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Influence of Family Support Intervention Mode on Mental State and Family Function of Family Members in Children with Leukemia

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ABSTRACT

OBJECTIVE: To observe the influence of family support intervention mode on the mental state and family function of family members of children with leukemia. Methods 64 children with leukemia and their families hospitalized in our hospital from May 2016 to January 2019 were randomly divided into observation group (32 cases) and control group (32 cases). The control group received routine nursing, the observation group received family support intervention mode, and the intervention lasted for 6 months after discharge. The changes of depression and anxiety, SSRs, disease management ability, chip and Apgar were recorded before and after intervention. Results compared with the intervention, the scores of SAS and SDS in the two groups were significantly lower (P < 0.05), and the above indexes in the observation group were lower than those in the control group (P < 0.05). Compared with before intervention, the scores of subjective support, objective support, support utilization and SSRs in the two groups were significantly higher after intervention (P < 0.05), and the above indexes in the observation group were higher than those in the control group (P < 0.05). Compared with before intervention, the scores of disease management ability and chip in the two groups after intervention were significantly increased (P < 0.05), and the above indexes in the observation group after intervention were higher than those in the control group (P < 0.05). After intervention, the intimacy, emotion, growth, cooperation, adaptability and Apgar of the two groups were significantly higher than those of the control group (P < 0.05). Conclusion the family support intervention model can alleviate the anxiety and depression of the parents of children with leukemia, improve the social support and disease management ability of the parents, help the families to improve the ability to deal with the disease, so as to improve the family function of children.

KEY WORDS: Family intervention; Leukemia; Psychological and Social support; Management

Originated in hematopoietic stem cell leukemia is the most common onset of malignant tumors, the incidence of childhood leukemia in recent years in our country, the high incidence of trend, the disease course and the partial treatment cycle is long, and easy to relapse, greatly affected children with daily life and health of body and mind, at the same time parents for children with deterioration and



produce a series of adverse emotions such as anxiety, depression, stricken families bear great pressure, cause the bad function of the family, thus affect the prognosis of children, even survival time [1-2]. Family support intervention refers to a series of behaviors that take the family as a whole, regard it as the center of intervention, and include parents in the disease management, daily life and care of children under the guidance of nursing staff [3-4]. Studies have shown that family support intervention can make children get personalized, more detailed and comprehensive care, help children rehabilitation and the harmony of family life, at the same time, parents personally involved in the care of children, thus increasing disease management ability and family function, which can better promote the treatment and prognosis of children improve [5]. The purpose of this study was to explore the influence of family support intervention mode on the psychological state and family function of the family members of children with leukemia, and to provide reference for the clinic.

MATERIALS AND METHODS

GENERAL INFORMATION: Sixty-four children with leukemia and their families hospitalized in our hospital from May 2016 to January 2019 were selected as the research subjects. Inclusion criteria:(1) the age of the children was 1-16 years old; The diagnosis was made according to the diagnostic criteria of leukemia in the Union Hematology [6], and the length of hospital stay was more than 7 days. (2) The parents of the children are 25-55 years old, and their education level is junior high school or above. They all have listening, speaking, reading and writing skills. They can communicate with medical staff without barriers, and they have signed informed consent, which has been approved by the ethics committee of our hospital. Exclusion criteria: critical or serious illness ordered by the doctor; A single parent; Left-behind children; Parents of children with mental disorders or cognitive dysfunction gave up treatment and withdrew from the study. Patients included in the study were randomly divided into two groups, and the general clinical data of the two groups showed no statistically significant difference (all P > 0.05), showing comparability. See table 1.

NURSING METHODS: The control group received routine nursing methods, including admission lecture, and informed the parents of the precautions and related treatment measures in detail. During hospitalization, I actively took care of various diseases, including dietary guidance, medication guidance, prevention of infection, bleeding nursing, fever nursing, daily activities nursing, etc. Timely inform parents to apply for related disease subsidies, medical insurance, etc. Nursing staff actively communicate with the children and their parents, fully grasp the psychological state of the children and their parents, and provide necessary emotional and psychological support; Encourage and guide children and parents to establish a positive attitude and behavior, in order to build confidence to overcome the disease. The observation group

