Clean and Healthy Living Behavior to Prevent Acute Respiratory Infection among Farmer's Families

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Abstract:

Acute Respiratory Infection (ARI) cases in Indonesia and abroad are still a significant health problem. In Indonesia, ARI ranks first as a cause of death in infants and toddlers, with a mortality rate of around 20-30%. ARI can cause severe breathing difficulties, such as pneumonia, and ARI is also one of the leading causes of death in children under the age of five in developing countries. This study aims to analyze how to improve clean and healthy living behavior to prevent ARI in farmer families. The research method used was a literature review conducted through Google Scholar, PubMed, and Science Direct in the 2019-2024 range. The keywords used in the search for articles were "ARI, Respiratory Disorders," "Unhealthy Living Behavior, Reduced Working Period, Well Ventilated House," and "Farmer, Family". Researchers found ten studies that met the inclusion criteria in the review. Prevention of respiratory tract infections (URI) in farming families involves practicing healthy behaviors, such as washing hands with soap, maintaining environmental hygiene, and avoiding exposure to cigarette smoke. The articles highlight the importance of understanding knowledge and adherence to clean and healthy living behaviors (PHBS) in reducing the risk of ARI. However, therapeutic communication is also essential, through providing clear information and emotional support to change unhealthy behaviors. The article still has obstacles, such as the underutilization of sanitation clinics, which calls for a more intensive and focused therapeutic communication approach to overcome these obstacles. Factors that increase the risk of Acute Respiratory Infection (ARI) include cooking with biogas inside the house, high housing density leading to a lack of sanitation around the house, poor ventilation, heavy workload for farmers, which increases exposure to dust, smoke and toxic gases, intense smoking, lack of access or awareness of the benefits of local sanitation clinics, and lack of awareness of the importance of maintaining environmental sanitation. Nurses are expected to conduct community counseling to improve understanding of clean and healthy behavior in ARI prevention practices among farmers.

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INTRODUCTION

Acute Respiratory Infection (ARI) is a disease that affects one or more of the human respiratory tracts, such as the nose to the alveoli. It involves related organs such as the sinuses, middle ear cavity, and pleura (Vanessa et al., 2023). This infection can be experienced by anyone, especially the elderly and toddlers. Common symptoms of this disease include difficulty breathing,

coughing, fever, sore throat, earache, runny nose, muscle pain, and sneezing (Wardana et al., 2020; Kurniyawan et al., 2023).

The cause of ARI is a virus or bacteria that often occurs within 14 days or more. Some viruses that often cause ARI are influenza, rhinovirus, adenovirus, respiratory syncytial, and parainfluenza. Although viruses often cause ARI, several types of bacteria can cause ARI: streptococcus, Haemophilus, staphylococcus aureus, corynebacterium diphtheria, mycoplasma pneumonia, and chlamydia. In addition, the cause is also due to factors such as individual behavior, poor living habits, and environmental conditions. Individual factors such as smoking habits in the family environment can endanger family members, especially very dangerous for toddlers who act as passive smokers. In addition, factors from the environment, such as dust exposure, home ventilation conditions, type of stove or fuel used when cooking, and the habit of parents bringing their children when cooking. In toddlers, nutritional status and immunization factors also cause the incidence of ARI; this includes breastfeeding, zinc and A vitamin intake, and TT injections in mothers (Fadila & Siyam, 2022).

The way this acute respiratory infection is transmitted is through contact with the saliva of the patient or infected person. From this saliva, the virus or bacteria will spread through the air and then enter the nose or mouth of another person. In addition, viruses or bacteria can also spread through touching contaminated objects or shaking hands with infected people. There are age groups that are susceptible to this disease, namely children, the elderly, people with heart and lung disorders, and active smokers. A person with low immunity will be vulnerable to exposure to acute respiratory infections. Especially in agricultural environments with community conditions that lack education about how ARI is transmitted and behaviors that can cause ARI incidence makes farming families more at risk of ARI (Meihindra et al., 2021).

One way to overcome the incidence of ARI is to implement Clean and Healthy Living Behavior. Clean and Healthy Living Behavior is a health action carried out consciously by individuals in the family and the surrounding environment (Meihindra et al., 2021). This activity seeks to reduce the spread of the virus because implementing Clean and Healthy Living Behavior will build good habits, such as regularly washing hands with soap so that virus transmission can be prevented. This allows individuals to play an active role in maintaining their health and helping each other's health, so the incidence of ARI is expected to decrease (Kautsar et al., 2021; Kurniyawan et al., 2024).

