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Original Article

Analysis of subjective and objective safety risks in nursing care of pediatric hematologic diseases

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Abstract: Objective: To explore safety risks in the common nursing care of pediatric hematologic diseases. Methods: A total of 100 children with hematologic diseases treated in our hospital were included and randomly divided into a control group (n = 49) and an observation group (n = 51). Children in the control group received routine nursing according to previous practice, while children in the observation group received special environmental nursing with a large number of nurses who had received professional nursing education. After a period of time, the related satisfaction of the two groups of patients was investigated and compared. Results: There were significant differences in nursing environment, the quantity of nursing staff, and the nursing level between the control group and the observation group. The proportion of patients with treatment compliance and accident incidence in the observation group was significantly different from that in the control group, indicating some safety risks in the nursing care of pediatric hematologic diseases. Conclusion: Reducing the probability of various risks in the process of nursing care can create a high-quality and comfortable rehabilitation environment for patients, so as to improve the patients' satisfaction with the service of medical staffs.

Keywords: Pediatric cardiovascular disease, unsafe factors, nursing, objective factors, subjective factors

Introduction

The circulatory system is an important part of human life system, and also has very complex components, and water, sugar, fat and other substances in the blood drive the stable operation of the circulatory system [1]. In addition, some substances in the blood have a hemostatic effect and will form necessary blood clots to protect the circulatory system when the skin is damaged. Other substances such as blood cells and platelets make up the other part of the blood. Any broken part of blood circulatory system may cause corresponding blood diseases, thus endangering human health. Sudden death is possible in people receiving treatment, so experts should conduct more in-depth research on hematologic diseases [2].

Children are vulnerable, and their hematologic system is easily affected by other external factors. Therefore, children are susceptible to hematologic diseases, such as leukemia and bone marrow dysplasia [3]. The clinical manifestations of children are decreased resistance, yellow skin, bleeding spots, and fever. There are some unhealthful safety factors in the nursing care of pediatric hematologic diseases. The factors can be classified from the aspect of subjective and objective. The situation of children hospitalized due to hematologic diseases has been summarized in recent years [4, 5]. We found that for different patients, their conditions were complex, because the etiology of blood diseases is complex. Therefore, the use of some drugs may have a great impact on the physical development and safety of patients in treatment [6]. In clinical treatment , attention should be paid to the combination of reasonable treatment plans to screen the unsafe factors in the process of clinical nursing, so as to prevent the incidence of other adverse phenomena.

Materials and methods

General data

A hundred children with hematologic diseases treated in our hospital from January 2018 to

January 2020 were included and divided into a control group and an observation group. Inclusion criteria: patient's condition should meet the relevant criteria; patients who had undergone bone marrow aspiration and cytological tissue examination; patients who had received full-process treatment in the hospital hematological department; and the family members of patient should be supportive of the study. Exclusion criteria: children with incomplete clinical data and those with kidney failure or dysfunction were excluded. This study was approved by the Ethics Committee of Ganzhou Maternal and Child Health Care Hospital. The families of patients were informed and signed a consent form.

Intervention methods

Relevant comparative experiments were carried out. Children in the control group received only routine nursing at the beginning of the experiment, while those in the observation group received a higher level of nursing care, and intervention measures were taken to give meticulous care to patients in the nursing process. The risk factors of nursing were summarized according to the hospital-developed scale. After a period of time, patients were asked to score the overall nursing service, and the corresponding scores were used as the basis to evaluate the service quality of nursing staff. Besides, patients were carefully asked about their condition and the relevant situation of clinical treatment. Through the investigation of various factors, nursing problems related to children's hematologic diseases were found and corresponding solutions were provided.

Observation indices and evaluation standard

Nursing risk factors scale of pediatric hematologic diseases: the risk factor scale made by our hospital was used to compare the scores of objective factors with subjective factors. A higher score indicates the higher risk factors.

Nursing quality score table: relevant values needed to be investigated in the testing of this index and are reflected in the form of statistical data conversion. This form satisfied the basic equation, and the difference in value obtained by this equation was composed of the actual nursing service quality and the expected value of service subjects. The evaluation criteria for this part of the study were obtained by anonymously investigating the children. A difference of 0 means that the service quality just meets patients' expectations and the patient is very satisfied with the nursing work. A positive difference value indicates a higher service standard, while a negative difference value indicates they are unsatisfied with the nursing service.

