

Original Article

Effect of comprehensive care on the negative emotions and life quality in parturients with postpartum depression and gestational hypertension

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Received February 3, 2021; Accepted March 29, 2021; Epub June 15, 2021; Published June 30, 2021

Abstract: Objective: To investigate the efficacy of comprehensive care during the nursing process of parturients with gestational hypertension and postpartum depression. Methods: This prospective study recruited 70 patients with gestational hypertension concurrent with postpartum depression, and the patients were randomly divided into a control group (35 patients received routine care) and an observation group (35 patients, treated by comprehensive care). Indicators including psychological condition, life quality, thyroid function, the incidence of eclampsia, and nursing satisfaction were recorded and compared before intervention (at the diagnosis of postpartum depression) and after intervention (three months after delivery) in the two groups. Results: The Hamilton Anxiety (HAMA) Scale and Hamilton Depression (HAMD) Scale scores were decreased in both groups after care intervention. Scores of Quality of Life Comprehensive Assessment Questionnaire (GQOLI-74) in all dimensions were higher after intervention than those of before intervention, and improvement was greater in the observation group ($P < 0.05$). The levels of thyroid-stimulating hormone, free triiodothyronine and free thyroxine after the intervention were higher than those before the intervention in the two groups, and the increase in the observation group was greater significant than that in the control group ($P < 0.05$). The incidence of postpartum eclampsia in the observation group was lower than that of the control group, and the nursing satisfaction of patients in the observation group was higher than that of the control group (both $P < 0.05$). Conclusion: Comprehensive care effectively relieved the abnormal psychological condition, promoted thyroid function, reduced the risk of postpartum eclampsia and improved the quality of life in patients with gestational hypertension and postpartum depression.

Keywords: Gestational hypertension, postpartum depression, comprehensive care, psychological condition, life quality

Introduction

Gestational hypertension is one of the high-risk complications during pregnancy, and can lead to preterm delivery and postpartum hemorrhage and may endanger the lives of mothers and babies in severe cases [1]. Compared with normal pregnant women, patients with gestational hypertension suffer from a higher level of psychological stress, which induces a higher susceptibility to postpartum depression. Previous survey has shown that the incidence of postpartum depression among patients with gestational hypertension is 6.0%-54.5% [2]. Postpartum depression impedes the recovery of women after delivery, reduces milk, affects

neonatal feeding and growth, and even causes actions that hurt themselves or infants [3]. Therefore, improving the negative psychological status of patients with postpartum depression by appropriate nursing intervention plays an important role in maintaining the health of parturient and infants. Traditional nursing care mostly concerns the disease itself and complications, while insufficient attention is paid to the psychological changes in patients [4].

Comprehensive care is a nursing method organized based on the framework of nursing procedure in a group of nursing staffs, who contribute together in work for a group of patients [5, 6]. With a combination of the advantages of

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team nursing and primary nursing, comprehensive care has been widely applied in clinic. However, the current studies about parturients with gestational hypertension mainly focused on the adverse maternal outcome and impact on the newborns, but rarely concern about the psychological status of patients [7]. Our study investigated the efficacy of comprehensive care for parturients with gestational hypertension and postpartum depression through evaluating psychological status, quality compliance, life quality and blood pressure, aiming to provide practical references for clinical nursing in pregnant women with high-risk of postpartum depression.

Materials and methods

General materials

This prospective study recruited 70 patients with gestational hypertension and postpartum depression treated in our hospital from November 2018 to January 2020, and the patients were randomly divided into a control group and an observation group.

Inclusion criteria: Patients were eligible if they were diagnosed with gestational hypertension which met the diagnostic criteria in the *Obstetrics and Gynecology* (8th Edition): hypertension (systolic/diastolic blood pressure $\geq 140/90$ mmHg) after $\geq 20+0$ weeks' gestation [8]. Had obvious postpartum depression; ere capable of cooperating with this research.

Exclusion criteria: Patients were excluded if they had hypertension before pregnancy; were about to have twins or multiple births; had a history or family history of mental illness; had communication or cognitive impairment; showed suicidal attempt; suffered from malignant tumors; or had other postpartum complications, such as puerperal infection, and postpartum hemorrhage.

All participants in this study signed an informed consent form. This study was approved by the Ethics Committee of our hospital.

Method

Patients in the control group received routine care, including medical education, regular prenatal care, and medication application as prescribed.

