

Effects of Rational Emotional Therapy on Anxiety and Delivery Outcome of Pregnant Women

Langhua Xiao , Guilian Zhang, Guirong Liu, Shuzhen Zhu 

Department of Obstetrics, Ganzhou Maternal and Child Health Hospital, Ganzhou, Jiangxi Province, 341000, People's Republic of China

Correspondence: Shuzhen Zhu, Department of Obstetrics, Ganzhou Maternal and Child Health Hospital, Ganzhou, Jiangxi Province, 341000, People's Republic of China, Tel +86 13698063659, Email 15297767499@163.com

Purpose: To explore the impact of rational emotive behavior therapy on the anxiety state and delivery outcomes of anxious primiparous women.

Methods: A randomized controlled trial design was employed. Sixty anxious primiparous women admitted between October 2021 and September 2022 were randomly assigned to a study group ($n = 30$) and a control group ($n = 30$). The control group received routine prenatal care, while the study group received rational emotive behavior therapy once a week for 12 weeks in addition to routine care. Anxiety levels were assessed using the Hospital Anxiety and Depression Scale, and the duration of labor and mode of delivery were recorded.

Results: After the intervention, the anxiety levels (3.97 ± 0.72 vs 6.27 ± 0.94) and depression levels (3.87 ± 0.86 vs 6.03 ± 0.93) of the mothers in the study group were significantly lower than those in the control group ($P < 0.05$). Regarding the duration of labor, the first stage of labor (472.83 ± 35.29 min vs 716.17 ± 32.00 min) and the second stage of labor (79.03 ± 33.94 min vs 110.10 ± 31.03 min) in the study group were significantly shorter than those in the control group ($P < 0.05$), while there was no significant difference in the duration of the third stage of labor between the two groups ($P > 0.05$). Furthermore, the spontaneous delivery rate in the study group was significantly higher than that in the control group (80.00% vs 26.67%), while the cesarean section rate and forceps delivery rate were significantly lower ($P < 0.05$).

Conclusion: Rational emotive behavior therapy can effectively alleviate prenatal anxiety in primiparous women, shorten labor, and improve delivery outcomes. This intervention can serve as an effective supplement to prenatal psychological care.

Keywords: rational emotional therapy, pregnant woman, anxiety, delivery outcome

Introduction

With the continuous change of medical model and the rapid development of society, many problems have also emerged in pregnancy and delivery, such as social problems, psychological problems of pregnant women, which are no longer just natural physiological processes. Pregnant women are prone to various psychological diseases during pregnancy and delivery,¹ especially primipara. Because of various reasons, for example, concerns about the baby's health, questions about the mother's capacity to care for her kid, and apprehension about the unknown atmosphere of the delivery room are all common worries for expectant mothers,² and pregnant women's discomfort and pain during labor will greatly affect the psychological state of pregnant women, and are prone to produce many negative psychological emotions, such as depression, anxiety, loneliness, tension. Studies indicate that the global prevalence of prenatal anxiety is 15%-20%, with higher rates in low- to middle-income countries, particularly among impoverished women at risk of gender or psychological distress.³ These adverse psychological emotions of pregnant women will have adverse effects on the fetus and delivery to a large extent. If the depression and anxiety of pregnant women are relatively serious, they may increase the secretion of corticosteroids and epinephrine, causing the imbalance of viscera and brain,⁴ which will reduce the blood flow of pregnant women, and then have adverse effects on the fetus. Or it can seriously reduce the secretion of norepinephrine, which can make pregnant women suffer from uterine contractions and weakness, and have adverse effects on the smooth delivery of pregnant women. If the psychological anxiety, tension and other emotions of pregnant women are very serious, it may also

cause increased postpartum hemorrhage of pregnant women, leading to massive bleeding. Therefore, effective psychological intervention for anxious primiparous women is a crucial aspect of perinatal care.

Among numerous psychological intervention methods, Rational Emotive Behavior Therapy (REBT), a classic cognitive behavioral therapy, was developed by Albert Ellis in the 1950s. Its core theory (ABC theory) posits that an individual's emotional and behavioral consequences are not directly determined by the precipitating event, but rather by their beliefs about that event. Therefore, identifying and challenging irrational beliefs and establishing rational thinking patterns can effectively improve emotional states and behavioral performance. REBT has shown good results in managing various emotional disorders.⁵ However, although some studies have explored the application of psychological interventions in the perinatal period, research specifically on the effectiveness of REBT in alleviating prenatal anxiety in primiparous women and systematically evaluating its impact on objective delivery outcomes remains insufficient.

Against this backdrop, this study aims to fill this research gap by exploring whether combined REBT can more effectively alleviate anxiety in primiparous women compared to routine care, and further evaluate its potential benefits in shortening labor and improving delivery outcomes. The findings are expected to provide empirical evidence for developing standardized perinatal psychological care programs and have significant practical implications for improving the quality of obstetric care.

