

Therapeutic play Promoting Children Health Management- Preschool Children Aerosol Therapy Completion Rates

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Abstract

Preschool children often resistance, fear, wailing cry, and couldn't cooperate with treatment, result in completion of aerosol therapy rates only 38.9%. In order to improving aerosol therapy rates of preschool children, establishing project team at January 1, 2013. Through observation, checklist, investigation aerosol therapy rates only 38.9% result from: 1. No aerosol therapy standards providing nursing guideline. 2. In junior nurses, without experience to helping children finish treatment. 3. There isn't setting the therapeutic play to attract children. Implementation actions: 1. Establishment of aerosol therapy process standard. 2. Arrangements for nurses to participate the education of therapeutic play. 3. Production teaching folder of therapeutic play and demonstration teaching DVD. Results: aerosol therapy rates of preschool children raised to 92.4% from 38.9%, reached the project purpose. In the future, provides promote and use of paediatric units, improve the quality of children's health management.

Keywords

therapeutic play, preschool children, aerosol therapy, paediatric health management

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I. Introduction

According to government statistics show: respiratory infection is a common disease of children aged 1-4, accounted for half of the medical reasons from children [1]. Aerosol therapy is the common treatment modalities of children respiratory infection, nearly 30% of children need to receive this treatment, the main purpose is to humidified respiratory tract, dilution sputum, discharge sputum smoothly, Achieve treatment of disease [2]. Paediatric health management is a strictly professional challenge, establishing good interaction with children is priority problem for nurses, and hoe to help children receive each treatment during hospitalization, is a difficult task [3]. Most of children were fear, resistances even unwilling to use, cause disease can't be treated, make family and nurses great frustration [4]. This is a paediatric unit, a profound experience the difficulties and challenges, many parents and nurses to do this treatment while children were asleep. Not only effect the timeliness of treatment, but also effect the process of disease recovery, prolonged hospital stay [5]. In view of this, established the project team, expectations through the teamwork, brainstorming, and combined with innovative ideas to improve the aerosol therapy completion rates. Improve the quality of children's health management, assist children restore the health.

II. Analysis Of Current Situation

A. Unit Introduction

This is a children unit; the number of beds was 55, average

occupancy rate at 2012 was 87.0%. A total of 22 nurses, the following year junior nurse majority, accounting for 68.3 % (15). Disease characteristics are respiratory tract infections, diseases ranked first for every month. During January to June, 2013, the total number of children were 1518, there were 685 people (45.1%) received aerosol therapy. The majority of hospitalized children were 3-5 years old, accounting for 85% of the children. The mean duration of hospitalization was 4-6 days, the primary caregivers was mostly mothers, followed by grandparents. There is a lounge in the unit, and there is a television and two coin-operated electric doll machines. Usually, hospitalized children used these as the play tools. If the treatment process, children faced fear, crying and restless, the caregiver would take children to the lounge, watch the TV, or play the coin-operated electric doll machine.

III. Aerosol therapy situation

A. Treatment Process

Treatment tool were based handheld nebulizer, supplemented doctor of phlegm medications. Process: Nurses take the handheld nebulizer to bedside combination and add medications. Then open the O2 flow to 6 l/min let it produced mist, near the handheld nebulizer to nose and mouth, through medications into lungs with each breath. The whole process is about 15-20 minutes. But this treatment often couldn't be completed immediately result from children crying, fear, and not cooperate with treatment.

B. Definition of aerosol therapy completion rates

For understanding aerosol therapy completion rates of hospitalized children, after project team refer to the relevant literature, discussion at nursing care quality management committee meeting, resolution the aerosol therapy completion rates: the number of children of treatment time within 30 minutes complete aerosol therapy÷the total children of need to do aerosol therapy*100%.

Hospitalized Children Received Aerosol Therapy Status Survey For understanding aerosol therapy situation, between the date January, 1-14, 2012, divided into three shifts conduct random sampling, recording the children who need to do treatment, and the number of children couldn't complete aerosol therapy within 30 minutes. For unfinished treatment, using the observation, checklist recording the reasons. Analysis results: during the survey period, the children who need to do treatment total 95 persons, finished treatment children have 37 persons(38.9%). The main reason analysis of unfinished about 58 persons as followed: nurses couldn't guide children accept this treatment(29.3%), nurses lack experience(27.5%), children are afraid, fear this treatment(22.4%),this treatment isn't important and don't want to spend time coaxing children(5.3%), initial contact treatment don't familiar with treatment process and busy with work(each 3.4%), children sleeping soundly and crying(each 1.7%)(Table 1).

