ORIGINAL RESEARCH

Effect of Humanistic Pain Management in Postpartum Women after Cesarean Delivery Based on Active Pain Assessment and Visual Analog Scale

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ABSTRACT

Objective • To explore the effect of humanistic pain management based on active pain assessment and the visual analog scale in postpartum women after cesarean delivery.

Methods • We selected 100 postpartum women who underwent cesarean delivery in Xuzhou Maternity and Child Health Care Hospital from April to December 2021 and divided the postpartum women into a management group and a conventional group, with 50 cases in each group. The conventional group was given routine pain management, while the management group was given humanistic pain management based on active pain assessment and visual analog scale score. The quality of pain management, sleep quality, unhealthy emotion, maternal comfort, breastfeeding rates, and patient compliance in the 2 groups were compared.

Results • The most severe degree of pain, the least degree of pain, the frequency of moderate and severe pain, and the influence of pain on sleep were lower in the management group than in the conventional group. The Pittsburgh Sleep Quality Index score was lower and the Self-Rating Anxiety Scale and the Self-Rating Depression Scale scores were higher in the management group than in the conventional group. In addition, the comfort scores for the second day and the third day after delivery were higher in the management group than in the conventional group. The breastfeeding rate and patient compliance were higher in the management group than in the conventional group.

Conclusion • Humanistic pain management based on active pain assessment and the visual analog scale can improve the quality of maternal pain management, the quality of sleep, and maternal comfort, ameliorate maternal adverse emotions, and promote breastfeeding and patient compliance. (*Altern Ther Health Med.* 2024;30(10):86-91).

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INTRODUCTION

Childbirth is an important event in a woman's life.[1] Cesarean deliveries are performed for approximately 15% of births in the world, and for more than 50% of births in China.[2] The first few days following cesarean delivery are frequently marked by excruciating pain for the patient.[3] The physical state of a woman can be impacted by this pain in a variety of ways.[4] Additionally, maternal activity can aggravate the pain into active pain.[5] This pain can last for 3 months or longer after a cesarean delivery.[6]

Given the facts above, pain management of postpartum women is an important aspect of early nursing after cesarean delivery.[7] However, pain management after cesarean delivery is extremely challenging.[8] Inadequate pain control in the early postpartum period increases a patient's risk of persistent pain, depressive symptoms, and opioid abuse.[9] Ineffective pain management can also disrupt the mother–infant relationship and cause abnormal breastfeeding after delivery.[10] Analgesic drugs or interventions may also cause side effects in pregnant and parturient women.[11]

Currently, pain management after cesarean delivery has evolved from a single-dimensional goal focused on visual analog scale (VAS) pain scores to a more comprehensive multidimensional approach.[12] Nurses play an important role in maternal pain management,[13] and nurse-led humanistic care can effectively alleviate patients' pain.[14] However, there has been no study on the effect of humanistic pain management on postpartum women after cesarean delivery. Therefore, this study aimed to explore the effect of humanistic pain management based on active pain assessment and VAS scores in post-cesarean postpartum women.

METHODS

General information

We selected 100 postpartum women who underwent cesarean delivery in Xuzhou Maternity and Child Health

Care Hospital from April to December 2021. The women were randomly divided into a management group and a conventional group, with 50 cases in each group.

Inclusion criteria: (1) all the postpartum women were at the first day after cesarean delivery and had no history of cesarean delivery; (2) no history of endocrine diseases and no severe pregnancy complications; (3) no postoperative complications, and the physical condition allowed for deep breathing, getting out of bed, and other functional activities; (4) all patients received intravenous patient-controlled analgesia after the operation and had good cognitive ability.

Exclusion criteria: (1) patients with a mental disorder or recent use of psychotropic drugs; (2) patients have had active pain assessment, accompanied by speech or audiovisual disorders; (3) patients with active pain assessment records in the nursing records of the ward 24 hours after the operation.

This study was approved by the Ethics Committee of Xuzhou Maternity and Child Health Care Hospital, and all patients and their families signed the informed consent form.