Data and Methods

General Data

A total of 60 anxious first-time mothers participated in the study between October 2021 and September 2022. Thirty women, ranging in age from 22 to 37, were used as a control group; their average age was (26.57 ± 3.93) years, and their average number of weeks pregnant was (39.2 ± 1.19). There were 12 cases of mild anxiety, 11 cases of moderate anxiety, and 7 cases of severe anxiety; the patients also spanned a wide range of educational attainment, from high school graduates to those still in their first year of college. Thirty individuals were included in the study, ranging in age from 22 to 31 years old, with an average of (25.5 ± 3.21) years, and a mean of (39.8 ± 1.30) weeks of gestation. There were 4 instances of middle school or below, 19 cases of senior high school, and 7 cases of junior high or lower; 11 patients with mild anxiety, 12 patients with moderate anxiety, and 7 patients with severe anxiety. In terms of broad statistics, neither set of expecting mothers differed from one another ($P > 0.05$). The study was approved by the Ganzhou Maternal and Child Health Hospital, Ethical code: No. (2022) Lunshenlin No. (82), Ethical review date: 18th, Nove., 2022. Written informed consent was obtained from all individuals included in this study. All data used in this study were anonymized to protect the privacy of participants.

Inclusion criteria: (1) Primiparous women; (2) Singleton pregnancy; (3) Gestational age ≥ 37 weeks; (4) Signed informed consent.

Exclusion criteria: (1) Pregnancy complications (eg, preeclampsia, poorly controlled gestational diabetes); (2) Clear medical indication for cesarean section; (3) History of mental illness or currently receiving anti-anxiety/depressant medication; (4) Communication difficulties, unable to cooperate in completing questionnaires and interventions.

Sample Size and Randomization

Sample Size Calculation: Using the formula for comparing the means of two independent samples, with a power of $(1-\beta)$ of 0.8 and α of 0.05 (two-tailed), and to detect the key difference in anxiety scores between the two groups, the estimated required sample size was at least 28 participants per group. Considering a dropout rate of approximately 10%, the final sample size was determined to be 60 participants, with 30 participants in each group.

Randomization and Blinding: Using a computer-generated random number table, the 60 eligible participants were assigned in a 1:1 ratio to either the study group (standard care + rational emotive behavior therapy) or the control group (standard care only). The randomization sequences were generated by researchers not involved in recruitment and assessment and sealed in opaque envelopes. Due to the nature of the intervention, blinding participants and intervention implementers was not feasible. However, the outcome assessors (those responsible for measuring labor duration and collecting final questionnaire data) were unaware of the group assignments to reduce measurement bias.

Methods

Normal nursing care was provided to the control group. The midwives, ward nurses and doctors in charge of the delivery room were introduced to pregnant women, and the ward area environment was explained in detail to minimize the anxiety and tension of pregnant women.^{6–8} The pregnant women were guided to eat and drink water, carry out aerobic training, and pregnant women were instructed to get out of bed more. And it was necessary to ensure that pregnant women have sufficient physical strength to produce. It was necessary to implement one-to-one prenatal, intrapartum and post-natal health education, carry out routine psychological nursing intervention, comprehensively understand the psychological changes of pregnant women during the perinatal period. The basic knowledge of delivery was explained to pregnant women in detail, the fetus and pregnant women were monitor and cared, the family members of pregnant women were urged to give more care and support to pregnant women, communicate with pregnant women more, which can enhance the psychological pleasure of pregnant women, and promote the comprehensive physical and mental relaxation of pregnant women.

The study group carried out rational emotional therapy nursing.⁹ At the same time of carrying out routine nursing, pregnant women were given rational emotional therapy nursing, which was carried out for a total of 12 weeks, one hour each time, once a week. The nursing process of rational emotional therapy includes four major aspects, namely, psychological evaluation, comprehension process, cultivation process and re-education process. A summary of the rational emotive behavior therapy intervention program is shown in Table 1. The detailed nursing care plan is as follows.

In the process of psychological evaluation, rational emotional therapy nursing is based on the theory of rational emotional therapy. In this process, it is necessary to actively interact with pregnant women, preliminarily study and evaluate the psychological and emotional problems of pregnant women, initially clarify the irrational beliefs of pregnant women's emotions and behaviors, and then explain the theory of rational emotional therapy in detail. In the process of comprehension, pregnant women are helped to further understand that their thoughts, their views on things are directly related to their behaviors and emotions. It can introduce some easy-to-understand cases to pregnant women, guide pregnant women to a certain extent, and urge pregnant women to discover the relationship between emotional reactions, behavioral reactions, and their irrational beliefs by themselves as much as possible, and can make the pregnant women recognize that the appearance of the former is caused by the negative effects of the latter, and that their own emotions and behaviors are determined by their own psychological emotions. In the process of cultivation, pregnant women are assisted to change their own cognitive level, give up their irrational beliefs, and have a further understanding of the irrationality of their beliefs. In this process, the negative psychological mood of pregnant women can be effectively improved through dialectics with irrational beliefs, rational emotional imagination technology, homework and other methods. In the process of education, it is needed to further strengthen the pregnant women's new reasonable ideas, help them replace unreasonable thinking patterns, make full use of rational thinking patterns, get rid of the original unreasonable beliefs, and promote pregnant women to better learn to use rational emotional chemotherapy to solve and deal with problems when they encounter relevant problems during the perinatal period.