Table 1: Causal factor analysis of children unfinished aerosol therapy (N=58)

Cause	Number (%)	Cumulative percentage (%)
nurses couldn't guide children	17(29.3)	29.3
nurses lack experience	16(27.5)	56.8
children are afraid and fear	13 (22.4)	79.2
treatment isn't important	3 (5.3)	84.5
don't want to spend time coaxing	3 (5.3)	89.8
busy with work	2(3.4)	93.2
initial contact treatment	2(3.4)	96.6
children sleeping soundly	1 (1.7)	98.3
children crying	1(1.7)	100.0
Total	58 (100)	

After analysis of the current situation and causal-effect analysis, the problems of children unfinished aerosol therapy summarized three: First, without aerosol therapy standard process providing nurses guide children; Second, in junior nurses, lack experience to help children finished treatment; The last, without therapeutic play to attraction children in unit.

C. Purpose of project

After project team member discussion and reading relevant references, according feasibility and ability of members, set the preschool children aerosol therapy completion rate is 38.9% before the project raised to 85% in the project.

IV.Lierature Review

A. Aerosol Therapy

Common treatment for children with respiratory tract infections was medications, besides, including non-drug approach: encourage deep breathing, cough, forced expiratory, postural drainage and beat sputum [5]. Aerosol therapy is the common treatment in paediatric health management practice, the action principle is using gas to break water up drug molecule to 2-5µtiny particles accompany each breath reaches the lower respiratory tract, the main purpose is wet the respiratory tract, dilution Mucus, make smooth discharge sputum [2] .

B. Therapeutic Play Functions

Therapeutic play means through knowing children develop, threat to life events and internal-self conflicts, use play with planned, purposeful, and skilful, as interventional paediatric healthcare activities[4]. The significance of children with play, mainly in assisting express emotions and coping with stress, anxiety, angry, fear, and worry, providing caregivers the opportunity to assess children's awareness to stress, perceptions and needs, adaption assistance, that means therapeutic play could promote the growth, develop and well-being under stressful situations, is the important element of paediatric health management[6]. There were research indicated the function of hospitalization children about therapeutic play including: divert attention, reduce stress, and relax guidance; help children gain sense of security in unfamiliar environment; reduce separation anxiety and feeling homesick; provide the way to express feeling and emotions; provide the therapeutic goals pipeline to successful completion treatment; interact with others and develop a positive attitude, providing choice and obtain self-control [4,6].

C. Preschool Children's Cognitive Development and Therapeutic Play Applications

Erickson cognitive development point: preschool children development task is "active and guilt." Although the children have learned simple self-care, and stool-urine control, however, hospitalization suffering from the disease, leaving the familiar home, limitation of activity, struggle disobedience for painful treatment, resist or cry for not be accepted and the attention, will make children feel stress, will let the children feel the pressure, even trigger the behaviours of withdrawal, anxiety, fear, doubt, resistance, hostility [7].

Applications of preschool children therapeutic play applications: body painted or doll organs use, would help them understand and reduce illusion bodily injury result in fear; safety hospital equipment and materials, such as crayons, picture books, dolls, clay, story books, story tapes and hospital role play toys, are often used; part of the preschool children would expect to retain the materials which they have been used, that they can used to their friends after discharge, e.g.: pictures, books, crafts, syringes, preschool children are favourite these[8,9].

V. Solution and Implementation Process

The project was January1, to December, 31, 2013. Divided into planning stage, implementation stage, and appraisal stage (see Table 2). By the team meetings and decision matrix resolution, implement actions are as follow: 1.Establishment of aerosol

therapy process standard. 2. Arrangements for nurses to participate the education of therapeutic play. 3. Production teaching folder of therapeutic play and demonstration teaching DVD.

