

Comprehensive Nursing Intervention Can Reduce Postoperative Complications and Shorten Hospital Stay of Children with Cleft Lip and Palate Repair Surgery

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This research aims to probe into the impact of people-oriented comprehensive nursing intervention on children with cleft lip and palate repair surgery. Totally 112 lip cleft children who underwent surgical treatment in our hospital from June 2017 to March 2019 were randomized into routine and intervention groups. Among them, 55 in the former underwent routine nursing intervention, and 57 in the latter obtained comprehensive nursing intervention additionally. The hospital stay and complications of the two groups were observed. The hospital stay and complications in the latter were less than those in the former. Comprehensive nursing intervention can reduce postoperative complications and shorten hospital stay in children with cleft lip and palate repair surgery.

Keywords: comprehensive nursing, children with cleft lip and palate, postoperative complications

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INTRODUCTION

Cleft lip and palate is a familiar geneogenous malformation, and its severity and influence on anatomical function are different. They may occur as an isolated event, which are related to a syndrome, caused by genetic and environmental factors [1-2]. One of 700 live births occurred in the world [3]. It is usually caused by the disturbance of embryonic development of soft and hard tissues around the mouth and face. These cracks are not only the deformation of normal appearance, but also may have a remarkable impact on life in terms of function and psychology. In most cases, chewing, swallowing and speaking are severely restricted, and lack of tooth space and facial expressions can also cause self-esteem problems [4-5].

Cleft lip and palate patients are usually

corrected through surgery, but the postoperative nursing has not been discussed to a great extent. Because everyone is an independent individual, most people often face mental health and social gaps, but routine nursing providers are often unable to realize or solve these gaps [6]. To satisfy people, a people-oriented comprehensive nursing intervention model has been developed clinically [7]. People-oriented nursing mainly involves people-oriented existence and behavior and the realization of people-oriented goals. It creates a people-oriented atmosphere, maximizes the potential of people-oriented team and optimizes the people-oriented support structure [8]. This human-centered nursing model can greatly meet the needs and personal preferences of patients, thus greatly promoting the relationship between nurses and patients [9]. A recent study has shown that this

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kind of nursing intervention can enhance mutual understanding and establish a supportive attitude towards the standardized programs to decrease man-made errors [10]. This research aims to probe into the impact of people-oriented comprehensive nursing intervention on children with cleft lip and palate repair surgery.

MATERIALS AND METHODS

General Data

Totally 112 lip cleft children treated by surgery from June 2017 to March 2019 were randomized into routine and intervention groups (RG; IG). Thereinto, 55 in the RG underwent routine nursing intervention, and 57 in the IG obtained comprehensive nursing intervention additionally.

Exclusion and Inclusion Criteria

Inclusion criteria: All children had congenital cleft lip and palate; Patients received comprehensive sequential therapy and had good nutritional status. This research was ratified by the Ethics Committee of our hospital, and informed consent forms were obtained.

Exclusion criteria: Children had other congenital malformations, abnormal coagulation function, or systemic diseases such as heart, brain, liver, kidney and lung; Children had mental disorder and those did not cooperate with treatment.

Nursing Methods

The RG adopted a routine nursing intervention: The children or their families were informed, and the wards were arranged to ensure cleanliness. Nursing and symptomatic nursing was performed in view of the doctor's advice during the perioperative period, and nurses answered the questions of the family members of the children and told them the precautions.

The IG obtained comprehensive nursing:

(1) **Psychological appeasement:** The nurses should take the initiative to approach the children gently, play patiently with them, and adopt simple and pleasant dialogue to alleviate their preparedness psychology. They should also have enough patience with the introverted and timid children to eliminate their fear psychology.

(2) **Intraoperative nursing:** The nurses should assist doctors in preoperative examination and feedback the relevant examination results, make clear the operation indications, and control the operation risks. They must ensure children's respiratory tract unobstructed, and should be proactive during the operation, and perform various nursing services quickly, timely and accurately.

