ORIGINAL RESEARCH

Discussion on Improvement of the Incidence of Complications After the Application of Self-Management and Continuous Nursing in Children with Primary Nephrotic Syndrome

Jing Bao, BS; Saijun Bao, BS; Xiao Zhu, BS

ABSTRACT

Objective • To analyze the effects of self-management and continuous nursing on improving the incidence of complications in children with primary nephrotic syndrome.

Methods • A retrospective analysis of 80 cases of children with primary nephrotic syndrome treated in our hospital from January 2019 to October 2022 was conducted. The patients were divided into a control group and an observation group, with 40 cases in each group. The control group received routine nursing, while the observation group received self-management and continuous nursing. After different nursing measures were taken in the two groups, the incidence of complications, the total satisfaction rate of patients' parents, quality of life scores, and the urinary albumin excretion rate before and after nursing between the two groups were analyzed.

Results • (1) In comparison to the control group, the observation group had a lower incidence of complications (gastrointestinal discomfort, hypoglycemia, and abnormal liver function) ($P < .05$). (2) In comparison to the control group, the observation group had a higher total satisfaction rate of the patients' parents after nursing ($P < .05$). (3) Compared to the control group, the observation group reported higher quality of life scores (psychological function, spiritual vitality, and somatic function) after nursing ($P < .05$). (4) Compared to the control group, the observation group revealed higher self-management ability scores after nursing ($P < .05$). (5) After nursing, the urinary albumin excretion rate in the observation group was lower than that in the control group ($P < .05$). (6) In terms of disease recurrence rate after 1 month and 2 months of nursing, the observation group reported was lower rate of disease recurrence compared to the control group ($P < .05$).

Conclusion • The application values of self-management and continuous nursing in children with primary nephrotic syndrome are significant. (*Altern Ther Health Med.* [E-pub ahead of print.])

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INTRODUCTION

Primary nephrotic syndrome in children belongs to a very common class of glomerular disease. It refers to the glomerular disease of an unknown cause that occurrs in childhood, mainly manifested as proteinuria, edema, and hypertension. The specific cause of primary nephrotic syndrome in children is unclear, which may be related to genetic and immune system abnormalities.[1-2] In the current clinical treatment stage, giving adrenocortical hormone treatment to children with primary nephrotic syndrome as soon as possible is conducive to improving the prognosis.[3-4] Therefore, how to effectively control the recurrence of primary nephrotic syndrome in patients is the main problem encountered during the treatment stage. Multiple recurrences of primary nephrotic syndrome in children will reduce the sensitivity of the body to hormone therapy, which will increase the difficulty of treatment and nursing,[5-6] In addition, severely affected patients may even suffer from chronic renal insufficiency. Currently, there is still a lack of effective ways to prevent the recurrence of primary nephrotic syndrome in children.[7-8] Studies have shown that,[9-10] self-management is one of the main factors affecting the recovery of patients,[11-12] so clinical treatment needs to be supplemented with scientific nursing interventions to strengthen the self-management ability of patients.[13-14] Continuous nursing refers to the comprehensive, continuous, and individualized care of patients by nursing staff in the medical process. It emphasizes the continuity and individualization of nursing and aims to provide comprehensive nursing services to meet the various needs and expectations of patients. Therefore, this paper

mainly analyzes the effects of self-management and continuous nursing on the improvement of the incidence of complications in children with primary nephrotic syndrome, to provide more theoretical references for the clinical nursing work involving children with primary nephrotic syndrome.

PATIENT DATA AND METHODS

Patient data

80 cases of children with primary nephrotic syndrome treated in our hospital from January 2019 to October 2022 were included as the subjects in our retrospective analysis. The patients were divided into control group and observation group, with 40 cases in each group.

