

BOJONEGORO CORRELATION BETWEEN RAISING LIVESTOCK AND ARI'S INCIDENT IN CHILDREN UNDER TWO TLATAH VILLAGE BOJONEGORO DISTRICT
Hubungan Pemeliharaan Hewan Ternak dengan Kejadian ISPA Pada Balita di Desa Tlatah Kabupaten Bojonegoro

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ABSTRACT

Background: *ARI is still a serious health problem in developing countries especially Indonesia. Not only affects adults, but also ARI is a major cause of death in children under five. Based on the data obtained by researchers from the Village Posyandu, there were 253 cases of ISPA in 2019 and 28 cases of ARI occurred in children aged 0-2 years. One of the risk factors of the ARI in children aged 0-2 years is unclean and unhelathy environment such as raising livestock in the house. Animals can be vectors and transmit disease to humans. Purpose:* *To analyze correlation between raising livestock and ARI's incident in children under two at Desa Tlatah Kabupaten Bojonegoro. Methods:* *This research was an observational research with a cross sectional approach. The population and sample in this research were all children aged 0-2 years in Tlatah Village Bojonegoro District which were 40 children, so the sampling technique used total sampling. Data were collected using pimary data that was observation an secondary data. Then the data were analyzed using the chi-square test. Results:* *The research did not show the relationship of raising livestock with ARI's incident in children aged under two because $p = 0.364 > \alpha = 0.05$. Conclusion:* *There is no correlation between raising livestock and ARI's incident in children aged under two at Desa Tlatah Kabupaten Bojonegoro.*

Keywords: *ARI, children, livestock*

ABSTRAK

Latar Belakang: *ISPA masih menjadi masalah kesehatan yang serius di negara berkembang seperti Indonesia. Tak hanya menyerang orang dewasa saja, ISPA juga menjadi penyebab utama kematian pada balita. Berdasarkan data yang diperoleh peneliti dari posyandu Desa tercatat kasus ISPA pada tahun 2019 mencapai 253 kasus dan 28 kasus ISPA terjadi pada balita usia 0-2 tahun. Salah satu faktor risiko terjadinya ISPA pada balita adalah lingkungan yang kurang bersih dan sehat seperti terdapat hewan ternak dalam rumah. Hewan dapat menjadi vektor penyakit serta menularkan penyakit ke manusia. Tujuan:* *Menganalisis hubungan antara pemeliharaan hewan ternak di dalam rumah dengan kejadian ISPA pada balita usia 0-2 tahun di Desa Tlatah Kecamatan Purwosari Kabupaten Bojonegoro. Metode:* *Penelitian ini bersifat observasional dengan pendekatan cross sectional. Populasi dan sampel dalam penelitian ini adalah semua balita berusia 0 – 2 tahun di Desa Tlatah Kabupaten Bojonegoro yang berjumlah 40 orang sehingga teknik pengambilan sampel menggunakan total sampling. Data dikumpulkan menggunakan data primer yaitu observasi dan sekunder. Kemudian data dianalisis menggunakan uji chi-square. Hasil:* *Penelitian tidak menunjukkan adanya hubungan pemeliharaan hewan ternak dengan kejadian ISPA pada balita karena $p = 0,364 > \alpha = 0,05$. Kesimpulan:* *Tidak terdapat hubungan antara pemeliharaan hewan ternak dengan kejadian ISPA pada balita di Desa Tlatah Kabupaten Bojonegoro. Kata kunci:* *ISPA, balita, hewan ternak*

INTRODUCTION

In developing countries like Indonesia, ARI is one of the serious health problems that must be solved. Not only attacking adults, but ARI is also a major factor that causes toddlers to die. The prevalence of ARI in Indonesia was reached 9.3% in 2018 (Kemenkes 2018). In addition, based on the 2018 Indonesian Health Profile, the incidence of ARI in children under five (per 1000 children under five) is 20.06%. The percentage is almost the same as the previous year's data, which was 20.56%. Meanwhile, the coverage of pneumonia in Indonesia reached 50% - 65% in 2015 - 2018. This percentage has increased from the previous 5 years which was only around 20% - 30%. The results of the mortality survey conducted by the ARI Sub-Directorate showed that pneumonia or ARI was the factor that caused the highest infant mortality in Indonesia with a percentage of approximately 22.3% of all infant deaths. The high percentage of ARI prevalence in children under five and infant mortality due to ARI shows that the high morbidity and mortality of ARI disease in children under five (Kemenkes RI 2019).

