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THE EFFECT OF AUDIOVISUAL DISTRACTION ON THE ANXIETY OF PRESCHOOL AGE CHILDREN RECEIVING NEBULIZER THERAPY IN BHAYANGKARA BRIMOB HOSPITAL

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Abstract

Background: Anxiety felt during inhalation procedures can affect a child's psychosocial development and reduce the child's health status. The anxiety experienced by children who are given a nebulizer is indicated by signs and symptoms, namely the child becomes aggressive, angry, rebellious, does not know the staff and the hospital environment, which causes not all of the nebulizer medication given to be inhaled, thus affecting the dose of the drug and the healing process. Research Objective: To determine the effect of audiovisual distraction on anxiety in pre-school children who received nebulizer therapy at Bhayangkara Brimob Hospital Research Method: This research is quantitative research with the type of research used in this research being quasi experimental with a pre and post test research design without control group design. The research sample consisted of 62 respondents. The instrument in this research was to use a visual facial anxiety scale (VFAS) observation questionnaire sheet. Statistical analysis uses parametric analysis with Paired T-Test. Research Results: The average value of anxiety level before audiovisual distraction was 4.290 and after audiovisual distraction was 1.725. The results of the research revealed the value of Asymp. Sig. (2-tailed) of 0.000 is smaller than <0.05 Conclusions and Suggestions: There is an influence of audiovisual distraction on the anxiety of pre-school aged children who received nebulizer therapy at Bhayangkara Brimob Hospital. Suggestions for hospital management to add TV facilities by showing cartoon films or children's songs so that children feel happy and reduce anxiety during nebulizer therapy

Keywords: Audiovisual, Anxiety, Distraction, Nebulizer

Introduction

Respiratory tract infection is a disease that causes high morbidity and mortality in children because the body's defenses are still low. Respiratory tract infections based on the area of infection are divided into upper respiratory tract infections and lower respiratory tract infections. Upper respiratory tract infections include rhinitis, sinusitis, pharyngitis, laryngitis, epiglottitis, tonsillitis, otitis. Meanwhile, lower respiratory tract infections include infections of the bronchi and alveoli such as bronchitis, bronchiolitis, pneumonia (Kemkes RI, 2012). Upper respiratory tract infections are the most common and require good treatment because the dangerous complications include otitis, sinusitis and pharyngitis. The causes of respiratory tract infections are various organisms, most of which are viral and bacterial infections (Kemkes RI, 2012).

Based on the area of infection, it is divided into upper respiratory tract infections and lower respiratory tract infections. The causes of respiratory tract infections are generally due to the presence of various microorganisms, but the most common are viral and bacterial infections (Tarigan, 2013).

Acute respiratory tract infection (ISPA) is an upper or lower respiratory tract disease, usually

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contagious, which can cause a wide spectrum of disease ranging from asymptomatic disease or mild infection to severe and deadly disease, depending on the pathogen, environmental factors, and environmental factors. host. However, ISPA is often defined as an acute respiratory disease caused by an infectious agent that is transmitted from human to human (Masriadi, 2017).

ISPA that occurs in the upper respiratory tract is often found as common cold, influenza, sinusitis, tonsillitis, and can even spread to cause otitis media. Meanwhile, ISPA that attacks the lower respiratory tract is bronchitis and pneumonia (Masriadi, 2017).

Upper respiratory tract infections (URTI) are a group of diseases that attack the throat, pharynx, larynx and bronchi. Colds are the most common type of URTI. Other types of upper respiratory tract infections include sinusitis, pharyngitis, laryngitis and tonsillitis. Lower respiratory tract infections (LRTI) are a group of diseases that affect the respiratory system below the throat. Any infection that affects the lungs and lower airways is considered an LRTI. Pneumonia, bronchitis, and bronchiolitis are the most common forms of lower respiratory tract infections (Masriadi, 2017).

