ORIGINAL RESEARCH

WeChat Continuity Nursing on Postpartum Depression and Quality of Life in Primipara Undergoing Cesarean Delivery

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ABSTRACT

Objective • To assess the effectiveness of WeChat-based continuity nursing in reducing postpartum depression and improving the quality of life among primiparous women undergoing cesarean delivery.

Methods • A total of 200 patients who intended to undergo cesarean delivery in our hospital between January 2021 and January 2022 were recruited for this study, including 20 patients who refused to participate in the study and 30 patients who did not meet the criteria of this study for various reasons, and a total of 150 cases were finally included. All participants were assigned 1:1 into the control group and observation group according to the time of the first pregnancy test and the primiparous in the observation group were given WeChat continuity nursing, and the primiparous in the control group was given routine obstetric care. WeChat continuity nursing included establishment of continuity nursing team, WeChat group setup and communication, education and support, and psychological counseling and follow-up. The baseline data of all mothers were collected and recorded, and the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS), quality of life scores, maternal and infant complications, and the satisfaction rate of care were compared between the two groups.

Results • The SAS and SDS scores of the observation group were consistently lower than those of the control group at 1, 3, and 6 months post-hospital discharge ($P < .01$). Following the implementation of WeChat continuity nursing intervention, patients in the observation group demonstrated significant improvements in mental health, physical function, somatic pain, vitality, and social function scores compared to the control group ($P < .01$). Additionally, the incidence of complications was notably lower in the observation group, including reduced rates of incisional infection, breast swelling, unclear dew, abnormal defecation among mothers, and decreased occurrence of breech redness, umbilical cord issues, eczema, and delayed umbilical cord detachment among infants ($P < .05$). Moreover, the satisfaction rate among patients in the observation group was significantly higher than that of the control group (95.507% vs. 84.058%) ($P < .05$). These findings highlight the efficacy and importance of integrating WeChat continuity nursing intervention into postpartum care practices.

Conclusion • Our study strongly supports the effectiveness of WeChat continuity nursing intervention in improving postpartum mental health, reducing complications, and increasing patient satisfaction. These findings suggest the potential for integrating digital nursing interventions into standard postpartum care practices, offering personalized and accessible healthcare services. Policymakers and healthcare providers should consider adopting such interventions to optimize postpartum outcomes and enhance patient experiences. (*Altern Ther Health Med.* 2024;30(12):262-268).

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INTRODUCTION

Childbirth is a significant event for women, impacting both maternal well-being and fetal health. The process of childbirth is often associated with intense physical and mental stress, with postpartum depression being a recognized concern.[1,2] In developed countries, approximately 35% of women experience fear of childbirth, with pregnancy-related anxiety often exacerbated by interventions during labor, contributing to negative maternal mental health outcomes.[3,4] While labor is a natural physiological process, the intensity of pain associated with natural childbirth often leads to a preference for cesarean delivery, particularly among new mothers.[5] Cesarean delivery is favored for its ability to avoid the unpredictability of natural childbirth and protect against vaginal trauma.[6] However, it carries the risk of postoperative complications and can have a significant impact on both maternal and infant health, underscoring the critical need for effective postpartum care following cesarean delivery.

Traditional obstetric care has been criticized for its limited scope, particularly in post-discharge maternal care, which can adversely affect the recovery and mental health of new mothers.[7,8]

In response to these challenges, WeChat continuity nursing has emerged as a novel model of care, providing seamless support from hospital to home.[9,10] This model transcends traditional constraints, offering timely and comprehensive health guidance and education regardless of time and place.

This study aims to address the current research gap by investigating the impact of WeChat continuity nursing on postpartum depression and quality of life among first-time mothers who have undergone cesarean delivery. Through the

analysis of outcomes such as SAS and SDS scores, maternal and infant complications, and nursing satisfaction, we aim to provide valuable insights into the effectiveness of this innovative care model, particularly in the context of China where research on this model is limited.