Table 1 Summary of Rational Emotive Behavior Therapy Intervention Program

Phase	Core Objectives	Main Content and Activities
Weeks 1–2 (Psychological Assessment)	Build relationships and assess irrational beliefs	Through interviews, identify irrational beliefs held by pregnant women regarding childbirth, childcare, and self-evaluation.
Weeks 3–8 (Understanding and Resolving)	Challenge and revise irrational beliefs	Using techniques such as Socratic questioning, rational affective imagery, and behavioral tasks (eg, recording and refuting daily negative thoughts), help pregnant women recognize that their emotional distress stems from irrational beliefs and learn to replace them with rational ones.
Weeks 9–11 (Continuing Education)	Solidify rational thinking patterns	Simulate childbirth scenarios to practice using rational thinking to cope with anxiety; learn stress management techniques (eg, deep breathing, relaxation exercises).
Week 12 (Summary and Feedback)	Review and reinforce	Summarize the gains during the intervention, develop plans to cope with future stress, and consolidate the treatment effect.

The experienced midwives in our hospital were needed to provide patients with good rational emotional therapy intervention.^{10,11} Before the intervention, all midwives needed to receive comprehensive and systematic training. When waiting for the maternity to enter the waiting period, the midwives needed to communicate with the maternity enthusiastically, and make corresponding psychological counseling for the maternity with bad emotions, and actively and effectively communicate with the maternity, and do a good job in evaluating the psychological state of the parturients, so as to improve the mood of the parturients through this way. At the same time, it was also necessary to carry out the corresponding knowledge propaganda and education for the parturients, so that the parturients can have a comprehensive and correct understanding of the delivery, and it was also necessary to help the parturients build a good delivery confidence as far as possible, so that the mood of the parturients can be improved. During delivery, when the patients were receiving care, the nursing staffs needed to further optimize the psychological nursing plan according to the individual condition of the patients.^{12–16} Psychological nursing is not only aimed at the psychological state of patients. The ultimate purpose of psychological nursing is to optimize the psychological state of patients through various nursing programs. Therefore, it was also extremely important to do a good job of active care for patients in daily life to improve the quality of nursing for patients. Before carrying out the nursing operation for patients, it was necessary to first analyze the basic data of patients as required, understand the individual status of patients, and analyze the ultimate goal of patients in the process of receiving treatment, so that patients can understand how to carry out effective nursing cooperation to improve the overall nursing quality as much as possible during receiving nursing. While nursing staffs should actively grasp the individual characteristics of patients when communicating effectively with patients, in particular, master the psychological changes and emotional state of patients, so that nursing staffs can carry out comprehensive nursing work targeted.

The main period of maternal bleeding is within 2 hours after delivery. Nurses should closely monitor the level of maternal indicators and focus on the changes of expression. Nurses should actively collect the information of patients, evaluate the basic condition of patients, clarify the family status of patients, and provide effective health education for patients. During the rest period, a quiet environment should be created, and it was needed to let the patients lie flat, and take warm and oxygen therapy. The blood pressure, skin color, pulse, respiration and others should be closely observed, and uterine contraction and whether there was tenderness should be observed. Postparturient women are prone to be caused negative emotions by various factors after their illness, and nursing staffs should implement effective psychological guidance to the puerpera. When caring for the postpartum women, it was necessary to adopt a scientific treatment plan according to the individual situations of the postpartum women. For example, if the postpartum women had soft birth canal injury or other complications during the delivery process, special attention should be paid to the need to carry out a blood volume test for the postpartum women every two hours or so. If the postpartum women had increased blood volume or had irregular bleeding conditions, corresponding nursing measures should be taken in time for management. In addition, nursing staffs should do a good job in preventing postpartum hemorrhage, strengthen emotional guidance, avoid postpartum depression in the process of delivery, make the pregnant women maintain a positive and optimistic attitude after delivery, and do a good job in their role transformation.

Observation Indicators

(1) Duration of Labor: Record the exact times of the first, second, and third stages of labor. (2) Anxiety and Depression Levels: The Hospital Anxiety and Depression Scale (HADS) was used to assess the anxiety and depression levels of both groups of mothers upon admission and before labor.¹⁷ This scale includes two subscales: Anxiety (HADS-A) and Depression (HADS-D), each with 7 items, and a total score of 0–21. A score ≥ 8 indicates possible anxiety or depression symptoms. This scale has good reliability and validity in the Chinese population. The scale has been validated in the Chinese population and has good reliability and validity. (3) Delivery Outcome: Record the mode of delivery (vaginal delivery, forceps delivery, cesarean section).

