

RELATIONSHIP BETWEEN SMOKING BEHAVIOR AND INCIDENCE OF ACUTE RESPIRATORY INFECTION IN RESIDENTS IN BOJONG MANUK VILLAGE, RT 10/RW 05, PASIR AMPO VILLAGE, KRESEK DISTRICT, TANGERANG REGENCY, BANTEN PROVINCE

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ABSTRACT

Acute Respiratory Infection (ARI) is an acute infection involving the organs of the upper respiratory tract and lower respiratory tract. Smoking behavior has negative impacts on health, especially on the respiratory system. Smoking also increases susceptibility to acute respiratory infections (ARI). The purpose of this study was to determine whether there is a relationship between smoking behavior and the incidence of ARI in Pasir Ampo Village, Kresek District, Tangerang Regency. The research design used was non-experimental with a cross sectional approach. The sample of this research is the residents of Kampung Bojong Manuk RT 10/RW 05, Pasir Ampo Village with a total of 25 people taken by purposive sampling technique. Data analysis used the chi-square test with 95% confidence level. The results of this study are, all respondents (100%) are active smokers; 8 respondents (32%) were light smokers, 17 respondents (68%) were moderate - severe smokers. The incidence of ARI was found in 15 people (60%) and no ARI 10 people (40%). This study obtained a value of $p = 0.02$ on the relationship between smoking behavior and the incidence of ARI, so it can be concluded that there is a relationship between smoking behavior and the incidence of ARI in Pasir Ampo Village, Kresek District, Tangerang Regency.

Keywords:

smoking behavior, acute respiratory infection (ARI)

INTRODUCTION

Acute Respiratory Infection (ARI) is an acute infection that involves the organs of the upper and lower respiratory tract (WHO, 2020). WHO estimates that passive smoker causes more than 1.2 million premature deaths per year as many as 65,000 children die each year from respiratory diseases (WHO, 2020). According to the World Health Organization (WHO), ARI is still a world health problem with nearly 4 million people dying each year, with 98% caused by lower respiratory tract infections. ARI is more common in developing countries than in developed countries with a percentage of 25% - 30% and 10% - 25% (Ottay R et al., 2016). Based on data reports from the Kresek Health Center in April 2020, ARI is the second most common disease with 203 cases out of a total of 1440 cases (14.09%). In 2020, ARI was

the disease with the highest incidence in Kresek District, with 9,208 cases in 2020, followed by Essential Hypertension with 3,221 (Kresek Health Center, 2020).

WHO (World Health Organizations) shows that Indonesia is ranked third in the world after China (390 million smokers) and India (144 million smokers). Based on Basic Health Research (RISKESDAS) in 2018, male smokers aged over 15 years were 62.9% and this is the highest prevalence of male smokers in the world. In addition, there was an increase in the smoking behavior of children under 18 years from 7.2% in 2013, increasing to 9.2% in 2018 (RISKESDAS 2018). Increased consumption has an impact on increasing the number of diseases caused by smoking and increasing mortality due to smoking. In 2013, the average number of cigarettes smoked was around 12.3 cigarettes per day. Nearly 80% of smokers started smoking before they were 19 years old. Generally, people start smoking at a young age and consumers' decisions to buy cigarettes are not based on sufficient information about the risks regarding the dangers of smoking addiction, the products purchased, the effects of addiction, and the impact of purchases imposed on others. The prevalence of smoking behavior in males aged >15 years was 36.3% (this figure tends to increase compared to 2007, which was 34.3%). RISKESDAS results in 2007, 2010 and 2013 showed that the highest age of first smoking was in the 15-19 year age group. (Ministry of Health, 2013). Riskesdas data for 2018, the percentage of smokers over 15 years of age is 33.8%. The percentage of the total number of male smokers was 62.9% and while the percentage of the total number of female smokers was 4.8%. This increase in the number of smokers is accompanied by an increase in diseases caused by consuming cigarettes, some of which are hypertension, stroke, diabetes, heart disease, and cancer (Riskesdas, 2018).

The habit of people smoking inside the house can have a negative impact on family members. Cigarette smoke can leave chemicals or residue on clothes, roofs, sofa curtains, and other places in the house (Sulaiman, 2014). This is supported by a study which states that toddlers who live at home with family members who smoke are at risk of 5.743 times more likely to suffer from pneumonia than toddlers who live at home with family members who do not smoke (Sugihartono, Rahmatullah, & Nurjazuli, 2012).

