

Regulation of Postpartum Depression and Mental Health in Women

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Abstract: Postpartum depression (PD) has brought a series of harm to mother and child, family and society. In order to reduce its incidence and improve Women's mental health and quality of life, caregivers should be able to fully assess the risk factors for postpartum depression and predict postpartum depression occurrence, and actively take economic and effective preventive intervention measures. The present study reviews the characteristic of postpartum depression and incidence rate of PD. Moreover, some important impact factors are presented to reveal the complicated influencing mechanisms of PD symptoms. Specifically, influences from family affect the women's emotion stability. Moreover, prior depression and anxiety in women can also affect DP levels. Taking into account the multifaceted effects of PD on women's psychological well-being, effective interventions need to be better recognized. The present study mainly focuses on the treatment effectiveness of yoga and mindfulness on PD symptoms. This paper highlighted the need for more research on the impact factors and therapeutic aspects of PD.

Keywords: pregnancy and childbirth, depression, prevention, psychological intervention, postpartum depression

1. Introduction

Women from pregnancy to childbirth is to experience a very strong physical and emotional experience, but also a strong physical and psychological response process. In addition to women's fragile and sensitive personality characteristics, the role of women in pregnancy, especially after childbirth, is easy to cause maternal postpartum emotional instability, loss and other manifestations, that is, puerperium mental disorders. Puerperial mental disorders include postpartum bad mood disorders, postpartum depression and postpartum psychosis, among which postpartum depression has attracted the attention of experts and scholars at home and abroad due to its strong concealment and great harm.

2. Performance of Postpartum Depression

Typical postpartum depression is a mood disorder that occurs within 6 weeks postpartum and can persist throughout the puerperium or longer time, generally for 6 months postpartum. The clinical manifestations of postpartum depression are similar to the general depressive symptoms, but the cause and fact of concern are often related to the affairs of the baby or the husband, manifested as

uncontrollable long-term crying, solitude, pessimism, insomnia or drowsiness, difficulty in concentration, fatigue and loss of appetite, and a tendency to commit suicide or harm infants. Postpartum depression can not only seriously affect the physical and mental health of pregnant women, but also adversely affect the emotional, intellectual development and behavioral development of infants (especially male infants). The incidence of postpartum depression varies between home and abroad, from 10% to 20% in western countries, and the domestic incidence ranges from 5.36% to 11.09%. There are data showing that the recurrence rate of patients with postpartum depression after another childbirth is as high as 30%~50%.

3. Factors of Postpartum Depression

In recent years, with the development of modern medical model, people's demand for health and their attention to psychosocial factors increase, and the incidence of PPD is on the rise in China. Therefore, the research on PPD in the medical community is also on the rise. Due to the different cultural background, living status, study design, measurement tools and diagnostic criteria, sample size and study period of different countries, the lack of conceptual and methodological rigor and the influence of multiple factors, the incidence rate of PPD is different abroad. Studies have shown that reported incidence of PDD range from 2.1% in Zurich, Switzerland to 31.6% in Bordeaux, France, and currently 500,000 women develop PPD annually in the United States [1]. According to the current literature, the incidence of PPD abroad is 3.5%~33%. For example, the incidence of PPD was 11.4% to 28.6% [2]; Baker et al. investigated 495 ethnic minority women, and the incidence of PPD was 22.5%. Domestic studies reported that the incidence of PPD ranged from 11.35% to 18% [3]. Leung surveyed 269 new Chinese mothers in Hong Kong, and the incidence of PDD was 19.8% [4]. He Ping showed that the incidence of PDD was 7.6% to 20.9%; Li et al. found that the incidence of PPD was 38.7%, which to some extent reflected that the situation of maternal depression in a certain area may be related to material, spiritual life and medical care conditions, regional differences and evaluation criteria [3]. In one prior study, there were significant differences in education, occupation, residence conditions, and newborn gender. The influencing factors of postpartum depression were education level, occupation, living conditions, newborn gender, medical staff attitude, early maternal and infant skin contact and early sucking.

In addition, the occurrence of postpartum depression and prenatal mental health status are obviously related. People with prenatal anxiety, depression and mood disorder. The probability of depression increased. Besides, maternal anxiety, depression and mood disorders have a significant effect on women. Postpartum depression is a common disease and a frequently occurring disease.

