

The Effect of Comfort Nursing on the Compliance and Efficacy of Treatment for Children with Acute Otitis Media Caused by Upper Respiratory Tract Infection

Jing Xu, Jun Qian*

Nanjing Maternal and Child Health Care Hospital, Nanjing 210000, China

*Corresponding author: Jun Qian, 109884510@qq.com

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Abstract: *Objective:* To explore and analyze the clinical effect of comfort nursing on children with acute otitis media. *Methods:* 62 children with acute otitis media caused by upper respiratory tract infection who visited the outpatient clinic of our hospital from June 2022 to June 2023 were selected for this study. They were divided into a study group ($n = 31$) and a control group ($n = 31$). Children in the control group received basic care, while children in the study group received comfort nursing along with basic care. The hearing thresholds, body temperature, treatment compliance, and nursing satisfaction of the two groups of children were compared. *Results:* After the nursing intervention, the hearing threshold and average body temperature of the children in the study group were lower than those in the control group ($P < 0.05$); the treatment compliance of the children in the study group was higher than that in the control group ($P < 0.05$); the nursing satisfaction of the study group was higher than that of the control group ($P < 0.05$). *Conclusion:* Comfort nursing can improve the treatment effect, treatment compliance, and nursing satisfaction of children with children with acute otitis media caused by upper respiratory tract infection.

Keywords: Comfort nursing; Upper respiratory tract infection; Acute otitis media

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1. Introduction

Acute otitis media is an inflammatory disease of the middle ear mucosal tissue, mainly caused by bacterial infection of the upper respiratory tract. There are purulent and non-purulent acute otitis media. The main clinical symptoms of acute otitis media are ear pain, hearing loss, tinnitus, and ear fullness. Severe acute otitis media may be accompanied by fluid or pus in the middle ear, which may cause critical symptoms such as tympanic membrane rupture^[1]. Clinical treatment of acute otitis media caused by upper respiratory tract infection usually includes drainage, fluid removal, drug treatment, and other treatment methods. Some children are less compliant with the treatment due to the discomfort caused by their symptoms, resulting in a less ideal treatment effect

[2]. Therefore, to improve the treatment effect of this disease, a comprehensive nursing intervention is needed. Comfort nursing is a nursing model aimed at improving children's physical and mental health [3]. 62 children with acute otitis media caused by upper respiratory tract infection were selected for this study to explore the application effect of comfort care.

2. Materials and methods

2.1. General information

62 children with acute otitis media caused by upper respiratory tract infection who visited the outpatient clinic of our hospital from June 2022 to June 2023 were selected for this study. They were divided into a study group ($n = 31$) and a control group ($n = 31$). The study group consisted of 18 boys and 13 girls, aged 3 to 9 years, with an average age of 6.18 ± 1.05 years. In the control group, there were 17 boys and 14 girls, aged 3 to 8 years, with an average age of 6.22 ± 0.97 years. There were no significant differences in the general characteristics between the two groups ($P > 0.05$).

Inclusion criteria: (1) Patients diagnosed with acute otitis media through specialist examination, (2) patients who met the diagnostic criteria for upper respiratory tract infection, (3) Patients whose parents agreed to participate in the study.

Exclusion criteria: (1) Patients with blood system diseases or immune system diseases, (2) patients with chronic otitis media, (3) patients whose parents did not agree to participate in the study.

2.2. Methods

The children in the control group were provided with basic care. The nursing staff performed tympanometry and hearing examinations on the children according to the doctor's instructions, explained the methods and precautions for using drugs to the parents, and answered questions from the parents.

The children in the research group received comfort nursing. In this nursing model, the care plan was formulated based on the children's condition and treatment plans, as well as their needs. (1) Condition observation and treatment: The children's body temperatures were checked, and they were asked about symptoms such as dizziness or tinnitus. The ears were observed for the presence of pus, noting its nature, color, and smell. If there were no tympanic membrane perforations, the doctor used 2% phenol glycerin ear drops to clear the ears, while the nursing staff explained the purpose and process of the treatment to the parents. If any of the children had perforated tympanic membranes, the doctor was responsible for gently flushing their external auditory canals with a hydrogen peroxide solution and instilling an appropriate amount of antibiotics into their ears. The nursing staff assisted in immobilizing the children during this procedure. After administering the medication, the doctor monitored the improvement of the children's symptoms, watched for any adverse drug reactions, and explained the mechanism of action of the prescribed drugs to the parents. It was important to inform them of the necessity of following the doctor's prescription and guide the children to cooperate with the treatment. (2) Tympanometry and hearing examination: The nursing staff informed the children and their parents in advance about the procedures and precautions for the middle ear and hearing examination. They guided the children to cooperate in completing the examination and provided comfort if the children became upset. After the examination was completed, the results were promptly conveyed to both the doctor and the children's parents. The staff also explained the characteristics of the child's condition to the parents and answered their questions in detail. (3) Health education and comfort care: The nurse introduced the disease-related knowledge to the parents of the children and informed them that the passage connecting the nasopharynx and the middle ear is the Eustachian tube.