Table 2: Project schedule of preschool children aerosol therapy completion rates

year	2013											
Item/Month	1	2	3	4	5	6	7	8	9	10	11	12
Planning stage	*											
Formulate aerosol therapy procedure	*											
Arrangement education course	*											
Design play tools		*										
Draw up teaching folder and demonstration teaching DVD			*	*								
Implementation stage				*	*							
Set up aerosol therapy procedure an policy guidance				*	*							
Organize in-service training courses					*	*	*	*				
Manufacture action play cart and content						*						
Make teaching folder and demonstration teaching DVD						*	*	*	*	*	*	
Appraisal stage									*	*		
Before and after comparison									*	*		
Data Integration and Analysis											*	
Discussions outcome and recommendations											*	
Report writing		*	*	*	*	*	*	*	*	*	*	*

Planning stage (January, 1 -April, 30)

A. Formulate aerosol therapy procedure (January, 1-31)

Invited supervisor of nursing department, paediatric attending physician, and paediatric nursing practitioner participate, through teamwork, utilize monthly ward meeting, checking and revising the procedure of aerosol therapy, added the therapeutic play into the procedure, and renew formulating aerosol therapy procedure.

B. Arrangement education course (January, 1-31)

Project team by the way of ward conference, discussion with all colleagues, arrangement therapeutic play-related education topic, expected to May to August, held two times each month training courses.

C. Design play tools (February, 1-28)

The project team proposed the idea in the ward meetings, for program effectiveness, feasibility, cost, time-consuming and so on, using decision matrix approach (Table 3), ultimately, highest scores are arrangement education course, manufacture action play cart and content, draw up teaching folder and demonstration teaching DVD, formulate aerosol therapy procedure, therefore, adoption of these programs.

Table 3: Preschool children aerosol therapy completion rates project decision matrix

programs	effectiveness	feasibility	cost	time-consuming	scores	resolution
1. Apply for playing room	21	7	7	12	42	
2. Take children to social work room outpatient play room	7	7	21	7	42	
3. formulate aerosol therapy procedure	21	21	21	13	76	✓
4. manufacture action play cart and content	21	21	13	21	76	✓
5. manufacture action play cart and content	19	19	9	21	68	✓
6. arrangement education course	21	21	9	15	66	✓

Note: Scoring criteria-the project team member, each high score 3 point. 1 point: feasibility minimum; 2 point: feasibility followed; 3 point: feasibility maximum. The more important or feasible, the higher score, the higher score, the lower cost.

D. Draw up teaching folder and demonstration teaching DVD (March, 1- April, 30)

Search for therapeutic play references through the Internet and e-journals resources, research and relevant information, after discussion with all colleagues, make teaching folder and established therapeutic play content, available in treatment process intervention, at the same time, recording the process to demonstration teaching DVD.

V. Implementation stage (April, 1-August, 31)

A. Set up aerosol therapy procedure an policy guidance (April, 1-May, 31)

The project team meeting with supervisor of nursing department, paediatric attending physician, and paediatric nursing practitioner participate for aerosol therapy procedure on the third Friday each month. Discussed content including: the purpose of project, executive cases, and solutions to solve steps.

B. Organize in-service training courses (May, 1 - August, 31)

Unit at May, 13 and 21; June 11 and 26; July, 9 and 23; August, 14 and 21, respectively, each held a one-hour training course. Against stage of development for children and pediatric therapeutic play conducted education, make colleagues familiar therapeutic play content, process and path, creativity, innovation, and design appropriate therapeutic play tools.

C. Manufacture action play cart and content (June, 1-July, 31)

At ward meeting decided to using basket cart as the action play cart, choose bright red to attract attention of children. In addition, due to the larger gap of basket cart, afraid play tools and toys would fall out, we use waterproof, easy to clean when dirty, clean plastic corrugated cardboard, cut to fit the size of the car affixed to the action play cart, and find the color attractive cartoon figure pasted to the surface, at the same time, according to the literature content[3], set-related therapeutic play tools: tennis maps, stickers, colored paper, colored pens, watercolor, drawing paper, three Little Pigs such as storybook, finish construction of play cart and play tools. And in accordance with Ministry of Health and Welfare announced enter virus 2012 handbook, using 1:100 dilution bleach daily with disinfect, ultraviolet disinfection once a week.

D. Make teaching folder and demonstration teaching DVD (June, 1- November, 30)

The 20th of each month, the search for therapeutic play literature, collection into electronic files and data present, let colleagues could review of the literature how to do before therapeutic play. If have the latest literature and related information, would be updated regularly. Before therapeutic play, through the process of recording after the family agreed to make DVD, as demonstration materials for on-the-job education or training courses for new employees.

VI. Appraisal stage (September, 1- December, 31)

A. Set up aerosol therapy procedure:

After project team discussion with experts, and policy announced, in August and September meetings held twice a ward, a total of 41 people participated in, attendance rate of 93.2%, announced the aerosol therapy procedure post revise.

