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The Value of the Knowledge-Attitude-Practice Health Education Model in Enhancing the Coping Ability of Caregivers of Children with Febrile Seizures

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Abstract: *Objective:* To analyze the impact of the Knowledge-Attitude-Practice (KAP) health education model on the coping ability of caregivers of children with febrile seizures. *Methods:* A total of 60 caregivers of children with febrile seizures admitted to our hospital from May 2024 to April 2025 were selected and randomly divided into a control group (receiving conventional health education) and a research group (receiving the KAP health education model). The health knowledge mastery, coping ability, anxiety levels, recurrence rates of the children, and caregiver satisfaction were compared between the two groups. *Results:* The research group demonstrated higher scores in health knowledge mastery and coping ability, lower scores in anxiety and depression, a lower recurrence rate of febrile seizures in children, and higher caregiver satisfaction compared to the control group ($p < 0.05$). *Conclusion:* The KAP health education model can effectively enhance the coping ability of caregivers of children with febrile seizures, alleviate their anxiety, reduce the recurrence rate of febrile seizures in children, and improve caregiver satisfaction. It is worthy of clinical promotion and application.

Keywords: Knowledge-attitude-practice health education model; Children with febrile seizures; Caregivers; Coping ability

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1. Introduction

Febrile seizures are one of the common pediatric emergencies, mostly occurring in children aged 6 months to 5 years, with an incidence rate of approximately 2–5%. During a febrile seizure, the child may suddenly experience symptoms such as generalized or localized muscle convulsions and loss of consciousness, which seriously affect the child's physical health and growth and development, while also imposing significant psychological stress and burden on caregivers [1]. As the primary caregivers responsible for the daily lives of pediatric patients,

the coping abilities of caregivers directly influence the disease control and rehabilitation outcomes of these children. However, due to a lack of relevant medical knowledge and coping experience, most caregivers tend to panic and fail to take correct measures when faced with febrile seizures in children, thereby delaying treatment [2]. Traditional health education models predominantly rely on one-way knowledge dissemination, lacking specificity and interactivity. Caregivers often passively receive information and find it difficult to truly translate learned knowledge into practical actions. In contrast, the Knowledge-Attitude-Practice (KAP) health education model is a cognitive, attitudinal, and behavioral change-based approach that emphasizes imparting knowledge, fostering beliefs, and guiding behaviors to help caregivers establish correct health concepts and behavioral habits, thereby enhancing their coping abilities. The KAP health education model has demonstrated significant effects in improving the coping abilities of caregivers for children with febrile seizures. This model enables caregivers to acquire systematic knowledge about febrile seizures, understand their causes, symptoms, and potential risks, and correct previous misconceptions [3]. On this basis, it helps caregivers establish correct health beliefs, prompting them to prioritize daily prevention and correct handling during seizure episodes. With the support of knowledge and beliefs, caregivers can put correct coping methods into action, such as accurately measuring body temperature, adopting reasonable cooling measures, remaining calm during seizures, and performing proper first aid, thereby effectively enhancing their ability to manage children with febrile seizures [4]. This study aims to explore the application effectiveness of the KAP health education model in improving the coping abilities of caregivers for children with febrile seizures, with the following content:

2. Materials and methods

2.1. General information

The trial period was set from May 2024 to April 2025. The selected subjects were caregivers of 60 pediatric patients with febrile seizures, randomly divided into two groups of 30 each. In the control group, there were 8 male caregivers and 22 female caregivers; the youngest was 22 years old, and the oldest was 45 years old, with an average age of (32.14 ± 3.05) years; Relationship with the child: 25 parents, 5 grandparents; in the research group, there were 9 males and 21 females; aged between 23 and 47 years old, with an average age of (32.06 ± 3.07) years; relationship with the child: 26 parents, 4 grandparents.

2.1.1. Inclusion criteria

All caregivers of children with febrile seizures; understanding the purpose of this study and signing the consent form.

2.1.2. Exclusion criteria

Individuals without medical records; caregivers with concurrent organic, mental, infectious, chronic, or other severe illnesses. There were no significant differences in the above data between the two groups ($p > 0.05$).

2.2. Methods

The control group received the conventional health education model. After the child was admitted to the hospital, the responsible nurse provided the caregivers with brochures on febrile seizures and conducted a centralized health education lecture for them. The content included the definition, causes, symptoms, and emergency treatment

methods of febrile seizures. During the child's hospitalization, the responsible nurse regularly provided oral health education to the caregivers and answered their questions. The research group adopted the Knowledge-Attitude-Practice (KAP) health education model, with the following specific content.

2.2.1. Knowledge dissemination phase

(1) Develop personalized education plans

After the child's admission, the responsible nurse communicated with the caregivers to understand their educational background, knowledge level, psychological state, etc., and formulated personalized health education plans.

