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*Original Article*

# The application effect analysis of psychological nursing in pediatrics transfusion treatment activities

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**Abstract:** Objective: To explore the influence of psychological nursing towards pediatrics venous transfusion. Methods: We selected 108 children patients having venous transfusion who were admitted by Liaocheng People's Hospital from July 2017 to November 2017 and randomized control method was adopted to divide them into experimental group of 54 children and control group of 54 children. Both groups of patients received pediatrics usual care. On the basis of control group, the experimental group added mental intervention nursing towards the children patients and their family members. Comparisons were made on the treatment compliance, puncture elapsed time, puncture successful rate, re-puncture rate and parents satisfaction degree of the two groups of children patients. Results: The experimental group of children patients exceeded the control group of children patients on treatment compliance and successful rate. And the puncture elapsed time and re-puncture rate of experimental group were obviously lower than those of control group. In addition, the parents satisfaction degree of experimental group was higher than that of control group (all $P<0.05$). Conclusion: Psychological nursing can improve the treatment cooperation degree and help to complete successfully the transfusion treatment activities and at the same time promote the harmony of doctor-patient relationship.

**Keywords:** Psychological nursing, pediatrics child patient, transfusion treatment, nursing satisfaction degree

## Introduction

Venous transfusion is a common therapeutic method in pediatric department, but the transfusion of children patients possesses certain particularity: they are too young, hard to communicate and have poor vein conditions and low cooperation degree and their parents have unhealthy emotions of anxiety and irritability. If the nurses can't meet the expectations of the parents of children patients in the medical activities, it is very easy to result in conflict and that may cause pediatric department to become the severely afflicted area of unharmonious doctor-patient relationship [1]. Researches have shown that the expectations of parents of children patients include the three aspects of transfusion environment, humanistic care and nursing quality [2]. The above aspects can be improved by active and effective nursing measures and among them psychological nursing measure is the priority among priorities; adopting active mental nursing towards children patients and their parents can improve medical quality and enhance doctor-patient relationship [3, 4]. For this purpose, in this research mental care intervention measures were taken towards the children patients and their parents in the process of pediatrics transfusion and the research obtained sound clinical effect. The report is as follows.

## Materials and methods

### *General material*

All the participants were the hospitalized children receiving transfusion treatment in the Pediatric Department of Liaocheng People's Hospital.

Selection standard: The ages of children patients ranged from 0 to 12, their illnesses were the common infections of respiratory tract and digestive tract, transfusion variety covered the regular anti-infection and antiviral medication

(not including sedative drug), the transfusion positions were around peripheral vein (limb vein and scalp vein, etc.), the estimated transfusion time was between 2 to 4 hours and all the parents of children patients were aware of accompanying the whole process of transfusion and signed the informed consent; all the children patients had normal intelligence development; family members coordinated with the investigation; all the children patients didn't have the function insufficiency of major organs like kidney, liver and brain.

Exclusion standard: There existed medical disputes on the children patients; they had medical history of psychological illness or mental illness; the children patients had major trauma or burn.

According to the admission number of children patients, related software was used to conduct pairing and grouping, the two groups included 54 children patients respectively.

*Nursing methods*

The venous transfusion punctures of the two groups of children patients were conducted by the same group of nurses, who have sound puncture skill and abundant nursing experience in the department. The control group adopted the regular nursing, including communicating with children patients and their family members, illustrating the caution in the process of transfusion and using language to comfort the children patients. While the experimental group adopted psychological intervention measures on the basis of observation group and the methods are as follows.

*Nursing intervention measure*

*Different measures for different age groups:* Infant and young children (<3 years): The nurses should coordinate with the parents to have the children patients adapt to the environment as soon as possible. They should not constrain the limbs of children and not let them see the needle of infusion apparatus too early and shift the attention of children patients by means of voice, colorful toys and food. Do remember not to let the parents and children patients separate and the puncture operation should be quick and gentle.

Preschool children patients (3-6 years): The children patients at this stage have the behavior characteristics of self-value affirmation, praise can help them to generate sense of success and affirm their self-value, on the contrary they will have sense of frustration and self-denial [5]. Secondly, they possess certain rebellious psychological reaction [6]. Targeting this condition, the nurses should have dialogues with children patients patiently and amiably and get rid of their horrified and rebellious psychology. After the initial relief of their mental state, the nurses should prepare some items like little red flower and stationery as rewards to stimulate the children patients to actively face the medical activity of nurses.

School-age children patients (>6 years): Nurses shall make use of the feature that this kind of children patients is easy to communicate. Through chatting with them, nurses could talk about some questions of the children patients concern, encourage and praise their not crying and enhance their self-confidence to resist the pains so as to improve the successful rate of puncture [7].

*Humanistic intervention:* Transfusion can cause the transfusion part of children patients to have cold feeling and they need warm water bag and warmer pad and their family members also have requirements towards hot water, for this purpose the experimental group provided the above items. Some research has confirmed that proper music broadcasting can facilitate the transfusion activity to go on smoothly, therefore we broadcast music and the sound intensity was about 45-60 decibel (pay attention to the individualized requirements of children patients), music went through the whole transfusion process and the control group did not broadcast music [8, 9].