The occurrence of postpartum depression is the result of a combination of many factors. The risk factors are occupational, poor living conditions, newborns are female, medical staff attitude, etc. Protective factors include high education level, early maternal and infant skin contact and early sucking. There was a statistically significant difference in anxiety and depression between the postpartum depression and no postpartum depression groups. Maternal anxiety and depression are positively associated with postpartum depression. Anxiety and depressive mood is a predictor of significance. Objective support, subjective support and support utilization of postpartum depression were worse than normal women. Low social support or lack of social support is a risk factor.

4. Treatment of Postnatal Depression

A previous study selected 86 pregnant women with second children who underwent prenatal examination in the outpatient department of a tertiary general hospital in Changsha by convenience sampling method, and divided them into control group and intervention group, with 43 cases in each group. The intervention group in the study was that both groups intervened for 6 weeks and were

followed until the 6th week postpartum. The setting of Control group is implement routine psychological care, face to face communication with psychotherapist. The communication includes self-care knowledge during pregnancy, how to identify negative emotions, listening to pregnant women, and giving corresponding psychological support and counseling.

The setting of the intervention group is: give mindfulness yoga training on the basis of routine psychological nursing. Under the guidance of professional senior mindfulness yoga teacher, pregnant women completed 6 group activities, once a week, including 5 indoor activities and 1 outdoor activity. The indoor location was a yoga training room and the outdoor location was a forest park in Changsha. The intervention is carried out in two batches, and the content of each class is the same. The pregnant women can choose according to their own time. The first batch of intervention was 15:00~16:00 every Saturday, and the second batch was 15:00~16:00 every Sunday. There was no intergroup communication between the pregnant women in the two groups.

5. Study on the Effect of Mindfulness Yoga Training

The yoga postures that should be used in the study were suitable for the middle and third trimester, and one obstetrician monitored them throughout the training process. Each training lasted about 60 min, each posture has a guiding language, with soothing background music, safe in and out of various postures, according to the actual situation of each pregnant woman at any time, and various props are provided to meet the needs of each pregnant woman. For example, provide blankets, yoga cushions, cushions and other props to ensure adequate support, comfort and safety. The specific contents are as follows: 1. Body scanning: close your eyes, gradually relax, participants guide attention and observation feelings, scan in a certain order (from head to foot or foot to head) and know the feelings of different parts of the body; 2, meditation: involving the observation of human breathing, feeling, mood, sound and thought; 3, posture yoga: gentle body posture and breathing, ensure enough flexibility and balance, including supine body stretch, supine legs, unilateral leg extension, ox and cat type;

Mindful walking: It involves walking slowly and carefully, feeling the feeling of your feet on the ground when walking, and consciously knowing every detail when walking.

There were 10 members of the intervention team, including 1 senior mindfulness yogologist (with medical background), 2 obstetrician and gynecologists, 1 national second-level psychological consultant, 2 senior title nurses, 2 intermediate title nurses, and in

2 master's students. The intervention study received professional training in the field under the supervision of a PhD in Clinical Psychology, and the implementation research process strictly followed the designed process. The intervention group issued the Mindfulness Yoga manual and diary and asked for recording

Record the daily training completion. WeChat pushes the audio of mindfulness yoga training with background music every day, urging each member to actively apply the training content to real life twice a day, 30 min each time, and make a return visit once.

About questionnaire survey, a WeChat group was established. The research used the "Questionnaire Star" online questionnaire survey platform to make the questionnaire, and filled in the questionnaire through scanning the QR code of WeChat and group sharing. Before issuing the questionnaire, the purpose and requirements of the study were detailed to the participating researchers, and the patients answered truthfully according to their actual situation at that time. The same guideline was used for each patient and no hints was given. The questionnaires before the intervention (before the first intervention) and 6 weeks after the intervention included the general condition questionnaire, SAS, and EPDS, and the questionnaire at 6 weeks postpartum included the general condition questionnaire and EPDS.

The general situation questionnaire was designed by the researcher after consulting relevant literature. Before the intervention and 6 weeks after the intervention, the questionnaire mainly included age, gestational week, education level, work unit, urban and rural sources, family per capita monthly income, and mode of first birth delivery etc. The main content of 6 weeks postpartum is the delivery mode, fetal sex, feeding method, etc.

There are 20 items in SAS, each item adopts grade 4 scoring method, "no or little time" ~ "most or all time" are 1 to 4 points, 5 items are reverse scoring, and the rest is positive score. According to the results of Chinese norm, the standard score <50 was normal, 50 to 59 mild anxiety, 60 to 69 moderate anxiety, and 70 severe anxiety [3]. The Cronbach's α coefficient of the SAS was 0.799 [5].