Statistical Methods

Data analysis was performed using SPSS 20.0 software. Normally distributed continuous data were described as mean $\pm$ SD, and independent samples *t*-tests were used for comparisons between groups. Count data were expressed as percentages, and chi-square tests were used for comparisons between groups. All statistical analyses were two-tailed, and $P < 0.05$ was considered statistically significant.

Table 2 Comparison of Labor Duration Between the Two Groups (min, $\bar{x} \pm s$)

Group	Number of Cases	First Stage of Labor	Second Stage of Labor	Third Stage of Labor
Control group	30	716.17 $\pm$ 32.00	110.10 $\pm$ 31.03	16.43 $\pm$ 4.22
Research group	30	472.83 $\pm$ 35.29	79.03 $\pm$ 33.94	15.60 $\pm$ 4.13
T value	/	27.981	3.706	0.769
P value	/	< 0.001	0.001	0.445

Results

Comparison of the Labor Process Time of the Two Groups

The study group and the control group presented different differences in the duration of the first, second and third stages of labor. Specifically, the duration of the first stage of labor in the study group was (472.83 $\pm$ 35.29) minutes, which was significantly shorter than that in the control group [(716.17 $\pm$ 32.00) minutes], and the difference was statistically significant ($t = 27.981$, $P < 0.001$). During the second stage of labor, the duration of the study group was (79.03 $\pm$ 33.94) minutes, which was also significantly shorter than that of the control group [(110.10 $\pm$ 31.03) minutes] ($t = 3.706$, $P = 0.001$). There was no significant difference in the duration of the third stage of labor between the two groups (study group: 15.60 $\pm$ 4.13 minutes vs control group: 16.43 $\pm$ 4.22 minutes; $t = 0.769$, $P = 0.445$). See Table 2 and Figure 1.

Differences in Anxiety and Depression Levels Between Groups

At admission, the baseline levels of anxiety (HADS-A) and depression (HADS-D) scores of the two groups of parturients were comparable, and the difference was not statistically significant (all $P > 0.05$). Re-evaluation before labor showed that the anxiety and depression scores of both groups of parturients were significantly lower than those at admission. Among them, the HADS-A score of the study group decreased to (3.97 $\pm$ 0.72) points, and the HADS-D score decreased to (3.87 $\pm$ 0.86) points, both of which were significantly lower than those of the control group [(6.27 $\pm$ 0.94) points and (6.03 $\pm$ 0.93) points]. The differences were all highly statistically significant ($t = 10.722$, $P < 0.001$; $t = 9.803$, $P < 0.001$). The results show that adding rational-emotive therapy on the basis of routine care can more effectively alleviate the anxiety and depression of primiparas. See Table 3 and Figure 2.

Comparison of Delivery Outcomes Between the Two Groups

There were significant differences in the delivery methods between the two groups of parturients. The natural delivery rate of the study group was 80.00% (24/30), significantly higher than 26.67% (8/30) of the control group, and the difference was highly

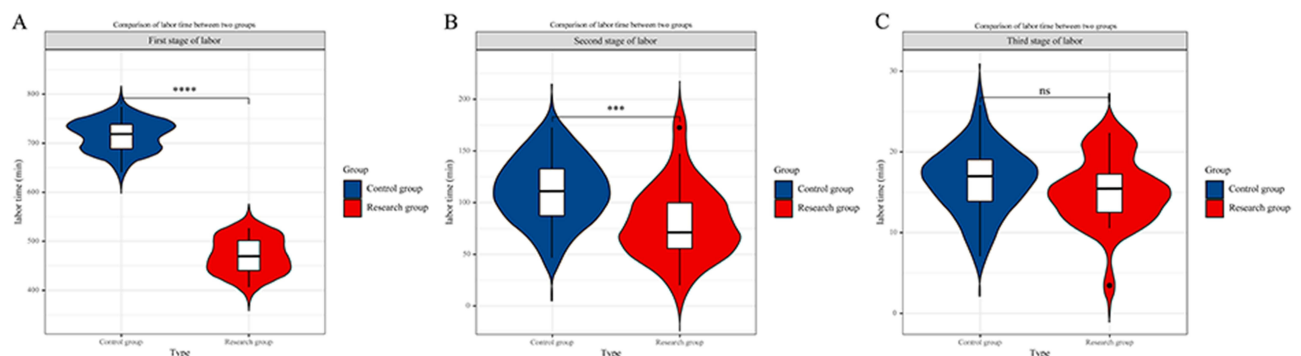
**Figure 1** Comparison of labor duration between the two groups. (A) First stage of labor; (B) Second stage of labor; (C) Third stage of labor.