received the family support intervention mode. In this model, a family counselor is responsible for two groups of 5-6 families. The specific intervention includes three aspects: disease related health education, cognitive behavioral intervention -- therapeutic communication using family strength discovery, and multidisciplinary cooperative discharge guidance for the prevention and treatment of complications in children. (1) Health education. During the hospitalization of the children, supervised learning was adopted. Health education brochures were distributed on the second day of admission and group discussion plans were made to urge the parents of the children to learn through group discussion. Each discussion is hosted by a family counselor organization, with 5-6 families at a time, and 3 discussions are arranged for each family. (2) Cognitive behavioral intervention - therapeutic communication to discover family strength. The first communication (1-3 days after admission, once): understanding family members, relationship, marital status, illness experience, impact on life, relationship with colleagues, economic situation, etc. Family counselors introduce themselves, communicate with parents about family members and draw a simple family map to confirm the relationship between parents and other family members, friends, colleagues and social institutions. Ask the parents how they feel about the illness: "Do you remember when your child was diagnosed?" "What was your inner reaction when you heard the diagnosis?" "Can you tell me how the illness has affected you?" "Who do you think the disease affects more? Who suffered more? What is the biggest challenge your family is facing right now?". (2) the second communication (admission 4-7 days, 1 time): by encouraging the children's parents to express, vent, discuss, think and then find the strength of support within the family. The family counselor asks the parents if they have any questions about what efforts the family members have made since the first communication, and presents the family map so the parents can see and communicate: "From your own experience, which measures have been most helpful and which ones have been least helpful?" "If you could only answer one question, what would you ask?" "How did the rest of your family handle the situation?" "If you had siblings, how would they handle it?" "What do you think will happen in the end?" "Who in the family is adamant that this situation will pass?" "What do you think will happen to the child?". (3) The third communication (8 to 8 before discharge, 2-4 times): information support, psychological and emotional support for the parents of the children, to guide the establishment of a correct understanding of the disease, to guide symptom management and to build a reasonable lifestyle. Family counselors ask parents, "What support measures does your family need?" "How does your family recognize illness?" "What symptoms is your family most concerned about?" "What lifestyle does your family think is best for their children?". (3) Discharge guidance. With nurses as the leading role, pediatricians and nutrition doctors are invited to jointly develop a group plan for the discharge



of children with existing or possible complications, and the family consultant is responsible for the implementation. Specific contents include: Internet + feedback + health education mode was adopted after discharge, family counselors and responsible families established WeChat contact, and leukemia knowledge, daily lifestyle, disease monitoring and other aspects were carried out through group discussion, push relevant knowledge, personalized answers and other forms. The WeChat official account is maintained by a special person and pushed once a week. We Chat group daily medical staff on duty, online guidance. Regularly understand the care of children's parents, timely solve the problems in care, and through online or follow-up in the form of timely solution. Ask the parents of children regularly about their knowledge, consolidate the learning effect during hospitalization, and guide them again if necessary. The family support intervention pattern in the observation group continued until 6 months after discharge.

Observation indexes (1) The anxiety and depression of the parents of the children in the two groups before and 6 months after intervention were recorded, and the Zung Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) were used for evaluation. The higher the score, the more serious the anxiety and depression level was [7]. (2) Social support Rating Scale (SSRS), which contains 3 dimensions (subjective support, objective support and support utilization) and involves 10 items. The higher the score, the more social support obtained, and the Cronbach's α coefficient of the scale was $0.74 \sim 0.83[8]$. (3) The "disease Management ability" dimension in the Family Management Measure (FAMM) was used to assess the care ability of the parents of the children. This dimension included 12 items, and each item was scored from 1 to 5 points. The higher the score, the higher the parents' care and disease Management ability [9]. Parents use the coping style scale (CHIP), including 45 items, involving 3 dimensions (consultation and communication, seeking social support, maintaining family unity), the higher the total score, the more active and effective the coping style of the parents of children [10]. (4) Family Adaptation, Partnership, Growth, Affection and Resolving Index (APGAR), which includes 5 items, including intimacy, Affection, Growth, cooperation and adaptability. Each item is evaluated by 3-level scoring method, and its score is 1-3. The higher the score is, the better the Family function is [11].

STATISTICAL METHODS: SPSS19.0 statistical software was used for processing. Measurement data conforming to normal distribution were expressed in the form of $(\pm s)$, and t test was used for comparison between groups. Enumeration data were presented in the form of rate or constituent ratio. Chi-square test was used for comparison between groups, and P < 0.05 was considered statistically significant.