(3) **Postoperative nursing:** After operation, it is

necessary to meet the reasonable needs of children and their families, effectively adjust the temperature and humidity of the ward, and observe their complications and adverse reactions in detail. If there is a risk of complications, it is necessary to take corresponding treatment measures in time. They have to strictly implement aseptic operation standards to avoid infection.

(4) **Eating intervention:** The nurses should scientifically arrange diet to ensure that children can take more nutrition. And they must guide caregivers to feed after strictly evaluating their eating conditions, and the families of children should not use too large and thin metal spoons; When feeding, they should ensure that the spoon is placed on the healthy side to prevent touching the wound of the child and relieve his pain; In addition, multivitamin drops should be mixed into liquid food to promote the recovery of surgical incision. It is necessary to ensure the cleanness of children's oral cavity, and help them suck out oral secretions in time to avoid suffocation.

(5) **Pain nursing:** Children with mild pain can divert attention and relieve pain by talking or playing cartoons. Children with higher pain should contact a doctor for corresponding analgesia treatment.

(6) **Discharge guidance:** Pay special attention to the safety awareness with the family members of the children, try not to have children crying vigorously, avoid external force causing damage to the incision position, and do not put fingers or hard objects in the mouth to prevent the wound from cracking. The nurses need to collect the contact information and home address of the family members of the children for follow-up work, so as to know the home nursing situation after discharge, point out the unreasonable points in time and reduce the adverse reaction risk events.

Outcome Measures

The excellent rate of mastering health knowledge of family members of the two groups was observed by self-made health knowledge questionnaire (disease-related and family nursing knowledge). The total score was 100 points, which could be divided into excellent (≥ 80), good (60-79) and poor (< 60). If the score was more than 60 points, the standard-reaching rate of health knowledge was equal to $(\text{excellent} + \text{good}) / \text{group case} \times 100\%$. The pain at 6, 12 and 24 h after surgery was observed by VAS score [11], with a perfect score of 10, which was directly proportional to the degree of pain. The patients' nursing satisfaction was evaluated by self-made satisfaction scale: The total score was 100 points, satisfied (≥ 80), relatively satisfied (70-80), generally satisfied (60-70) and dissatisfied (≤ 59). Total satisfaction =

(total-dissatisfied)/total×100%. The degree of psychological stress reaction before and after intervention was evaluated by Hamilton Anxiety Scale (HAMA) [12], 56 points in total. The higher the score, the more serious the anxiety is. The quality of life of patients after nursing was assessed by using SF-36 scoring scale [13]. The full score was 100 points; The higher the score, the higher the quality of life is.

STATISTICAL METHODS

SPSS 20.0 (SPSS, Inc., Chicago, IL, USA) is applied in statistical analysis. The measurement data are measured by t test and assessed by paired t test before and after nursing. Multiple time points

within the group is assessed by repeated measures analysis of variance and expressed by mean±standard deviation (x±sd). The counting data are assessed by Chi-square test and represented by percentage (%). The differences are statistically remarkable When P<0.05.

RESULTS

General Data of Both Groups

There was no difference between the two groups in their own data and general family (P>0.05) (Table I).

Table I General data of both groups [n(%)] ($\bar{x}\pm sd$)