Quality of life: quality of life serves as a standard to evaluate the quality of personal life. It is generally directly related to the development of social policy and planning. Higher score indicates higher quality of life.

Life satisfaction index (LSI): Adrian White is a social psychologist from the University of Leicester in UK. He believes that people's LSI is closely related to individual life satisfaction, and in his theory, LSI is directly related to individual life and overall judgment. Before discharge, the satisfaction of the study samples was investigated with a centesimal system.

Statistical analysis

SPSS 20.0 software was used for statistical analysis. Counted data were represented by n (%). At the same time, Student's *t* test was used to test the overall results of the experiment. *F* test was used to compare the difference between groups. $P < 0.05$ was considered as significant.

Results

Comparison of general clinical indices between the two groups

There was no statistical significance in general clinical indices between the two groups in the presentation of clinical trials ($P > 0.05$), as shown in **Table 1**.

Comparison of nursing unsafe factors scale of pediatric hematologic diseases between the two groups

The scores of objective and subjective factors in the control group were significantly higher than those of the observation group, and the results of comparison between the two groups were transformed into data models, which were of practical significance in statistics ($P < 0.05$, **Figure 1**).

Table 1. Comparison of general clinical indices between the two groups

General clinical indices		Observation group (n = 51)	Control group (n = 49)	*t*	*P*
Gender	Male	27	25	0.037	0.847
	Female	24	24		
Average age (years)		9.22±0.75	9.17±0.68	0.349	0.728

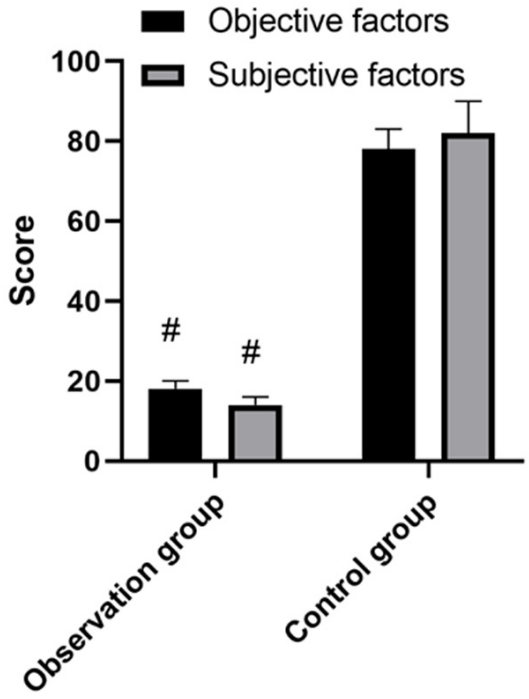

Figure 1. Comparison of nursing risk factors scale of pediatric hematologic diseases between the two groups. The scores of objective and subjective factors in the control group were significantly higher than those of the observation group, and the results of comparison between the two groups were transformed into data models, which were of practical significance in statistics ($P < 0.05$). # denotes a significant difference in the same index compared with the control group.

Comparison of nursing quality score between the two groups

The observation group showed a higher score of each index than the control group, and the difference was significant ($P < 0.05$, **Figure 2**).

Comparison of quality of life between the two groups

The two groups showed significant difference in quality of life, and the difference was significant ($P < 0.05$, **Figure 3**).

Figure 2. Comparison of nursing quality score between the two groups. The observation group showed higher score of each index than the control group, and the difference was significant ($P < 0.05$). # denotes a significant difference in an index compared with the control group.

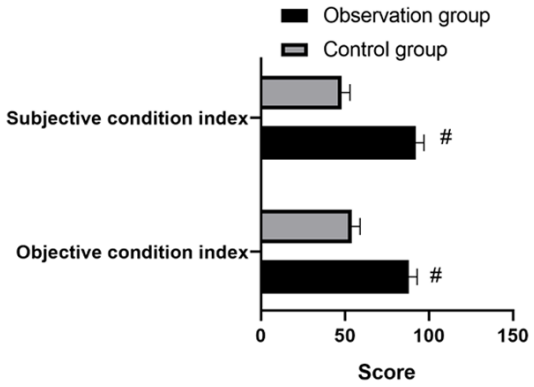

Figure 3. Comparison of quality of life between the two groups. The two groups showed a significant difference in quality of life ($P < 0.05$). # denotes a statistically significant difference in the same index compared with the control group.

Comparison of life satisfaction index between the two groups

In the observation group, the risk factors caused by objective factors and subjective factors were weakened, and the general nursing methods used in the control group were rated lower in the late scoring survey (**Figure 4**).

