44] HUANG J S, ZHENG J, LING-LING G. Individual and dyadic network analyses of depressive symptoms in Chinese postpartum couples: a cross-sectional study[J]. Midwifery, 2023, 116:103529. DOI:10.1016/j.midw.2022.103529.
[45] ZHOU Y P, HUANG F Y, CHEN Y Q, et al. Study on actor-partner

interdependence of postpartum depressive mood, resilience, and dyadic coping in puerperal women and their spouses[J]. Military Nursing, 2023, 40(12):10-13.
[46] ZHENG J, HAN R, GAO L. Social support, parenting self-efficacy, and postpartum depression among Chinese parents: the actor-partner interdependence mediation model[J]. J Midwifery Womens Health, 2024, 69(4):559-566. DOI:10.1111/jmwh.13588.
[47] RAO W W, ZHU X M, ZONG Q Q, et al. Prevalence of prenatal and postpartum depression in fathers: a comprehensive meta-analysis of observational surveys[J]. J Affect Disord, 2020, 263:491-499. DOI:10.1016/j.jad.2019.10.030.
[48] DA COSTA D, DANIELI C, ABRAHAMOWICZ M, et al. A prospective study of postnatal depressive symptoms and associated risk factors in first-time fathers[J]. J Affect Disord, 2019, 249:371-377. DOI:10.1016/j.jad.2019.02.033.
[49] TOKUMITSU K, SUGAWARA N, MARUO K, et al. Prevalence of perinatal depression among Japanese men: a meta-analysis[J]. Ann Gen Psychiatry, 2020, 19(1):65. DOI:10.1186/s12991-020-00316-0.
[50] FREITAS C J, WILLIAMS-READE J, DISTELBERG B, et al. Paternal depression during pregnancy and postpartum: an international Delphi study[J]. J Affect Disord, 2016, 202:128-136. DOI:10.1016/j.jad.2016.05.056.
[51] PEDERSEN S C, MAINDAL H T, RYOM K. "I wanted to be there as a father, but I couldn' t" : a qualitative study of fathers' experiences of postpartum depression and their help-seeking behavior[J]. Am J Mens Health, 2021, 15(3):15579883211024375. DOI:10.1177/15579883211024375.
[52] CHEN Y H, HUANG J P, AU H K, et al. High risk of depression, anxiety, and poor quality of life among experienced fathers, but not mothers: a prospective longitudinal study[J]. J Affect Disord, 2019, 242:39-47. DOI:10.1016/j.jad.2018.08.042.
[53] ZHANG C J, CHENG Y Y, CHEN D M, et al. Mediating role of team support between stress and anxiety-depression in ICU nurses[J]. Journal of Nursing Science, 2023, 38(13):70-73.
[54] PENG L, CHEN Y L, LI Y J, et al. Visual analysis of research hotspots on perinatal depression in maternal spouses based on Web of Science[J]. Chinese Journal of Woman and Child Health Research, 2023, 34(6):116-123. DOI:10.3969/j.issn.1673-5293.2023.06.017.
[55] YANG Z T, WEN X, YE Q Y, et al. Meta-analysis of depression detection rates throughout the reproductive period among Chinese women[J]. Chinese Journal of Disease Control & Prevention, 2023, 27(12):1475-1479. DOI:10.16462/j.cnki.zhjbkz.2023.12.018.
[56] DENG B, HU X, ZHANG C, et al. Study on health management strategies for pregnant women under the universal "two-child" policy[J]. Journal of Nanjing Medical University: Social Sciences, 2021, 21(2):159-164. DOI:10.7655/NYDXBSS20210212.
[57] ZHOU K, WU Z R. Topic expansion and narrative innovation of parenting observation reality shows—Reconstruction of family gender roles based on social learning theory[J]. China Television, 2022(11):50-56.

Author Contributions: Fan Yu was responsible for conceptualization, design, and manuscript writing; Li Rong supervised manuscript revision and quality control and takes overall responsibility for the work; Gong Shuangying performed data extraction, analysis, and quality assessment; Yang Xiaojuan and Li Rui conducted literature searching and screening.

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Note: Figure translations are in progress. See original paper for figures.