(2) Diversified education methods

Various educational methods were used to impart knowledge about febrile seizures to the caregivers, such as distributing brochures, holding special lectures, playing video materials, and providing one-on-one explanations. The brochure content included the causes, symptoms, emergency treatment methods, and preventive measures of febrile seizures; special lectures invited pediatric experts to teach and explain in detail the pathogenesis and treatment principles of febrile seizures; video materials demonstrated the correct handling methods during febrile seizure episodes and key points of daily care; one-on-one explanations answered the caregivers' questions based on their individual needs.

2.2.2. Belief-building phase

(1) Case sharing

Organize caregivers to participate in case-sharing sessions, inviting caregivers who had previously cared for children with febrile seizures and handled them well to share their experiences, so that caregivers could understand that correct responses and care can effectively reduce the recurrence rate in children and enhance their confidence.

(2) Psychological support

The responsible nurse closely monitors the psychological state of caregivers, promptly identifies negative emotions such as anxiety and fear, and provides psychological support and counseling. Through communication and interaction with caregivers, the nurse helps alleviate their psychological stress and establish correct health beliefs.

2.2.3. Behavioral guidance phase

(1) Simulation exercises

Organize caregivers to participate in simulated exercises of febrile convulsions, allowing them to personally experience and operate in simulated scenarios, thereby mastering correct first-aid methods and nursing skills. After the exercises, the responsible nurse evaluates and guides the caregivers' operations, promptly correcting any errors.

(2) Regular follow-ups

After the child is discharged from the hospital, the responsible nurse conducts regular follow-ups with the caregivers to understand their nursing situation and the child's condition, providing targeted guidance and suggestions. At the same time, the nurse encourages caregivers to develop good nursing habits in their daily lives, such as regularly measuring body temperature, maintaining a reasonable diet, and engaging in

appropriate exercise.

2.3. Observation indicators

(1) Mastery of health knowledge

A self-designed questionnaire is used to survey caregivers in both groups before the child's discharge. The questionnaire covers aspects such as etiology, symptoms, first-aid methods, and preventive measures, with a total score of 100 points. Higher scores are preferable.

(2) Coping ability

A self-compiled questionnaire is used to assess coping knowledge, coping skills, and coping attitudes, with a total score of 100 points. Higher scores indicate stronger coping abilities among caregivers.

(3) Anxiety

The Self-Rating Anxiety Scale (SAS) and the Self-Rating Depression Scale (SDS) are used to survey caregivers upon the child's admission and before discharge. The scales consist of 20 items, each rated on a 4-point scale, with a total score range of 20–80 points. Higher scores indicate more severe anxiety among caregivers.

(4) Caregiver satisfaction

A self-designed questionnaire is used to evaluate satisfaction with aspects such as the content and methods of health education, as well as the service attitude of medical staff. The total score is 100 points, divided into three levels: very satisfied (80–100 points), satisfied (60–79 points), and dissatisfied (< 60 points).

2.4. Statistical analysis

Data were processed using SPSS 26.0 software. Measurements and counts were expressed as $\bar{x} \pm s$ and (n, %), respectively. Differences were assessed using t, c^2; A p-value of less than 0.05 was considered statistically significant.

3. Results

3.1. Analysis of health knowledge mastery and coping ability of caregivers in the study group and control group

After nursing intervention, the scores for health knowledge mastery and coping ability among caregivers in the study group were higher than those in the control group, with a statistically significant difference ($p < 0.05$), as shown in **Table 1**.

Table 1. Comparison of knowledge mastery and coping ability between the two groups ($\bar{x} \pm s$, points)

Group	n	Knowledge mastery	Coping ability
Study group	30	85.17 ± 3.02	88.11 ± 3.52
Control group	30	67.41 ± 2.96	71.04 ± 3.09
t-value	/	23.003	19.961
p-value	/	0.000	0.000

3.2. Assessment of anxiety levels among caregivers in the study group and control group

The SAS scores of caregivers in the study group were lower than those in the control group after nursing intervention, with a statistically significant difference ($p < 0.05$), as shown in **Table 2**.

Table 2. Comparison of anxiety scores between the two groups ($\bar{x} \pm s$, points)

Group	n	SAS		SDS	
		Before care	After care	Before care	After care
Study group	30	52.14 ± 4.60	35.14 ± 3.06	68.54 ± 7.51	32.31 ± 4.33
Control group	30	51.51 ± 4.75	48.22 ± 3.92	68.26 ± 7.38	43.26 ± 5.54
t-value	/	0.521	14.406	0.193	11.388
p-value	/	0.603	0.000	0.846	0.000

3.3. Evaluation of recurrence rates in pediatric patients in the study group and control group

The recurrence rate in the study group was lower than that in the control group, with a statistically significant difference ($p < 0.05$), as shown in **Table 3**.

