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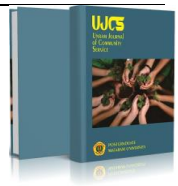

SAPA (School Health Program) and Breathing Exercises for Children at SDN 06 Pontianak Timur

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Abstract: Health education and socialization about preventing Acute Respiratory Tract Infection (ARTI) can increase public knowledge and awareness of the importance of clean and healthy living behavior. This activity helps the community understand how to prevent ARTI through simple actions such as washing hands, covering the mouth when coughing or sneezing, and maintaining environmental cleanliness. Furthermore, this community service can also provide other benefits, such as Increased knowledge. Through counseling and socialization, the community obtains information about ARTI, its causes, symptoms, and how to prevent it. Increased awareness, the community becomes more aware of the importance of maintaining their own health and the surrounding environment to prevent ARTI. When increased clean and healthy living behavior, the community begins to implement clean and healthy living behavior in everyday life, such as washing hands, covering the mouth when coughing or sneezing, and maintaining environmental cleanliness. Reducing the incidence of ARTI, with better knowledge and awareness, the community can reduce the risk of ARTI in themselves and their families. Community Empowerment, Through community service activities, the community is actively involved in efforts to prevent ARTI, so that they feel responsible for public health.

Keywords: Breathing Gymnastics, Children, Greeting ARTI.

Introduction

Acute Respiratory Tract Infection (ARTI) is a common illness in children. WHO estimates the incidence of ARTI in developing countries with an under-five mortality rate above 40 per 1000 live births to be 15-20% per year in the under-five age group. According to the WHO, approximately 13 million children under five die worldwide each year, with the majority of these deaths occurring in developing countries, where ARTI is one of the leading causes of death, killing approximately 4 million children under five each year (Afdhal et al., 2023; Salamat, 2024).

In Indonesia, Acute Respiratory Tract Infection (ARTI) consistently ranks as the leading cause of infant mortality (Ernawati et al., 2022). As many as 36.4% of infant deaths in 2008 (32.1% in 2009, 18.2% in 2010, and 38.8% in 2011) were caused by ARTI. Additionally, ARTI is often among the top ten diseases with the highest number of patients in hospitals. Based on data from the 2009 P2 program for ARTI, the coverage of ARTI patients exceeded the target of 13.4%, with 18,749 patients identified. The mortality survey conducted by the Sub-Directorate of ARTI in 2010 placed ARTI as the leading cause of infant mortality in Indonesia, accounting for 22.30% of all deaths in children under five (Hayat et al., 2022; Yusran et al., 2024).

The Head of the West Kalimantan Provincial Health Office, Erna Yulianti, stated that there is a decreasing trend in cases of Acute Respiratory Infection (ARI) in West Kalimantan Province caused by smoke. Reported cases of Acute Respiratory Tract Infection (ARTI) in West Kalimantan in week 38 were 4,429, which is a decrease from week 37, with 6,129 reported cases. Therefore, not all reported ARTI cases are due to smoke. However, there are also other diseases related to respiratory infections. As for the cases of ARTI by age, they are distributed across districts and cities in West Kalimantan. Among them, in Pontianak City, there were 471 cases in the 0-under-5 age group, 339 cases in the 5-

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9 age group, 703 cases in the 9-60 age group, and 167 cases in the 60 and over age group (Dinkes Pontianak, 2023).

Based on the data above, the service team implemented health education on ARTI with breathing exercises. This was based on research showing the incidence of upper Acute Respiratory Tract Infection (ARTI) in the intervention and control groups after slow deep breathing exercises were administered. It was found that out of 30 respondents in the intervention group, almost all (87%) had a normal respiratory rate (Dewy, 2020; Nur et al., 2021).

Method

This service activity will be held on February 7, 2025, at SDN 06 Pontianak Timur, Saigon District, Pontianak City. A total of 114 participants attended this service activity. In this service activity, the methods used were material presentations related to dengue fever, the SAPA ISPA program using PowerPoint media, discussions, and demonstrations of breathing exercises. The demonstration was conducted live and through video presentations of the manufacturing process. This counselling activity was interspersed with icebreakers. For data analysis, primary data from the questionnaire results before and after the educational intervention will be used (Notoatmodjo, 2014).