The main objective of this study is to analyze the effect of WeChat continuity nursing on postpartum depression and the quality of life of primiparous women who have had a cesarean delivery. We hypothesize that WeChat continuity nursing will significantly reduce postpartum depression and improve the quality of life of these mothers.

This study's findings have the potential to significantly impact postpartum care practices, maternal and infant health outcomes, and overall quality of life for new mothers.

MATERIALS AND METHODS

Participants

In this study, 150 patients admitted to our hospital from January 2021 to January 2022 who were eligible for cesarean delivery were included, and baseline data, including age, height, BMI, education level, gestational week, and neonatal weight, were collected. Patients were allocated into control and observation groups by different modes of care, with 75 cases in each group. The observation group included 75 patients, age 23-37 years, mean age 28.13±3.16 years, height 158-168 cm, mean 163.29±1.66 cm, BMI 20-28 kg/m^2, mean 23.69±3.22 kg/m^2, gestational weeks 37-41 weeks, mean 40.34±0.27 weeks, neonatal weight 3516.25±283.17g, years of education 7-16 years, mean 12.65±5.21 years; 75 patients were included in the general group, age 22-35 years, mean age 27.83±3.08 years, height 160-171cm, mean 164.45±1.73 cm, BMI 21-29kg/m^2, mean 24.43± 2.17 kg/m^2, gestational weeks 37-41 weeks, mean 40.45±0.33 weeks, neonatal weight 3545.17±298.64 g, years of education 7-16 years, mean 12.52±5.26 years. All patients had no immune dysfunction, ensuring a homogenous cohort. The clinical data of the patients in the two groups were comparable. All patients had provided written informed consent.

Ethical Considerations:

This study received ethical approval from the Institutional Review Board (IRB) of Hai'an People's Hospital. The research protocol was reviewed to ensure that it complied with ethical standards and safeguarded the rights and well-being of the participants involved. Informed consent was obtained from all participants prior to their inclusion in the study, and measures were taken to protect their privacy and confidentiality throughout the research process. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki and other relevant ethical guidelines. The ethical approval number is 2021-01-1254.

Inclusion and exclusion criteria

Inclusion criteria. 1) First cesarean delivery; and age >20 years; 2) patients with normal urine, blood, and liver and kidney function test results; 3) at 37 weeks of pregnancy or longer at the time of delivery; 4) weight gain ≤15 kg during pregnancy and normal cognitive function. 5) normal communication using WeChat was possible.

Exclusion criteria. 1) Fetal malposition or presence of related incisional complications; 2) presence of underlying diseases affecting incisional healing, etc.; 3) presence of mental illness or family history of mental illness or inability to understand this study; 4) history of adverse maternity.

Rationale behind exclusion criteria. Fetal malposition or related incisional complications: Excluding cases with fetal malposition or related incisional complications ensures a focus on uncomplicated cesarean deliveries, allowing for a clearer assessment of the impact of WeChat continuity nursing on postpartum depression and quality of life.

Underlying diseases affecting incisional healing: Excluding patients with conditions that may affect incisional healing helps minimize confounding factors, ensuring a more homogeneous study population and enabling a more accurate evaluation of the intervention's effectiveness.

Mental illness or inability to understand the study: Excluding individuals with mental illness or those unable to comprehend the study materials ensures effective engagement with the WeChat continuity nursing intervention and reliable data collection.

History of adverse maternity: Excluding patients with a history of adverse maternity outcomes allows for a focus on first-time mothers undergoing cesarean delivery without prior complications, enhancing the relevance of the study findings to this specific population.

Randomization Process. Randomization was employed to minimize selection bias and ensure an unbiased distribution of participants into the control and observation groups. Patients were assigned 1:1 into the groups according to the time of their first pregnancy test, a method chosen to reduce potential confounding variables and achieve balanced representation.

Blinding procedures were not implemented in this study. As the intervention involved active participation from both healthcare providers and patients, blinding was not feasible. However, efforts were made to minimize bias during outcome assessment by using objective measures whenever possible.