Children have Eustachian tubes with a short lumen, a wide inner diameter, and a low position of the tympanic orifice. This anatomical structure allows bacteria or secretions from the nasopharynx to enter the middle ear, potentially leading to acute suppurative inflammation. Children with acute otitis media caused by upper respiratory tract infection often cry during treatment, making the parents worried about their condition. Therefore, the nurses comforted the children and diverted their attention so they would feel less uncomfortable. The nurses also informed the parents that acute otitis media is a common disease among children. When the children returned for a follow-up visit, the nursing staff educated the children and their parents on the causes, symptoms, and treatment options for acute otitis media caused by upper respiratory tract infection in plain and easy-to-understand language. They also explained the prescriptions and the function of the medications given to the parents. Furthermore, the parents were also informed about the importance of complying with the treatment program and the expected treatment effects. During the health education process, the nursing staff actively interacted with the parents of the children, answered their questions, helped them to understand the disease and treatment plans, and guided them to cooperate with the nursing staff to complete the health management of the children.

2.3. Evaluation criteria

The hearing thresholds and average body temperatures of the two groups of children before and after nursing intervention were recorded and compared. A self-made scale was used to evaluate the treatment compliance and nursing satisfaction of the two groups of children.

2.4. Statistical methods

SPSS23.0 was used to analyze the research data. The measurement data was expressed as mean \pm standard deviation and analyzed using a *t*-test; the count data was expressed as percentages and was analyzed using a χ^2 ; $P < 0.05$ indicates a statistical difference.

3. Result

3.1. Hearing threshold and average body temperature

As shown in **Table 1**, after nursing intervention, the hearing threshold and average body temperature of the children in the study group were lower than those in the control group ($P < 0.05$).

Table 1. Comparison of hearing thresholds and average body temperature of the two groups of children (mean \pm standard deviation)

Group	Hearing threshold (dB)		Average body temperature (°C)	
	Before nursing intervention	After nursing intervention	Before nursing intervention	After nursing intervention
Study group ($n = 31$)	28.01 \pm 2.25	17.86 \pm 1.15	38.62 \pm 1.89	36.58 \pm 0.44
Control group ($n = 31$)	27.94 \pm 2.23	20.38 \pm 1.94	38.55 \pm 1.91	37.29 \pm 0.96
<i>t</i>	0.123	6.221	0.145	3.743
<i>P</i>	0.902	0.000	0.885	0.000

3.2. Treatment compliance and nursing satisfaction

As shown in **Table 2**, the treatment compliance and nursing satisfaction of children in the study group were higher than those in the control group ($P < 0.05$).

Table 2. Comparison of treatment compliance and nursing satisfaction between the two groups of children (*n* [%])

Group	Treatment compliance	Nursing satisfaction
Study group (<i>n</i> = 31)	29 (93.5)	30 (96.8)
Control group (<i>n</i> = 31)	23 (74.2)	25 (80.6)
χ^2	4.292	4.026
<i>P</i>	0.038	0.044

4. Discussion

Acute otitis media is often induced by upper respiratory tract infection and is more common in the winters and springs. The main symptoms of this disease are tinnitus, ear pain, and hearing loss. Symptoms such as fever, chills, diarrhea, and vomiting might also be present. Clinically, acute otitis media is mainly treated symptomatically with drugs, but children lack a correct understanding of the disease and suffer from severe discomfort, resulting in low treatment compliance^[4]. In order to ensure the maximum treatment effect of this disease, complete nursing intervention needs to be implemented.

Under the conventional nursing model, nursing staff perform nursing interventions based on doctor's orders. The measures taken include drug administration and condition observation. Parents should be educated on the disease, and nursing staff should provide adequate care, so that the children will be more compliant with the treatment. Under the comfort nursing mode, the comfort of the patient becomes the primary goal. Nursing plans are formulated based on the children's illness and psychological status. With a better understanding of the disease and the nursing services provided, parents can also better guide their children to comply with the treatment program^[5].

The results of this study show that the hearing threshold and average body temperature of children after treatment were lower than those of the control group, suggesting that comfort care can help improve the effect of disease treatment. This is because the efficacy of the treatment depends on the patient's compliance with the treatment. In primary care, parents sometimes overlook their children's condition, resulting in inadequate treatment and subsequent impacts on treatment effectiveness. To address this, nursing staff provided comprehensive disease-related information and medication guidance to parents during the comfort care process. By instructing parents on how to guide their children correctly, it encouraged active cooperation with treatment, ultimately leading to a significant improvement in treatment effectiveness^[6]. The results of this study show that the treatment compliance and nursing satisfaction of children in the study group were higher than those in the control group, suggesting that comfort nursing can improve treatment compliance and nursing satisfaction. This is because the nursing plan is centered on the child, and the parents are education on the disease and treatment program. Moreover, the children were also constantly comforted and encouraged during the treatment process, making them more compliant with the treatment program. This explains the higher treatment compliance and the nursing satisfaction in the study group compared to the control group^[7,8].

5. Conclusion

In short, comfort care for children with acute otitis media resulting from upper respiratory tract infections can enhance treatment effectiveness, compliance, and nursing satisfaction. This approach can be widely implemented in healthcare facilities. However, it is essential to consider the limitations of this study, including

the small sample size, short research duration, and the absence of a cross-sectional comparative study across multiple hospitals. Future research should aim to refine the process and analyze specific measures for comfort care.

Disclosure statement

The authors declare no conflict of interest.

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