THE RESULTS

SAS and SDS scores before and after intervention were compared between the two groups. After intervention, self-rating anxiety scale (SAS) and self-rating depression scale (SDS) scores were significantly decreased in the two groups (P < 0.05), and the above indexes in the observation group were lower than those in the control group (P < 0.05). Are shown in table 2.

Comparison of SSRS scores between the two groups before and after intervention Compared with before intervention, the scores of subjective support, objective support, support utilization and SSRS total scores were significantly increased in the two groups after intervention (P < 0.05), and the above indexes in the observation group were higher than those in the control group after intervention (P < 0.05). See table 3.

Note: Compared with the control group, P<0.05.

Comparison of disease management ability and ChIP score between the two groups before and after intervention, disease management ability score and ChIP score were significantly increased in the two groups after intervention (P < 0.05), and the above indexes in the observation group were higher than those in the control group after intervention (P < 0.05). See table 4.

Comparison of Apgar scores between the two groups before and after intervention Compared with before intervention, the intimacy, emotion, growth, cooperation, fitness and total Apgar scores of the two groups were significantly increased after intervention (P < 0.05), and the above indexes in the observation group were higher than those in the control group after intervention (P < 0.05). As shown in table 5.

Table 1: Comparison of general clinical data between the two groups

| Group | n | Relationship with children | | Children with gender | | Age of child (years) | | |
|-------------------|----|----------------------------|-----------|----------------------|-----------|----------------------|---------------|-----------|
| | | father | mother | boy | girl | 1~6 | 7 ~ 11 | >11 |
| Observation group | 32 | 9(28.12) | 23(71.82) | 18(56.25) | 14(43.75) | 7(21.88) | 11(34.38) | 14(43.75) |
| The control group | 32 | 8(25.00) | 24(75.00) | 19(59.38) | 13(40.62) | 8 (25.00) | 12(37.50) | 12(37.50) |

| Group | n | Whether the child is an only child | | Types of diseas | ses in children | Monthly household income (yuan) | | |
|-------------------|----|------------------------------------|-----------|-----------------|-----------------|---------------------------------|------------|----------|
| | | Yes | No | ALL | ANLL | Under 5000 | 5000~10000 | >10000 |
| Observation group | 32 | 24(75.00) | 8(25.00) | 25(78.13) | 7(21.87) | 21(65.63) | 7(21.88) | 4(12.50) |
| The control group | 32 | 22(68.75) | 10(31.25) | 26(81.25) | 6(18.75) | 19(59.38) | 8(25.00) | 5(15.63) |



| Group | | To live | | | Cultural level | | | | |
|-------------------|----|-----------|------------------------|----------|--------------------|--------------------------|----------|--------------------|--|
| | n | City | The villages and towns | Rural | Junior high school | High school or technical | College | Bachelor degree or | |
| | | City | The vinages and towns | IXurar | | secondary school | Conege | above | |
| Observation group | 32 | 17(53.13) | 6(26.09) | 9(28.13) | 8(25.00) | 10(31.25) | 8(25.00) | 6(18.75) | |
| The control group | 32 | 16(50.00) | 8(25.00) | 8(25.00) | 7(21.87) | 11(34.38) | 7(21.87) | 7(21.87) | |

Note: ALL: acute lymphoblastic leukemia; ANLL: Acute non-lymphoblastic leukemia

Table 2: Comparison of SAS scores and SDS scores between the two groups before and after intervention ($^{x}\pm s$)

| | | SAS score | | | | SDS score | | | |
|-------------------|----|-------------------------|------------------------|----------|----------|-------------------------|------------------------|----------|----------|
| Group | n | Before the intervention | After the intervention | T values | P values | Before the intervention | After the intervention | T values | P values |
| Observation group | 32 | 56.40±8.19 | 36.19±7.85 | 9.12 | < 0.05 | 58.30±8.19 | 38.24±6.26 | 10.129 | < 0.05 |
| The control group | 32 | 55.89±7.43 | 43.41±6.54 | 7.443 | < 0.05 | 57.87±8.25 | 45.56±7.40 | 8.674 | < 0.05 |
| T values | | 0.218 | 5.489 | _ | _ | 0.237 | 5.743 | _ | _ |
| P values | | >0.05 | < 0.05 | _ | _ | >0.05 | < 0.05 | _ | _ |