Among the patients in the control group, the youngest was 3 years old, while the oldest was 11 years old, and the average measured age was (7.55 ± 1.55) years. Among them, 25 cases were mild and 15 cases were moderate. There were 21 cases with parents' educational level of senior high school and above while 19 cases had parents with an educational level of junior high school and below. Among the patients in the observation group, the youngest was 3 years old, while the oldest was 12 years old, and the average measured age was (7.57 ± 1.56) years. Among them, 24 cases were mild and 16 cases were moderate. There were 22 cases with parents' educational level of senior high school and above while 18 cases had parents with an educational level of junior high school and below. The above data between groups were evaluated by statistical software, and no significant difference was deemed to exist with $P > .05$.

Inclusion criteria: (1) persistent massive proteinuria (the ratio of urinary protein to creatinine is greater than 2 mg/mmol); and, (2) there are obvious edema symptoms, such as edema of face and lower limbs. Exclusion criteria: (1) children with other kidney diseases, such as glomerulonephritis and renal tubular diseases; and, (2) children with other systemic diseases, such as systemic lupus erythematosus.

Methods

The control group received routine nursing: (1) The patients' condition and its trend changes should be paid close attention to, and a detailed and true record should be given, and the nursing staff should report to the attending physician in time if there was any abnormal state. (2) It is necessary to limit the intake of salt and protein to reduce the burden on the kidneys. It is recommended to consult a professional dietitian to make a diet plan suitable for children.

The observation group adopted self-management and continuing nursing: (1) A standardized self-management education plan was formulated based on the development of the patients' condition and the understanding of the patient's parents about the disease. The plan was divided into various forms such as education manuals and reading materials. The nursing staff, as the main educators, should explain the main contents of self-management to the patients' parents, and give corresponding demonstrations to them, so as to guide the patients' parents to correctly understand the specific contents of self-management and the importance of implementation, and patiently answer the related illness questions of patients' parents. The nursing staff should use pictures, slides, and other materials to help patients and their parents further understand primary nephrotic syndrome in children, so as to improve their understanding. (2) A continuing nursing team was established, whose members included the patients' attending doctor, specialist nurses, etc. and at the same time, the nursing team members should receive regular learning and training to understand the relevant knowledge of various continuing nursing practices. Provide education and support to patients and their families, including the popularization of disease knowledge, diet adjustment, drug use and other aspects of guidance. Regular follow-up should be carried out 1 month and 3 months after discharge that could be carried out through WeChat and telephone. When the patients' condition fluctuated significantly after hospitalization, the frequency of follow-up should be appropriately increased. The QQ and WeChat groups of patients' parents were established to answer their questions about the patients' illness through online group chat and other means of communication. The nursing staff could also regularly share some information about the prevention and treatment of the complications of primary nephrotic syndrome in children in the group, so as to strengthen the disease knowledge of patients' parents after hospitalization.

Evaluation criteria

After different nursing measures were taken in the two groups, the incidence of complications (gastrointestinal discomfort, hypoglycemia, and abnormal liver function), total satisfaction rate of patients' parents, quality of life scores (psychological function, spiritual vitality, and somatic function), self-management ability scores (medication according to the doctor's advice, life, diet and exercise, mentality adjustment, and return visit on time), urinary albumin excretion rate before and after nursing, and the disease recurrence rate after 1 month and 2 months of nursing were compared between the two groups.

Total satisfaction rate of patient's parents: The patient's parents could evaluate themselves using the self-made questionnaire of this department, and the recovery rate was 100.00%. It was divided into three items, namely satisfaction, relative satisfaction, and dissatisfaction, and the sum of the first two rates was the total satisfaction rate.

Urinary albumin excretion rate: It was measured by automatic biochemical analyzer.

Quality of life score (psychological function, mental vitality, and physical function): According to the quality of life measurement scale, the total score is 100; the higher the score, the better is the quality of life.

Self-management ability score (according to the doctor's advice on medication, life, diet and exercise, psychological adjustment, and timely return visit): According to the self-management ability measurement scale, the total score is 100; the higher the score, the better is the self-management ability.

