

## Effect of Predictive Nursing Intervention on Patients with Postpartum Hemorrhage after Cesarean Section

Pu Quanyan

Zhenba County People's Hospital Shaanxi Zhenba 723600

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*Corresponding author:* Pu Quanyan, 312822944@qq.com

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### ABSTRACT

**Objective:** To study the effect of predictive nursing intervention on patients with postpartum hemorrhage after cesarean section. **Methods:** 84 delivery women who had been hospitalized for cesarean section from July 2016 to July 2017 were recruited. They were divided into experimental and reference groups by random number table method. Each group had 42 cases. Among them, the reference group adopted the routine nursing mode. On this basis, the experimental group adopted the predictive nursing intervention mode. The amount of postpartum hemorrhage and the causes of bleeding in two groups were compared and analyzed. **Results:** The volume of postpartum hemorrhage in two hours and 24 hours after operation in the experimental group were lesser compared to reference group. Compared with the reference group, the proportion of postpartum hemorrhage causes, such as incision bleeding, uterine atony bleeding, placental bleeding and vascular rupture bleeding was lower in the experimental group. Besides, the delivery women and family members in the experimental group had higher total satisfaction compared to reference group. The difference between two groups was significance ( $p < 0.05$ ). **Conclusion:** The results showed that predictive nursing intervention model plays an important role in the nursing of postpartum hemorrhage after cesarean section and should be popularized and applied in clinical practice.

### 0 Introduction

The proportion of cesarean section in the current clinical delivery is increasing every year. Compared with the traditional vaginal delivery mode, there are many complications after cesarean delivery, and the recovery time is longer. Taking postpartum hemorrhage as an example, it has caused great harm to the women health<sup>[1]</sup>. In this regard, cesarean section care is particularly important. By

means of predictive nursing intervention measures, the predictive nursing work of the delivery women in cesarean section can be enhanced, reducing the proportion of vaginal bleeding in two hours and 24 hours after operation. In addition, this measure can enhance the safety of maternal life and maternal health.

### 1 Clinical data and methods

## 1.1 Clinical data

84 delivery women who had been hospitalized for cesarean section from July 2016 to July 2017 were selected and divided into reference and experimental groups with 42 cases each using random number table method. In experimental group, the minimum age of delivery women was 22 years old, the maximum age was 38 years and the median age was (26.7 + 4.2) years old. The shortest gestational week was 38 weeks, the longest was 42 weeks and the median gestational week was (39.5 + 0.5) weeks. While in the reference group, the minimum age of delivery women was 22 years old, the maximum age was 39 years and the median age was (25.9±5.1) years old. The shortest gestational week was 37 weeks, the longest was 42 weeks and the median gestational week was (38.5±0.7) weeks. The maternal age, gestational week and other data of two groups were statistically analyzed, and the results showed no significant difference ( $P > 0.05$ ), which was comparable.

## 1.2 Methods

To benefit the early recovery of the maternal health, the reference group was adopted the routine nursing intervention mode and the environmental hygiene of the cesarean section maternal wards was maintained. Besides, the corresponding diet for the delivery women and maternity drugs were also monitored. In contrast, the experimental group was adopted the predictive nursing intervention mode. The main practices are as follows: firstly, the necessary health education and propaganda for the delivery women and their families were provided by the nursing staff. The knowledge about vaginal delivery and cesarean section was also introduced by the nursing staff to the delivery women and their families so that they can have a better understanding of the necessity of cesarean section and the related links and steps of cesarean section. This action would eliminate the delivery woman's wrong cognition of delivery. Meanwhile, the knowledge on postpartum diet and recovery period was also given by the nursing staff to improve the compliance of postpartum treatment and nursing and help the delivery woman in cesarean section to be recovered as soon as possible.

Secondly, a reasonable diet for delivery women was provided by the nursing staff as this care is particularly important because delivery women need to consume a lot of physical strength during childbirth.

However, when the delivery women are in the parturition stage, the psychological pressure is big. It is common for them to have no appetite in the clinic process, thus seriously affecting the physical strength of the delivery

women in childbirth<sup>[2]</sup>. In view of this, the proper diet plan was designed scientifically and rationally by the nursing staff. Furthermore, the delivery women were guided by them to correctly understand the importance of the reasonable diet and choose the food that is easy to digest and have high calorie so as to improve the physical level of the delivery women in childbirth.

Thirdly, necessary psychological nursing was also provided by the nursing staff to the delivery women because the lower abdomen will have intermittent pain after the occurrence of the uterine contraction. This physiological phenomenon seriously affects the delivery women's mood. This situation is normal for women who give birth for the first time, where their psychological pressure is greater and have negative emotions, such as fear, anxiety and depression. These emotional and psychological states cause muscle tension in the delivery women in return, which further expands the pain and forms a vicious circle. To solve the problem, the nursing staff should apply psychological knowledge flexibly and communicate with the delivery women and their families. With this, the maternal tension is not merely relieved, but also to a certain extent, can distract the delivery woman attention to get rid of the impact caused by negative emotions, thus avoiding the fatigue problems of uterine contraction<sup>[3]</sup>. In addition, the women in cesarean section basically have malposition, multiple births and fetus distress, thus maternal anxiety about the risk of cesarean section surgery and postoperative infant health is more obvious. In these situations, the nursing staff should play a role by guiding the mutual communication between delivery women and other women who have cesarean section to build up their confidence in childbirth.