*Attach importance to the participation degree of family members:* First nurses should use genial tone to communicate with family members, inform them the condition of children patients, sooth their anxious mentality, neatly tell them the whole medical process of children patients, answer the parents' questions patiently and meticulously, make the goals of each other explicitly, establish sound nurse-patient relationship, give due understanding towards some uncool behaviors of parents resulting from worrying about the illness of children patients, avoid quarreling and adopt proper methods to resolve contradictions delicately. In

**Table 1.** General material of two groups of children patients

| Group | Experimental group | Control group | *P* value |
|---|---|---|---|
| Age group | | | 0.897 |
| <3 years | 13 | 15 | |
| 3-6 years | 32 | 31 | |
| >6 years | 9 | 8 | |
| Disease types | | | 0.697 |
| Alimentary canal | 24 | 22 | |
| Air tube | 30 | 32 | |
| Sex | | | 0.847 |
| Male | 28 | 27 | |
| Female | 26 | 27 | |
| Puncture site | | | 0.699 |
| Scalp | 23 | 25 | |
| Limb | 31 | 29 | |

**Table 2.** Total successful puncture rate and all age group puncture comparison of two groups of children patients

| Group | Experimental group | Control group | *P* value |
|---|---|---|---|
| Total | | | 0.013 |
| Case | 54 | 54 | |
| Success (n, %) | 42 (77.8) | 30 (55.6) | |
| <3 years | | | 0.276 |
| Case | 13 | 15 | |
| Success | 9 | 7 | |
| 3-6 years | | | 0.080 |
| Case | 32 | 31 | |
| Success | 26 | 19 | |
| >6 years | | | 0.011 |
| Case | 9 | 8 | |
| Success | 7 | 4 | |

addition, the intimate relationship between parents and children patients should be made use of to let them feel the care and warmth from parents, to stabilize their emotions and make it easier for the children patients to cooperate with the medical interaction of nurses. Besides, in the transfusion process of children patients their family members should observe closely the changes of puncture part and check whether the transfusion went on smoothly. If any irregular condition occurred, family members should inform the nurses immediately so as to reduce the occurrences of disputes.

*Evaluation methods*

Successful rate of puncture: that means finishing the vein puncture with one needle insertion and the infusion goes on smoothly; puncture elapsed time: calculate from the selection of vein to the fixation of infusion band; re-puncture: that refers to the re-puncture action resulting from the accidents of leakage, needle prolapse in the transfusion process after successful puncture; nursing satisfaction degree: the satisfaction degree was tested by the self-made questionnaire of the author's department and the test contents covered the satisfaction degree of three dimensions including attitude towards nurses, nursing comprehensiveness and nursing operational skills. Each item adopted the system of 1-4 score, and there were totally 25 items, the score ranged from 0 to 100, the total score of each dimension was 100 and higher scoring manifested higher nursing satisfaction degree.

*Data statistics*

The statistics software SPSS 20.0 was used to conduct analysis and mean ± SD was used to express the normal measurement data of two groups of children patients; t test of independent sample was adopted to conduct comparison among groups; the comparison of sample rate adopted chi-square test or Fisher's exact test and $P<0.05$ shows that the difference has statistical significance.

## Results

*The illness variety, gender, age group and puncture position of two groups of children patients*

The illness variety, gender, age group and puncture position of two groups of children patients can be seen in **Table 1**. The result showed that there was no statistical difference on the general material of two groups (all $P>0.05$).

*Puncture successful rate*

The total successful puncture rate (77.8% vs 55.6%, $P<0.05$) was shown in **Table 2**, the puncture successful rate of experimental group was obviously higher than that of control group. On the aspect of all age groups, for the infant and young children and preschool children, the

**Table 3.** Puncture elapsed time comparison of two groups of children

| Group | Exoeriment group | Control group | *P* value |
|---|---|---|---|
| Total | | | 0.007 |
| <4 min | 21 | 13 | |
| 4-8 min | 24 | 18 | |
| >8 min | 8 | 23 | |
| <3 years | | | 0.287 |
| <4 min | 4 | 2 | |
| 4-8 min | 5 | 3 | |
| >8 min | 4 | 8 | |
| 3-6 years | | | 0.066 |
| <4 min | 14 | 9 | |
| 4-8 min | 14 | 11 | |
| >8 min | 4 | 12 | |
| >6 years | | | 0.049 |
| <4 min | 7 | 1 | |
| 4-8 min | 2 | 4 | |
| >8 min | 1 | 3 | |

**Table 4.** The re-puncture rate comparison of two groups of children

| Group | Experiment group | Control group | *P* value |
|---|---|---|---|
| Total | | | 0.024 |
| Case | 50 | 50 | |
| Re-puncture | 14 | 25 | |
| <3 years | | | 0.434 |
| Case | 13 | 15 | |
| Re-puncture | 3 | 6 | |
| 3-6 years | | | 0.098 |
| Case | 32 | 31 | |
| Re-puncture | 9 | 15 | |
| >6 years | | | 0.029 |
| Case | 9 | 8 | |
| Re-puncture | 1 | 6 | |

successful rate of two groups had no statistical difference (both P>0.05), but for the school-age children the successful puncture rate was obviously higher than that of control group (P<0.05).