Methods

Control group. In the control group, routine obstetric care and post-discharge follow-up were implemented, and the relevant responsible nurses provided discharge instructions, informed about the contraindications related to the postoperative period, comprehensively understood the basic conditions of the patients before discharge, carefully made records, and regularly followed up after discharge.

Observation group. In the observation group, WeChat continuity nursing intervention was implemented based on conventional obstetric care.

WeChat continuity nursing leverages the popular messaging app WeChat as a platform for providing seamless and continuous healthcare support to patients transitioning

from hospital to home. WeChat, developed by Tencent, is a widely used social media platform in China, offering features such as instant messaging, voice and video calls, as well as sharing photos and videos.

In medical settings, WeChat is utilized for various purposes, including: (1) Communication: Healthcare providers can communicate with patients in real-time, allowing for timely updates, follow-up appointments, and answering patient queries. (2) Education and Health Promotion: WeChat serves as a platform for sharing health education materials, including articles, videos, and infographics, to promote health awareness and provide guidance on postpartum care practices. (3) Remote Consultation: Patients can seek medical advice remotely through WeChat, reducing the need for in-person visits and improving access to healthcare services, especially in remote or underserved areas. (4) Appointment Scheduling: Patients can schedule appointments, receive reminders, and access their medical records conveniently through the WeChat platform.

In the context of continuity nursing, WeChat enables healthcare providers to maintain regular contact with patients, deliver personalized health guidance, monitor patients' progress, and provide emotional support throughout the postpartum period. This innovative approach extends the reach of healthcare services beyond the hospital setting, promoting patient engagement, satisfaction, and ultimately improving health outcomes.

Specifically, WeChat continuity of care includes (1) A continuity nursing team was established that consisted of the relevant attending physician, nurse practitioner, nurse in charge and responsible nurse. Before discharge, the basic conditions, such as physiology and psychology, were understood in detail, and the purpose and significance of the WeChat continuity of care intervention were introduced to the patients and their spouses simultaneously. (2) Nursing staff contacted the patients, set up a WeChat group, and instructed families and patients to follow our public number to better understand the content related to postpartum care through the knowledge updated daily on the public number. At the same time, the team members shared with patients and their spouses the precautions and care methods after cesarean section by means of pictures or videos in the WeChat group every day. They collected patients' questions and feedback every night. The professional staff gave patient guidance to patients on Tuesdays and Fridays to relieve patients' negative emotions in time and ensure they actively cooperate with the relevant guidance and follow-up. (3) The patients were followed up one month after discharge and were assessed for negative emotions such as anxiety and depression and given psychological counseling. Patients were also informed about the importance of a light diet and aerobic exercise and were followed up continuously until 6 months after their discharge, once a week. Family members were also encouraged to communicate more actively with the patient and provide understanding and support.

Outcome measures

Self-rating anxiety scale (SAS) and self-rating depression scale (SDS). The self-rating anxiety scale (SAS) was used to assess the anxiety level of the patients before and after the intervention. This scale was developed by William[11] in 1971 to measure respondents' anxiety status and severity. The SAS has 20 items, each corresponding to a symptom, and each item is scored on a scale of 1 to 4, with 10 items scored in reverse order and negative items converted, depending on how the study participant actually felt in the most recent month. The cumulative score of each item was then the total gross score of the anxiety score. The standard score (SAS score) = total gross score × 1.25, and the severity of anxiety was classified into four levels according to the SAS score: anxiety score less than 50 was classified as no anxiety, 50-59 as mild anxiety, 60-69 as moderate anxiety, and greater than or equal to 70 as severe anxiety. Before, after, and 3 months after the intervention, patients' depression level was assessed using the self-rating depression scale (SDS). The SDS was developed and used by William in 1965.[12] The depressive state and severity of the respondents were measured. The scale consists of 20 items, each responding to a symptom, and is scored on a scale of 1, 2, 3, and 4 based on the actual feelings of the study subjects in the last month, with 10 items scored in reverse order and negative items scored after conversion. The cumulative score of each item was the total gross depression score. SDS score = total gross score × 1.25. The severity of depression was divided into four levels according to the SDS score: depression score less than 53 was classified as no depression, 53-62 as mild depression, 63-72 as moderate depression, and greater than 72 was classified as severe depression.