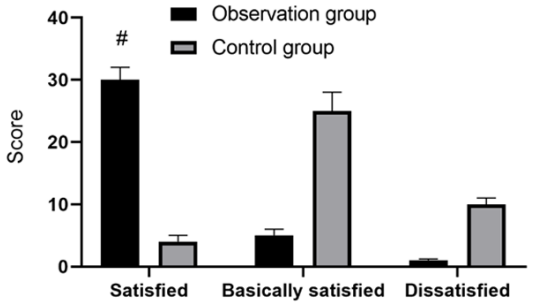

Figure 4. Comparison of life satisfaction index between the two groups. In the observation group, the types of risk factors resulting from objective and subjective factors were conducted with optimized analysis. The control group received general nursing during the experiment. The value in the survey data of the observation group was higher than that of the control group, and the difference was significant ($P < 0.05$). # denotes a statistically significant difference in the same index compared with the control group.

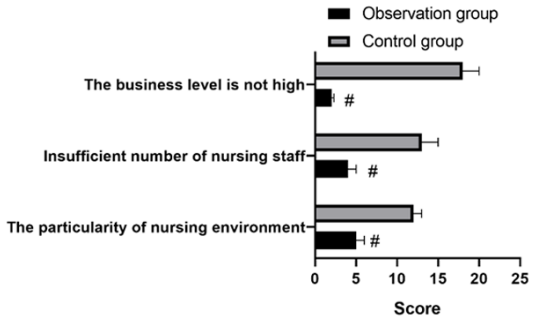

Figure 5. Comparison of the incidence of objective factors between the two groups. The objective factors were the particularity of nursing environment, the shortage of nursing staffs, and low professional level. # denotes a statistically significant difference in the same index compared with the control group.

Comparison of the incidence of objective factors between the two groups

The objective factors were the particularities of nursing environment and other types of measures (**Figure 5**).

Comparison of the incidence of subjective factors between the two groups

The subjective factors were poor compatibility of children and accidents. The incidence rate was 8% in the observation group and 21% in the control group (**Figure 6**).

Discussion

Safety in the nursing of pediatric hematologic diseases is an important consideration, so we

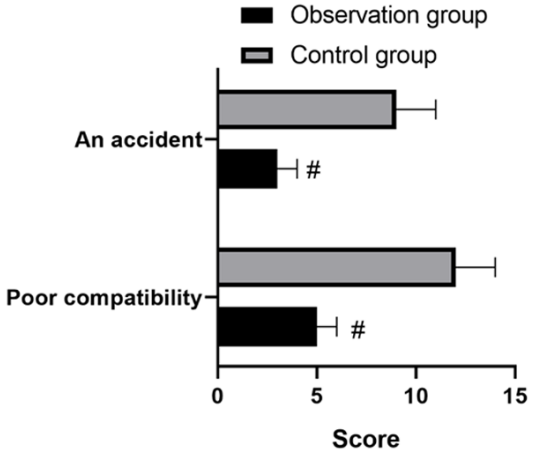

Figure 6. Comparison of the incidence of subjective factors between the two groups. Subjective factors were poor compatibility of children and accidents. The incidence rate was 8% in the observation group and 21% in the control group. # denotes a statistically significant difference in the same index compared with the control group.

analyzed risk factors in the nursing of pediatric hematologic diseases from multiple aspects and angles. From the objective point of view, risk factors are as follows: (1) Particularity of nursing environment: the particularity of pediatric nursing patients may bring difficulties to nursing staffs and easily lead to nursing errors. Generally, there are more visiting family members in pediatrics, and the noisy ward environment affects the normal nursing work to a certain extent [7, 8]. (2) Insufficient quantity of nurses: although there are a large number of nurses in our hospital, in the face of more and more patients, the roles of medical staff cannot be well done [9]. In addition, there is also an unreasonable distribution of nursing staff in our hospital, which is a common problem in most hospitals in China. When the hospital is full of patients, the nursing staffs are often very busy. However, some special individuals cannot be taken care of one-on-one, leading to the phenomenon of divided doctor-patient relationship [10] and excessive psychologic pressure on nursing staffs. Moreover, this high-pressure environment makes the normal progress of nursing work more difficult. (3) Low professional level: nurses fail to better cope with the changes in patients' condition. Due to the complex etiology of hematologic diseases, children have poor resistance and are more prone to some diseases [11]. Therefore, in the process of patients receiving treatment, the hospital's requirements for medical staffs are more strin-