Result and Discussion

This service activity aims to increase knowledge about preventing upper Acute Respiratory Tract Infection (ARTI) or ISPA (in Indonesian) during the dry season in children at SDN 06 Pontianak Timur, which will be held on Friday, February 7, 2025, at SDN 06 Pontianak Timur, Saigon District, Pontianak City.

The stages of this service activity are as follows: The pre-interaction stage, which involves introducing the service members and conveying the objectives of the activities to be carried out. Followed by a speech from the Principal, the Head of the Service Implementation Committee, Breathing Exercises, and a Quiz.

Figure 1. Delivery of SAPA ISPA Material

Next is the interaction stage. During this stage, the service team members administered a pre-test, followed by the delivery of material using a presentation method with PowerPoint and a question-and-answer session led by the presenter. The material presented during the presentation session to the children of SDN 06 Pontianak Timur included: the definition of ARTI, the causes of ARTI, the symptoms of ARTI, and the prevention of ARTI (Swasti & Natalia, 2024).

ISPA, or Acute Respiratory Tract Infection, is an acute infection that attacks the respiratory system, affecting both the upper and lower respiratory tracts. The following are some diseases that are classified as ISPA, including: Lower respiratory tract infection. From bronchitis, pneumonia, tuberculosis, bacterial infections, and fungal infections. Upper respiratory tract infections. From the common cold, sinus infections, tonsillitis, sore throat, pharyngitis, and COVID-19 (Dewi & Oktavia, 2021).

ISPA is a disease that can affect components of the respiratory tract, especially the upper part, including the nose, sinuses, pharynx, and larynx. Anyone can experience this respiratory disorder, but it is usually very contagious among children or the elderly. The cause of ARTI is a viral or bacterial infection in the respiratory tract, both upper and lower (Buton et al., 2023). Here are some common causes of ARTI:

1. Viral Infection
   The most common cause of ARTI is viral infection, especially in the upper respiratory tract. Some viruses that can trigger ARTI include:
   a) Rhinovirus, which can cause the common cold,
   b) Adenovirus, which can cause the common cold, bronchitis, and pneumonia,
   c) Influenza virus, which can cause the flu,
   d) Parainfluenza virus, which can cause croup (a respiratory infection in children), and
   e) Coronavirus, the cause of COVID-19 infection.
2. Bacterial Infection
   Besides viruses, bacteria can also cause ARTI. Bacteria that cause ARTI include:
   a) Streptococcus, which can cause pharyngitis, impetigo, rheumatic fever, sepsis, and meningitis,
   b) Staphylococcus aureus, which can cause pneumonia,
   c) Haemophilus, which can cause meningitis and epiglottitis,
   d) Klebsiella pneumoniae, which can cause pneumonia and meningitis,
   e) Mycoplasma pneumoniae, which can cause severe pneumonia, and
   f) Chlamydia, which can cause chlamydia.

The transmission of viruses or bacteria that cause Acute Respiratory Tract Infection (ARTI) occurs through contact with saliva droplets released by infected

individuals when they cough, sneeze, or speak, causing these microorganisms to spread through the air (Pribadi et al., 2021).

Risk Factors for Respiratory Tract

Infections several factors can increase a person's risk of developing Acute Respiratory Tract Infection, including:

1. Young children and the elderly
   Children under five years old and the elderly are more susceptible to infection due to weaker immune systems. This age group also frequently interacts in crowded places like schools, which leads to faster infection spread. Children born prematurely or with a history of congenital heart disease or lung disease are also more susceptible to respiratory tract infections. Some researchers have also identified several factors that can increase the risk of ARTI in toddlers. For example, nutritional status, immunization, exclusive breastfeeding, exposure to cigarette smoke during pregnancy, housing density, and the use of fuel for cooking (Amiruddin et al., 2022; Widianti, 2020).
2. Individuals with weak immune systems
   A weak immune system tends to have difficulty fighting infections, including Acute Respiratory Tract Infection. Examples of people with weak immune systems include those who have had organ transplants, have leukemia, or have HIV/AIDS.
3. People with heart and lung disorders
   People with a history of heart disease or lung disorders have a higher risk of contracting Acute Respiratory Tract Infection. For example, those with chronic obstructive pulmonary disease, progressive heart failure, or asthma (Llarena, 2022).
4. Active and passive smokers
   Smoking can damage lungs and respiratory function, making it easier to contract Acute Respiratory Tract Infection and slowing down the healing process. This condition is also common in passive smokers, or people who frequently inhale cigarette smoke.
5. Exposure to air pollution
   Frequent exposure to air pollution also increases the risk of Acute Respiratory Tract Infection. Toxic substances from pollution can be inhaled and irritate the respiratory tract.