Pain management

Conventional group. Routine postoperative pain care was given. The degree of pain was assessed by the numerical rating scale (NRS) every 4 hours after the operation. The goal of postoperative pain control was moderate or below (NRS ≤4). If NRS was greater than 4, pain specialists instructed the patients to increase the frequency of patient-controlled intravenous analgesia (PCIA) compressions, and other measures, or to inform the doctor to adjust the analgesia program. At the same time, the NRS was used to dynamically assess and intervene in the patients' pain, once every 4 hours; when the NRS was 4 or less, routine assessment was resumed.

Management group. Humanistic pain care measures were given based on active pain assessment and VAS scores. After childbirth, the responsible nurse accompanied the patient to the ward and ensured a clean environment. They also maintained the cleanliness and unobstructed flow of various channels, such as infusion and urinary catheters, and took measures to avoid discomfort caused by various cuffs. Pain education was provided. Additionally, the physiological and psychological needs of first-time mothers were taken into consideration, by providing them with full care and respect to establish a strong level of trust and cooperation during the nursing process. Timely guidance on recovery and contraindications was provided based on the specific needs and physiological characteristics of postpartum women. A designated person was responsible for assessing the functional activity status and pain score of the women during rest and implemented effective interventions accordingly. Patients were taught how to relieve pain by using the PCIA system and were instructed to practice coughing exercises. Both the VAS and the functional activity score (FAS) were simultaneously used to assess pain levels. The objective for pain control in postpartum women is to achieve a VAS score of 3 or less and an FAS score of B or less. When the VAS score was 3 or less and the FAS score was B or less, nonpharmacological methods such as listening to music, engaging in conversation, and diversion of attention were used for pain relief. For VAS scores ranging from 3 to 5 and an FAS score of B, the frequency of PCIA use was increased, and pain assessment was conducted every 3 to 4 hours. If the VAS score was greater than 5 and the FAS score was B or greater, indicating poor analgesic effect, the assessment results and treatment measures were reported to the doctor for necessary adjustments to the pain management plan. After 3 to 4 hours, the analgesic effect was reevaluated, and treatment plans were modified based on the evaluation results. When the VAS score was 3 or less and the FAS score was either B or A, routine pain assessments were resumed. When the pain level of postpartum women did not reach the desired control goal, pain assessment continued with an interval of 4 hours between assessments. If the postpartum women voluntarily reported experiencing pain, the responsible nurse increased the frequency of pain assessment and, if necessary, administered prescribed medication for pain relief until effective pain control was achieved, after which routine pain assessments were resumed. After hospital discharge, the services for postpartum women were extended. The related personnel made regular telephone follow-up visits, tried to understand the breastfeeding situation, and provided help. A mother-and-child communication group was established to set up a platform for exchange of experiences, which can promote breastfeeding rates and patients' compliance.

Observation indexes

Quality of pain management 24 hours after the operation. The efficacy of pain control for postpartum cesarean delivery was assessed at 24 hours, 48 hours, and 72 hours. Postoperative pain management quality indicators included the following 5 items: (1) The most severe degree of pain within 24 hours after the operation was self-evaluated using a 0 to 10 scale. The degree of pain was positively correlated with the score. (2) The least degree of pain within 24 hours after the operation was self-evaluated using a 0 to 10 scale. The degree of pain was positively correlated with the score. (3) The frequency of moderate and severe pain was self-evaluated using a 0 to 5 scale, for which 1 represented always, 2 represented frequently, 3 represented often, 4 represented occasionally, and 5 represented never. (4) The effect of pain on sleep was self-evaluated using a 0 to 10 scale, and the effect was positively correlated with the score.

Sleep quality. The Pittsburgh Sleep Quality Index (PSQI) was used to evaluate the sleep quality of postpartum women prior to intervention and at 1, 2, and 3 days postintervention. Elevated scores indicate substandard sleep quality.

Emotional distress. The Self-Rating Anxiety Scale (SAS) and the Self-Rating Depression Scale (SDS) were used to appraise the emotional well-being of postpartum women before intervention and at 1, 2, and 3 days after intervention. Higher scores signify heightened emotional distress.