gent. As special nursing staffs for children, they must be proficient in a variety of routine nursing operations, as well as the use of all kinds of medical instruments. In addition, for the existing hospital nursing staff system, it is very important to improve the quality of relevant technical personnel and humanities training, as the current hospital implements a system of employment under contract [12]. Most nurses will sign certain agreements, which make some nurses unable to care for patients well because of their lack of experience. From the subjective point of view, the risk factors are as follows: (1) Poor compatibility of children. The youngest of children cannot cooperate with the treatment effectively, coupled with the fact that most children are afraid of the hospital doctors and nurses. This makes it difficult for nursing staff to conduct nursing work [13]. In addition, because the condition of patients with hematologic diseases changes rapidly after the occurrence of disease, and an increasing number of patients may worsen disease and patient's condition, the family members often blame the failure of nursing staffs, resulting in a rigid doctor-patient relationship, thus causing difficulties in the development of nursing work [14]. (2) Accidents. Children are too young to have common sense. Their family members also lack general health and safety education [15]. In addition, children are unfamiliar with hospitalization instructions, medication precautions, and fire isolation knowledge and prone to getting lost, walking around, and knocking over infusion racks and other accidents. Furthermore, rebellious and medical-weary behavior may increase the risk of nursing work for nursing staffs.

At the present stage, most scholars analyze the unsafe factors in pediatric nursing. This study chose to analyze therisk factors in the nursing of pediatric hematological diseases, provided more targeted and detailed research, and innovated from the research field.

Through the comparative analysis of the data results of two groups in this study, relevant conclusions could be drawn. The common risk factors in the process of pediatric nursing are mainly caused by management factors [16]. Secondly, social considerations and nurses' own factors may also cause unsafe phenomena in the nursing process. The routine nursing service usually has an unsatisfactory effect and does not form a corresponding control with other preventive measures, leading to the dissatisfaction of most parents as well complaints [17]. Other preventive measures are taken in routine nursing work so that parents are comforted, with reduced complaining behavior. Through this experiment, we can take reasonable and scientific measures to reduce the probability of unsafe conditions, so as to improve the satisfaction of patients' families [18]. Relevant scholars adopted a group experiment method [19], and also analyzed the risk factors existing in the nursing of pediatric hematologic diseases, in which samples were divided into an experimental group and control group, with 80 cases in each group, and were given different levels of nursing measures. It was found that patients in the experimental group who took higher-level nursing measures were less likely to have risk factors in the treatment of hematologic diseases, and the results also showed that a lack of professional ability of nursing staff, poor cooperation of patients, and accidents were the main risk factors in the nursing of pediatric hematological diseases, consistent with the results of this study.

In the process of hospital nursing, most subjects involved in this experiment were younger children, and the medical staffs should treat each patient with the most enthusiastic attitude and the most meticulous nursing manner. Since any mistakes made in the nursing process may make parents of children dissatisfied, primary medical nurses should take certain measures to prevent this kind of accident, eliminate various risk factors, improve the nursing service for children, reduce the contradiction between doctors and patients, and build a harmonious medical environment [20].

For risk factors existing in the nursing of pediatric hematologic diseases, this study recommends optimization through these approaches: (1) Quantity of hospital nursing staffs should be appropriately increased, and nursing staff establishment should be reasonably performed. It is necessary to integrate the existing resources, control the quantity of nurses, improve their knowledge level, absorb more professional nurses, and always pay attention to the cultivation of nurses' professional skills and the quality of social humanities [21]. (2)

On-the-job training should be strengthened in the existing medical staff system to improve the relevant nursing level of nursing staff [22]. For fresh graduates lacking work experience, the hospital should provide them with more on-the-job training, including professional nursing courses. The supervisor nurse should teach and guild fresh nursing staffs to form a good management system and nursing mechanism, train nurses to be good at observation and have the ability to master various nursing operations and nursing equipment alone [23]. (3) Nursing staff should actively reach a consistent nursing goal with patients' families and make them cooperate with the normal implementation of nursing work [24].

There are many risk factors in pediatric disease nursing. To further prevent such problems, we should combine more reasonable scientific methods [25]. However, due to limited time and energy, the number of research subjects in this study is too few, and the depth of research needs to be improved. In future work, the research on this subject will be further strengthened.

Disclosure of conflict of interest

None.

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