Table 3: Comparison of SSRS scores between the two groups before and after intervention($^{\chi}\pm s$)

| Group | n | Time | Objective to support | Subjective support | Support utilization | SSRS score |
|-------------------|----|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|
| Observation group | 32 | Before the intervention | 6.17±1.24 | 16.69±2.32 | 6.47±1.41 | 31.83±4.22 |
| | | After the intervention | 9.32±2.51 ^① | 22.25±3.17 ^① | 10.31±2.30 ^① | 40.90±5.19 ^① |
| | | T values | 5.439 | 7.123 | 6.234 | 9.175 |
| | | P values | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| The control group | 32 | Before the intervention | 5.94±1.18 | 16.86±2.25 | 6.39±1.45 | 31.47±4.17 |
| | | After the intervention | 7.80±2.19 | 19.47±3.24 | 8.27±2.27 | 35.73±5.65 |
| | | T values | 4.732 | 5.68 | 4.951 | 7.327 |
| | | P values | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

Table 4: Comparison of disease management ability and ChIP scores between the two groups before and after intervention

| | | Disease management ability | | | Dyvaluas | CHIP scale | | | |
|-------------------|----|----------------------------|------------------------|----------|----------|-------------------------|--------------|----------|----------|
| Group | | Before the intervention | After the intervention | T values | | Before the intervention | After the | T values | P values |
| | | | | | | | intervention | | |
| Observation group | 32 | 28.19±6.27 | 39.44±8.52 | 10.276 | < 0.05 | 39.29±7.39 | 54.76±8.20 | 12.764 | < 0.05 |
| The control group | 32 | 27.70±6.41 | 44.29±7.10 | 8.154 | < 0.05 | 38.31±5.50 | 46.41±7.33 | 10.312 | < 0.05 |
| T values | | 0.21 | 4.276 | _ | | 0.318 | 6.543 | _ | _ |
| P values | | >0.05 | < 0.05 | _ | _ | >0.05 | < 0.05 | _ | _ |

Table 5: Comparison of Apgar scores between the two groups before and after intervention($^{x}\pm s$)

| Group | n | Time | Fitness | Cooperation degree | Degree of emotional | Maturity | Intimacy | APGAR score |
|-------------------|----|-------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Observation group | 32 | Before the intervention | | 1.32±0.27 | 1.41±0.39 | 1.31±0.28 | 1.34±0.34 | 6.84±1.43 |
| | | After the intervention | 2.51±0.29 ^① | 2.20±0.38 ^① | 2.37±0.31 ^① | 2.45±0.44 ^① | 2.42±0.47 ^① | 11.75±1.84 ^① |
| | | T values | 7.49 | 8.112 | 7.123 | 6.985 | 6.12 | 9.129 |
| | | P values | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| The control group | 32 | Before the intervention | 1.43±0.31 | 1.35±0.24 | 1.39±0.35 | 1.28±0.30 | 1.32±0.26 | 6.76±1.25 |
| | | After the intervention | 1.98±0.26 | 1.82±0.33 | 1.90±0.40 | 1.94±0.52 | 1.89±0.48 | 9.42±1.76 |
| | | T values | 5.784 | 6.23 | 5.43 | 4.532 | 4.389 | 7.436 |
| | | P values | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

Note: ① Compared with the control group, P<0.05.



DISCUSSION

The promotion and application of family-centered intervention mode benefited from the promulgation of the Education Act for All Children with Disabilities in 1975, but it was not until the passage of the Amendment of the Education Act for Persons with Disabilities in 1991 that individual family service plans moved from the background to the foreground for intervention of special preschool children [12]. In his study in 2001, Beret believed that the disease nursing intervention service should emphasize the feelings of the family and the family should become an active participant [13]. At present, foreign countries have raised the focus of intervention from patients themselves to the whole family level. Previous studies have shown that family-oriented intervention can not only improve the prognosis of patients, such as mortality and depression, but also reduce the depression mood and care burden of family members, and family-level intervention is better than patient-level intervention [14-15]. In the United States, a family support model has been established for pre-school special children, in which family counselors provide a variety of services one-to-one or in groups. In China, family support intervention has been applied in the nursing intervention of adult chronic diseases, cancer, mental diseases and malignant tumors. Yang Guoqing [16] believed that the implementation of social family support intervention for mental patients could help improve the social functional defects of mental patients and help them return to society as soon as possible. Dong Yahui et al. [17] carried out long-term family support intervention for homeless children with schizophrenia after assistance, which could significantly control the condition and promote comprehensive recovery. There are few reports on family support intervention for childhood leukemia. Wang Dongying et al. [18] discussed the influence of family participation nursing mode on the psychological state of children with leukemia and their parents, and believed that this nursing mode could effectively bring positive influence on the psychological state of children and their parents, and was worthy of clinical promotion.