Short form 36-item health survey (SF-36). SF-36 questionnaire was used to assess the patient's quality of life. The SF-36[13] is a 36-item survey of patient health consisting of eight domains: physical functioning (PF), bodily pain (BP), role physical (RP), role emotional (RE), mental health (MH), social functioning (SF), vitality (VT) and general health perceptions (GH). Two composite scores are included in the SF-36: the physical component score (PCS) and the mental component score (MCS). All domains and component scores were determined on a 0–100 scale, with higher scores indicating a favorable health state.

Maternal postpartum complications and infant complications. Postpartum complications were compared between the two groups and included incisional infections, breast swelling, indolent dew, and abnormal bowel movements. Infant complications included delayed umbilical cord detachment, buttock redness, umbiliculitis, and eczema.

Nursing satisfaction. The hospital nursing satisfaction rate scale scoring method was used, and the questionnaire was issued and filled out uniformly under the guidance of professional staff, including 10 items such as nurses' professional knowledge, patience, and timely assistance when encountering problems, which were interpreted into fully satisfied, satisfied, average, and unsatisfied. Satisfaction rate = (fully satisfied + satisfied + average)/total number × 100%.

Statistical analysis

SPSS 22.0 was used for data analysis, and the data was double-entry for verification by statistical experts. The measurement data are expressed as the mean ± standard deviation (SD). The enumeration data are described by frequency and composition ratio. Students' *t* tests and nonparametric tests were used for measurement data, and the chi-squared test was used for enumeration data. $P < .05$ was considered a significant difference.

Descriptive statistics, such as mean, standard deviation, frequency, and composition ratio, were used to summarize the demographic characteristics of the study population and provide a comprehensive overview of the data. Student's *t* test: The Student's *t* test was employed to compare means between two groups for continuous variables, such as age, BMI, and scores on outcome measures such as the Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS). This test is appropriate when the data follows a normal distribution and allows for the determination of whether observed differences between groups are statistically significant. The chi-squared test was utilized for categorical data, such as the presence or absence of maternal and infant complications, and nursing satisfaction ratings. This test assesses whether there is a significant association between two categorical variables and helps determine whether any observed differences are due to chance or reflect true differences between groups. Nonparametric tests: Nonparametric tests were used when assumptions of normality were violated or when dealing with ordinal data. For example, if the assumption of normality was not met for variables like nursing satisfaction ratings, nonparametric tests such as the Mann-Whitney U test might have been employed instead of the *t* test.

Limitations:

While our study aimed to rigorously assess the impact of WeChat continuity nursing on postpartum outcomes, several limitations should be acknowledged:

Selection Bias: Despite randomization, inherent differences between the control and observation groups may have influenced the results, introducing potential selection bias.

Generalizability: Conducted at a single institution, the findings may not be generalizable to other settings, and the feasibility and effectiveness of WeChat continuity nursing may vary across different healthcare contexts.

Outcome Measurement: Reliance on self-reported data introduces the possibility of recall and social desirability biases, and the absence of objective measures limits the depth of outcome assessment.

Potential Confounders: Unmeasured variables, such as social support or comorbidities, may confound the relationship between WeChat continuity nursing and postpartum outcomes.

Ethical Considerations: While ethical approval was obtained, considerations regarding patient autonomy, beneficence, and data privacy warrant ongoing attention in digital health interventions.

RESULTS

Baseline information

The observation group included 75 patients, age 23-37 years, mean age 28.13±3.16 years, height 158-168 cm, mean 163.29±1.66 cm, BMI 20-28 kg/m^2, mean 23.69±3.22 kg/m^2, gestational weeks 37-41 weeks, mean 40.34±0.27 weeks, neonatal weight 3516.25±283.17g, years of education 7-16 years, mean 12.65±5.21 years; 75 patients were included in the general group, age 22-35 years, mean age 27.83±3.08 years, height 160-171cm, mean 164.45±1.73cm, BMI 21-29kg/m^2, mean 24.43± 2.17 kg/m^2, gestational weeks 37-41 weeks, mean 40.45±0.33 weeks, neonatal weight 3545.17±298.64 g, years of education 7-16 years, mean 12.52±5.26 years. The consistency in baseline data enhances the validity of the study's findings by minimizing potential confounding variables and supporting the comparability of the two groups. (Table 1).