Symptoms of ARTI

Symptoms of ARTI generally last between one and two weeks. In most cases, sufferers will experience a reduction in symptoms after the first week. The symptoms of ARTI are coughing, which is very common in those who have it. Despite this, the symptoms or signs of upper and lower respiratory tract infections can differ. Here are the upper respiratory tract infection symptoms that may appear:

a) Coughing and sneezing with a stuffy nose,
b) Runny nose,
c) Fever and headache,
d) Sore throat,
e) Wheezing or shortness of breath, and
f) Enlarged lymph nodes.

Meanwhile, symptoms of lower respiratory tract infections can cause a productive cough, shortness of breath, and fever (Wahyudi & Zaman, 2022).

Research on ARTI

A study published in the journal BMC Pediatrics evaluated the prevalence and risk factors associated with acute respiratory infections in children under five years of age at a hospital in Ethiopia. In this study, it was found that the prevalence of acute respiratory infections in children under five years of age is 27.3 percent. Significant risk factors include the child's age being under 12 months, the mother's age being between 16 and 33 years, the mother's lack of awareness about handwashing, living in a rural area, and the child having no history of meningitis. This study shows that acute respiratory infections are a common health problem in children under five years old, with the child's age, mother's age, place of residence, and mother's hand hygiene being important factors influencing the occurrence (Niku, 2021).

Figure 2. Breathing Exercise Counselling Event

During the delivery of the material and breathing exercises, so that the children of SDN 06 Pontianak Timur can apply them in their daily lives. After the material was presented and demonstrated, a question-and-answer session followed. The speaker asked the Service Team questions about the material that had already been presented. This was followed by icebreaking activities, including breathing exercises. The event continued with the students of SDN 06 Pontianak Timur taking a post-test to determine whether the material and demonstrations that had been presented were understood by the students of SDN 06 Pontianak Timur.

Figure 3. Breathing Exercises

Figure 4. Distribution of souvenirs to SDN 06 Pontianak Timur students for the quiz given by the speaker

Figure 5. Distribution of souvenirs to SDN 06 Pontianak by the speaker

Figure 6. Group Photo

Based on the results of the pre-test and post-test, there was an increase in the knowledge level of male and female students at SDN 06 Pontianak Timur regarding ARI after the counselling. Based on the level of knowledge before the delivery of the material, which was 0.00%, and after, which was 100%. This is due to the success of the service team in delivering the material, resulting in an increase in the knowledge level of students at SDN 06 Pontianak Timur regarding ARI.

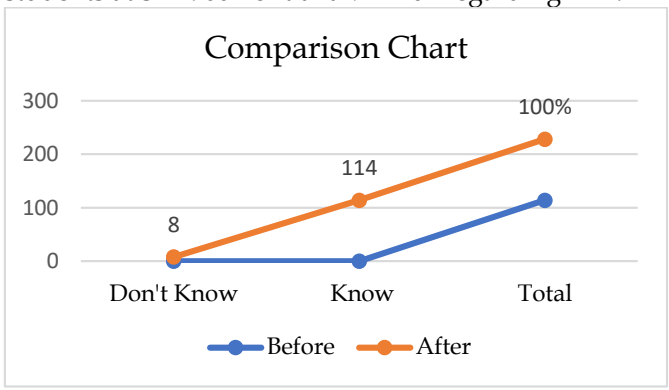

Figure 7. Knowledge Level About ARI in Children at SDN 06 Pontianak Timur

Conclusion

This activity can increase the knowledge and understanding of students in East Pontianak, Saigon District, Pontianak City, and Breathing Exercises so that they can be applied in daily life.

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