Data from the Ministry of Health shows that non-pneumonia ISPA cases in the Jakarta, Bogor, Depok and Bekasi (Jabodetabek) areas from 29 August to 6 September 2023 reached 90,546 cases. The increase in cases began to occur at the beginning of this week. On September 3 2023, 4,759 daily cases were reported. That number rose significantly to 11,116 cases on September 4 and increased again to 16,074 cases on September 5. The Director of Prevention and Control of Infectious Diseases at the Ministry of Health said that of the 90,546 ISPA cases in the last week, 55 percent occurred in those of productive age. Meanwhile, in other age groups it occurs in children under five (14 percent), children (14 percent), and elderly people (8 percent) (Data Kemenkes RI, 2023). Bhayangkara Brimob Hospital, it is known that the number of ISPA sufferers in the last 3 years, namely in 2021 there were 816 patients, in 2022 there were 1,559 patients and in 2023 there were 1,410 patients.

In acute respiratory infections there is inflammation of the mucous membrane around the throat and there are yellow or white attached spots. This results in narrowing or blockage of the respiratory tract. Ineffective airway clearance is the inability to clear secretions or obstruction from the respiratory tract to maintain a clear airway. The characteristic limits of ineffective airway clearance are ineffective coughing, decreased breath sounds, additional breath sounds (crackles, rales, crackles wheezing), excessive amounts of sputum, changes in respiratory rhythm, restless cyanosis (NANDA, 2017).

The impact of this buildup of secretions can disrupt the airway, and can cause symptoms in the form of shortness of breath in children. If the bacterial infection is not treated, there can be complications in the form of cyanosis due to shortness of breath due to excessive accumulation of secretions which requires treatment, in severe cases and babies or children usually experience heart failure which causes death (Kusuma, 2015).

Therapy for children suffering from ARI consists of main therapy and additional therapy. The main therapy includes antibiotic therapy and additional therapy is symptomatic therapy such as analgesic therapy, antipyretic therapy, bronchodilator inhalation therapy and mucolytics (Meriyani, Megawati and Udayani, 2016). Giving inhalation therapy is more effective for children with bronchopneumonia because giving inhalation therapy aims to provide a bronchodilation effect or widen the lumen of the bronchi, the phlegm becomes thin making it easier to expel, reduces bronchial hyperactivity and can overcome infections (Astuti, Marhamah and Diniyah, 2019).

The phenomenon that occurs in hospitals is that inhalation therapy using a nebulizer for children is not carried out in accordance with the goals of therapy, such as the drug not running out and the administration time being long, when undergoing inhalation therapy using a nebulizer the child cries and rebels. Obstacles were found because children felt anxious, uncomfortable and cried when receiving inhalation therapy using a nebulizer, thus disrupting the process of providing inhalation therapy using a nebulizer (Iqomh, 2016).

The anxiety experienced by children who are given a nebulizer is indicated by signs and

symptoms, namely the child becomes aggressive, angry, rebellious, does not know the staff and the hospital environment, which causes not all of the nebulizer medication given to be inhaled, thus affecting the drug dose and the healing process (Rusdi, Alfiyanti and Nurullita, 2012).

There are several ways that can be done to reduce anxiety in patients, one of which is distraction. The purpose of using distraction techniques in nursing interventions is to divert or distance the client's attention from something that is being faced, for example discomfort. The way to do this is by focusing attention on something the child likes with audio-visuals, for example watching cartoons. Cartoon interludes are an easy and effective way to reduce anxiety in pediatric patients before they undergo treatment. Watching cartoons can reduce anxiety because it focuses pediatric patients on something other than the discomfort they feel (Lee *et al.*, 2012).

Based on Habiba's research, therapy in children with bronchopneumonia aims to provide a bronchodilation effect or widen the bronchial lumen. Children often show uncooperative behavior when given inhalation therapy using a nebilizer. Providing distraction by watching cartoons can reduce anxiety because it focuses pediatric patients on something other than the discomfort they feel. Data were analyzed using the paired t test. Anxiety before being given the cartoon film video distraction was 70% in the moderate anxiety category and after being given the cartoon film video distraction was 56.7% in the mild anxiety category. The results of the analysis obtained p=0.000, which means that there was an effect of cartoon video distraction on anxiety in pediatric patients with bronchopneumonia who underwent inhalation therapy using a nebulizer (Habiba, 2021).