In the agricultural environment, compliance is still needed to maintain healthy living behaviors. A farmer has the right to choose a job in agriculture, either as a landowner or worker. Farmers have an excellent opportunity to be exposed to smoke, harmful gases, and dust exposure in their work. Farmers also have a high workload that can cause stress, fatigue, and decreased immunity. Farmers can prevent the incidence of ARI by familiarizing themselves with daily clean and healthy living behavior (Nurhidayah et al., 2023; Afandi et al., 2023). This study analyzes how to improve clean and healthy living behavior to prevent ARI in farmer families.

METHOD

The literature search process for this review article used databases such as Google Scholar, PubMed, and ScienceDirect, with a range of years from 2019 to 2023. The Inclusion criteria in this study are articles or journals that are by PICOS elements, namely the independent variable of the study is Healthy Living Behavior, and the dependent variable of the study is the Farmer Family; the researcher limits the publication year of the journal article to the last five years, and the type of research uses a cross-sectional design, experiments, and case studies, national and international

articles in Indonesian and English. The exclusion criteria in this study are articles or journals that are less than the last five years or before 2019, ARI is not in farmers, unhealthy lifestyles to prevent ARI in farmers, and journals cannot be accessed. The search used several keywords in Indonesian and English. The search in Indonesian used the keywords "ISPA, Gangguan Pernafasan," "Perilaku Hidup Tidak Sehat, Pengurangan Masa Kerja, Rumah dengan Ventilasi yang Baik," and "Petani, Keluarga Petani." While the search in English used the keywords "ARI, Respiratory Disorders," "Unhealthy Living Behavior, Reduced Working Period," "Well Ventilated House," and "Farmer, Family."

The articles selected could answer the researcher's questions and had been screened using the PRISMA evaluation criteria method. Researchers screened journal articles starting from the discovery of 815 journals, then found that as many as 455 journal articles were excluded because the year of publication needed to meet the criteria, namely less than 2019. Then, of the 360 journal articles that had been found, 266 articles were excluded because they could not be accessed, so researchers determined journal articles that were appropriate and could be used as a source of research information for the 94 journal articles that had been found. Eighty-four journals were excluded after screening based on the inclusion and exclusion criteria, and ten articles were selected to be reviewed.

Literature search through Google Scholar, PubMed, and Science Direct database with keywords that have been adjusted until ten articles are obtained that have been adjusted to the theme "Healthy Living Behavior to prevent the incidence of ARI in farmers".

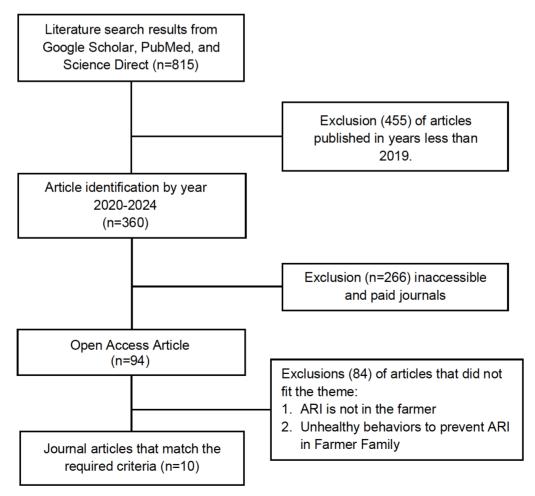


Figure 1. Literature Search Flowchart

RESULT

Based on the literature review results obtained from secondary data on Healthy Living Behavior to prevent the incidence of ARI in farmers, the literature search process was carried out according to the method described earlier, using relevant words. The findings of the journals were explicitly selected, and relevant data were then selected as material for the literature review. A total of ten journals were identified, consisting of six international and four national journals. Next, the researcher analyzed the literature by outlining the results and discussion of each study.