Various efforts have been made by the government to control ARI, starting in 1984 at the same time as the start of ARI control at the global level. But until now, these efforts have not shown significant results. ARI cases are still found in many health care settings, both at the district health care center level and at the hospital level. (Ministry of Health RI, 2012). Based on the results of the top ten diseases that occurred at the Kresek Health Center in 2022, it was found that 203 cases of ARI were ranked second most often found (Puskesmas Kresek, 2022).

The purpose of this study was to determine the relationship between smoking behavior and the incident of acute respiratory infection among residents in Kampung Bojong Manuk Rt 10/Rw 05, Pasir Ampo Village, Kresek District, Tangerang Regency, Banten Province.

METHOD

This study used a cross-sectional research design with a consecutive sampling technique, the sampling was carried out by selecting samples that met the research criteria for a certain period of time so that the number of samples was fulfilled (Siyoto, 2015). The population used is residents in Kampung Bojong Manuk RT 010/05, Pasir Ampo Village, Kresek District, Tangerang Regency. Data collection was carried out on 9-11 November 2022. The number of samples taken, namely 25 people, was based on calculations using the slovin formula. Data were processed using the SPSS 26.0 Data Analysis Program with univariate and bivariate analysis using the chi-square test. The inclusion criteria in this study

were residents of RT 010/05 Kampung Bojong Manuk aged 17-65 years, and willing to become respondents. Meanwhile, the exclusion criteria were residents who refused to be sampled. The variable taken is smoking behavior with the incidence of ARI in respondents. The characteristics of the respondents are divided based on age, last education, occupation, and income per month. The variables used for both groups are categorical variables. Each variable is taken based on a questionnaire that has been prepared by the researcher. Respondents were categorized into ARI and not ARI and smoking and not smoking.

RESULT AND DISCUSSION

Table 1. Characteristics of Residents in Kampung Bojong Manuk Rt 010/05, Pasir Ampo Village, Kresik District, Tangerang Regency

Gender	Frequency	Percentage (%)
Man	25	100
Woman	0	0
Total	25	100
Age (Year)		
17-25 Year	6	24.4
26-35 Year	8	32.2
36-45 Year	6	24.4
More Than 45 years	5	20.0
Total	25	100
Last Educational Courses		
Never Take Any Educational Courses	0	0
Elementary	8	32.2
Junior High	10	40
Senior High	5	20
Degree	2	8.8
Total	25	100
Occupation		
Work	25	100
Doesn't Work	0	0
Total	25	100
Monthly Wages		
≥ Rp.4.230.792	7	28
<Rp.4.230.792	18	72
Total	25	100

In Table 1, there are characteristics of 25 respondents in this study. In the gender variable, the majority of the gender is male as many as 25 respondents. In the age variable, 26-35 years of age occupy the most age, 8 respondents (32.2%). In the last education variable, the majority of respondents had education up to junior high school (SMP) as many as 10 respondents (40%). As many as 25 respondents work (100%) with the most income per month belonging to the middle to lower category (72%).

Table 2. Distribution of Smoking Behavior in Kampung Bojong Manuk Rt 10/05 , Pasir Ampo Village, Kresek District, Tangerang Regency

Smoking Behavior	Frequency	Percentage (%)
Smoke (+)	25	100
Smoke (-)	0	0
Total	25	100

Table 3. Distribution of Smoking Degrees in Kampung Bojong Manuk Rt 010/05, Pasir Ampo Village, Kresek District, Tangerang Regency

Smoking Degree	Frequency	Percentage (%)
Light Smoker	8	32
Moderate-Heavy Smoker	17	68
Total	25	100

Based on Table 2 and Table 3, there are 25 respondents (100%) who have smoking habits. With the distribution of light smokers as many as 8 respondents (32%), and moderate - heavy smokers 17 respondents (68%).