Table 3 Changes in Anxiety and Depression Ratings Between Groups (Points, $\bar{x} \pm s$)

Group	Number of Cases	HADS-A Score		HADS-D Score	
		At Admission	Before Labor	At Admission	Before Labor
Control group	30	11.37 $\pm$ 1.87	6.27 $\pm$ 0.94	10.27 $\pm$ 1.46	6.03 $\pm$ 0.93
Research group	30	11.50 $\pm$ 2.53	3.97 $\pm$ 0.72	10.33 $\pm$ 1.94	3.87 $\pm$ 0.86
T value		0.371	10.722	0.263	9.803
P value		0.712	< 0.001	0.793	< 0.001

statistically significant ($\chi^2 = 17.143$, $P < 0.001$). Meanwhile, the cesarean section rate (13.33%, 4/30) and forceps-assisted delivery rate (6.67%, 2/30) in the study group were significantly lower than those in the control group (cesarean section rate 43.33%, 13/30, $\chi^2 = 6.648$, $P = 0.010$; Forceps delivery rate: 30.00%, 9/30, $\chi^2 = 5.455$, $P = 0.020$). See Table 4 and Figure 3.

Discussion

Since the British scholar Pett first proposed postpartum anxiety in 1968, it has aroused a lot of attention in the world. Postpartum depression is the most common type of mental syndrome after childbirth, which refers to the absence of a history of mental illness and emotional disorders after childbirth. Therefore, it is very important to understand the disease and provide psychological care for the delivery. The main characteristics of postpartum anxiety are suicidal tendencies, indifferent expressions, pessimistic world fatigue, loss of appetite, inattention, helplessness or insomnia, crying and personality decline. Typical postpartum anxiety is an emotional disorder that occurs within 6 weeks after delivery, which may last longer than the whole postpartum period. The incidence of this disease has been reported as high as 30% abroad. Maternity may be lethargic, irritable and lose interest in daily activities. In serious cases, hallucinations, suicides or violent tendencies may occur, which will seriously affect the maternal and family members. Understanding the causes of postpartum depression and providing appropriate nursing care according to the incidence factors can reduce the occurrence probability of postpartum anxiety. There are relatively few clinical reports on the factors of postpartum depression that cause postpartum depression. In order to determine the detailed causes of postpartum depression, the postpartum depression after delivery in the hospital was investigated. Anxiety and depression are the relatively common psychiatric diseases with relatively high incidence rate and mortality in clinical practice. They not only cause serious

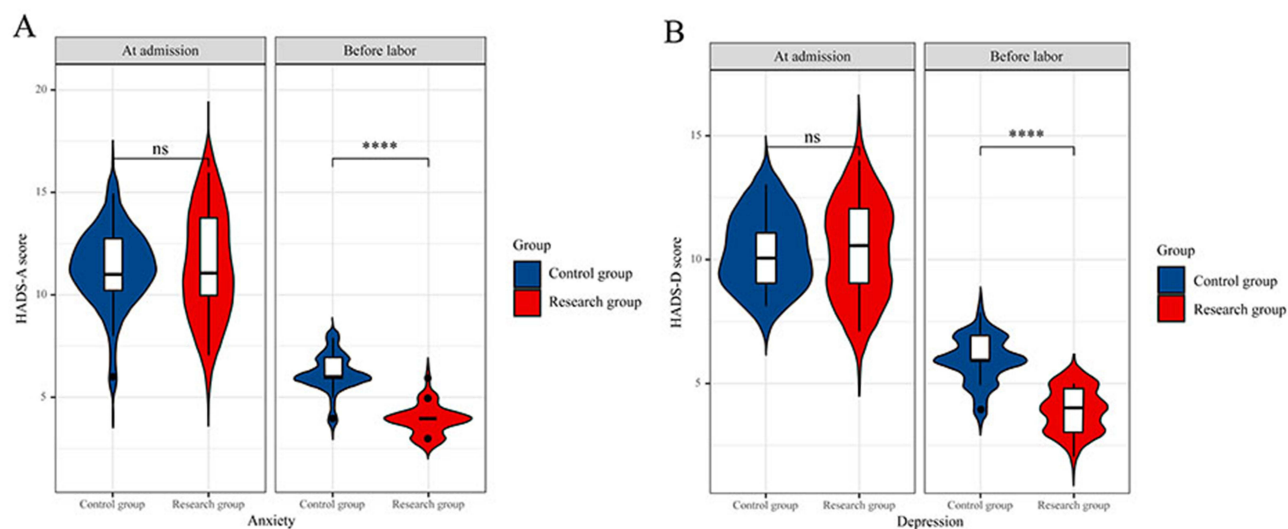
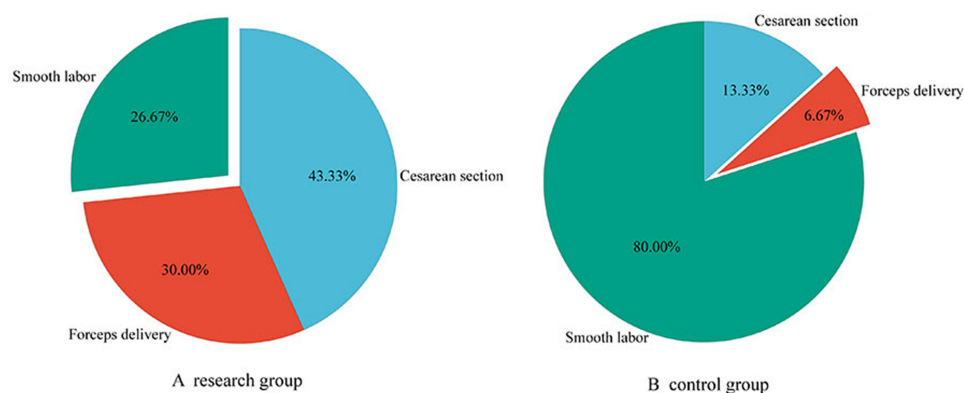