Based on a preliminary study at Bhayangkara Brimob Hospital, it is known from the results of observations of the anxiety levels of pre-school aged children who received nebulizer therapy based on visual facial anxiety scale (VFAS) observations of 5 toddlers who received nebulizer therapy. It is known that of the 5 toddlers who experienced high anxiety, 1 patient, 2 patients had moderately high anxiety, and 2 patients had mild anxiety.

From the description above, the author is interested in researching the effect of audiovisual distraction on the anxiety of pre-school age children who receive nebulizer therapy at Bhayangkara Brimob Hospital.

Methods

Research Design

This research is a quantitative research with the type of research used in this research being quasi experimental with a pre and post test research design without control group design because in this research knowledge will be measured before being given treatment and after being given treatment without a control group.

Population and Sample

The population in this study was 160 pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital in the last 3 months. A sample is a small portion of the population taken to represent the population in research. Slovin's formula in sample calculations So the research sample is 62 respondents based on the inclusion and exclusion criteria.

Research Instrument

The instrument in this research was to use a visual facial anxiety scale (VFAS) observation questionnaire sheet.

Data analysis

The research uses univariate analysis to describe each variable studied. The normality test to determine statistical analysis uses parametric analysis with the Paired T-Test or non-parametric statistical analysis with the Wilcoxon test. Bivariate analysis is analysis carried out with more than two variables. Before carrying out bivariate analysis, a normality test was carried out first. The normality test determines statistical analysis using parametric analysis with the Paired T-Test or non-parametric statistical analysis with the Wilcoxon test

Results

a. Respondent Characteristics

Table 1. Respondent Characteristics

Characteristics	Frequency	Categories	
		F	%
Usia	4 tahun	29	46,8
	5 tahun	27	43,5
	6 tahun	6	9,7
Jenis Kelamin	Laki-Laki	39	62,9
	Perempuan	23	37,1

Based on table 1, it is known that the description of the characteristics of pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital is that the highest frequency is 4 years old with 29 children (46.8%) and male gender with the highest frequency is 39 children or 62.9 %.

b. Distribution of anxiety frequency before and after audiovisual distraction in pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital

Table 2. Distribution of anxiety frequency before and after audiovisual distraction in pre-school aged children who received nebulizer therapy at Bhayangkara Brimob Hospital

Anxiety	N	Mean	Std. Deviation	Minimum	Maximum
Before	62	4,290	1,383	2	1
After	62	1,725	0,833	7	4

Based on table 2, based on the results of the assessment of the frequency distribution of anxiety before and after audiovisual distraction in pre-school children who received nebulizer therapy at Bhayangkara Brimob Hospital, it is known that the average value of anxiety level before audiovisual distraction was 4.290 and after audiovisual distraction was 1.725. The std deviation before audiovisual distraction was 1.383 and after audiovisual distraction was 0.833, the minimum value before audiovisual distraction was 2 and after audiovisual distraction was 1 and the maximum value before audiovisual distraction was 7 and after audiovisual distraction was 4.

c. The Effect of Audiovisual Distraction on the Anxiety of Pre-School Age Children Receiving Nebulizer Therapy at Bhayangkara Brimob Hospital

Table 3. The Effect of Audiovisual Distraction on Anxiety in Pre-School Age Children Receiving Nebulizer Therapy at Bhayangkara Brimob Hospital

Variable	N	Z	Asymp. Sig. (2-tailed)
Anxiety	62	-6,948	0,000

Based on Table 3, the results of the Wilcoxon test are known to determine the effect of audiovisual distraction on anxiety in pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital. The results of the research revealed the value of Asymp. Sig. (2-tailed) of 0.000 is smaller than <0.05, so it can be concluded that there is an influence of audiovisual distraction on the anxiety of pre-school aged children who receive nebulizer therapy at Bhayangkara Brimob Hospital.

Discussion

a. Description of Respondent Characteristics Based on Age and Gender

Based on the research results, it is known that the description of the characteristics of pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital was that the highest frequency was 4 years old with 29 children (46.8%) and male gender with the highest frequency was 39 children or 62.9 %.