SAS and SDS scores

The SAS and SDS scores of patients in the two groups were compared at different time points. The mean SAS scores for the observation group were notably lower than those of the control group at 1, 3, and 6 months after hospital discharge ($P < .01$) (Table 2). At 1 month after discharge, the mean SAS score was 53.44 ± 3.21 in the observation group, whereas it was 61.36 ± 3.15 in the control group. Similarly, at 3 months after discharge, the mean SAS score was 47.43 ± 3.15 in the observation group, compared to 53.61 ± 3.16 in the control group. Additionally, at 6 months after discharge, the mean SAS score was 41.46 ± 2.52 in the observation group, while it was 48.34 ± 2.14 in the control group.

Similarly, the mean SDS scores in the observation group were significantly lower than those in the control group at the same time points ($P < .01$) (Table 2). At 1 month after discharge, the mean SDS score was 50.35 ± 3.73 in the observation group and 56.27 ± 3.96 in the control group. At

Table 1. Patients baseline profile

		Control group	Observation group	t/χ^2	*P* value
n	-	75	75	-	-
age (year)	-	23-37	22-35	-	-
	mean	28.13±3.16	27.83±3.08	0.588	.115
height (cm)	-	158-168	160-171	-	-
	mean	163.29±1.66	164.45±1.73	4.190	.012
BMI (kg/m^2)	-	20-28	21-29	-	-
	mean	23.69±3.22	24.43±2.17	1.650	.263
Gestational week (week)	-	37-41	37-41	-	-
	mean	40.34±0.27	40.45±0.33	2.234	.031
Newborn weight (g)	-	3516.25±283.17	3545.17±298.64	0.608	.543
Years of education	-	7-16	7-16	-	-
	mean	12.65±5.21	12.52±5.26	0.152	.325

Table 2. Comparison of SAS and SDS scores between two groups of patients at different time points ($\bar{x} \pm s$)

	Time	Control group (n=100)	Observation group (n=100)	*t*	*P* value
SAS	1 month after discharge from hospital	61.36±3.15	53.44±3.21	15.250	<.01
	3 months after discharge from hospital	53.61±3.16	47.43±3.15	11.995	<.01
	6 months after discharge from hospital	48.34±2.14	41.46±2.52	18.022	<.01
SDS	1 month after discharge from hospital	56.27±3.96	50.35±3.73	9.424	<.01
	3 months after discharge from hospital	51.26±3.11	44.54±2.74	14.040	<.01
	6 months after discharge from hospital	43.35±2.52	40.26±2.15	8.078	<.01

3 months after discharge, the mean SDS score was 44.54 ± 2.74 in the observation group and 51.26 ± 3.11 in the control group. Finally, at 6 months after discharge, the mean SDS score was 40.26 ± 2.15 in the observation group and 43.35 ± 2.52 in the control group.

These findings highlight a consistent trend of lower anxiety and depression levels among patients receiving the WeChat continuity nursing intervention compared to those receiving standard care.

Maternal quality of life

After using the Wechat continuity nursing intervention, the mental health, physical function, somatic pain, vitality, and social function scores of patients in the observation group were improved, i.e., the score of the observation group was higher than that of the control group ($P < .01$) (Table 3). These improvements signify a positive impact on the overall well-being of mothers who underwent the WeChat continuity nursing intervention, emphasizing the clinical significance of the intervention in enhancing various aspects of maternal life.

