

Analysis of the Application Effect of Extended Care Combined with Family Health Education in The Treatment of Pediatric Eczema

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Abstract: *Objective:* To analyze the application effect of continuity of care combined with family health education in the treatment of pediatric eczema. *Methods:* Sixty cases of pediatric eczema children who were admitted from January 2021 to December 2023 were selected and divided into two groups of 30 cases each. The control group received routine care and the observation group received continuation of care combined with family health education. Family knowledge, eczema basic receding time, family satisfaction, and recurrence rate between the two groups were compared. *Results:* The aftercare family knowledge mastery score and family satisfaction of the observation group were higher than the control group, where eczema basic receding time and recurrence rate in six months were lower in the observation group as compared to the control group ($P < 0.05$). *Conclusion:* In the treatment of pediatric eczema, continuity of care combined with family health education improved the family's awareness of the disease, controlled eczema symptoms, and reduced the recurrence rate.

Keywords: Pediatric eczema; Continuity of care; Family health education

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1. Introduction

Pediatric eczema belongs to the category of chronic inflammatory skin disease and is highly prevalent in infants and young children. Visible lesions are common during the acute stage, mainly manifested as herpes mounds with a relatively obvious tendency to exudate. As the disease progresses into the chronic stage, the mound will be manifested as mossy with erythema, which can be seen in epidermal exfoliation ^[1]. This is usually accompanied by an intense itch. Eczema has a complex etiology, which may be related to the daily living environment, clothing, daily diet, etc. ^[2]. It is prone to recurrent episodes, which are prolonged and difficult to cure and may affect the growth and development of the infant or child. Children have poor self-control ability, often resulting in involuntarily scratching of the eczema site, thus increasing the degree of skin lesions and complicating recovery ^[3]. It is believed that not only is it crucial for pediatric eczema to receive early clinical intervention but also to strengthen out-of-hospital care, increase parental awareness, control the disease, and

promote recovery. This study analyzed the application effect of continuity of care combined with family health education in the treatment of pediatric eczema, where a total of 60 cases of children admitted in the past three years were included as research subjects.

2. Information and methods

2.1. Data

Sixty cases of children with pediatric eczema were selected as the subjects of this study (admission time: January 2021 to December 2023) and were randomly divided into two groups of 30 cases each. The control group consisted of 17 males and 13 females, aged 1 month to 4 years old, with an average age of 2.01 ± 0.58 years. The duration of the disease ranged from 1–8 days, with an average of 4.15 ± 1.16 days. There were 13 cases of lesions on the head and face, 10 cases on the back and limbs, and 7 cases on other parts. The observation group consisted of 16 males and 14 females, aged 2 months to 4 years old, with an average age of 2.12 ± 0.43 years. The disease duration ranged from 1–7 days, with an average of 4.20 ± 1.11 days. There were 14 cases of lesions on the head and face, 10 cases on the back and limbs, and 6 cases on other parts. Comparison of data between the two groups showed no significance ($P > 0.05$).

2.2. Inclusion and exclusion criteria

Inclusion criteria: (1) Meet the clinical diagnostic criteria of pediatric eczema; (2) have no other congenital diseases or serious physical diseases; (3) have a regular caregiver that can communicate properly; (4) complete clinical data. Exclusion criteria: (1) Patients with allergic constitution; (2) presence of co-infectious diseases; (3) co-infectious immune system diseases; (4) lack of cooperation of the main caregiver.