In line with Roslita's research, it is known that the age range for children who receive inhalation therapy is 1-4 years. Children who experienced respiratory problems and received inhalation medication were housed in the RSCM pediatric infection ward in 2018. In 2018, data was obtained that most of the children were male (60%). In this research, it was also discovered that children were not yet in school (Roslita, 2021).

According to the theory, there are several factors that influence anxiety, namely age, gender, history of previous treatment. Preschool children express their emotions freely, often showing anger. At this age, we are still afraid of new things, this usually causes anxiety. Children are not used to controlling their emotions, so this can influence the severity, moderateness, or mildness of hospitalization anxiety in children. Thus, researchers are of the opinion that as children get older, they have more experience. It is also known that girls' anxiety is higher than boys (Kuswanto, 2019).

According to researchers' assumptions, school-aged children experience anxiety more often than not, they cry or feel depressed. Anxious boys are more likely to look afraid and immediately cry on the edge, while girls will feel more gloomy and have a frightened facial expression, which will cause severe anxiety.

b. Distribution of anxiety frequency before and after audiovisual distraction in pre-school aged children who received nebulizer therapy at Bhayangkara Brimob Hospital

Based on the results of the assessment of the frequency distribution of anxiety before and after audiovisual distraction in pre-school children who received nebulizer therapy at Bhayangkara Brimob Hospital, it is known that the average value of anxiety level before audiovisual distraction was 4.290 and after audiovisual distraction was 1.725. The std deviation before audiovisual distraction was 1.383 and after audiovisual distraction was 0.833, the minimum value before

audiovisual distraction was 2 and after audiovisual distraction was 1 and the maximum value before audiovisual distraction was 7 and after audiovisual distraction was 4.

In line with previous research by Habiba, anxiety in pediatric patients in bronchopneumonia patients before being given cartoon film video distraction when given inhalation therapy using a nebulizer was the most frequent, namely in the moderate anxiety category amounting to 21 people (70%) whereas after being given cartoon film video distraction when given therapy The most frequent inhalations using a nebulizer were in the mild anxiety category, amounting to 17 people (56.7%) (Habiba, 2021)

In theory, anxiety is a natural emotional disorder characterized by deep feelings of fear or worry. (Sadock, Benjamin, Sadock, 2019) to reduce anxiety, distraction techniques are needed where distraction is a method for eliminating anxiety by diverting attention to other things so that Individuals will forget their anxiety and can even increase their tolerance for the anxiety they experience. Pleasing sensory stimuli cause the release of endorphins which can inhibit anxious stimuli resulting in fewer anxious stimuli being transmitted to the brain (Novita, 2013)

According to researchers' assumptions, the problem of fear and anxiety experienced by children, especially pre-school aged children, when administering inhalation medication can be caused by the child feeling afraid of the sound made by the inhalation device (jet nebulizer) and also the hood used by the child during inhalation which makes the child feel suffocated. . The anxiety felt by children during medical procedures such as inhalation therapy needs to be treated. The child becomes afraid of the next procedure and refuses to undergo the procedure. The anxiety felt during the procedure also affects the child's psychosocial development and reduces the child's health status.

c. The Effect of Audiovisual Distraction on the Anxiety of Pre-School Age Children Receiving Nebulizer Therapy at Bhayangkara Brimob Hospital

Based on the research results, the Wilcoxon test results were found to determine the effect of audiovisual distraction on the anxiety of pre-school age children who received nebulizer therapy at Bhayangkara Brimob Hospital. The results of the research revealed the value of Asymp. Sig. (2-tailed) of 0.000 is smaller than <0.05, so it can be concluded that there is an influence of audiovisual distraction on the anxiety of pre-school aged children who receive nebulizer therapy at Bhayangkara Brimob Hospital.

In line with the results of Habiba's research, it is known that the results of the analysis obtained p=0.000, which means that there is an effect of cartoon video distraction on anxiety in pediatric patients with bronchopneumonia who underwent inhalation therapy using a nebulizer (Habiba, 2021). Is also in line with Rosita's research that the results of the innovation project show that there is a significant difference between the distress scores of children in the group with run care and the group that received audiovisual distraction intervention (p=0.001). Conclusion: It is hoped that audiovisual distraction intervention can be applied to children with oxygen supply disorders who experience distress during inhalation therapy (Roslita, 2021).