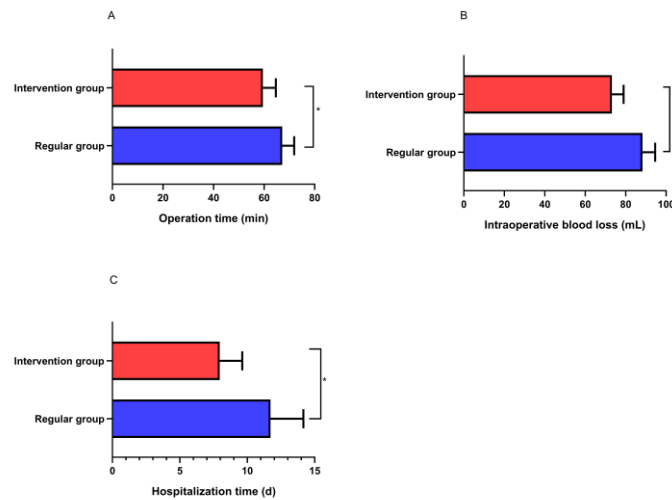
Classification	Routine group (n=55)	Intervention group (n=57)	t/ χ^2 value	P value
Gender			0.293	0.587
Male	31 (56.36)	35 (61.40)		
Female	24 (43.64)	22 (38.60)		
Age (years)	4.68±2.51	5.21±2.43	1.135	0.258
Parents' educational level			2.125	0.345
Both below high school	20 (36.36)	25 (43.86)		
Both high school and above	19 (34.55)	22 (38.60)		
Others	16 (29.09)	10 (18.18)		
Monthly household income (yuan)			0.197	0.656
≤ 8000	19 (34.55)	22 (38.60)		
>8000	36 (65.45)	35 (61.40)		
Expression types			0.968	0.808
Unilateral cleft lip	19 (34.55)	17 (29.82)		
Bilateral cleft lip	15 (27.27)	13 (22.81)		
Cleft palate	7 (12.73)	9 (15.79)		
Cleft lip and palate	14 (25.45)	18 (31.58)		
Seasons			7.195	0.065
Spring	13 (23.64)	15 (26.32)		
Summer	11 (20.00)	17 (29.82)		
Autumn	24 (43.64)	12 (21.05)		
Winter	7 (12.73)	13 (22.81)		

General Operation Conditions of Both Groups

The operation time of the RG and the IG was (67.18±4.70) min and (59.52±5.12) min, respectively. The amount of bleeding during operation was (88.32±6.24) ml and (73.19±5.77)

ml, respectively. The hospital days were (11.73±2.43) d and (7.96±1.67) d, respectively. The results manifested that the general operation condition of the latter was better than that of the former (P<0.05) (Figure 1).

Figure 1 General operation situation of both groups



(A) Comparison of operation time between both groups: The operation time of the intervention group is shorter than that of the other ($P < 0.05$). Note: $*P < 0.05$. (B) Comparison of intraoperative blood loss between both groups: Intraoperative blood loss in the intervention group is less than that in the other ($P < 0.05$). Note: $*P < 0.05$. (C) Hospital stay between both groups: The hospital stay in the intervention group is shorter than that in the other ($P < 0.05$). Note: $*P < 0.05$.

Comparison of Complications between Both Groups

The incidence of postoperative complications in

the IG was obviously lower than that in the RG ($p < 0.05$) (Table II).

Table II Complications in both groups [n(%)]

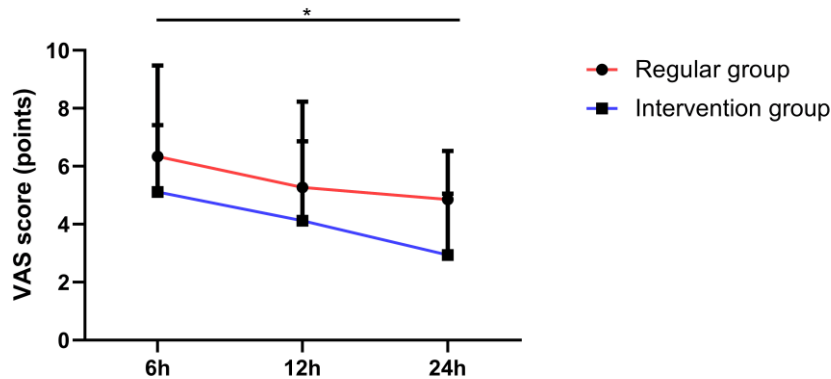
Classification	Routine group (n=55)	Intervention group (n=57)	χ^2 value	P value
Infection	4 (7.27)	2 (3.51)	-	-
Nerve injury	1 (1.82)	0 (0.00)	-	-
Velopharyngeal incompetency	1 (1.82)	0 (0.00)	-	-
Oronasal fistulas	1 (1.82)	0 (0.00)	-	-
Airway obstruction	2 (3.64)	0 (0.00)	-	-
Tooth root damage	3 (5.45)	1 (1.75)	-	-
Total incidence	12 (21.82)	3 (5.26)	6.614	0.010