*Puncture elapsed time comparison of two groups of children patients*

Puncture elapsed time comparison of two groups of children patients (**Table 3**). The puncture elapsed time of experimental group was obviously lower than that of control group (P<0.05). On the aspect of all age groups, for the infant and young children and preschool children, the elapsed time comparison had no statistical difference (both P>0.05), but for the school-age children the puncture elapsed time was obviously lower than that of control group (P<0.05).

*The re-puncture rate comparison of two groups of children*

The re-puncture rate comparison of two groups of children was shown in **Table 4** and the re-puncture rate of experimental group was lower than that of control group (P<0.05). On the aspect of all age groups, for the infant and young children and preschool children, the re-puncture rate of two groups had no statistical difference (P>0.05), but for the school-age children the re-puncture rate was obviously lower than that of control group (P<0.05).

*Nursing satisfaction degree comparison of family members of two groups of children patients*

Nursing satisfaction degree comparison of family members of two groups of children patients was shown in **Table 5** and the nursing satisfaction degree of experimental group was obviously higher than that of control group (all P<0.05).

## Discussion

Since it has the advantages like administrating drug quickly and taking effect rapidly, venous transfusion has been used widely in the clinic, especially in the rescue work of emergency treatment of severe patients [10]. Although the pediatrics venous transfusion situation is not very prominent, it still arouses widespread concerns due to the special group of children patients. Venous transfusion can bring children strong stressor, cause unhealthy emotions of fear, fretfulness and nervousness and make the children not cooperate with the treatment activity and some research has shown that incoordination constitutes the major reason for the failure of vein puncture [11-13]. In addition, the fearful and nervous psychology of children patients can stimulate the increasing secretion of catecholamine in the children's body. The direct consequence is the contraction of periph-

**Table 5.** Each dimension score comparison of nursing satisfaction degree

| Group | Experiment group | Control group | t value | *P* value |
|---|---|---|---|---|
| Nursing staff attitude | 95.5±4.23 | 90.6±5.35 | 5.080 | <0.001 |
| Comprehensive nursing | 94.17±3.78 | 89.57±6.17 | 4.600 | <0.001 |
| Operant skill | 92.11±2.33 | 90.19±3.92 | 1.920 | 0.004 |

eral vessel and that increases the puncture difficulty [14]. Coupled with current family planning policy, many children are the single one in the family. Once they fall ill, the parents of children patients will become excessively anxious and nervous and cause oversensitivity. This kind of unhealthy emotion can not only infect the children patients, but also result in the occurrences of disharmony [15]. Besides, investigation found that the children patients' parents have unrealistic pursuit of finishing the vein puncture with one needle insertion and that reflects the higher requirements towards nursing [16]. Therefore, in order to improve this matter, we should proceed from the two aspects of children patients and their family members to solve the problem.

On the aspect of children patients, the research abroad shows that conducting necessary psychological nursing constitutes the precondition of all medical activities [17-19]. Active psychological nursing intervention can help to relieve the unhealthy emotions of children patients. Adopting different encouraging ways, through active psychological nursing intervention nurse can help the children patients face the puncture bravely, improve their treatment compliance, shorten the puncture time and reduce the re-puncture rate. While actively improving the work efficiency, active psychological nursing intervention helps to reduce the disputes between nurses and patients [20]. Our results also confirmed that psychological nursing intervention group of children patients excelled over the control group of children patients on the aspects of puncture successful rate, puncture elapsed time and re-puncture rate, etc.

On the aspect of family members of children patients, all kinds of measures were taken to actively gain knowledge about their mental state and meet their treatment expectation. In the treatment process we understood the emotions of family members, let them participate into the treatment process, sought their coordination and jointed hands to complete the treatment process of children patients. In our research each dimension of nursing satisfaction degree of family members exceled over that of control group and this move can facilitate the maintenance of harmonious doctor-patient relationship.

This thesis also showed that there was unsatisfactory effect on the nursing intervention of infant and young children and preschool children (all of the statistical results of puncture successful rate, re-puncture rate and puncture elapsed time had no statistical difference). Measures are yet to be taken to strengthen the age grouping, make research on the children patients' features of psychological behaviors and take corresponding nursing measures.

In conclusion, adopting active and effective nursing measures can relieve the nervous feelings of children patients. That not only facilitates the transfusion activities to go on smoothly, but also improves the nursing satisfaction degree. It is worthwhile to promote the application of this method.

## Disclosure of conflict of interest

None.

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