Patients in the observation group were treated by comprehensive care during the perinatal period [9, 10]. (1) Prenatal care. The specialist nurses explained the following information to the parturients before delivery by multimedia and brochures: the knowledges about delivery, gestational hypertension and postpartum depression, the importance and necessity of taking medication as prescribed and regular prenatal care. Meanwhile, the daily diet of patients was supervised by nurses. A balanced diet including more vegetables and fruits was recommended, but overeating should be avoided. Timely targeted psychological intervention or counseling was provided to the patients with irritability, anxiety, depression, or mania during pregnancy. The patients were told about benefits of a peaceful mind to the fetus as well as encouraged to learn emotional self-regulation. (2) Delivery care. Childbirth is a process with extreme pain, and gestational hypertension is one of the high-risk complications during pregnancy. Thus, patients with gestational hypertension suffered higher pressure during delivery which induces a higher incidence of complications after delivery. During the whole process of childbirth, a midwife was arranged to accompany the parturient. Encouragement and assistant of diverting attention were offered to the parturients with vaginal birth. While for the parturients with cesarean section, soft music was played in the delivery room to reduce the psychological burden and eliminate tension and fear so as to acquire the best mentality to deliver the child. (3) Postpartum care. The mothers were rested peacefully after delivery. Blood pressure was measured 4-6 times by nurses per day. The postpartum hemorrhage, the flowing of the catheter, and the condition of surgical incision were supervised by nursing staff. The correct breastfeeding posture was also educated by nurses. Companionship from family members, especially the husband, was informed to the relatives of the parturient to encourage and support parturients as well as to help take care of newborns. Appropriate soft music at a low volume were played to relieve the irritability and anxiety of the patient during waking time.

Outcome measures

Primary outcome measures: The indicators were measured before intervention (at the time

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Table 1. General data of patients in the two groups ($\bar{x} \pm sd$)

Item	Observation group (n=35)	Control group (n=35)	χ^2/t	P
Age (years)	30.4±3.6	30.7±2.8	0.389	0.698
Gestational (weeks)	39.4±1.2	38.9±1.6	1.479	0.144
BMI (kg/m ²)	26.82±2.41	27.22±1.94	0.765	0.447
The severity of disease (n)			0.548	0.760
Mild	10	8		
Moderate	15	18		
Severe	10	9		
Pregnancy history (n)			0.583	0.445
Primipara	13	10		
Multipara	22	25		
Premature Birth (n)			0.543	0.461
Yes	20	23		
No	15	12		
Education (n)			1.014	0.314
Middle school or below	14	10		
High school or above	21	25		

Note: BMI: Body mass index.

of diagnosing postpartum depression) and after intervention (3 months after delivery).

(1) Psychological status was assessed by the Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HAMD) [11, 12]. HAMA ≥ 7 points indicate a possibility of anxiety, and HAMA < 7 point indicate no anxiety. With a total of 17 items, HAMD showing a score of 7-17 points indicates a possibility of depressive symptoms, and a score of < 7 points indicates no depressive symptoms. Higher score reflects more severe anxiety and depression. (2) Quality of life was evaluated using Quality of Life Comprehensive Assessment Questionnaire (GQOLI-74) [13]. The material life was scored from 16 to 80 points, and the other three dimensions, social function, physical function and psychological function, were all scored from 20 to 100 points. Higher score indicates better quality of life.

Secondary outcome measures: (1) Venous blood (5 mL) was collected from patients for the detection of thyroid-stimulating hormone (TSH), free triiodothyronine (FT3), and free thyroxine (FT4), by a thyroid function tester (model: MN-6110B, from Shanghai Hanfei, China). (2) The incidence of eclampsia postpartum, including eclampsia and pre-eclampsia, was compared between the two groups. The diagnostic criteria of eclampsia and pre-eclampsia

described in Obstetrics and Gynecology (8th Edition) were applied in this study. The incidence of eclampsia = (case number of eclampsia + case number of pre-eclampsia)/total number of cases * 100% [8]. (3) Nursing satisfaction of patients was accessed using a self-developed satisfaction questionnaire. Satisfaction rate = (number of satisfaction + number of general satisfaction)/total number of cases * 100%.

Statistical analysis

SPSS 20.0 was employed for statistical analysis of data. Counted data were shown as n (%), and χ^2 test was performed for comparison; measured data were expressed by ($\bar{x} \pm sd$), compared between before and after

the intervention in each group by paired t-test and compared between the two groups by independent t-test. $P < 0.05$ was considered significant.