2.3. Methods

The control group received routine care. The patient's family was instructed to follow the medical advice for drug administration and were not allowed to use them without supervision. If there is oozing and reddening of the affected area, semiconductor laser therapy is performed after explaining the procedure to the family. They were also informed of the main points of daily care, as well as the relevant precautions, such as timely cleaning of urine, saliva, milk, and other undesirable liquids that harbor bacteria, including frequent diaper changes and keeping the skin dry. Patients were encouraged to wear clothing made of 100% cotton and use a soft. Baby gloves were given to the patients to avoid involuntary scratching. The observation group received continuity of care combined with family health education. First, a continuity of care team was formed, consisting of two physicians and one nurse, with a strong sense of responsibility and business skills, as well as graphic editing skills and familiarity with the treatment and care of pediatric eczema. Secondly, a platform for continuity of care and health education and a WeChat group named "Skin Care Baby Family." This was mainly used for the implementation of daily health education activities and continuity of care interventions, where specialists were responsible for the daily maintenance and release of information. At the time of consultation, relevant information about the child and family was collected, including the child's age, medical history, as well as family structure, and parents' cultural level. A personal continuity of care file was then created for each child. A nursing program was developed with one or two family members added to a micro-telephone group, which allows for the transmission of health education materials for reading. The nursing staff combined clinical experience and reviewed literature and other methods to produce health education materials, including causes of diseases, symptoms, skin care methods, dietary precautions, and medication precautions. The nurses regularly focused on online lectures, which were given by the head of the department, uploading the courseware materials

in advance for family members to study and review after the class. New methods of disease care were sent regularly to the WeChat group and family members were encouraged to actively ask questions. The nursing staff and department directors were responsible for answering the questions, and for the common problems, they were made into the form of handouts, sent to the WeChat group, and uploaded onto the WeChat public account. During each follow-up visit, the family received a questionnaire, which included the child's recent diet, emotional state, etc. The family was advised to keep a dietary diary and on-site guidance was provided according to the patient's specific situation. On-site demonstration of skin care methods and medication by specialized personnel was performed, including the control of water temperature and time when bathing. Emotional management was also carried out by paying attention to the family member's emotions. Nurses observed their tone of voice and expression during communication. If the family member seems impatient and anxious, face-to-face and ongoing WeChat communication was carried out to alleviate negative emotions, emphasize the importance of active cooperation with the medication, and the importance of strengthening the family care. They were also informed of the high prevalence of eczema in pediatrics to reduce the psychological burden. Furthermore, family members were instructed to correctly utilize the hospital's WeChat public account to obtain relevant information materials, as well as to make advanced online booking registration and payment for a smoother hospitalization process. The family members were also regularly reminded through WeChat to attend follow-up sessions after discharge.

2.4. Observation indicators

The family member's knowledge of the disease before and after care was compared. Each child was assigned a primary caregiver and a homemade questionnaire was distributed, which covered five major aspects of eczema etiology, medication methods, dietary matters, skincare, and environmental care. Each aspect was scored from 0–10 points. The higher the score, the higher the degree of disease knowledge mastery.

The eczema basic receding time and family satisfaction of care of the two groups were compared. Family satisfaction was measured using the Newcastle Nursing Satisfaction Scale (NSNS) [4], which consisted of 19 items. Each item was scored from 1–5 points, where a higher score a higher nursing satisfaction. The patients were instructed to continuously follow-up for 6 months and the disease recurrence rate was recorded.

2.5. Statistical methods

The data were analyzed by SPSS version 25.0 statistical software. Measurement data that conformed to a normal distribution were expressed as mean \pm standard deviation and compared using a *t*-test. Count data were expressed as % and analyzed using a chi-squared (χ^2) test. Results were considered statistically significant at $P < 0.05$.

3. Results

3.1. Disease knowledge mastery

As shown in **Table 1**, the difference between the scores of the two groups of family members in various aspects of disease knowledge mastery before nursing was not significant ($P > 0.05$). After three months, the knowledge mastery score of the observation group was higher than that of the control group ($P < 0.05$).

Table 1. Disease knowledge mastery score between the two groups before and three months after care (mean \pm standard deviation, points)

Group	Cases, <i>n</i>	Eczema causes		Medications		Dietary matters		Skincare		Environmental care	
		Before care	Three months later	Before care	Three months later	Before care	Three months later	Before care	Three months later	Before care	Three months later
Control group	30	5.12 \pm 1.15	6.35 \pm 1.08	5.34 \pm 1.13	6.41 \pm 1.12	5.29 \pm 1.08	6.74 \pm 1.13	5.34 \pm 1.28	6.91 \pm 1.19	5.55 \pm 1.37	6.84 \pm 1.23
Observation group	30	5.15 \pm 1.10	8.23 \pm 0.54	5.28 \pm 1.10	7.96 \pm 0.34	5.18 \pm 1.14	8.27 \pm 0.59	5.17 \pm 1.31	8.02 \pm 1.14	5.47 \pm 1.26	7.91 \pm 0.96
<i>t</i>	-	0.103	8.528	0.208	7.253	0.384	6.574	0.508	3.689	0.235	3.756
<i>P</i>	-	0.918	0.000	0.836	0.000	0.703	0.000	0.613	0.000	0.815	0.000