Comfort degree. The comfort level of postpartum women was evaluated by a general comfort questionnaire (GCQ) at 1, 2, and 3 days after intervention. The higher the score, the better the comfort level.

Breastfeeding rate. Telephone follow-ups, home visits, and emails were used to probe into the breastfeeding practices of postpartum women at 7 days, 4 months, and 6 months postpartum.

Treatment compliance. The treatment compliance of the 2 groups of postpartum women was evaluated. Noncompliance: the women did not cooperate with all measures and had obvious negative emotions. General: the women were basically able to cooperate, with less negative emotions. Good compliance: the women fully cooperated with the operation, without any negative emotions.

Statistical analysis

The data were analyzed using SPSS version 23.0 software (IBM Corp). Count data were expressed as mean (SD), and *t* tests were performed between the 2 groups. Number data were expressed as number (%), and χ^2 tests were used. $P < .05$ was considered statistically significant.

RESULTS

Comparison of general information

The age of patients in the Management group was (27.68±4.26) years, juxtaposed with (27.68±4.26) years in the Conventional group. There existed no marked disparity in age between the two cohorts ($P = .3762$). The gestational age of patients in the Management group was recorded at (39.18±1.14) weeks, as opposed to (39.04±1.29) weeks in the Conventional group. Noteworthy is the absence of statistically significant variation in gestational age between these two groups ($P = .5666$). The surgical duration for patients in the Management group was documented at (59.82±4.53) minutes, whereas for the Conventional group, it stood at (60.33±5.45) minutes. This underlines the absence of notable divergence in surgical duration between the respective groups ($P = .6120$). The volume of bleeding in the Management group amounted to (298.57±10.61) ml, while in the Conventional group, it measured (301.54±12.58) ml. The study brought to light no statistically significant contrast in bleeding volume between the two sets ($P = .2049$). The Body Mass Index (BMI) of patients in the Management group was calculated as (25.33±3.02) kg/m^2, as compared to (26.07±3.17) kg/m^2 in the Conventional group. The findings emphasize the lack of statistically significant disparity in BMI between the groups ($P = .2349$). The educational years completed by patients in the Management group were tallied at (11.62±4.84) years, while in the Conventional group, it amounted to (12.42±4.46) years. The analysis failed to reveal any statistically significant discrepancy in educational years achieved between the cohorts ($P = .2349$). (Table 1).

Table 1. Comparison of General Information

Group	Age, mean (SD), y	Gestational weeks, mean (SD), wk	Operation time, mean (SD), min	Blood loss, mean (SD), mL	Body mass index[a], mean (SD)	Years of education, mean (SD), y
Management (n=50)	27.68 (4.26)	39.18 (1.14)	59.82 (4.53)	298.57 (10.61)	25.33 (3.02)	11.62 (4.84)
Conventional (n=50)	28.46 (4.51)	39.04 (1.29)	60.33 (5.45)	301.54 (12.58)	26.07 (3.17)	12.42 (4.46)
t	0.8890	0.5750	0.5089	1.2761	1.1951	0.8595
P value	.38	.57	.61	.20	.23	.39

[a] Calculated as weight in kilograms divided by height in meters squared.

Comparison of the quality of pain management

24 hours following the surgical procedure, the pain intensity score for individuals in the Management cohort measured (4.61±0.70) points, contrasting with (6.72±1.33) points for those in the Conventional group. This highlights that after 24 hours, the pain intensity score in the Management cohort was notably inferior to that in the Conventional group ($P < .001$); the mildest pain intensity score for Management cohort individuals stood at (1.13±0.24) points, as opposed to (2.54±0.46) points for individuals in the Conventional group, indicating that after 24 hours, the mildest pain intensity score in the Management group was lower compared to the Conventional group ($P < .001$); patients in the Management cohort reported a moderate to severe pain frequency score of (2.49±0.59) points, while patients in the Conventional group had a score of (3.63±1.11) points, revealing that after 24 hours, the frequency score for moderate to severe pain in the Management group was lower than in the Conventional group ($P < .001$); the impact of pain on sleep for individuals in the Management group reflected a score of (3.50±1.19) points, contrasting with (4.99±1.45) points for those in the Conventional group, indicating that after 24 hours, the impact of pain on sleep for Management group individuals was less than for those in the Conventional group ($P < .001$).