Audiovisual distraction is a diversion of attention using the five senses of sight, including watching matches, watching television and seeing the scenery of watching animated cartoons. Audiovisual distractions in animated cartoon films contain elements of images, colors and stories so that children like watching animated cartoons. This means that pain impulses due to injury do not flow through the spine, messages do not reach the brain so the child does not feel pain (Sarfika, Yanti and Winda, 2017).

The anxiety experienced by children who are given a nebulizer is indicated by signs and symptoms, namely the child becomes aggressive, angry, rebellious, does not know the staff and the hospital environment, which causes not all of the nebulizer medication given to be inhaled,

thus affecting the dose of the drug and the healing process (Rusdi, Alfiyanti and Nurullita, 2012). Several ways that can be done to reduce anxiety in patients, one of which is distraction.

The purpose of using distraction techniques in nursing interventions is to divert or distance the client's attention from something that is being faced, for example discomfort. The way to do this is by focusing attention on something the child likes, for example watching cartoons. Cartoon interludes are an easy and effective way to reduce anxiety in pediatric patients before they undergo treatment. Watching cartoons can reduce anxiety because it focuses pediatric patients on something other than the discomfort they feel (Lee *et al.*, 2012).

According to Iqbal, Lilis and Joko, not all anxiety can be said to be pathological, there is also anxiety that is normal. The factors that influence anxiety levels are internal factors consisting of age, experience and physical assets. External factors, namely knowledge, education, finances, family, medicine and socio-cultural support (Mubarak, Indrawati and Susanto, 2015) A child's anxiety can also be influenced by age so that the child has no previous experience and will feel excessive anxiety

According to the researchers' assumption, before audiovisual distraction was carried out, pre-school age children (4-6 years) who underwent respiratory tract inspection received nebulizer therapy experienced high levels of anxiety, whereas after audiovisual distraction, anxiety decreased. Therefore, audiovisual distraction techniques in nursing interventions can divert or distance the child's attention from something that is being faced so that the child feels comfortable and calm.

Based on this research, it is known that the role of nurses is needed in reducing anxiety by diverting children's attention with things that make them interesting, such as children watching cartoons or children's music. The advantage of using audiovisual distraction techniques to reduce anxiety is that this technique can make children pay attention to watching cartoons or children's songs so that they forget about the nebulizer therapy that is being carried out.

Implication and Limitations

It is difficult for researchers to convince parents, because there are parents whose principle is that children should not watch on smartphones. For this reason, researchers explained to respondents that audiovisual distraction by watching on a smartphone is safe and very useful when children experience anxiety during the nebulizer so that children do not experience severe anxiety which impacts their health. Children are difficult to calm during research, making it difficult for children to intervene. Initially the patient was calm and afraid of audiovisual distraction, but after a more intensive approach the patient was willing and began to enjoy audiovisual distraction therapy. Measurement of anxiety uses the visual facial anxiety scale (VFAS) so that it is completely the result of the researcher's observations. VAS measurements can be seen directly from the child's facial expression.

Conclusion

Based on the research results and discussions presented by the researcher, the following conclusions can be drawn:

a. The frequency distribution of anxiety before audiovisual distraction was carried out in pre-school aged children who received nebulizer therapy at Bhayangkara Brimob Hospital showed that the average value of anxiety level before audiovisual distraction was carried out was 4.290.
b. The frequency distribution of anxiety after audiovisual distraction was carried out in pre-school children who received nebulizer therapy at Bhayangkara Brimob Hospital showed that the average value of anxiety level after audiovisual distraction was 1.725.

c. There is an effect of audiovisual distraction on the anxiety of pre-school aged children who received nebulizer therapy at Bhayangkara Brimob Hospital with a p value of 0.000 which is less than <0.05.

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1. Author Contribution

Author 1 and Author 2 contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

2. Conflict of interest

The results of this research can be used as an additional literature for the development of nursing science, and to meet the requirements of obtaining Bachelor of Nursing Degree.

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