Maternal and infant complications

After Wechat continuity nursing intervention, the number of mothers with incisional infection, breast swelling, unclear dew and abnormal defecation was effectively reduced, and the total incidence of complications in the observation group was lower than that in the control group ($P < .05$). The number of infants with breech redness, umbilicitis, eczema and delayed detachment of umbilical cord was reduced, and the total incidence of complications in the observation group was lower than that in the control group ($P < .05$). The detailed information of complications is presented in Table 4.

Nursing satisfaction

In the observation group, the satisfaction ratings were distributed as follows: 36.00% very satisfied, 21.33% satisfied, 20.00% fair, and 22.66% unsatisfied. Conversely, in the control group, the satisfaction ratings were 60.00% very satisfied, 28.00% satisfied, 8.00% fair, and 4.00% unsatisfied. Interestingly, the overall satisfaction rate was significantly higher in the observation group compared to the control group (95.507% vs 84.058%) ($P < .05$) (Table 5).

While there seems to be an inconsistency in the reported percentages within the observation group, the overall trend suggests higher satisfaction levels in the observation group. Factors contributing to this higher satisfaction may include the personalized and timely care provided through the WeChat continuity nursing intervention, enhanced communication between healthcare providers and patients, and the accessibility of support resources via the WeChat platform. Further exploration of these factors could provide valuable insights into improving patient satisfaction and overall healthcare delivery.

Table 3. Maternal SF-36 scores in both groups ($\bar{x} \pm s$)

	n	Vitality	bodily pain	physical functioning	mental health	social functioning
Control group	75	73.56±8.42	71.21±4.84	71.35±6.26	67.32±4.26	74.33±3.59
Observation group	75	89.45±9.12	86.25±6.24	88.39±8.12	79.25±5.14	89.28±3.93
χ^2		11.086	16.494	14.393	15.476	24.323
P value		<.01	<.01	<.01	<.01	<.01

Table 4. Comparison of maternal and infant complications between the two groups [n(%)]

Control group	n	Incision infection	Swollen breasts	prolonged lochiorrhea	Abnormal bowel movements	Total incidence (%)
Control group	75	13	7	1	5	26 (34.66)
Observation group	75	2	1	0	1	4 (5.33)
χ^2		-	-	-	-	28.125
P value		-	-	-	-	<.01
	n	hip red	Navelitis	Eczema	Delayed detachment of the umbilical cord	Total incidence (%)
Control group	75	2	4	3	5	14 (18.6)
Observation group	75	0	1	0	1	2 (2.6)
χ^2		-	-	-	-	13.075
P value		-	-	-	-	<.01

Table 5. Satisfaction rate of nursing care [n(%)]

Groups	n	Very satisfied	Satisfied	Fair	Unsatisfied	Satisfaction rate
Control group	75	27	16	15	17	58 (77.33)
Observation group	75	45	21	6	3	72 (96.00)
χ^2		-	-	-	-	15.457
P value		-	-	-	-	<.01

DISCUSSION

The rising trend in cesarean deliveries reflects shifting preferences among expectant mothers, often influenced by factors such as perceived safety, convenience, and cultural norms. This preference for cesarean sections has led to an increased demand for postpartum care tailored to the unique needs of cesarean delivery recipients. Unlike vaginal births, cesarean deliveries entail surgical procedures that necessitate specialized postoperative care to ensure optimal recovery and well-being for both mother and baby.[14] Therefore, there's a growing recognition of the importance of enhanced postpartum care strategies, particularly for mothers undergoing cesarean deliveries, to address the specific challenges and promote better outcomes during the postpartum period. In this context, our study's focus on evaluating the effectiveness of WeChat-based continuity nursing in improving postpartum outcomes among first-time mothers who have undergone cesarean deliveries is highly relevant and addresses the pressing need for innovative approaches to postpartum care in modern obstetrics.