After 48 hours post-surgery, the highest intensity pain score for individuals in the Management group was recorded at (3.74±0.53) points, while individuals in the Conventional group reported (5.93±0.86) points. This illustrates that after 48 hours, the highest intensity pain score in the Management group was lower when compared to the Conventional group ($P < .001$); the mildest pain intensity score for Management group individuals was (1.02±0.16) points, in contrast to (2.23±0.25) points for those in the Conventional group, demonstrating that after 48 hours, the mildest pain intensity score in the Management group was lower compared to the Conventional group ($P < .001$); individuals in the Management cohort recorded a moderate to severe pain frequency score of (2.01±0.21) points, while individuals in the Conventional group presented a score of (3.14±1.03) points, indicating that after 48 hours, the frequency score for moderate to severe pain in the Management group was lower compared to the Conventional group ($P < .001$); the impact of pain on sleep for Management group individuals registered a score of (3.11±0.93) points, contrasted with (4.03±1.16) points for the Conventional group, suggesting that after 48 hours, the impact of pain on sleep for Management group individuals was less compared to the Conventional group ($P < .001$).

72 hours post-surgery, the most intense pain score for individuals in the Management group displayed (2.95±0.61) points, in comparison to (5.02±0.77) points for individuals in the Conventional group. This showcases that after 72 hours, the most intense pain score in the Management group was lower compared to the Conventional group ($P < .001$); the mildest pain intensity score for individuals in the Management

Table 2. Comparison of the Quality of Pain Management 24 Hours After Operation

Group	24 hours after operation, mean (SD)			
	Most severe degree of pain	Least degree of pain	Frequency of moderate and severe pain	Influence of pain on sleep
Management (n = 50)	4.61 (0.70)	1.13 (0.24)	2.49 (0.59)	3.50 (1.19)
Conventional (n = 50)	6.72 (1.33)	2.54 (0.46)	3.63 (1.11)	4.99 (1.45)
t	9.9270	19.2162	6.4126	5.6168
P value	<.001	<.001	<.001	<.001
Group	48 hours after operation, mean (SD)			
	Most severe degree of pain	Least degree of pain	Frequency of moderate and severe pain	Influence of pain on sleep
Management (n = 50)	3.74 (0.53)	1.02 (0.16)	2.01 (0.21)	3.11 (0.93)
Conventional (n = 50)	5.93 (0.86)	2.23 (0.25)	3.14 (1.03)	4.03 (1.16)
t	15.3293	28.8259	7.6012	4.3755
P value	<.05	<.001	<.001	<.001
Group	72 hours after operation, mean (SD)			
	Most severe degree of pain	Least degree of pain	Frequency of moderate and severe pain	Influence of pain on sleep
Management (n = 50)	2.95 (0.61)	0.86 (0.23)	1.70 (0.43)	2.55 (0.67)
Conventional (n = 50)	5.02 (0.77)	2.04 (0.21)	2.89 (0.64)	3.45 (0.92)
t	14.9002	26.7905	10.9133	5.5917
P value	<.001	<.001	<.001	<.001

Table 3. Comparison of PSQI Scores Before and After Cesarean Delivery

Group	PSQI before intervention, mean (SD)	PSQI 1 day after intervention, mean (SD)	PSQI 2 days after intervention, mean (SD)	PSQI 3 days after intervention, mean (SD)
Management (n = 50)	15.37 (2.43)	9.74 (2.50)[a]	9.31 (2.25)[a]	9.02 (2.08)[a]
Conventional (n = 50)	15.64 (2.73)	11.78 (2.67)[a]	11.28 (2.31)[a]	10.89 (2.14)[a]
t	0.5224	3.9437	4.3198	4.4308
P value	.60	<.001	<.001	<.001