Table 3. Comparison of recurrence rates between the two groups (n, %)

Group	n	Recurrence cases	Rate (%)
Study group	30	2	6.67
Control group	30	8	26.67
χ^2	/	4.320	
p-value	/	0.038	

3.4. Assessment of caregiver satisfaction in the study group and control group

After nursing intervention, the satisfaction scores in the study group were higher than those in the control group, with a statistically significant difference ($p < 0.05$), as shown in **Table 4**.

Table 4. Comparison of satisfaction levels between the two groups (n, %)

Group	n	Very satisfied	Satisfied	Dissatisfied	Total satisfaction rate
Study group	30	18 (60.00)	10 (33.33)	2 (6.67)	28 (93.33)
Control group	30	10 (33.33)	12 (40.00)	8 (26.67)	22 (73.33)
χ^2	/	/	/	/	4.320
p-value	/	/	/	/	0.038

4. Discussion

Febrile seizures are one of the common neurological disorders in pediatrics, characterized by acute onset and rapid progression. The pathogenesis of febrile seizures is not yet fully understood, but it is generally believed to be related to factors such as incomplete development of the nervous system in children, genetic predisposition,

and infections. The onset of febrile seizures not only causes certain damage to the child's brain but may also lead to sequelae such as epilepsy, seriously affecting the child's physical and mental health and quality of life [5]. According to statistics, approximately 30–40% of children with febrile seizures experience recurrence, imposing significant psychological stress and economic burdens on caregivers. As the primary caregivers in the child's daily life, caregivers play a crucial role in observing the child's condition, providing nursing care, and facilitating rehabilitation. The caregiver's ability to respond directly relates to whether the child receives timely and effective treatment during febrile seizures and whether seizures can be prevented from recurring [6]. However, because most caregivers lack relevant medical knowledge and coping experience, they often panic when faced with a child's febrile seizure and fail to implement timely response measures, thereby delaying treatment. Therefore, improving caregivers' ability to respond is of great significance for improving the prognosis of children.

Traditional health education models primarily rely on one-way dissemination of knowledge, lacking specificity and interactivity. Under this model, healthcare professionals often simply impart basic knowledge and nursing methods about febrile seizures to caregivers, who tend to passively receive information and find it difficult to truly translate the learned knowledge into practical behavior [7]. Moreover, traditional health education models often overlook caregivers' psychological needs and belief changes, making it difficult to stimulate caregivers' enthusiasm and initiative for learning, thereby affecting the effectiveness of health education. The Knowledge-Attitude-Practice (KAP) health education model is a health education approach based on cognitive, attitudinal, and behavioral changes. It primarily focuses on imparting knowledge, fostering beliefs, and guiding behaviors to help caregivers establish correct health concepts and behavioral habits. In the KAP health education model, knowledge serves as the foundation, beliefs as the driving force, and behaviors as the goal. By imparting knowledge about febrile seizures to caregivers, the model helps them establish correct health beliefs, thereby guiding them to adopt correct behavioral approaches and improve their ability to respond. Compared with traditional health education models, the KAP health education model places greater emphasis on caregivers' subjectivity and participation, better meeting their individualized needs and enhancing the effectiveness of health education [8].

The results of this study show that the caregivers in the research group scored higher in terms of their mastery of health knowledge compared to the control group. This is because the Knowledge-Attitude-Practice (KAP) health education model, through the formulation of personalized education plans and diverse educational methods, can impart relevant knowledge about febrile seizures to caregivers in a targeted manner according to their different needs and characteristics, enabling caregivers to better understand and master the content learned. Meanwhile, methods such as case sharing and psychological support can stimulate caregivers' learning interest and enthusiasm, thereby improving their learning outcomes. The coping ability scores of caregivers in the research group were higher than those in the control group. On the basis of knowledge transmission, the KAP health education model emphasizes the establishment of beliefs and the guidance of behaviors. Through case sharing and psychological support, caregivers are helped to establish correct health beliefs and enhance their confidence in coping with febrile seizures. Furthermore, through simulated drills and regular follow-ups, caregivers continuously improve their coping skills in practice and develop good nursing habits, thereby effectively enhancing their coping abilities [9].

5. Conclusion

In summary, the KAP health education model can effectively enhance the coping abilities of caregivers of children with febrile seizures, improve their anxiety levels, reduce the recurrence rate in children, and increase caregiver

satisfaction, making it worthy of clinical promotion and application. In future clinical work can further refine the KAP health education model, improve the quality and effectiveness of health education, and provide better guarantees for the healthy growth of children.

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Disclosure statement

The authors declare no conflict of interest.

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