Statistical methods

All index data were included in SPSS23.0. χ^2 and t-value were separately used to verify the counting and measurement data that were expressed in the form of % and $\bar{x} \pm s$, respectively, and $P < .05$ was the test standard for significant difference.

RESULTS

Comparison of the incidence of complications (gastrointestinal discomfort, hypoglycemia, and abnormal liver function) between the two groups

Upon comparing the data of the incidence of complications (gastrointestinal discomfort, hypoglycemia, abnormal liver function) between the two groups, the incidence of complications in the observation group was found to be lower than that in the control group ($P < .05$). See Table 1 and Figure 1.

Comparison of the total satisfaction rate of patients' parents between the two groups

The comparison of the total satisfaction rate of the patients' parents between the two groups after nursing, reveals that the observation group has higher total satisfaction rate than the control group ($P < .05$). See Table 2 and Figure 2.

Comparison of the quality of life scores (psychological function, spiritual vitality, and somatic function) between the two groups

Comparison of the quality of life scores (psychological function, spiritual vitality, and somatic function) after nursing between the two groups, shows that the observation group has higher quality of life than the control group ($P < .05$). See Table 3 and Figure 3.

Comparison of the self-management ability scores of the two groups of patients (medication according to the doctor's advice, life, diet and exercise, mentality adjustment, and return visit on time)

Comparison of the self-management ability scores (medication according to the doctor's advice, life, diet and exercise, mentality adjustment, and return visit on time) after nursing between the two groups, shows that the observation group has higher self-management ability than the control group ($P < .05$). See Table 4 and Figure 4.

Comparison of the urinary albumin excretion rate of the two groups before and after nursing

Before nursing intervention, there was no significant difference in urinary albumin excretion rate between the two groups ($P > .05$); from comparison of the above data after nursing, the observation group was found to be lower than the control group ($P < .05$). See Table 5 and Figure 5.

Comparison of the disease recurrence rate of the two groups after 1 month and 2 months of nursing

Comparison of the disease recurrence rate after 1 month and 2 months of nursing between the two groups shows that

Table 1. Comparison of the Incidence of Complications (Gastrointestinal Discomfort, Hypoglycemia, and Abnormal Liver Function) Between the Two Groups

Group	Number of cases	Gastrointestinal discomfort	Hypoglycemia	Abnormal liver function	Complications (%)
Observation group	40	1	1	0	5.00
Control group	40	2	3	3	20.00
χ^2 value					4.11
P value					.04

Figure 1. Comparison of the Incidence of Complications (Gastrointestinal Discomfort, Hypoglycemia, and Abnormal Liver Function) Between the Two Groups

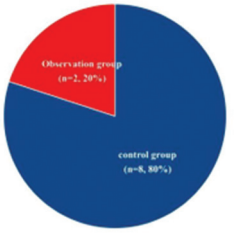


Table 2. Comparison of the Total Satisfaction Rate of Patients' Parents Between the Two Groups

Group	Number of cases	Satisfied	Relatively satisfied	Dissatisfied	Total satisfaction rate (%)
Observation group	40	29	10	1	97.50
Control group	40	22	10	8	80.00
χ^2 value					6.14
P value					.01

Figure 2. Comparison of the Total Satisfaction Rate of Patients' Parents Between the Two Groups

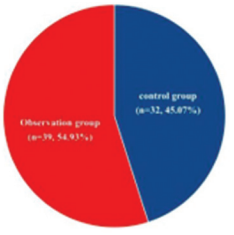


Table 3. Comparison of Quality of Life Scores (Psychological Function, Spiritual Vitality, and Somatic Function) Between the Two Groups

Group	Psychological function	Spiritual vitality	Somatic function
Observation group	87.77 ± 1.33	87.65 ± 1.22	87.65 ± 1.34
Control group	75.55 ± 1.32	75.23 ± 1.55	75.89 ± 1.35
t	41.25	39.82	39.10
P value	.00	.00	.00

Figure 3. Comparison of the Quality of Life Scores (Psychological Function, Spiritual Vitality, and Somatic Function) Between the Two Groups