Fourthly, in the process of delivery, the relevant first aid after cesarean section was prepared and the previous drug allergy of the delivery woman was studied by the nursing staff. During the initial stage of operation, the oxygen and ECG monitoring equipment was provided. During the process of delivery, ECG data of the delivery woman, especially heart rate and blood pressure was monitored by the nursing staff. Moreover, atropine and norepinephrine were also prepared to ensure the smooth delivery of cesarean section, thus preventing the occurrence of accidents during the operation. After childbirth, the pregnant women were given with oxytocin injection (manufacturer: Nanjing Xin Bai Pharmaceutical Co., Ltd., batch number: Chinese Medicine H10930233) and intravenous drip was 2.5 to 5 units. Two hours after cesarean section is the high-risk stage of postpartum hemorrhage. At this stage, the nursing staff should focus on the bleeding of the pregnant

women continuously. The pregnant women would have emergency treatment by the attending physician if they encountered serious bleeding. Within 24 hours after giving birth, the bleeding condition of the woman was monitored and massage was also given by the nursing staff to the patients according to the actual situation. In addition, a good communication with their family members was also given by the nursing staff to help families to develop maternal care plans and improve the compliance of maternal treatment.

### 1.3 Observation indicator

Data of postpartum hemorrhage of the delivery women were collected using weighing method. A disposable sterile paper pad was placed under the buttocks of the delivery women. The weight of disposable paper mats used was weighed at the third stage of delivery process, two hours postpartum and 24 hours postpartum. The difference between the weight of the clean paper pad was the bleeding weight of the delivery women at this stage. Bleed volume (ml) = bleed weight (g) ÷ 1.05. The amount of maternal bleeding was then obtained at each stage. Generally, the bleeding amount in two hours after operation is more than 400ml whereas 24 hours after operation is more than 500ml that is considered postpartum hemorrhaged. The satisfaction of the delivery women and family members was investigated by the hospital's self-made "patient (family) satisfaction survey questionnaire". The scale is 100 and the higher the score, the more satisfied the delivery women and the family are

among them. The score of 60 or less is not satisfied and 61 to 80 points is generally satisfied. 81 to 100 points is very satisfied. Total Satisfaction = Very satisfied + general satisfaction.

### 1.4 Statistical analysis

All data of the study was analyzed using SPSS 17.0 software. The data of the bleeding amount of the delivery women in two hours and 24 hours after cesarean section in reference and experimental groups were tested by *t*, and data was expressed as mean ± standard deviation. Incision bleeding, uterine atony bleeding, placental bleeding and vascular rupture bleeding in both groups were tested with X<sup>2</sup> method and data was represented as (n%). Statistical significance was considered at P < 0.05.

## 2 Results

### 2.1 Comparison of postpartum hemorrhage in cesarean section

The postpartum hemorrhage data in the reference and experimental groups in different nursing intervention modes were analyzed and significantly different. (P < 0.05). The volume of postpartum hemorrhage in two hours and in 24 hours after operation in the experimental group were less than that in the reference group as depicted in Table 1.

**Table1 Comparison of postpartum hemorrhage in two groups of cesarean section**

Groups	Number of cases (n)	Vol-ume of hemor-rhage (two hours) after parturition (ml)	Vol-ume of hemor-rhage (24 hours) after parturition (ml)
Experimental group	42	256.8±46.5	360.8±61.9
Reference group	42	295.5±49.4	436.7±75.6
t		4.3443	5.9159
P		0.0000	0.0000

### 2.2 Comparison of causes of postpartum hemorrhage in the delivery women

The results showed that the causes of postpartum hemorrhage in the experimental group was significantly dif-

ferent with the reference group ( $P < 0.05$ ). The proportion of postpartum hemorrhage causes, such as incision bleeding, uterine atony bleeding, placental bleeding and

vascular rupture bleeding was lower in the experimental group compared to reference group.

**Table 2 Comparison of causes of postpartum hemorrhage in two groups of delivery women [n (%) ]**

Groups	Number of cases (n)	Incision bleeding	Uterine atony bleeding	Placental bleeding	Vascular rupture bleeding
Experimental group	42	1 (2.38)	3 (7.14)	0 (0)	0 (0)
Reference group	42	6 (14.29)	16 (38.10)	4 (9.52)	5 (11.90)
X <sup>2</sup>		3.8961	11.4947	4.2000	5.3165
P		0.0483	0.0006	0.0404	0.0211

### 2.3 Comparison of nursing satisfaction between the delivery women and family members

Besides, the nursing satisfaction of the delivery women and the family members were also analyzed in both

groups. However, the results showed that the nursing satisfaction between the two groups was significantly different ( $P < 0.05$ ), in which the total satisfaction of the delivery women and family members in the experimental group was higher than the reference group as depicted in Table 3.