[a]*P* < .05, compared with before intervention.

group stood at (0.86±0.23) points, while individuals in the Conventional group reported (2.04±0.21) points, indicating that after 72 hours, the mildest pain intensity score in the Management group was lower than the Conventional group ($P < .001$); patients in the Management group recorded a moderate to severe pain frequency score of (1.07±0.43) points, whereas individuals in the Conventional group had a score of (2.86±0.64) points, showcasing that after 72 hours, the frequency score for moderate to severe pain in the Management group was lower than the Conventional group ($P < .001$); the impact of pain on sleep for Management group individuals exhibited a score of (2.55±0.67) points, in contrast to (3.45±0.92) points for the Conventional group, signifying that after 72 hours postoperatively, the impact of pain on sleep for Management group individuals was less than that of the Conventional group ($P < .001$). (Table 2).

Comparison of sleep quality

Prior to the surgical procedure, patients in the Management group exhibited a PSQI score of (15.37±2.43) points, while those in the Conventional group had a PSQI score of (15.64±2.73) points, with no statistically significant variance between the two cohorts ($P = .6026$). On the initial day following surgery, patients in the Management group showed a PSQI score of (9.74±2.50) points, as opposed to the Conventional group patients whose PSQI score was (11.78±2.67) points, indicating a lower PSQI score in the Management group on the first postoperative day ($P < .001$). Subsequently, on the second day post-surgery, the PSQI score for patients in the Management group was (9.31±2.25) points, while the Conventional group patients had a PSQI score of (11.28±2.31) points, illustrating a lower PSQI score in the Management group on the second postoperative day ($P < .001$). Moving on to the third day post-surgery, patients in the Management group had a PSQI score of (9.02±2.08) points, compared to the Conventional group patients with a PSQI score of (10.89±2.14) points, underscoring a lower PSQI score in the Management group on the third postoperative day ($P < .001$). (Table 3).

Comparison of emotional distress

Prior to the surgical intervention, the patients in the Management cohort displayed SAS scores of (56.87±2.29) points, whereas those in the Conventional cohort exhibited SAS scores of (57.64±2.78) points, suggesting no statistically significant variance between the two groups ($P = .1338$). On the initial postoperative day, the SAS scores of the Management group registered (41.65±2.49) points, whereas the Conventional group recorded (48.80±4.06) points, highlighting that the SAS scores of the former were considerably lower than those of the latter on the first day post-surgery ($P < .001$). Subsequently, on the second day following the surgical procedure, the SAS scores for the Management group stood at (39.65±2.27) points, compared to (45.27±3.31) points in the Conventional group, underscoring that the former's SAS scores were significantly reduced compared to the latter on the second postoperative day ($P < .001$). Moving on to the third day post-surgery, the SAS scores for the Management patients amounted to (38.11±2.05) points, while those in the Conventional group tallied (41.37±3.42) points, confirming that the SAS scores for the Management group were notably lower than those for the Conventional group on the third postoperative day ($P < .001$).

In the preoperative phase, the SDS scores for the Management cohort were (59.85±2.97) points, whereas the Conventional cohort scored (60.22±3.74) points, signifying no significant difference between the two groups ($P = .5851$). Upon evaluation on the first day post-surgery, the SDS scores for the Management group were (42.47±1.49) points, marking a contrast to the Conventional group's (50.64±3.86) points, showcasing a substantial discrepancy between the two groups on the first day after surgery ($P < .001$). Similarly, on the second day following the surgical procedure, the SDS scores for the Management cohort reached (39.73±1.21) points, while those for the Conventional group were (47.29±2.75) points, illustrating a significant reduction in SDS scores for the Management group compared to the Conventional group ($P < .001$). Finally, on the third day post-surgery, the SDS scores for the Management group were (35.49±1.36) points, whereas those in the Conventional group were (43.61±2.14) points, showcasing a discernible difference between the two groups on the third day following the surgical intervention ($P < .001$). (Table 4).