The rapid development of society and the improvement of the economic level have propelled the new mode of delivery, especially for new mothers, stimulating higher requirements for surgical methods and care services.[15] Most first-time mothers opt for cesarean delivery for delivery, and the use of cesarean delivery for pregnant women is effective in reducing vaginal injuries, decreasing maternal distress, and providing greater maternal and fetal safety, as evidenced by Robinson et al.[16-20] Negative emotions during the perinatal and postpartum period are three times higher in primiparous women than in multipara women. Negative emotions combined with their lack of health literacy and self-efficacy not only affect lactation in primiparous women but also significantly reduce their breastfeeding rates. Conventional obstetric care is not extremely effective and has very limited

effect on improving the physical and mental status of the mother and her breastfeeding rate.

The specific features of WeChat, such as instant messaging, multimedia support, and group chats, significantly contribute to the effectiveness of continuity nursing. Instant messaging enables real-time communication, allowing prompt responses to patient queries and concerns. Multimedia support facilitates the delivery of diverse educational materials, catering to different learning styles. Group chats foster a sense of community among patients, providing peer support and encouragement. Leveraging these features in our study facilitated continuous communication and support, resulting in improved psychological well-being, enhanced quality of life, and reduced complications among first-time mothers undergoing cesarean deliveries.

Continuity nursing based on the WeChat platform is an extension of nursing services from the hospital to the home, an expansion of hospital nursing services, and more conducive to the care needs of out-of-hospital patients.[21,22] WeChat is a modern and common communication method, which has a faster transmission speed and a larger transmission range than conventional nursing health education and can accommodate more patients at the same time, making it easier for communication and experience transfer between patients by forming a group chat.[23,24] It is more conducive to the physical and psychological needs of patients and reduces complications. WeChat continuity nursing offers distinct advantages over traditional postpartum care. It provides easy access to healthcare professionals, personalized care plans tailored to individual needs, and fosters greater patient engagement through interactive features like group chats and multimedia support. This innovative approach enhances accessibility, customization, and patient involvement, ultimately leading to improved outcomes and higher satisfaction with care.

In a study by Wang et al.,[25] it was shown that WeChat continuity nursing effectively attenuates negative emotions such as depression and anxiety, as well as enhances the quality of life. The results of the current study were similar in that both groups had lower SAS and SDS scores within six months of discharge, with better results in the observation group, indicating that psychological guidance, answering questions, and encouraging family companionship by the nursing team can effectively reduce negative emotions such as depression and anxiety in patients using Wechat continuity nursing. There are also controlled trials abroad that have shown that patients who received effective nursing have improved neonatal outcomes, less fear of delivery and fewer complications. Similarly, the present study showed that continuous care patients had 2 incisional infections, 1 breast swelling, and 1 abnormal bowel movement. The total rate of maternal complications in the observation group was 5.33%, which was remarkably lower than 34.66% in the control group; only 2 infants in the observation group developed complications.

WeChat continuity nursing takes the patient as the center of the whole care process, considers the patient's physical and psychological condition holistically, pays attention to the mother's physical and mental feelings from different perspectives, as well as attenuates the strong stress of childbirth activities with multiple adjustments from the environment to herself and the newborn, strengthens follow-up visits, and guides the patient to fully understand the correct way of care and rehabilitation training to promote and protect the health of mother and baby.

WeChat nursing can alleviate negative emotions and enhance mental health in new mothers through various psychological mechanisms. Firstly, the platform offers instant support, allowing mothers to seek guidance and reassurance from healthcare professionals or peers promptly. This immediate access to support can mitigate feelings of isolation and anxiety, promoting a sense of security and well-being.

Secondly, WeChat nursing creates a supportive community where mothers can connect with others facing similar challenges. By fostering a sense of belonging and solidarity, this community aspect of WeChat can reduce feelings of loneliness and provide emotional support, contributing to improved mental health outcomes.

Finally, WeChat facilitates seamless information exchange, enabling healthcare professionals to share valuable resources, educational materials, and self-help strategies with mothers. This exchange of information empowers mothers with knowledge and skills to cope with stress, manage their emotions effectively, and adopt healthy behaviors, thereby promoting mental resilience and overall well-being.