Table 4. Distribution of ARI incidents in Bojong Manuk Village RT 010/05, Pasir Ampo Village, Kresek District, Tangerang Regency

ARI Incident	Frekuensi	Presentase (%)
ARI (-)	10	40
ARI (+)	15	60
Total	25	100

Table 5. Relationship between Smoking Behavior and ARI Incidence in Kampung Bojong Manuk Rt 010/05, Pasir Ampo Village, Kresek District, Tangerang Regency

	ARI (-)	ARI (+)	Total	P-Value
Light Smoker	7	1	8	0,02
Moderate-Severe Smoker	3	14	17	
Total	10	15	25	

Based on table 4, there were 15 respondents who had ARI (60%) and 10 (40%) did not. In table 5, there are 7 respondents who are light smokers but do not have ARI, 1 respondent who is a light smoker who has ARI, 3 respondents who are moderate smokers who do not have ARI, and 14 respondents who are moderate smokers who have ARI. Obtained a value of $p = 0.02$ on the relationship between smoking behavior and the incidence of ARI so that it can be concluded that there is a relationship between smoking behavior and the incidence of ARI.

This research has 25 respondents. In this study it was found that the largest sex group was male as much as 100%. In the age variable, the largest age group was in the age group over 26-35 years with 8 respondents (32.2%). It is known that the prevalence of smoking behavior in males aged >15 years is 36.3% (this figure tends to increase compared to 2007, which was 34.3%). RISKESDAS results in 2007, 2010 and 2013 showed that the highest age of first smoking was in the 15-19 year age group. (KEMENKES, 2013) In the last education

variable, there were 10 respondents with the last education at the junior high school level. From the Ministry of Education and Culture in 2021, the Data and Information Center (Pusdatin) of the Ministry of Education and Culture noted that Tangerang Regency occupies the first position in the number of dropout children in Banten Province with 17,660 children. This number supports the lack of knowledge and self-awareness about health, especially problems regarding ARI disease and its causes. (KEMENDIKBUD 2021). Out of a total of 25 respondents, 25 people (100%) work, but it is known that 18 (72%) of the respondents still have an income less than the average monthly wages in the regency. Based on table 4, there were 15 respondents who had ARI (60%) and 10 (40%) did not. Table 5 shows the degree of mild ARI by 2 respondents (13.3%), moderate ARI by 5 respondents (33.3%), and severe ARI by 8 respondents (53.4%). Based on table 6, there are 10 respondents who smoke but do not have ARI and 15 respondents who smoke and have ARI.

In the ARI variable, there were 15 respondents (60%) with ARI incidents and as many as 9 of them experienced ARI with the most frequent degree, namely the degree of moderate ISPA with a percentage of 60%. This is in accordance with the data profile of the Kresek Health Center in April 2022 where ARI is the second most common disease, namely 203 cases out of a total of 1440 cases (14.09%). It is known that there were 25 respondents who smoked (100%) with the majority of respondents smoking being moderate smokers (44%). This happened because in Pasir Ampo Village itself there was no counseling about the dangers of smoking so that people's awareness was still lacking.

The results showed that there was a relationship between smoking behavior and the incidence of ARI with $p = 0.02$. These results are consistent with research conducted by Wardana et al., 2020 in Jember with the result that the incidence of ARI is related to smoking habits and research conducted by Hasanah et al., 2017 that there is a relationship between smoking behavior and the incidence of acute respiratory infections. Another research that is in line is the study of Ahyanti et al, 2013, which stated that students who smoke have a 2.334 times the risk of suffering from ISPA compared to students who do not smoke.

In general, there are three risk factors for ARI, such for environmental factors, individual factors, and behavioral factors. Environmental factors include air pollution in the house, the physical condition of the house, and the density of the house's occupancy. Indoor air pollution factors include cigarette smoke.

The limitations of this study are the lack of sensitivity in grouping respondents into the ARI category because it is only based on a questionnaire and the lack of sample data due to limited research time.

CONCLUSION

Based on the results of this study, it can be concluded that there is a relationship between smoking behavior and the incidence of ARI in residents of Rt.10/05 Kampung Bojong Manuk, Pasir Ampo Village, Kresek District, Tangerang Regency. For future researchers, further research should be carried out on other factors that can affect the severity of ARI in Pasir Ampo Village, such as inadequate house ventilation, smoke from mosquito coils and other factors that we did not examine.

The advice given to the Health Office in the area is that it is necessary to hold counseling about the dangers of smoking so that people can increase their knowledge about the effects of smoking and can also provide rehabilitation facilities for smokers, so that they not only prevent passing counseling, but can also help treat cigarette users.

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