The EPDS is an ideal self-rating scale for the initial screening of postpartum depression. In this study, the Chinese version translated by Guo Xiujing et al. was used, including 10 items, and each item adopted the grade 4 scoring method, ranging from 0 to 3 [2]. The total score was 0 to 30, and the best cut-off value was 9.5. The higher the score indicated greater depression. The scale has a reliability of 0.76 and a validity of 0.999 3 [4].

Laboratory indicators measured the blood pressure and heart rate of the two groups before the intervention; on the first intervention day and 6 weeks after the intervention, the two groups of venous blood were collected and sent to the chemiluminescence immunolaboratory to test the serum hydrocortisone level.

About blood collection requirements, in the first 12 hours, fast high-fat food, sleep for 8 h, early morning (7:30~8:30), resting, fasting state. In this study, the serum hydrocortisone level was used as a reflection of the neuroendocrine changes of psychological stress in second pregnant women.

Statistical Methods Data were analyzed by double entry method using SPSS 25.0 statistical software. Measurement data are expressed as ($\bar{x} \pm s$), two independent sample t test for variance, t 'test for the variance, paired t test for the comparison of the same group; count data are expressed as relative number, and χ^2 test and Fisher's exact probability method for comparison between groups. A $P < 0.05$ was considered as a statistically significant difference.

For Data analysis and results, (1) compared with the general situation of the two groups, a total of 86 questionnaires were issued on the first intervention day, 2 invalid questionnaires with filling error rate > 10% and filling time < 1 min were excluded, 84 valid questionnaires were recovered, and the effective recovery rate of the questionnaires was 97.7%. During the intervention period, 3 patients in the intervention group were absent from group activities > 2 times (regarded as withdrawal), and 2 patients in the control group were lost to follow-up. After 6 weeks of intervention and 6 weeks after delivery, 79 questionnaires were distributed, 1 invalid questionnaire was excluded, and 78 valid questionnaires were recovered. The effective recovery rate of the questionnaires was 98.7%. The general difference between the two groups who completed the intervention and received the questionnaire was not significant ($P > 0.05$).

(2) Comparison of SAS score, EPDS score and serum hydrocortisone level before and after the intervention, EPDS score and serum hydrocortisone level ($P > 0.05$); SAS between the two groups after the intervention

The scores, EPDS scores, and serum hydrocortisone levels were statistically significant ($P < 0.05$).

(3) The incidence of depression at 6 weeks postpartum was compared between the two groups at 6 weeks postpartum, and the incidence of depression (EPDS > 9.5 points) in the two groups was 36.8% (14 / 38) and 12.5% (5 / 40), respectively. Comparing the two groups, the difference was statistically significant ($\chi^2 = 6.27$, $P = 0.012$).

The results show that the present situation of mental health of pregnant women second pregnancy second pregnancy from a pregnancy, although have certain knowledge and pregnancy parenting experience, but when choose pregnancy again, some older maternal and cesarean section pregnant women, especially professional women, face work, parenting, family contradictions and pressure, to

psychological, physiological impact of different degree of [1]. The preliminary study of our research group found that pregnant women with a second pregnancy had anxiety and depression [6,7]. Xu Jihong et al survey found that 25.77% of women with a second child have depression symptoms, and 13.05% have anxiety symptoms [8]. Liang Ailing et al [8] screened 470 pregnant women with a second child, and found that the incidence of prenatal depression was 62.98%, which was significantly higher than that of first pregnant women. The study found that the psychological consistency of the second child was at the above average level and was more prone to anxiety in the third trimester of pregnancy [1]. Whether there is a direct link between antenatal anxiety depression and postpartum depression has been a hot research topic at home and abroad. A Romanian pilot study found that pregnancy status and trait anxiety are psychopathological phenomena associated with postpartum depression [2]. NIETO et al. found associations between prenatal depression and postpartum depressive symptoms in Mexican women, and called for comprehensive screening and early intervention for prenatal depression [9]. At present, there are many studies on the postpartum mental health of primiparas in China, but there are few studies on postpartum depression in pregnant women. Moreover, another study focuses on the depression symptoms among mothers with a second child [10].