**Table 3 Comparison of nursing satisfaction between two groups of the delivery women and their families [n (%) ]**

Groups	Number of cases (n)	Very satisfied	Generally satisfied	Not satisfied	Total Satisfaction
Experimental group	42	28 (66.67)	12 (28.57)	2 (4.76)	40 (95.24)
Reference group	42	17 (40.48)	14 (33.33)	11 (26.19)	31 (73.81)
X <sup>2</sup>					7.3716
P					0.0066

## 3 Discussion

Postpartum hemorrhage is the primary culprit endangering maternal life safety. It is usually caused by maternal uterine inertia, placental adhesion or retention, coagulation dysfunction and birth canal injury, all of which are the causes of postpartum hemorrhage. Among them, uterine inertia is a common cause of bleeding in delivery women. Due to the weak of uterine muscle contraction, the capillaries in the uterine smooth muscle of the delivery women are difficult to be effectively oppressed, leading to persistent uterine bleeding in pregnant women. The causes of uterine inertia are the dysplasia of the womb muscle fiber, the effect of operation anesthesia on the uterine muscle fiber, etc. Therefore, during the nurs-

ing process, it is necessary to focus on the high-risk period of two hours postpartum. The nursing staff should take predictive nursing intervention to find out the bleeding situation of the pregnant women in time and the pregnant women should also take the medicine to promote uterine contraction according to the circumstances. These preventive measures enhance the contractility level of the uterine muscle tissue of the delivery women and play the role of pressing the uterine capillaries.

Many academic studies on postpartum hemorrhage have been undertaken because it is one of the main complications of cesarean section. Among the researchers, Hu Liqiong, Qiu Xifeng and others believed that vaginal delivery is of great significance to maternal health and pregnancy outcomes. Therefore, before de-

livery, the nursing staff should strengthen the propaganda and education of vaginal delivery to delivery women and their family members and guide the delivery women and their families to choose vaginal delivery as much as possible. In this regard, they can have a correct understanding of the advantages and significance of vaginal delivery<sup>[4]</sup>. However, there is still a need for cesarean section for some pregnant women who have malposition, multiple births and fetal distress. In view of this group, the author believed that the nursing work should be strengthened in the process of delivery to help physicians focus on the vital signs of the delivery women and observe and calculate the amount of maternal bleeding. Once the pregnant woman showed the symptom of hemorrhage, the nursing staff should immediately communicate with the physician so that physicians can carry out first aid work quickly to maximize the protection of maternal life and safety. On the other hand, Zhao Li, Gong Yingying and others' research results showed that the nursing staff should strengthen the understanding of the actual situation of the delivery women and evaluate the maternal physiological indicators during maternal admission. This action could predict the possible problems in the process of delivery and formulate corresponding solutions to improve the treatment capacity of emergency in delivery<sup>[5]</sup>. This point is in line with the argument in this article. Through predictive nursing intervention mode, maternal health education and psychological intervention can be strengthened to improve maternal treatment, nursing compliance and formulate nursing methods according to maternal indicators. This kind of targeted nursing mode is more suitable for the delivery women with cesarean delivery, which is not merely guaranteed the life safety of the delivery women, but also helps to improve the satisfaction of the delivery women and family members in nursing work. In addition, two hours after childbirth is the main period for the occurrence of hemorrhagic symptoms. In response to this phenomenon, the nursing staff must closely observe the situation of maternal bleeding and various vital signs during the two hours post-cesarean section. If the vaginal bleeding is too high, the uterine contraction drugs can be given as appropriate. The uterine muscle contraction force can be improved by drugs to help the pregnant

woman to get through the high bleeding time.

In conclusion, predictive nursing intervention is an effective measure to reduce the volume of postpartum hemorrhage of delivery women. The results of this study showed that predictive nursing intervention measures was adopted in the experimental group, and postpartum hemorrhage of the delivery women after two hours of operation was  $256.8 \pm 46.5$  ml. Compared with the bleeding volume ( $295.5 \pm 49.4$  ml) of the delivery women in the reference group, we can see the advantages of predictive nursing intervention measures and its value in clinical practice. Besides, the 24-hour postpartum hemorrhage in the reference group ( $436.7 \pm 75.6$  ml) was significantly higher than the experimental group was only ( $360.8 \pm 61.9$  ml). There was no massive hemorrhage in the experimental group. Taken together. The findings in this study confirm that predictive nursing interventions can effectively prevent postpartum hemorrhage in cesarean section and has strong application effect, which can be widely applied in clinical practice.

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