Table 1. Literature Analysis

ID	Author & Journal Identity	Journal Title	Objective	Population & Sample	Method	Summary of Result
A1	Author: Woolley et al., 2022 Journal Identity: Atmospheric Environment, 276 (2022) 119055	Association of household cooking location behavior with acute respiratory infections among children aged under five years; a cross-sectional analysis of 30 Sub-Saharan African Demographic and Health Surveys	Determine the relationship of cooking locations using biogas outdoors and indoors with the incidence of ARI in children under five years of age.	The sample used was a household of men and women aged 15-49 years who had never married.	The method was cross-sectional; data were taken based on DHS surveys in the last ten years in 30 Sub-Saharan African countries.	The prevalence of outdoor biogas cooking in sub-Saharan African countries is relatively low, averaging 42%. Families who still cook using biogas indoors have a higher risk of respiratory infectious diseases such as coughing and shortness of breath.
A2	Author: Galavi et al., 2023 Journal Identity: Informatics in Medicine Unlocked 37 (2023) 101193	The Role of e-health on Public Knowledge and behavior in preventing COVID-19	To determine the role of e-health in increasing knowledge in the prevention of Covid-19.	The method used in this study was a descriptive cross-sectional method using an online survey in Kerman, with an instrument in the form of a tripartite questionnaire that includes demographics, knowledge levels, and behavior change of respondents. The analysis used is binomial regression analysis.	The population used were residents in the city of Kerman, with the inclusion criteria for the sample being residents aged more than 16 years and using smartphones,	Knowledge has an essential influence on preventing infectious diseases, including respiratory infections. Increased knowledge is helpful to prevent the body from becoming infected. The more knowledge one has, the more likely it is to take preventive measures.
A3	Author: Indriyani et al., 2022 Journal Identity: SSM - Population Health 19	The relationship between the built environment and respiratory health: Evidence	To determine the influence of the environment on respiratory health	This study used 2000, 2007, and 2014 socioeconomic and health data. This research	The primary variable of this study is the built environment as measured	The environment influences human health. Dense environments have a close relationship with the incidence



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Summary of Result

Author & ID Journal Identity (2022) 101193

Journal Title from a Ionaitudinal study in Indonesia

Objective

Population & Sample relates to the literature linking the built environment and health outcomes. The approach used was GIS methods, and the analysis was done using parametric analysis.

Method by the sprawl

index.

of respiratory tract infections. In addition to density. environmental factors also have a possible relationship with the incidence of respiratory tract infections. Poor ventilation in housing also contributes significantly to disease transmission. Farmers exhibit

Α4 Author: Wulansari & Handayani, 2021 (January, 2021) Journal Identity : Pro Health Jurnal Ilmiah Kesehatan, 3 (1) : 87-93

Behavior of Washing Hands with Soap for Dizzy Patients in the Working Area of the **Technical** Implementation Unit of the Banyubiru Community Health Center who earn their **Pandemic**

To know the benefits of hand washing with soap behavior in preventing diseases such as ARI and Diarrhea.

This study uses a quantitative descriptive method.

The population used is mobile health center patients who work as farmers, and the samples used are pusling patients.

poor behavior when applying CTPS (hand washing with soap) before and after carrying out activities. Not implementing HWWS can cause various diseases.

such as diarrhea

and ARI.

A5 Author: Kautsar et al., 2020 Journal Identity: Bangladesh J Medicine, 32 (1):19-24

living as Farmers during the Covid-19 Clean And Healthy Lifestyle Behaviors And Healthy Housing Influenced The Incident Of Acute Respiratory Infection In Childhood

To know the relationship between clean and healthy living behaviors, healthy housing, and the frequency of ARI incidence in children under 1-4.

This study used a crosssectional method with an observational analytic approach.

The population in this study were children under five years old in Sumber Mlaten Hamlet, Kalirejo District, Lawang District, East Java. The sample was taken using the total sampling method with the inclusion criteria of families of children aged 1-4 years willing to

Poor habits and environmental conditions influence the incidence of ARI. Smoking habits and housing density have a significant relationship with the incidence of ARI in children under five.