3.2. Eczema basic receding time and family satisfaction with care

As shown in Table 2, the observation group had a shorter time for basic eczema to recede and higher family satisfaction scores ($P < 0.05$).

Table 2. Eczema basic receding time and family satisfaction between the two groups (mean \pm standard deviation)

Group	Cases, <i>n</i>	Eczema basic receding time (days)	Family satisfaction (points)
Control group	30	16.18 \pm 3.35	79.56 \pm 5.34
Observation group	30	14.08 \pm 2.27	84.14 \pm 3.26
<i>t</i>	-	2.842	4.010
<i>P</i>	-	0.006	0.000

3.3. Recurrence rate

As shown in Table 3, the observation group had a lower recurrence rate than in the control group during the six-month follow-up period ($P < 0.05$).

Table 3. Recurrence rate between the two groups [*n* (%)]

Group	Cases, <i>n</i>	Recurrence	No recurrence
Control group	30	8 (26.67)	22 (73.33)
Observation group	30	2 (6.67)	28 (93.33)
χ^2	-	4.320	4.320
<i>P</i>	-	0.038	0.038

4. Discussion

Eczema has a high prevalence of about 10%–20% in pediatric diseases [5]. The symptoms are aggravated by cold and heat, and clinical treatment of pediatric eczema commonly uses antipruritic agents, antibiotics, immunosuppressants, and even hormonal drugs [6]. Among many other factors, a child has poor self-control ability and is thus affected by the itching and discomfort brought by the disease. Inappropriate diet and skin management can lead to the aggravation or recurrence of the disease [7]. Therefore, in addition to the clinical drug treatment, family members need to actively maintain a healthy diet and prioritize skincare so that the symptoms are controlled as soon as possible, and the disease can be cured at the root.

Pediatric eczema is easily affected by diet, living conditions, external environment, and other factors [8]. Simple in-hospital treatment can temporarily control and improve the patient's condition, but there is a great risk of recurrence without proper care after discharge. Hence, it is necessary to strengthen out-of-hospital care. Continuum of care is an important method of out-of-hospital care, at the same time, in pediatric disease cases, the participation of family members is also highly important. Continuity of care is mainly for chronic diseases hence the development of a new model of care emphasizing the importance of out-of-hospital care is crucial, as well as the necessity of family education and social support [9,10]. Conventional care methods are not only in the form of a single point but lack guidance points [11]. Extended care combined with family health education can transmit disease-related knowledge to family members in multiple forms, including file transmission, remote guidance, and on-site guidance. Extended care also involves many aspects such as diet, environment, and the family members' emotions. For example, strengthening dietary guidance can avoid the consumption of allergenic food and enhance immunity [12,13]. With the help of the WeChat group, face-to-face communication and guidance can be provided by the nurses, which can strengthen the family members' disease awareness and cooperation with the treatment [14,15]. The results of this study showed that the family members of the observation group had higher disease awareness scores than the control group aftercare, the basic receding time of eczema was shorter, family satisfaction was higher than the control group, and the recurrence rate within six months of follow-up was lower than the control group. These data suggested that continuation of nursing care combined with the health education of the family members can improve their knowledge of the disease, control the symptoms of eczema reduce the recurrence rate, and increase the family members' satisfaction with nursing care.

5. Conclusion

The implementation of extended care combined with family health education in the treatment of pediatric eczema increased the family members' cooperation with the work of health care personnel, decreased the recurrence rate, controlled the disease symptoms, and increased the family members' satisfaction with nursing care.

Disclosure statement

The authors declare no conflict of interest.

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