Comparison of maternal comfort

The GCQ scores for patients in the Management group were (57.27±6.50) points on the first postoperative day, as

Table 4. Comparison of SAS and SDS Scores Before and After Cesarean Delivery

Group	SAS, mean (SD)				SDS, mean (SD)			
	Before intervention	First day after intervention	Second day after intervention	Third day after intervention	Before intervention	First day after intervention	Second day after intervention	Third day after intervention
Management (n = 50)	56.87 (2.29)	41.65 (2.49)[a]	39.65 (2.27)[a]	38.11 (2.05)[a]	59.85 (2.97)	42.47 (1.49)[a]	39.73 (1.21)[a]	35.49 (1.36)[a]
Conventional (n = 50)	57.64 (2.78)	48.80 (4.06)[a]	45.27 (3.31)[a]	41.37 (3.42)[a]	60.22 (3.74)	50.64 (3.86)[a]	47.29 (2.75)[a]	43.61 (2.14)[a]
t	1.5117	10.6153	9.9012	5.7812	0.5478	13.9624	17.7928	22.6445
P value	.13	<.001	<.001	<.001	.59	<.001	<.001	<.001

[a]$P < .05$, compared with before intervention.

opposed to (55.11±6.05) points for those in the Conventional group. This indicates that there was no statistically significant difference in the GCQ scores between the two groups on the first postoperative day ($P = .0886$). On the second postoperative day, the GCQ score for the Management group patients was (64.69±6.03) points, compared to (60.08±6.00) points for the Conventional group patients, suggesting that the GCQ score for the Management group patients was higher than that of the Conventional group on the second postoperative day ($P < .001$). Moving on to the third postoperative day, the GCQ score for the Management group patients was (69.51±5.83) points, while the Conventional group patients scored (63.35±5.15) points, indicating that the GCQ score for the Management group patients was higher than that of the Conventional group patients on the third postoperative day ($P < .001$). (Table 5).

Table 5. Comparison of Maternal Comfort

Group	First day after intervention, mean (SD)	Second day after intervention, mean (SD)	Third day after intervention, mean (SD)
Management (n = 50)	57.27 (6.50)	64.69 (6.03)	69.51 (5.83)
Conventional (n = 50)	55.11 (6.05)	60.08 (6.00)	64.35 (5.15)
t	1.7200	3.8321	4.6905
P value	.09	<.001	<.001

Table 6. Comparison of Breastfeeding Rate

Group	7 days postpartum, No. (%)	4 months postpartum, No. (%)	6 months postpartum, No. (%)
Management (n = 50)	45 (90)	47 (94)	40 (80)
Conventional (n = 50)	29 (58)	34 (68)	21 (42)
χ^2	4.7	11.0	15.2
P value	.03	<.001	<.001

Table 7. Comparison of Treatment Compliance

Group	Good compliance	General	Noncompliance	Number of patients with good compliance	Rate of compliance, %
Management (n = 50)	39	7	4	46	92
Conventional (n = 50)	29	9	12	38	76
χ^2	4.8				
P value	.03				

Comparison of breastfeeding rate

After 7 days of intervention, the Management cohort had 45 patients (90.00%) nurturing their offspring, while within the Conventional cohort, 29 patients (58.00%) were nurturing their offspring. This thereby implies that there was no noteworthy variance in the nurturing rates between the two cohorts post 7 days of intervention ($P = .0309$); post 4 months of intervention, the Management cohort had 47 patients (94.00%) nurturing their offspring, whereas in the Conventional cohort, 34 patients (68.00%) were nurturing their offspring. This signifies that post 4 months of intervention, the nurturing rate among patients in the Management cohort exceeded that of patients in the Conventional cohort ($P < .001$); and post 6 months of intervention, the Management cohort had 40 patients (80.00%) nurturing their offspring, while within the Conventional cohort, only 21 patients (42.00%) were nurturing their offspring. This indicates that post 6 months of intervention, the nurturing rate among patients in the Management cohort surpassed that of patients in the Conventional cohort ($P < .001$). (Table 6).

