

## **Study on effect of cluster-based care in reducing incidence rate of inevitable pressure sore.**

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### **Abstract**

**Purpose:** The cluster-based caring measure was carried out for the patients with inevitable pressure sore to analyze its clinical effect on formation of pressure sore.

**Method:** 90 patients with inevitable pressure sores, who came to our hospital for treatment, were selected as the investigation objects and randomly divided into two groups, saying the control group and the observation group, with 45 patients in each group. Common pressure sore caring measures were carried out for the control group, while the cluster-based caring measures were done to intervene in the observation group on the above basis. Clinical caring effects of the patients in two groups were compared and analyzed.

**Result:** Compared with the control group, the incidence rate of pressure sore was lower in the patients of the observation group and the difference between two groups was of obvious significance ( $\chi^2=4.530$ ,  $p=0.007$ ). Compared with the control group, the mean time and satisfaction of pressure sore formation were better for the patients with inevitable pressure sores in the observation group and the difference between two groups was of obvious significance ( $p<0.05$ ).

**Conclusion:** The application of the cluster-based caring in nursing of pressure sore of the elder patients was helpful to heal pressure sore, could effectively lower the incidence rate of pressure sore and was beneficial to improve the satisfaction with outstanding clinical effect, so that it should be worthily referenced in clinical activity.

**Keywords:** Cluster-based caring, Reduction of inevitable pressure sore, Effect study.

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### **Introduction**

Pressure sore refers to skin injury, which occurs during operation procedure, and is also called bedsore or decubital ulcer. As a relatively common complication in clinical caring, it is subject to various factors.

The cause of this disease is mainly as follows: as partial tissue of the body is under a long-term stress, hypoxemia is caused in the body and blood circulation is obstructed, so that the local skin and subcutaneous tissue are in alimentary deficiency, causing anaemia loss of normal functions, anabrosis and even putrescence of skin soft tissues, and finally pressure sore.

However, due to limiting factors of personal conditions, including severe dropsy, severe dyscrasia, instable vital signs, forced positions and so on, it is difficult to avoid pressure sore for some patients although caring is carried and so it is called inevitable pressure sore [1-5]. At present, the incidence rate of inevitable pressure sore was regarded as one of key indices for assessing the quality of clinical caring.

Clinically, there are many factors affecting pressure sore. Moreover, because the nurses are lack of sufficient perception for caring of pressure sore, the incidence rate of pressure sore

is relatively high. In order to lower such an incidence rate, effective caring measures should be adopted actively, which is beneficial to improve the prognosis for the patients.

As a special bundled caring mode, the cluster-based caring mainly focuses on the diseases which are difficult to be treated. It means that a set of in-exhaustive clinical treatment and caring intervention measures are carried out for a kind of patients or a case, the common application of such factors can obtain more beneficial effect for the patients than the application of a single factor, thus the problems, if any, can be effectively treated and cared and the advantages of various methods can be collected to make up shortcomings to improve caring effect from various aspects.

It can obtain benefits for the patients to the maximum extent or reduce occurrence of hazards so as to improve caring quality, reduce incidence rate of pressure sore and prevent it for the patient.

Therefore, in this article, the cluster-based caring measures were provided for the patients with inevitable pressure sores to analyze its clinical effect.

## Data and Methods

### General data

90 patients with inevitable pressure sores, who came for treatment in our hospital, were selected and equally divided into two groups at random. In the observation group, 45 patients with inevitable pressure sores consisted of 22 males and 23 females with the age of 40~73 y old and the mean age of  $52.3 \pm 6.5$  y old. In the control group, 45 patients with inevitable pressure sores consisted of 21 males and 24 females with the age of 43~75 y old and the mean age of  $55.8 \pm 7.3$  y old. The inclusion conditions for the patients with inevitable pressure sores included coma, paralysis, dropsy, fracture of pelvis, dyscrasia, gatism and so on. The patients in two groups were checked and approved by the Ethic Commission and signed the consent agreement. Through statistical analysis, treatment and comparison, basic information of the patients in two groups, including sex, age and other general data, were comparable without significant difference and statistical meaning ( $p > 0.05$ ).

### Therapeutic methods [6-8]

Common routine caring was carried out for the patients with inevitable pressure sores in the control group, while the cluster-based caring and intervention were done for the observation group, mainly including the following specific methods: Risk assessment: the Braden scale was adopted for assessment and 9 scores corresponded to the conditions of the patients with inevitable pressure sore. The nurse reported the patients meeting the above conditions in the responsible in-patient area and the pressure sore management group of the hospital should come to the in-patient area to qualitatively confirm them within 24 h. The responsible medical staff strictly conducted casing assessment according to the processes specified in the formulated pressure sore caring guidelines. A cluster-based caring management group was established to formulate relevant plans and fulfil them. Based on specific conditions of the patients, the team leader formulated individualized prevention and intervention caring measures and gave operational demonstration in person for special caring. All caring operations should be standardized strictly. The skills of the nurses were regularly trained and assessed to improve practical experience of pressure sore prevention and caring. In order to lower the incidence rate of pressure rate, new preventive tools were applied and used in caring work, including turn-over pillow, which assisted the patient in lying on one side; limb protection pad, which lightened the stress of limbs' apophysis. U-shaped ischium pad and sacrococcygeal pad, which relieved stress borne by ischium and sacrococcygeal part in horizontal position; lower-limb elevating pad for the patient lying on one side after hip joint replacement, to maintain abduction and neutralization and to prevent occurrence of pressure sore. During caring, monitoring and guidance should be strengthened by specific persons. The pressure sores in each in-patient area were charged by a