Postoperative Pain of Children in Both Groups

The VAS scores of the RG at 6, 12 and 24 h were (6.34±3.14), (5.27±2.96), (4.85±1.68), respectively, while those in the IG were (5.11±2.31),

(4.12±2.74), (2.94±2.11), respectively. The results showed that the pain scores of children in the IG were obviously lower than those in the other ($P < 0.05$) (Figure 2).

Figure 2 Postoperative pain of children in both groups



It signified that the pain scores of children in the intervention group at 6, 12 and 24 h are lower than those in the other (P<0.05). Note: *P<0.05.

Excellent Rate of Mastering Health Knowledge of Family Members of Both Groups

The standard-reaching rate of family members' health knowledge in the RG was 65.45%, while

that in the IG was 89.47%. The results manifested that the mastery of family members' health knowledge in the latter was obviously higher than that in the former (P<0.05) (Table III).

Table III Excellent rates of mastering health knowledge between both groups [n(%)]

Excellent rate	Routine group (n=55)	Intervention group (n=57)	χ^2 value	P value
Excellent	16 (29.09)	27 (47.37)	-	-
Good	20 (36.36)	24 (42.11)	-	-
Poor	19 (34.55)	6 (10.53)	-	-
Standard-reaching rate	36 (65.45)	51 (89.47)	9.313	0.002

Comparison of Satisfaction between Both Groups

The total satisfaction of the RG was 81.82%,

while that of the IG was 96.49%. The results signified that the total satisfaction of the latter was higher than that of the former (P<0.05) (Table IV).

Table IV Satisfaction in both groups [n(%)]

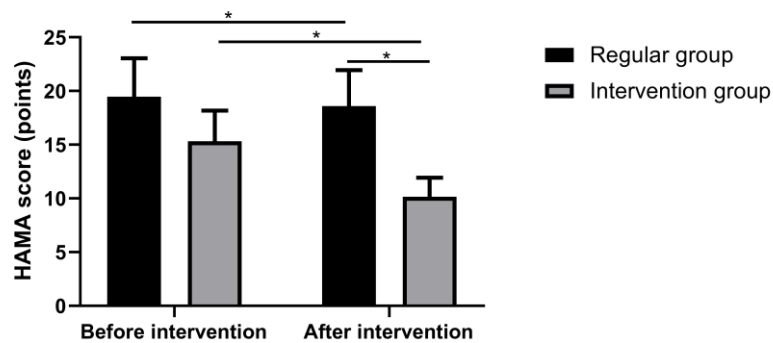
Satisfaction	Routine group (n=55)	Intervention group (n=57)	χ^2 value	P value
Satisfied	11 (20.00)	27 (47.37)	-	-
Relatively satisfied	25 (45.45)	21 (36.84)	-	-
Generally satisfied	9 (16.36)	7 (12.28)	-	-
Dissatisfied	10 (18.18)	2 (3.51)	-	-
Total satisfaction	45 (81.82)	55 (96.49)	6.300	0.012

Degree of Psychological Stress Reaction of Children before and after Intervention

The HAMA scores before and after intervention in the RG were (19.47±3.58) and (18.59±3.36) respectively, and the scores of the IG were

(15.33±2.84) and (10.15±1.78). The results documented that the scores of both groups decreased after intervention, but the latter were markedly lower than the former (P<0.05) (Figure 3).