Figure 2 Changes in anxiety and depression ratings between groups. (A) Anxiety scores; (B) Depression scores.

Table 4 The Two Groups' Delivery Results (Cases,%)

Group	Number of Cases	Cesarean Section	Forceps Delivery	Smooth Labor
Control group	30	13(43.33)	9(30.00)	8(26.67)
Research group	30	4(13.33)	2(6.67)	24(80.00)
χ^2 value	/	6.648	5.455	17.143
P value	/	0.010	0.020	< 0.001

damage to women's normal body functions, but also may cause physiological and psychological impact on the fetus at the same time. Maternal anxiety and depression have become serious medical problems in society. In the management of patients, researchers believe that it is necessary to conduct a comprehensive analysis of maternal anxiety and depression factors, and actively avoid to ensure normal pregnancy. Postpartum anxiety is relatively common in clinical practice. This disease is a mental disorder caused by the changes of the patients' emotion and mood. The patients' cognition, behavior, psychology and other aspects will have a great change in the state of depression, it will have a significant effect on the patients' lives on a day-to-day basis. Once the first symptoms of the sickness appeared, the patients are mainly depressed and lack of interest. It is characterized by low mood, depression, distress and sadness that can be felt by oneself or observed by others, feeling that the pain is difficult to endure, feeling unhappy, and even feeling that life is like a year, live no better than die, often scowling and sighing. There is a low mood almost every day, which generally does not change with the environment. Loss of interest or sense of pleasure, and there is no interest in everything or a decline in interest, lose enthusiasm for previous hobbies, lose the ability to experience happiness, and can not gain fun from activities that are usually engaged in. Anxiety, expressed as upset, worried, nervous, paranoid, worried about losing control or accident and others. Slow thinking, which is expressed as slow conscious response, difficulty in thinking, in severe circumstances, patients will also experience a loss in their capacity to make judgments, diminished speech, slower speech speed, lower loudness, as well as impediments in their ability to respond and communicate. Cognitive symptoms are mainly manifested in the decline of memory ability of recent events, attention disorder, information processing ability decline, and indifference to self and surrounding environment and others. When it is serious, it will produce "three no symptoms", that is, feeling useless, helpless and hopeless. Serious depression patients are often accompanied by negative suicidal ideas and behaviors. The suicide thoughts tend to be tenacious and keep coming back. The steps people take to end their lives are often well-planned and impossible to stop them from doing. Because of this, suicide tendencies are the most severe and potentially lethal symptoms of depression.

**Figure 3** The two groups' delivery results. (A) Research group; (B) Control group.

Rational emotional therapy is a kind of psychotherapy theory and method,¹⁸ which was founded by famous psychologist Ellis in the 1950s. Psychologist Alice believes that there is a close relationship between the human emotions and thinking. When a person acts in accordance with rational thinking, he or she will feel a certain degree of competition, and his or her emotions are relatively pleasant. At the same time, his or her actions can also achieve certain results. However, when a person acts according to irrational thinking, his or her emotions and psychology will have some emotional reactions. Rational emotional therapy is applied to the care of pregnant women with anxiety.^{19–21} It can be used to deeply analyze the psychological and emotional problems of pregnant women, further evaluate the psychological status of pregnant women, fully understand the behavioral discomfort, negative emotions and other related problems of pregnant women, and then have a more accurate analysis of the irrational beliefs of pregnant women, and take this as the center to implement corresponding nursing intervention measures for pregnant women.²²