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ID	Author & Journal Identity	Journal Title	Objective	Population & Sample	Method	Summary of Result
A6	Author: Vanessa et al., 2023 Journal Identity: Scientific Journal Of Nursing and Health vol 1 no 2	Clean and Health Living Behavior And The Incident Of ARI In Toddler in Hospital Metro City Islam	Knowing the relationship between clean and healthy living behaviors and the incidence of acute respiratory infections in toddlers	This study uses a correlation method (correlation study) using a cross-sectional approach.	become respondents. The population in this study consisted of mothers who had toddlers at the Metro Islamic Hospital, totaling 521 mothers of toddlers, using a purposeful sampling technique.	The relationship between the incidence of ARI disease in toddlers with clean living behavior is very close. Twenty-seven people do not maintain PHBS, while 16 people maintain PHBS. Moreover, the results obtained from 43 people who experienced ARI
A7	Author: Lasabu et al., 2023 Journal Identity: Jikes: Jurnal Ilmu Kesehatan Vol 1, No 2.	The Relationship Between Family Member's Smoking Habits and the Incident of Upper Respiratory Tract Infections (ARI) In Toddlers	To know the relationship between the smoking habits of family members and the incidence of acute respiratory infections in children under 1-4 years old.	The method used is a cross-sectional approach. The data is taken by giving informed consent to the respondents and explaining the purpose of the study.	The sample used was all parents in Desa Salangano who brought their toddlers for treatment or visited Puskesmas Totikum during Januari - Maret tahun 2023 with 50 people.	were 33. The results showed that toddlers in this study mainly were not exposed to cigarette smoke, namely 28 people (63.6%) and 16 people (36.4%). According to the researcher's assumption, more toddlers are not exposed to cigarette smoke because family members do not smoke around toddlers.
A8	Author: Fathmawati et al., 2021 Journal Identity: PloS one, 16(9), e0257881	Factors related to the incidence of acute respiratory infections in toddlers in Sleman, Yogyakarta, Indonesia: Evidence from the Sleman Health and Demographic Surveillance System.	To determine the factors associated with acute respiratory infections among children under five in Sleman, Yogyakarta.	The method used was a cross-sectional approach, and data were taken using the chisquare test performed on independent variables that were thought to be associated with ARI in toddlers.	The sample used was toddlers.	The incidence of ARI in this study was slightly higher in boys than girls. Studies conducted in Bangladesh and Iraq found that boys had higher ARI than girls.
A9	Aurhor : Sari et al., 2022 Journal Identity : Jurnal Penelitian Kesehatan	Utilization of Sanitation Clinics Related to ARI Incidents in the Working	Knowing the Utilization of Sanitation Clinic Associated	The present study employed a quantitative analytical observational	The study population consisted of patients with ARI in 2021	A study conducted in the Jetis district of Madiun County revealed that many of the local



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Author & ID Journal Identity Suara Forikes Vol 13

Journal Title Area of the Jetis Health Center. Madiun Regency

Objective with the Incidence of ARI in the Working Area **Puskesmas** Jetis Madiun Regency.

Population & Sample methodology with a casecontrol approach. The data were collected through the administration of a questionnaire.

Method who were treated at **Puskesmas** Jetis in Madiun Regency. The sample consisted of 52 respondents. with 26 cases and 26 controls. The sampling technique employed was simple random sampling. The population

population needed to utilize sanitation clinics. This finding was associated with a high incidence of respiratory illnesses.

Summary of Result

A10 Author: Ramlawati. 2023 Journal Identity: IMJ (Intium Medica Journal) Volume

Description of the Basic Sanitation Conditions of the Community in Parigi Hamlet, Wajo Regency

It is knowing the description of the primary sanitation conditions of the community in Parigi

Hamlet, Wajo

Regency.

The method used in this study was a descriptive approach with an observation form as the instrument.

and sample subjects in this study were all the houses in Parigi Hamlet, totaling 170. Data analysis was conducted using the univariate analysis method, which aims to describe the frequency distribution and percentage of each variable studied.

The results showed that sanitation in most farming communities was the majority, with toilets (85.3%), but many still needed to reach health standards. Trash management tends to use burning (84.1%), but awareness of health risks such as ARI is needed. The role of health workers and environmental health cadres is essential to raise awareness and build sanitation programs that suit farmers' conditions.

DISCUSSION

Farmers have a heavy workload; heavy workloads can cause stress (Fitria et al., 2023). Research shows that there is a relationship between stress and smoking frequency in the community, where smoking frequency will occur more often if you have stress (Mayah et al., 2020). In addition, the work environment of farmers who are in the field also makes it more likely that farmers experience ARI because, with the work environment in the field, farmers have a high probability of exposure to dust, smoke, aerosol mist, and other harmful gasses (Pereira et al., 2023).