Results

General data

There were no significant differences between the general data of patients in the two group, so the two groups were comparable (all $P > 0.05$; **Table 1**).

Psychological status

Before the intervention, no significant differences in scores of HAMA and HAMD were observed between the two groups ($P > 0.05$). After intervention, scores of HAMA and HAMD both significantly decreased in the two groups. Moreover, the decreases were more significant in the observation group than in the control group (all $P < 0.05$; **Table 2**).

Quality of life

Before the intervention, no statistically significant difference in each item of GQOLI-74 was observed between the two groups (all $P > 0.05$). While after the intervention, scores of GQOLI-74 were increased in all dimensions in both groups. Moreover, the increases were more sig-

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Table 2. HAMA & HAMD scale of two groups before and after the intervention ($\bar{x} \pm sd$, scores)

Group	Time	HAMA	HAMD
Observation group (n=35)	Before the intervention	9.69±1.22	10.94±2.01
	After the intervention	6.58±1.01*. [#]	7.01±1.38*. [#]
Control group (n=35)	Before the intervention	10.02±1.49	11.22±1.79
	After the intervention	7.95±1.24*	8.83±1.44*

Note: Comparison in the same group before and after the intervention, *P<0.05; compared with the control group, [#]P<0.05. HAMA: Hamilton Anxiety Scale; HAMD: Hamilton Depression Scale.

Table 3. GQOLI-74 scores of two groups before and after intervention ($\bar{x} \pm sd$, scores)

Group	Indicator	Before the intervention	After the intervention
Observation group (n=35)	Material life	62.20±5.44	69.77±5.36*. [#]
	Social function	72.02±5.76	77.77±5.40*. [#]
	Physical function	68.86±5.22	75.40±5.43*. [#]
	Psychological function	65.55±6.43	74.40±5.80*. [#]
Control group (n=35)	Material life	61.69±5.84	64.30±5.66*
	Social function	71.84±6.55	74.40±6.30*
	Physical function	69.33±5.37	72.95±5.55*
	Psychological function	66.07±5.77	69.78±5.07*

Note: Comparison in the same group before and after the intervention, *P<0.05; compared with the control group, [#]P<0.05. GQOLI-74: Quality of Life Comprehensive Assessment Questionnaire.

Table 4. Comparison of thyroid function in two groups before and after the intervention ($\bar{x} \pm sd$)

Group	Indicator	Before the intervention	After the intervention
Observation group (n=35)	TSH (mIU/L)	1.75±0.44	2.36±0.49*. [#]
	FT3 (pmol/L)	4.67±0.48	5.36±0.50*. [#]
	FT4 (pmol/L)	18.57±1.94	23.35±2.42*. [#]
Control group (n=35)	TSH (mIU/L)	1.78±0.52	2.03±0.48*
	FT3 (pmol/L)	4.60±0.43	4.87±0.54*
	FT4 (pmol/L)	18.20±2.38	20.02±3.33*

Note: Comparison in the same group before and after the intervention, *P<0.05; compared with the control group, [#]P<0.05. TSH: thyroid-stimulating hormone; FT3: free triiodothyronine; FT4: free thyroxine.

Table 5. Incidence of postpartum eclampsia (n, %)

Group	Eclampsia	Pre-eclampsia	Incidence
Observation group (n=35)	0 (0.00)	1 (2.86)	1 (2.86)
Control group (n=35)	2 (5.71)	4 (11.43)	6 (17.14)
χ^2			3.968
P			0.046

nificant in the observation group than in the control group (all P<0.05; **Table 3**).

Thyroid function

Before the intervention, there was no significant difference in the levels of TSH, FT3 and

FT4 between the two groups (all P>0.05). However, after intervention, those indicators were elevated in both groups, and the elevations were greater in the observation group than in the control group (all P<0.05; **Table 4**).

Incidence of postpartum eclampsia

The incidence of postpartum eclampsia in the observation group was lower than that in the control group (P<0.05; **Table 5**).

Satisfaction rate

The nursing satisfaction of patients in the observation group was 94.29% (33/35), which was

significantly higher than 74.29% (26/35) in the control group (P<0.05; **Figure 1**).