The main findings of this study indicate that, compared with primiparous women receiving only routine care, anxious primiparous women receiving REBT interventions had significantly lower levels of prenatal anxiety and depression, shorter first and second stages of labor, and more desirable delivery outcomes, manifested in a higher rate of spontaneous vaginal delivery. Previous studies have confirmed the positive effects of interventions such as mindfulness and psychological care on maternal mood. This study further extends these findings by applying structured REBT. As a cognitive behavioral therapy, REBT has the advantage of proactively identifying and challenging irrational beliefs that lead to emotional distress. By transforming irrational beliefs into more adaptive rational beliefs, pregnant women are able to approach childbirth with lower levels of anxiety and stronger self-efficacy, which may be the core mechanism behind the observed improvements in psychological indicators. Notably, this study linked psychological improvements to objective obstetric outcomes. The shortened labor process and increased spontaneous vaginal delivery rate can be reasonably explained from a physiological perspective. Severe anxiety activates the hypothalamic-pituitary-adrenal axis, leading to elevated levels of stress hormones such as cortisol, which may cause reduced uteroplacental blood flow and uncoordinated uterine contractions. REBT may have optimized the balance of the autonomic nervous system and reduced the interference of stress hormones, thereby promoting more efficient uterine contractions and cervical dilation. This “psycho-physiological” pathway hypothesis is supported by our results, namely, the group with the most significant improvement in psychological state also experienced the smoothest labor progress.

However, limitations must be considered when interpreting the results of this study. The small sample size and single-center nature limit the generalizability of the results. Due to the nature of the intervention, blinding of both implementers and participants was not possible, potentially leading to expectation effects. Furthermore, the study lacks long-term postpartum follow-up data, making it impossible to assess the preventive effect of REBT on postpartum depression. Despite these limitations, the results of this study have clear clinical significance. It demonstrates that integrating structured psychological interventions such as REBT into routine prenatal care is feasible and beneficial. Future research should focus on conducting large-scale, multi-center randomized controlled trials with active control groups to further validate its efficacy. Simultaneously, exploring the physiological mechanisms of REBT (such as through the detection of stress indicators like cortisol) and its long-term effects on mothers and infants will be valuable research directions.

Conclusion

In conclusion, this study demonstrates that REBT for primiparous women experiencing prenatal anxiety can effectively alleviate their anxiety and depression, and indirectly shorten labor, increase the rate of natural childbirth, and ultimately optimize delivery outcomes through improved psychological state. Despite limitations imposed by sample size and the single-center design, these results provide promising evidence for the application of REBT in the perinatal period. Future studies with larger-scale investigations are recommended to validate its efficacy and explore its physiological and psychological mechanisms.

Data Sharing Statement

All data generated or analysed during this study are included in this. Further enquiries can be directed to the corresponding author.

Ethics approval and consent to participate

The study was conducted in accordance with the 1964 Helsinki Declaration and was approved by the Ganzhou Maternal and Child Health Hospital, Ethical code: No. (2022) Lunshenlin No. (82), Ethical review date: 18th, November, 2022. Written informed consent was obtained from all individuals included in this study.

Author Contributions

All authors contributed to data analysis, drafting or revising the article, have agreed on the journal to which the article will be submitted, gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