specially assigned person, who should visit the wards every day to understand progress of caring work. Moreover, the leader of the caring group should comprehensively assess fulfilment and implementation effects weekly, timely discover problems (if any), guide and correct any confusion or deflection and adjust the caring measures. The director of the pressure sore management group should check fulfilment effect of the pressure sore measures weekly, follow up to investigate each elder patient with pressure sore, get done with work assessment, urge to fulfil measures and timely report special conditions (if any) to the pressure sore management group so that the team leader could give guidance or treatment in person. After one treatment month of all patients, the conditions of pressure sores in the patients of two groups were observed and recorded.

### Assessment indices [9-12]

The effects of the caring were assessment for the patients of two groups, mainly including effect and duration of pressure sore and caring satisfaction. Effect assessment indicated that the wound was healed at the site of pressure sore of the patient, there was no incretion, granulation tissue grew up and there were no infection, no pain and no new wound of pressure sore.

**Effectiveness included:** The wound of pressure sore had been controlled for the patient, the wound exudate was less, granulation tissue started to grow, the patient's pain was lightened and there was no new sore.

**Ineffectiveness included:** The wound of the patient did not get better or no sore occurred and the focus expanded gradually.

**The patient's satisfaction for caring service included:** Satisfied, dissatisfied and much satisfied. Satisfaction = (satisfied cases + much satisfied cases) / proportion  $\times 100\%$ .

### Statistical treatment methods

SPSS 14.0 statistical analysis software was adopted to compare statistical data obtained after different treatments for two groups. When t-test was carried out, the equivalent was expressed in ( $\bar{x} \pm s$ ). The counts were indicated in the percentage (%) and verified by  $\chi^2$ .  $P < 0.05$  indicated that the difference was of significance.

## Results

### Comparison of therapeutic effects for the patients in two groups

Therapeutic effects for the patients were shown in Table 1. It could be seen from the data that, among 45 cases in the treatment group, the effective rate was up to 88.89%. The total effective rate for improving pressure sores in the control group was 71.11%, which increased by 17.78% while compared with that of the control group. It could be seen from result analysis that the improvement of the observation group was better than

the control group, of which the difference was relatively great and of statistical significance ( $P < 0.05$ ).

**Table 1.** Comparison of pressure sore therapeutic effects of patients in two groups.

Group	Cases	Obvious effective (n)	Effective (n)	Ineffective (n)	Total effective rate (%)
Control group	45	27	13	5	0.8889
Observation group	45	8	24	13	0.7111
$\chi^2$					4.53
P					0.007

**Table 2.** Recording of pressure sore duration of patients.

Group	Cases	Duration (d)
Control group	45	4.5 ± 0.8
Observation group	45	8.1 ± 1.3
t		5.661
P		0.004

**Recording of pressure sore duration in patients of two groups**

It could be seen from the results of Table 2 that the inter-group comparison before and after nursing of the control and

observation groups indicated that the mean sour-forming time was 4.5 ± 0.8 d for the patients of the control group and 8.1 ± 1.3 d for the patients of the observation group.

The mean sour-forming time of the observation group was more obvious than the control group and the inter-group difference was outstanding and had statistical significance ( $P < 0.05$ ).

**Patient’s satisfaction for caring**

The total satisfaction of the patients of the control group was 97.78% and more superior to that of the control group (75.56%) and the inter-group difference was significant ( $P < 0.05$ ) (Table 3).

**Table 3.** Comparison of patient’s satisfaction in two groups.

Group	Cases	Much satisfied (n)	Satisfied (n)	Dissatisfied (n)	Satisfaction rate (n)
Control group	45	32	12	1	0.9778
Observation group	45	14	20	11	0.7556
$\chi^2$					6.973
P					0.001

**Discussion**

The study results indicated that, while compared with the control group, the total effective rate of the observation group was improved obviously and the inter-group difference was significant ( $P < 0.05$ ), which meant that the caring methods and effects of the observation were better. The pressure-sore duration was higher in the patients of the observation group than that of the control group and the inter-group difference was significant ( $P < 0.05$ ). After the assessment of caring satisfaction in two groups, the satisfaction for cluster-based caring of the observation group was more desirable.

In this article, through the cluster-based caring and intervention measures for the patients with inevitable pressure sore, detailed caring was done for causes of pressure sores, patients’ features and disease conditions of the inevitable pressure sores; clinically, the cluster-based caring measures should be strictly gone through and fulfilled to get done with relevant caring for the patient, keep their skin clear and dry and supervise the

fulfilment of relevant work to significantly lower the pressure sore incidence rate of the patient, promote their satisfaction for caring service, lighten their pain and improve their life quality and clinical nursing service level, of which remarkable effect had been achieved. So, the said measures should be used for reference in clinical activities.

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