Figure 3 Psychological stress reaction degree of children in both groups before and after intervention



The HAMA scores of both groups manifest no difference before intervention ($P>0.05$), but the scores of the intervention group are obviously lower than those of the other ($P<0.05$). Note: $*P<0.05$.

Quality of Life in Both Groups

The related quality of life scores in the IG were

higher than those in the RG ($p<0.05$) (Table V).

Table V Quality of life in both groups ($x\pm sd$)

Group	n	Physiological function	Energy	Mental health	Body function
Routine group	55	74.29±5.24	79.24±5.13	73.44±7.16	81.43±6.28
Intervention group	57	83.18±6.29	84.43±5.20	80.58±6.92	88.17±5.85
t		8.112	5.315	5.367	5.880
p		<0.001	<0.001	<0.001	<0.001

DISCUSSION

Cleft lip deformity is one of the most familiar geneogenous malformations, which needs interdisciplinary methods to solve the physical cleft lip deformity and the accompanying speech and swallowing problems. Many types of cleft lip deformity may occur, and cleft palate usually occurs at the same time. When patient’s lips are deformed incompletely or the white roll/vermillion boundary is separated incompletely, microscopic or hidden cracks will appear [14]. Altogether 25% of cleft lip and palate patients need orthognathic surgery to correct tooth surface deformity, but various complications may occur, such as bleeding, improper fracture and injury of inferior alveolar nerve and lingual nerve [15]. Usually, the traditional nursing mode is mostly passive nursing, which only implements the doctor’s orders or solves the problems after the patients and their families ask them, which lacks initiative and meeting, and is difficult to adapt to the differences among many people. Therefore, people increasingly need innovation to meet crucial health challenges, enhance quality and access opportunities, and decrease hazards and costs [16]. People-oriented comprehensive nursing is the policy focus of medical services, which aims to ensure that the

public can provide safe and high-quality nursing while meeting the increasing expectations of consumers [17]. In this research, the results show that there are fewer complications in children who have received comprehensive nursing intervention. It suggests that comprehensive nursing for children after operation can effectively reduce the occurrence of complications. A recent study has shown that hospital-based nursing interventions can remarkably reduce postoperative complications [18]. There is also a study showing that the patient-centered comprehensive nursing plan enhances the quality of life and reduce complications [19]. The reason for fewer complications may be that nurses in comprehensive nursing are more professional, skilled and experienced, and they can deal with unexpected situations quickly to avoid serious problems. Not only that, the nursing staff also monitored the indicators of the children during the whole process, and reported any abnormality to the doctor and solved in time. These comprehensive factors may be the reasons for reducing the occurrence of complications.

Our research results also manifest that the general operation situation is better and the hospital stay is shorter after receiving comprehensive nursing intervention, which

indicates that the intervention of comprehensive nursing can effectively improve the operation efficiency and promote recovery. There is also a study showing that comprehensive nursing intervention can improve rehabilitation, shorten hospital stay, reduce the possibility of re-admission, and reduce the incidence of complications [20]. Moreover, our research results also indicate that comprehensive nursing intervention can also reduce the psychological stress state of children and improve their quality of life. A new study also shows that providing comprehensive nursing may improve patients' satisfaction, relieve anxiety and depression symptoms, and improve health-related quality of life [21]. Research also shows that people-centered comprehensive nursing intervention model may improve satisfaction awareness and symptom management [22]. This may be due to the active nursing of nurses, providing nursing with clinical ability, guiding patients' positive reactions in personal emotions and deep feelings, and promoting their participation in nursing, thus increasing patients' and their families' positive prospects and satisfaction with rehabilitation [23-24].

To sum up, comprehensive nursing is an effective service based on participants' needs and available resources [25]. It can reduce complications and shorten hospital stay after cleft lip and palate repair surgery.

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