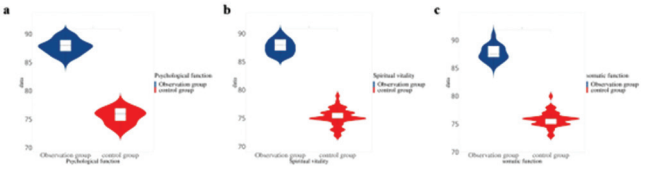


Table 4. Comparison of the Self-Management Ability Scores of the Two Groups of Patients (Medication According to the Doctor's Advice, Life, Diet and Exercise, Mentality Adjustment, and Return Visit on Time)

Group	Medication according to doctor's advice	Life, diet and exercise	Mentality adjustment	Return visit on time
Observation group	85.33 ± 2.22	85.56 ± 2.21	85.56 ± 2.21	85.66 ± 2.11
Control group	73.33 ± 2.11	75.54 ± 2.34	76.65 ± 3.22	76.68 ± 2.44
t	24.78	19.69	14.43	17.61
P value	.00	.00	.00	.00

Figure 4. Comparison of the Self-Management Ability Scores of the Two Groups of Patients (Medication According to the Doctor's Advice, Life, Diet and Exercise, Mentality Adjustment, and Return Visit on Time)

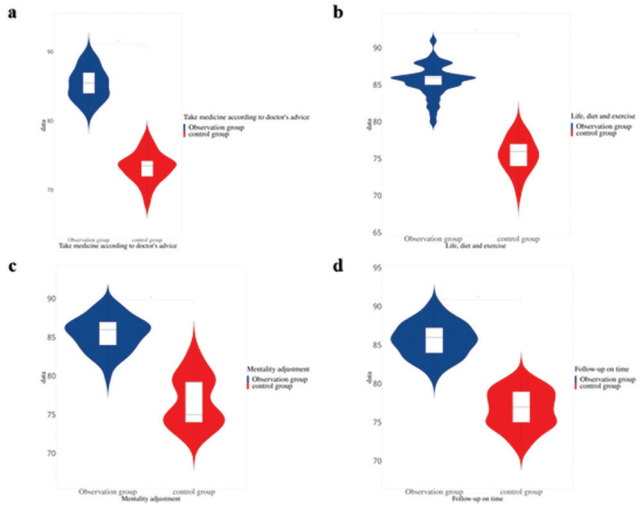


Table 5. Comparison of Urinary Albumin Excretion Rate Between the Two Groups Before and After Nursing

Group	Before nursing	After nursing
Observation group	154.67 ± 20.48	82.34 ± 28.45
Control group	155.86 ± 20.34	118.54 ± 25.42
t	0.26	6.00
P value	.80	.00

Figure 5. Comparison of Urinary Albumin Excretion Rate Between the Two Groups Before and After Nursing

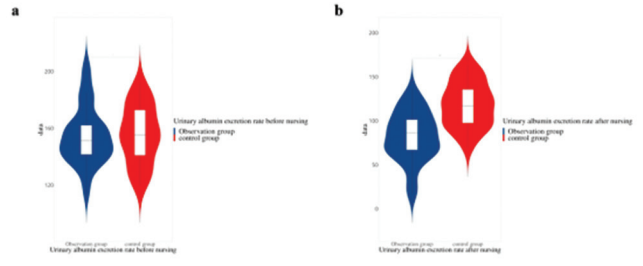
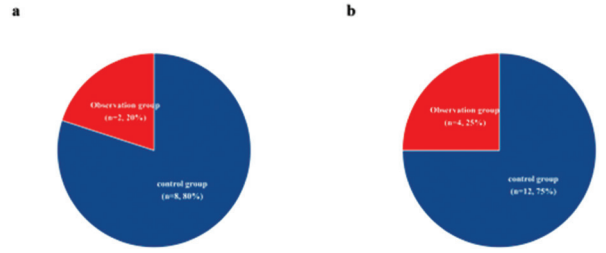


Table 6. Comparison of Disease Recurrence Rate After 1 Month and 2 Months of Nursing Between the Two Groups (%)

Group	Number of cases	Nursing for 1 month	Nursing for 2 months
Observation group	40	2 (5.00)	4 (10.00)
Control group	40	8 (20.00)	12 (30.00)
χ^2 value		4.11	5.00
P value		.04	.03

Figure 6. Comparison of Disease Recurrence Rate Between the Two Groups After 1 Month and 2 Months of Nursing



the observation group is lower than that of the control group ($P < .05$). See Table 6 and Figure 6.