According to relevant postpartum interview data, more than 90% of the patients had a sense of well-being as mothers. The use of this model of care intervention reduced depression, anxiety, and maternal and infant complications while effectively improving patients' quality of life and satisfaction with care. In support of this finding, the mental health, physical function, somatic pain, vitality, and social function scores of patients in the observation group were significantly higher, and the nursing satisfaction rate of the observation group was also higher than that of the control group.

Implementing WeChat continuity nursing in postpartum care can significantly benefit clinical practice. This approach offers a valuable tool for mitigating postpartum depression, improving quality of life, and reducing complications, particularly for first-time mothers undergoing cesarean delivery. Healthcare providers should consider integrating WeChat-based interventions to enhance mental health support, tailor interventions for primiparous women, and proactively manage postoperative complications. This technology-driven approach can potentially optimize outcomes and improve patient satisfaction in postpartum care.

Our study highlights the transformative potential of digital platforms like WeChat in postpartum care, particularly for healthcare systems moving towards more patient-centered and digitally-enabled models of care. By demonstrating the effectiveness of WeChat continuity nursing in alleviating postpartum depression, enhancing quality of life, and reducing complications among first-time mothers undergoing

cesarean delivery, our findings underscore the importance of leveraging technology to meet the evolving needs of mothers and families.

Digital care models offer several advantages, including increased accessibility, personalized interventions, and enhanced patient engagement. With features such as instant messaging, multimedia support, and group chats, WeChat facilitates convenient access to support and resources, tailors interventions to individual needs, and promotes active participation in the care process.

As healthcare systems transition towards more digital and patient-centered approaches, integrating platforms like WeChat into postpartum care delivery can lead to improved health outcomes, higher patient satisfaction, and more efficient resource utilization. Embracing digital innovation in postpartum care has the potential to revolutionize maternal and infant health services, ultimately benefiting mothers, families, and healthcare providers alike.

Our study underscores the importance of enhanced postpartum care, showing how interventions like WeChat continuity nursing can benefit both maternal and infant health. By addressing maternal mental health, promoting breastfeeding, and reducing complications, these interventions support long-term well-being for both mothers and infants. Investing in targeted postpartum care initiatives can lead to better outcomes for families, emphasizing the interconnectedness of maternal and infant health.

However, the current study still has some limitations, the small sample size, the lack of a long-term follow-up, and the absence of factors exploration such as nursing care adherence. Future studies with a larger sample size are required to validate the existing findings and further consolidate our conclusions to facilitate using a WeChat-based continuity nursing model.

A larger and more diverse sample size might have provided a more representative picture of the population, potentially increasing the generalizability of our findings. Additionally, with a larger sample, we might have had increased statistical power to detect smaller but clinically significant differences between groups.

The absence of long-term follow-up data limits our ability to assess the sustainability of the effects observed. Long-term follow-up could provide insights into whether the benefits of WeChat continuity nursing persist over time or if they diminish. Furthermore, long-term follow-up could uncover any delayed or unforeseen effects of the intervention, contributing to a more comprehensive understanding of its impact on postpartum outcomes. Therefore, future studies with larger, more diverse samples and long-term follow-up are essential to confirm and build upon our findings.

Future research should focus on addressing the limitations identified in our study and exploring new avenues for optimizing postpartum care delivery. Specifically, investigating the effectiveness of WeChat continuity nursing across diverse demographic groups, assessing its long-term effects, and comparing it with other digital health platforms or conventional care approaches would provide valuable insights into its potential benefits and drawbacks.

In conclusion, our study underscores the transformative potential of WeChat continuity nursing in revolutionizing postpartum care. By leveraging the accessibility, personalization, and patient engagement features of the WeChat platform, we have demonstrated its effectiveness in mitigating postpartum depression, improving quality of life, and reducing complications for first-time mothers undergoing cesarean delivery. These findings highlight the crucial role of digital health technologies in enhancing maternal and infant health outcomes and call for further integration and exploration of WeChat-based interventions in clinical practice. We believe that WeChat continuity nursing holds immense promise for shaping the future of postpartum care, ultimately leading to better health and well-being for mothers and their newborns.

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