Farmers also have a habit of not going to health facilities because farmers tend to go to people who are believed to be able to heal or by the beliefs of the house using medicines that are around because of the distance of health facilities from the farmer's house (Riswal et al., 2023).

The proximity of health facilities to the farmer's environment can minimize the possibility of farmers getting ARI because, with the proximity of health facilities, providing education is easier (Isabella & Prabandari, 2021). Education that can be quickly delivered to farmers and their families has the benefit of increasing disease prevention behavior (Galavi et al., 2023).

ARI disease can be prevented by implementing clean and healthy living behaviors and increasing health knowledge. This statement is supported by research by Indriyani et al. (2022), which shows that having a neighborhood that is not dense, not slum, and has good ventilation and lighting can improve air quality so that the incidence of ARI can be prevented. Research by Indriyani et al. (2022) aligns with research conducted by Galavi et al. (2023), which shows that implementing clean and healthy living behavior can help prevent ARI.

Smoke greatly influences the incidence of ARI, be it smoke from burning garbage or cigarettes; therefore, burning that causes smoke must be minimized (Arifah et al., 2023). In their research, Woolley et al. (2022) showed that cooking outdoors with biogas fuel can reduce smoke exposure compared to cooking indoors to reduce the risk of ARI. Ramlawati (2023), in her article, shows that poor sanitation in the community, including unhealthy latrines and the tendency to burn garbage, increases the risk of ARI. The study is in line with research conducted by Lasabu et al. (2023), which shows that inhaled cigarette smoke can increase the risk of developing ARI.

The practice of outdoor cooking can be an effective preventive measure against acute respiratory infection (ARI), especially in children. Woolley et al. (2022) said this practice could reduce their respiratory infection risk. As highlighted in the study, it is essential to recognize the importance of environmental factors in ARI prevention.

ARI prevention measures also include daily clean and healthy living practices. Indriyani et al. (2022) and Wulansari & Handayani (2021) emphasize the importance of maintaining hand hygiene and the environment, as well as maintaining endurance through a healthy diet and regular exercise. These simple steps can effectively reduce the risk of developing ARI.

Early education and habituation are essential in preventing acute respiratory infections (ARIs). Kautsar et al. (2020) and Vanessa et al. (2023) emphasize that parental knowledge about ARI and habituation to a healthy lifestyle in toddlers and children can reduce the risk of developing this disease. This includes the practice of regular handwashing and avoiding exposure to cigarette smoke.

ARI prevention measures are not only individual but also require comprehensive community efforts. Lasabu et al. (2023) and Fathmawati et al. (2021) highlighted the importance of maintaining home and environmental hygiene, providing complete immunization, and exclusive breastfeeding as collective measures in preventing ARI.

Increased knowledge regarding ARI and enhanced environmental sanitation are critical components in preventing ARI. Sari et al. (2022) and Ramlawati (2023) emphasized the significance of enhanced knowledge about the disease, utilization of sanitation clinics, and awareness of optimal environmental sanitation. With these measures, ARI prevention efforts can become more effective and sustainable.

CONCLUSION

The causes of the high risk of exposure to respiratory tract infections are cooking activities using biogas indoors or in the house, very dense housing conditions resulting in a lack of sanitation in the environment around the house, lack of or poor home ventilation, a large workload of farmers so that they have a high probability of exposure to dust, smoke, and harmful gases, smoking habits with a high frequency, lack of utilization of local sanitation clinics and lack of awareness of the

importance of environmental sanitation. The incidence of ARI occurs mainly in the male gender; therefore, steps that can be taken to prevent the incidence of ARI can be taken by getting used to clean and healthy living behaviors such as maintaining hand hygiene by diligently washing hands, getting used to a healthy diet, doing regular exercise. For children, efforts can be made to prevent ARI incidence by providing complete immunization, exclusive breastfeeding, and providing comfort and cleanliness of the surrounding environment. Providing education to the community about the importance of ARI because increasing public knowledge will allow people to take preventive measures as early as possible, and when people already understand the dangers of a disease, it will encourage healthy behavior to be formed.

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