DISCUSSION

Primary nephrotic syndrome in children is characterized by glomerular filtration membrane damage and proteinuria. The disease usually occurs in childhood. Clinically, pediatric primary nephrotic syndrome has a high rate of incidence.[15-16] For patients with pediatric primary nephrotic syndrome,[17-18] routine nursing intervention only aims at the patients' body for nursing operation, and carries out follow-up advice before discharge. This kind of nursing mode cannot ensure the rehabilitation effects of patients to the greatest extent.[19-20] In particular, patients suffering from primary nephrotic syndrome are children, whose autoimmune ability and resistance are relatively weak. If scientific and effective nursing interventions are not efficiently adopted, it can lead to a variety of complications.[21-22] Therefore, for children with primary nephrotic syndrome, we need to focus on improving their own management ability and ensuring the measures of continuous nursing after hospitalization, so as to achieve the purpose of restoring health as soon as possible.[23-24]

Self-management nursing refers to the management and care of individuals for their own health and well-being. It involves a series of behaviors and decisions taken by individuals in daily life to maintain physical and psychological health. The goal of self-management nursing is to prevent the occurrence and progress of diseases and improve the quality of life through positive health behaviors and effective self-monitoring. Helping patients choose a healthy self-management nursing concept is aligned to the current emerging clinical nursing intervention mode. Good self-management is conducive to helping patients start from themselves, recognize their potential strength values, and improve their self-care ability.[25-26] The main purpose of self-management is to improve self-management identity, which is intended to improve patients' cooperation in the treatment and nursing process. Interestingly, when this concept is applied to children with primary nephrotic syndrome it can play an important role in reducing the incidence of complications.[27-28] On the other hand, continuous nursing can provide patients and their parents with a scientific and reasonable nursing plan after hospitalization, help them further understand the disease, and strengthen the communication frequency between patients' parents and

nursing staff through telephone and WeChat follow-up, so as to improve patients' treatment compliance.[29-30] Simultaneously, the effective combination of self-management and continuous nursing is conducive to reducing the recurrence rate of the disease to the greatest extent, through a synergistic effect of nursing, and further consolidating the nursing effects. The data results also showed that the incidence of complications (gastrointestinal discomfort, hypoglycemia, and abnormal liver function), urinary albumin excretion rate after nursing, and disease recurrence rate after 1 month and 2 months of nursing in the observation group were lower than those in the control group ($P < .05$). After nursing, the total satisfaction rate of parents, quality of life scores (psychological function, spiritual vitality, and somatic function), and self-management ability scores (medication according to the doctor's advice, life, diet and exercise, mentality adjustment, and return visit on time) of the two groups were compared, and the rate/scores in the observation group were higher than those in the control group ($P < .05$). The data suggest that self-management and continuous nursing have high implementation and application values.

This research was conducted within a limited time frame, and long-term effects or changes could not be captured, and it is one of the limitations of the study. Therefore, these aspects should be considered when interpreting the research results and the study design should be improved in future research.

It can be seen that the application values of self-management and continuous nursing in children with primary nephrotic syndrome are significant, which is conducive to reducing the incidence of complications, improving the quality of life, lowering urinary albumin excretion rate in patients, improving the self-management ability of patients at the same time, and enhancing the satisfaction of patients' parents.

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AUTHOR DISCLOSURE STATEMENT

There are no potential conflicts of interest to disclose.

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