Funding

This study was funded by the Science and Technology Plan Project of Jiangxi Provincial Health Commission, Project ID: 202212340.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Qiu YY, Qiu CB, Chen J, Jiang Y, Wu HH. The effect of mindfulness “dance” on psychological state pain and delivery outcome of primipara. *China Matern Child Health Care*. 2021;36(6):1220–1223. doi:10.19829/j.zgfybj.issn.1001-4411.2021.06.001
2. Rohrbasser A, Wong G, Mickan S, Harris J. Understanding how and why quality circles improve standards of practice, enhance professional development and increase psychological well-being of general practitioners: a realist synthesis. *BMJ Open*. 2022;12(5):e058453. PMID: 35508344. doi:10.1136/bmjopen-2021-058453
3. Evans K, Rennick-Egglestone S, Cox S, Kuipers Y, Spiby H. Remotely delivered interventions to support women with symptoms of anxiety in pregnancy: mixed methods systematic review and meta-analysis. *J Med Internet Res*. 2022;24:e28093. PMID: 35166688. doi:10.2196/28093
4. Geng W. The effect of spousal companionship+one-to-one Doula whole-process intervention on the total labor process and post-natal nursing satisfaction of primipara after natural delivery. *China Pharm Clin J*. 2020;20(19):3339–3341
5. Victor-Aigbodion V, Eseadi C, Ardi Z, Sewagegn AA, Ololo K, Abonor LB, Alohe HE, Falade TA, Effanga OA. Effectiveness of rational emotive behavior therapy in reducing depression among undergraduate medical students. *Medicine*. 2023;102:e32724. PMID: 36705389. doi:10.1097/MD.00000000000032724
6. Li S, Deng SD. Effect of psychological nursing combined with antenatal comprehensive nursing intervention on delivery outcome of primipara and serum E2, P, PRL levels. *Lab Med Clin*. 2020;17(7):981–983.
7. Cao YJ, Shi R, Zhang S. Effect of rational emotional therapy on mood, self-stress and burden, stress coping style and quality of life of patients with prostate cancer after surgery. *Cancer Progress*. 2021;19(14):1501–1505.
8. McCauley M, White S, Bar-Zeev S, Godia P, Mittal P, Zafar S, van den Broek N. Physical morbidity and psychological and social comorbidities at five stages during pregnancy and after childbirth: a multicountry cross-sectional survey. *BMJ Open*. 2022;12(4):e050287. PMID: 35470180. doi:10.1136/bmjopen-2021-050287
9. de Graaff AM, Cuijpers P, Acarturk C, Akhtar A, Alkneime MS, Aoun M, Awwad M, et al. Scalable psychological interventions for Syrian refugees in Europe and the Middle East: STRENGTHS study protocol for a prospective individual participant data meta-analysis. *BMJ Open*. 2022;12(4):e058101. PMID: 35443961. doi:10.1136/bmjopen-2021-058101
10. Qin AM, Liu SL, Wei SY, Guo JF. The application effect of whole-process seamless nursing in the prevention of postpartum complications of primipara. *Chinese Modern Doctor*. 2021;59(2):180–182186.
11. Liu Y, Ni X, Wang R, Liu H, Guo Z. Application of rational emotive behavior therapy in patients with colorectal cancer undergoing adjuvant chemotherapy. *Int J Nurs Sci*. 2022;9:147–154. PMID: 35509702. doi:10.1016/j.ijnss.2022.02.002
12. Järholm S, Warren AM. Uterus transplantation: lessons learned from a psychological perspective. *Clin Obstet Gynecol*. 2022;65:52–58. PMID: 35045025. doi:10.1097/GRF.0000000000000673
13. Apolinário-Hagen J. Internet-delivered psychological treatment options for panic disorder: a review on their efficacy and acceptability. *Psychiatry Invest*. 2019;16:37–49. PMID: 30122031. doi:10.30773/pi.2018.06.26
14. Zhang SM, Zhao YY, Chen HY. The effect of rational emotional therapy on the psychological resilience and traumatic growth of patients undergoing breast cancer radical surgery. *Med Clin Res*. 2021;38(3):458–460. doi:10.3969/j.issn.1671-7171.2021.03.041
15. Liu H, Yang Y. Effects of a psychological nursing intervention on prevention of anxiety and depression in the postpartum period: a randomized controlled trial. *Ann Gen Psychiatry*. 2021;20: 2. PMID: 33397393. doi:10.1186/s12991-020-00320-4
16. Mattioli A. Vulnerabilities in clinician–parent exchanges and the cascade of communication traps: a review. *Arch Dis Child*. 2022;14(N):4031–4038.
17. Liu W, Liu J, Ma L, Chen J. Effect of mindfulness yoga on anxiety and depression in early breast cancer patients received adjuvant chemotherapy: a randomized clinical trial. *J Cancer Res Clin Oncol*. 2022;148:2549–2560. PMID: 35788727. doi:10.1007/s00432-022-04167-y
18. Shin JW, Tate JA, Happ MB. The facilitated sensemaking model as a framework for family-patient communication during mechanical ventilation in the intensive care unit. *Crit Care Nurs Clin North Am*. 2020;32:335–348. PMID: 32402326. doi:10.1016/j.cnc.2020.02.013
19. Zheng JW, Zhao L. The influence of free posture and Doula care on the pregnancy outcome of primipara. *Modern Chin Med*. 2022;60(13):179–182.

20. Lin LM, Lu YN, Ning HB. Effect of rational emotional therapy on rehabilitation self-efficacy of stroke patients. *J Armed Police Logistics College*. 2021;30(4):104–107.
21. Stie M, Delmar C, Nørgaard B, Jensen LH. Efficacy of open dialogue about complementary and alternative medicine compared with standard care in improving quality of life in patients undergoing conventional oncology treatment (CAMONCO 2): protocol for a randomised controlled trial. *BMJ Open*. 2022;12(4):e059960. PMID: 35470199. doi:10.1136/bmjopen-2021-059960
22. Liu ZH, Hou XQ. Effect of rational emotional therapy combined with aerobic exercise intervention on CD-RISC score, exercise tolerance and prognosis of patients with coronary heart disease after interventional therapy. *Hainan Med J*. 2021;32(15):2037–2040.

International Journal of Women's Health

Publish your work in this journal

The International Journal of Women's Health is an international, peer-reviewed open-access journal publishing original research, reports, editorials, reviews and commentaries on all aspects of women's healthcare including gynecology, obstetrics, and breast cancer. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/international-journal-of-womens-health-journal>

Dovepress
Taylor & Francis Group