Comparison of treatment compliance

Among the cohort under the Management category, 39 individuals demonstrated exemplary adherence to the study parameters, 7 participants exhibited moderate adherence, while 4 patients showcased non-adherence, culminating in an impressive compliance rate of 92.00%. Conversely, in the Conventional group, 29 patients showcased good adherence, 9 participants displayed moderate adherence, and 12 individuals exhibited non-adherence, resulting in a compliance rate of 76.00%. These findings suggest that the compliance rate of patients within the Management group significantly surpassed that of the Conventional group ($P < .001$). (Table 7).

DISCUSSION

The number of women who have had a cesarean delivery has been on the rise in recent years.[15] However, most women who have this invasive procedure experience moderate and severe postoperative pain,[16] which can cause a range of adverse effects.[17] The higher the postpartum pain, the lower the breastfeeding rate and the higher the incidence of postpartum depression and chronic pain.[18] For every 30% increase in the duration of severe pain after surgery, chronic pain increases by 3% 12 months after surgery.[19] Furthermore, maternal activity becomes more difficult because of the pain.[20] In addition, after cesarean delivery, postpartum women are at great risk of sleep disorders.[21] These circumstances can reduce the comfort of the women after childbirth.[22]

Nursing intervention has shown good application value in the treatment of various diseases.[23] Humanistic care theory is patient centered, emphasizing that nurses should give care to patients, embodied by interpersonal activities, humanity, and emotion in the nursing process.[24] Humanistic care can improve patient satisfaction and mental health and produce positive health outcomes.[25] At the same time, humanistic care given by nursing staff inherently endows patients with positive effects, which are no less substantial than therapeutic behaviors such as managing and controlling complications.[26]

In this study, we compared the conventional group that was given conventional pain management with the management group that was given humanistic pain management. We found that, based on active pain assessment and VAS scores, the most severe degree of pain, the least degree of pain, the frequency of moderate and severe pain, and the degree of influence of pain on sleep were lower at 24 hours after the operation in the management group compared with the conventional group. This illustrates that humanistic pain management based on active pain assessment and VAS scores has a good effect on pain control of women after cesarean delivery. The PSQI score of the management group was lower than that of the conventional group, indicating that humanistic pain management based on active pain assessment and VAS scores was effective in improving the sleep quality of the women after cesarean delivery. The SAS and SDS scores of the management group were lower than those of the conventional group, which suggests that humanistic pain management based on active pain assessment and VAS scores could effectively relieve the negative emotions of the women.

The comfort scores of 2 days and 3 days after delivery in the management group were higher than those in the conventional group, indicating that the humanistic pain management based on active pain assessment and VAS scores effectively improved postpartum comfort. Moreover, the breastfeeding rate in the management group was significantly higher than that in the conventional group at different periods after delivery, showing that humanistic pain management based on active pain assessment and VAS scores could promote breastfeeding. The compliance of the management group was higher than that of the conventional group, indicating that humanistic pain management based on active pain assessment and VAS scores improved nursing compliance.

This study has achieved certain outcomes by implementing a humanistic approach to pain management, using active pain assessment and VAS scores, among postpartum women who underwent cesarean delivery. However, certain limitations exist within this study. First, it exclusively focused on first-time mothers who had a cesarean delivery, failing to consider women with prior childbirth experiences. Consequently, the effectiveness of humanistic pain management, based on active pain assessment and VAS scores, for women with a history of childbirth remains uncertain and warrants further investigation. Second, the sample size in this study was small, and no examination of the long-term effects on postpartum women after intervention was conducted. Therefore, additional research is necessary to validate the application efficacy of humanistic pain management, using active pain assessment and VAS scores, across a broader population and over an extended time frame.

In conclusion, humanistic pain management based on active pain assessment and VAS scores had a good effect on postpartum women after cesarean delivery. It not only helped to improve the quality of pain management but also improved the sleep quality and the degree of comfort, relieved adverse mood, and promoted breastfeeding and nursing compliance.

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