B. Organize in-service training courses

Respectively in May, June, July, August, held two sessions each month job training, every time one hour, assign experienced nurses, paediatric nurse practitioners, and paediatric nursing teachers, each theme is "characteristic of physical and mental development of children," "therapeutic play application of hospitalized children", "how to communicate with children through play", "how to

combine therapeutic play in nursing innovation." There were twenty-two nurses completed four hours of education courses.

C. Manufacture action play cart and content

After finished action play cart, each time children couldn't complete the treatment, nurses push the action play cart to bed unit, first with the primary caregiver, children build therapeutic relationships, then use the play tools such as the three little pigs, tennis map, toy swingin, watercolor painting blowing, blowing the paper windmill, make children unwittingly completed aerosol therapy, and upon completion of the treatment given stickers to encourage.

D. Make teaching folder and demonstration teaching DVD

After finished action play cart and teaching folder and demonstration teaching DVD, colleagues read the information and discuss usually, looking forward to develop more features of the play. Meanwhile on October 20, November 21, December 27 to make revised to add new search literature.

Appraisal results

As a result of job education and training, development of aerosol therapy process, providing nurses guidance hospitalized children accepted aerosol therapy, and made information into teaching materials and regularly updated, project team survey the persons of aerosol therapy during November, 1-14, the result indicated that the preschool children aerosol therapy completion rates, from 38.9% (37 numbers) before project improved, upgraded to 92.4% (89 numbers) after improvement project, to achieve project purpose and remarkable results (Figure 1).

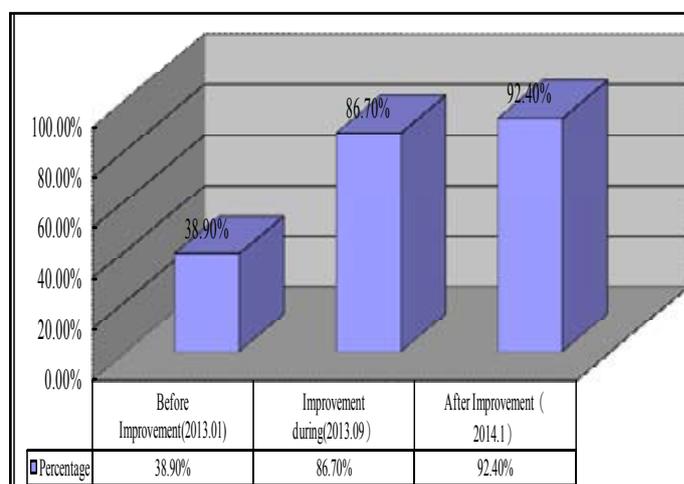


Fig.1: Project improvement before and after comparison

VII. Conclusion

The purpose of this project is to arises preschool children aerosol therapy completion rates, through survey the reasons for low completion rate, draw up strategies, by the way of education training, provide actually therapeutic play teaching, establish teaching folder and demonstration teaching DVD, innovative action play car building, therapeutic play tools setting, enable children complete treatment in play, help promote therapeutic relationship established between primary caregiver and children, increased their satisfaction.

Resistance from the early implementation of the project, units

are mostly junior nurses, were unfamiliar with therapeutic play process, and work busy. Through project team a serious education, actually involved manufacture, encourage colleagues' co-creation and innovation, search literature together, making lecture notes, conceived action play cart, building therapeutic play content, search related tools, finally successful completion project. Many colleagues have expressed to improve processes through project; more understand the realities of nursing and clinical implications of innovation. During the process project, limitation of space design couldn't have a play room, creative action play cart instead, in turn lead to many families donate without toys and story books for therapeutic play. Finally, made some recommendations:

1. Therapeutic play resources integration: develop children's therapeutic play plan, provide child-friendly and atmosphere environment of play, assist hospitalized children and their families to adapt, learn care skills, and improve the quality of health management.
2. Empirical research: currently provided for hospitalized children over the lack of a comprehensive literature study the therapeutic play, mostly as case study, depth empirical research related to therapeutic play for delay.
3. Play equipment and materials budget: Health managers can enlist equipment and materials budget, encouraged staffs to create, abundant play resources.

In past, often face unwilling cooperate with the treatment, the caregiver put the handheld nebulizer aside, conduct after children asleep. Not only affects the timeliness, also treatment effect greatly reduced. Most parents of children said the way through play was a good measure to help children receive and finish treatment. If extended to other paediatric units, such as paediatric clinic, or other medical institution without playing room, believes can be more helpful to children's health management.

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