The results of this study showed that compared with the intervention, SAS and SDS scores in the two groups were decreased after intervention, but SAS and SDS scores in the observation group were significantly lower than those in the control group after intervention. Children with leukemia after diagnosis and subsequent treatment, parents not only bear the heavy economic burden, also often concern about child deterioration, and are at the mercy of fear of losing a child, has experienced great psychological conflict, thus appeared different degree of adverse emotions such as depression and anxiety, on the other hand, if parents appear this kind of bad mood, is not only bad for children rehabilitation, also can weaken the parents disease management ability and family function, further hampering children with subsequent treatment effect,

and form a vicious circle [2]. The results of this study suggest that family support intervention can significantly relieve the negative emotions such as anxiety and depression of the parents of children, and can actively improve the psychological state of the parents. The results of this study showed that after intervention, the scores of each dimension and total score of SSRS scale, disease management ability score and ChIP score in the observation group were higher than those in the control group. Due to the huge blow of malignant tumor to the whole family, the psychological and social function of the parents of children with a great negative impact, parents face the high medical costs of helplessness, as well as the children's condition of fear, the family social support is significantly reduced; At the same time, the parents of the children lack relevant care knowledge and skills, coupled with adverse psychological problems, doubts about the relationship between medical care and treatment, and lack of confidence in treatment, leading to the decline of the ability of the parents of the children to manage disease and cope with the disease [19]. The results of this study suggest that the family support intervention model is more effective in improving the social support degree, disease management ability and the ability to cope with the disease of the children's families. The results of this study showed that the Apgar scores and total scores in the observation group were significantly higher than those in the control group after intervention. Studies have shown that the basic function of a family is to provide good social, psychological, physical and other levels of healthy development for family members [20]. The results of this study suggest that family support intervention can significantly improve the family function of children, therefore, in the practice of clinical intervention, we should focus on the improvement of family function.

The family support intervention adopted in this study consisted of family counselors through disease-related health education, therapeutic communication to discover family strength, and multidisciplinary cooperative discharge guidance for the prevention and treatment of complications. During hospitalization, we adopt supervised learning, comprehensively evaluate the psychological status of the children's family members and the ability of disease management and coping with the disease, and carry out targeted, family-oriented nursing interventions to promote the normalization of family life and strengthen family strength. After hospital discharge, the mode of Internet + feedback + health education is helpful to find out the problems that the children and their parents really need and improve the learning effect. Therapeutic communication is the core component of interventions at the family level. Therapeutic communication is one of the three nursing behaviors that can best reflect the professional value of nurses [21], and it refers to that medical staff take communication as the treatment means to solve the main existing problems of patients. Through



communication, opportunities are selected, targeted communication is carried out in a planned, purposeful, principle and hierarchical manner, so as to help patients cope with anxiety and other adverse emotions, express emotional support, provide information and feedback, correct irrational understanding, and provide a kind of nursing communication with hope [22]. The purpose of therapeutic communication is to treat patients, through communication to guide patients with poor ability to clear life goals and adopt behaviors conducive to physical and mental health; Through positive communication to help patients and their family members and medical personnel to establish trust each other in the treatment of sexual, emotional, psychological and social function of support, encourage family members to establish a correct understanding of disease, the construction of a reasonable way of life, not only improved the mental state of family members, set up the confidence of conquer disease, enhance the ability of dealing with disease, and improve the function of family, helped improve the follow-up treatment and prognosis of children [23].

In conclusion, the family support intervention model can relieve the anxiety and depression of the parents of children with leukemia, improve the social support and disease management ability of the parents of children with leukemia, and help the family to improve the ability to cope with the disease, so as to improve the family function of children with leukemia.

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