Discussion

Parturients with gestational hypertension are at high risk, and the incidence of complications,

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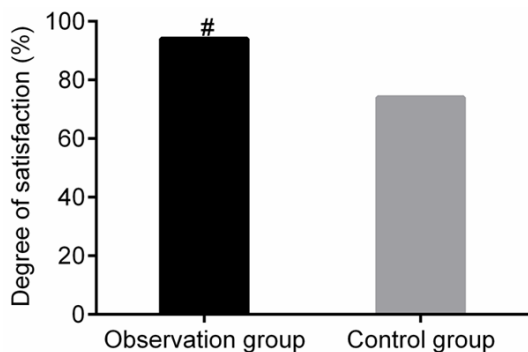


Figure 1. Comparison of nursing satisfaction between two groups. Compared with the control group, [#]P<0.05.

such as postpartum hemorrhage, during and after pregnancy is also higher when comparing with normal pregnant women. Due to considering the impact of hypertension on fetus development, patients with gestational hypertension often suffer much psychological pressure, which leads to a higher incidence of postpartum depression among these patients [14, 15]. Postpartum depression not only impedes the recovery of patients from delivery but also affects the lactation of the parturients and induces self-harm and other negative behaviors [16]. Therefore, comprehensive, efficient, and high-quality care for patients with postpartum depression plays an important role in relieving the negative psychological condition and improving the life quality of the parturients.

Our study showed lower HAMA and HAMD scores as well as higher GQOLI-74 scores in the observation group than in the control group after the intervention. These results suggested that comprehensive care for patients with gestational hypertension and postpartum depression during the perinatal and postpartum periods effectively improved patients' anxiety, depression and other negative psychological conditions, as well as promoted their postpartum quality of life. The displayed results by the current study are similar to the previous data published by Vieira et al., who reported that the comprehensive care improved the negative psychological conditions in patients with postpartum depression through the comparison and analysis of the psychological change between two different postpartum care models [17]. The underlying reason might involve that

health education related to gestational hypertension and postpartum depression was integrated into the comprehensive intervention, which assisted patients in improving their understanding of disease, the active cooperation with treatment as well as the prognosis and fetal development. Thus, the compliance with treatment was improved. Besides, playing low volume soft music during waking time delivered positive effects to the patients by rhythmic waves which also were of benefit.

Hypothyroidism affects the normal work and rest of the parturients. Resulting from loss of nutrient intake, the parturients could have low sleep quality, which induces the parturients to be susceptible to postpartum depression. Many studies have pointed out that hypothyroidism is closely associated with the occurrence of postpartum depression [18-20]. With relief of postpartum depression, the thyroid functional indicators can increase to a certain proper extent. This study observed that the levels of TSH, FT3, and FT4 in the two groups were both increased after intervention when comparing with those before intervention. Moreover, the observation group was observed to have more significant increases in these indicators than the control group, indicating that comprehensive care effectively improves the thyroid function of patients with postpartum depression after gestational hypertension during the perinatal and postpartum periods. Costantine et al. have also shown that careful postpartum care restores patients' low thyroid function to a certain extent, and comprehensive care can recover the thyroid hormones close to a normal level [21]. Besides, our study found that the incidence of postpartum eclampsia in the observation group was 2.86%, which was significantly lower than 17.14% in the control group. The lower incidence indicated that comprehensive care greatly reduced the incidence of eclampsia among patients with postpartum depression and gestational hypertension. Too et al. also pointed out that, for patients with gestational hypertension, unsatisfactory management of blood pressure and unappropriated nursing measures were able to cause a significantly increased incidence of postpartum eclampsia [22]. This study also showed that the nursing satisfaction rate of patients in the observational group was higher than that in the control group, suggesting that comprehensive

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care is beneficial to improve the nursing satisfaction of patients.

However, there are some limitations to this study since this is a single-center study with limited sample size. Therefore, to further evaluate the effect of comprehensive care on patients with postpartum depression and gestational hypertension, an increase in the sample size and extension of follow-up time are still required in future research.

In summary, comprehensive care for patients with postpartum depression and gestational hypertension can effectively relieve the negative psychological condition, improve thyroid function and reduce the risk of postpartum eclampsia and elevate the quality of life of patients, suggesting that comprehensive care is worthy of promotion in clinic.

Acknowledgements

This work was supported by The Project of Jiangsu Provincial Maternal and Child Health Association (F201848 and F201917) and The Project of Suzhou Health and Family Planning Commission Science Project (SYS2018030).

Disclosure of conflict of interest

None.

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