In addition, this study found that group mindfulness yoga can relieve anxiety and depression. Foreign studies have found that long-term mindfulness training can lead to the reduction of gray matter density in the amygdala of the human brain, and the amygdala is the brain tissue that produces, recognizes and regulates emotions, indicating that mindfulness training can effectively regulate emotional [5]. Mindfulness practice alone has been shown to have positive health effects, improving chronic pain, reducing perceived stress and depressive symptoms during pregnancy, and promoting mental health [9]. GUARDINO et al used mindfulness stress reduction training to conduct psychological intervention in 47 primiparous women during pregnancy, which effectively reduced the occurrence of prenatal depression [3]. However, due to the inconsistency of intervention methods, intervention time, intervention population and research tools, the impact of mindfulness training on postpartum depression was not obvious. Other studies have found that yoga during pregnancy can reduce pregnancy stress reactions and anxiety [6]. Yoga comes from ancient Indian philosophy and involves the combination of body posture and meditation. Mindfulness yoga during pregnancy is a body-mind model of hada yoga based on mindfulness and stress reduction [9]. Pregnancy yoga integrates mindfulness into each posture, to achieve the state of body and mind and harmony between man and nature, which can effectively make the body in a relaxed state, make the brain relax, awake, and make the mood become more peaceful [5]. The intentional combination of yoga and mindfulness training is powerful, during periods of stress and body discomfort, mindfulness and yoga are natural partners [3]. However, there is no sufficient research in China to show that the combination of mindfulness and yoga is effective in alleviating the negative emotions of pregnant women. In this study, the SAS score and EPDS score of the intervention group were lower than those before the intervention and significantly lower than those of the control group, while the intervention group was in labor.

Group mindfulness yoga can effectively reduce serum hydrocortisone levels. Before the intervention, both serum hydrocortisone levels exceeded the upper reference limit, which is consistent with the findings of ABRAO et al, which may be related to psychological stress during pregnancy [2]. Psychological stress during pregnancy can activate the sympathetic-adrenal medullary endocrine axis through the amygdala limbic system of the brain, release catecholamines, and initiate the hypothalamic-pituitary-adrenal (HPA) axis, leading to increased hydrocortisone levels [9]. Some studies have found that postpartum depression was also associated with dysregulation of the HPA axis, exposure to hydrocortisone, and decreased levels of hydrocortisone are directly associated with the reduction of anxiety and depression in patients [9]. Mindfulness yoga breathing is a slow and

rhythmic deep breathing technology, combined with several yoga postures, activate the sympathetic nervous system opposite parasympathetic nervous system, when sympathetic in optimal operation, hydrocortisone will be removed, the system will prevent the consumption of hydrocortisone, and hydrocortisone is one of the causes of depression [2]. This is also confirmed by the results of this study, where serum hydrocortisone levels in the intervention group were significantly lower than before the intervention and significantly lower than the control group, while serum hydrocortisone levels after 6 weeks of intervention were higher than before the intervention. It shows that group mindfulness yoga can effectively relieve the emotional disorders under the stress state, let the pregnant women be in a state of physical and mental relaxation, freely release negative emotions, establish a good connection with others, and make the hormone level in a relatively balanced state. In conclusion, 6 weeks of group mindfulness yoga can relieve anxiety and depression in pregnancy, reduce the level of hydrocortisone, and thus reduce the incidence of postpartum depression. However, this study has some limitations: 1. This study only selected pregnant women with prenatal examination in one hospital, and there is some selective bias, and whether pregnant women can participate in the intervention largely depends on the time and place of intervention; (2) the serum hydrocortisone level is only tested in the morning, and the following study will add a nighttime sample to evaluate the changes throughout the day. Our research group predicts that it will be beneficial to combine group mindfulness yoga as an adjuvant therapy model with traditional drug therapy or psychotherapy to provide services for pregnant women or pregnant women with depression. Next, different regional multicenter studies are planned to further verify the effectiveness of mindfulness yoga in the maternal population.

6. Conclusion

Early identification of risk factors for postpartum depression and preventive interventions such as counseling, education and individual guidance for high-risk women can enable women to re-organize life, build self-confidence, reduce the negative impact of stress and life events, and actively treat delivery. Increasing or activating social support networks can also enable women to receive substantial, emotional and confident support during pregnancy and postpartum, rather than worthless and empty preaching. Pregnancy prediction and intervention can effectively reduce the incidence of postpartum depression and reduce its impact on maternal and family.

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