ARI disease can occur due to several factors. Human factors and environmental factors are the dominant factors that influence the occurrence of ARI. Research conducted by (Dagne et al. 2020) showed that the age factor of mother and child, place of residence, and information about maternal hand hygiene were significant factors related to the occurrence of ARI in toddlers. Another research conducted by (Kemenkes 2018) in Malawi stated that malnutrition and poor environmental sanitation are factors that can influence the occurrence of ARI in Malawi.

One of the provinces that has the highest prevalence of ARI in Indonesia is East Java with a percentage of around 9.5% (Kemenkes 2018). The prevalence of ARI cases in children under five in Bojonegoro reached 17.75% (Kemenkes 2018). Researchers obtained data from the Public Health Centres which recorded cases of ARI in 2019 reaching 253 cases. A total of 28 cases of ARI occurred in children aged 0-2 years.

Factors that can affect the occurrence of ARI in toddlers are environmental conditions and humans themselves. Human factors include age, gender, genetics, nutrition, lifestyle, race, customs, occupation, immune status, and psychological. While

environmental factors can be in the form of physical and biological environment. The biological environment includes plants, animals, viruses, bacteria, fungi, parasites, insects, and others that can act as disease agents, infection reservoirs, disease vectors, and intermediate hosts. The physical environment is water, air, soil, weather, food, heat, house, and so on. Factors that can affect the occurrence of ARI in toddlers are environmental conditions and humans themselves. Human factors include age, gender, genetics, nutrition, lifestyle, race, customs, occupation, immune status, and psychological. While environmental factors can be in the form of physical and biological environment. The biological environment includes plants, animals, viruses, bacteria, fungi, parasites, insects, and others that can act as disease agents, infection reservoirs, disease vectors, and intermediate hosts. The physical environment is water, air, soil, weather, food, heat, house, and so on (Chandra 2018). A less clean and unhealthy home environment can trigger the occurrence of ARI in toddlers. Besides that, the environment around the house such as the yard and cattle pens can also trigger the occurrence of ARI in toddlers.

Based on research conducted by Puspita (2014) there was a relationship between the location of livestock in the house and the incidence of ARI in Patokan Village, Bantaran District, Probolinggo Regency. However, research conducted by Zulaikhah, Soengeng, and Sumarawati (2017) showed the results that the presence of livestock pens in the house had a PR of 1.45 which means that respondents with the presence of cattle pens in their homes had a risk of ARI 1.45 times higher than respondents who did not have a cattle pen in his house. Cattle cages that are not separated in the house can cause the transmission of infectious diseases.

The cause of ARI cases in toddlers in Tlatah Village was not explained thus the researchers wanted to link the incidence of ARI in toddlers with raising livestock at home because around 22 respondents kept livestock at home. Meanwhile, animals can be vectors of disease and transmit diseases to humans. Hence, this research aims to analyze the relationship between domestic animal husbandry and the incidence of ARI in children aged 0-2 years in Tlatah Village, Purwosari District, Bojonegoro Regency.

METHOD

The method used in this research was observational with a cross sectional approach. The population used in this research were all children aged 0-2 years in Tlatah Village, Purwosari District, Bojonegoro Regency as many as 40 toddlers. The sample in this research was also a population in which toddlers aged 0-2 years in Tlatah Village, Purwosari District, Bojonegoro Regency, totaling 40 toddlers. The sampling technique was total sampling because the entire sample in this research is a population.

Researchers obtained primary and secondary data. The data of ARI on toddler were obtained secondary by referring to the

data on the Posyandu under five in Tlatah Village, Bojonegoro Regency in 2020. Meanwhile, data on the maintenance of livestock animals was obtained by direct observation in the field. This recent research used the chi-square test to analyze the data. The place of research was carried out in Tlatah Village, Purwosari District, Bojonegoro Regency on December 27, 2019 - January 31, 2020 with the ethical review number 1769-KEPK.

RESULT

The data on characteristic of respondents can be seen on table 1.

Table 1. Characteristic of Respondents

Characteristic of Respondents	Frequency	Percentage
Age (Months)		
0 – 11	15	37,5
12 – 24	25	62,5
Sex		
Male	21	52,5
Female	19	47,5
Total	40	100

Based on Table 1, data on the characteristics of respondents were obtained, namely 37.5% of children aged 0-11 months (15 people) and 62.5% of children aged 12-24 months (25 people). Meanwhile, based on gender characteristics, the results showed that the number of male toddlers amounted to

52.5% or 21 people and toddlers who were female amounted to 47.5% or 19 people.

The followings are the results of the research on the relationship between raising livestock and the incidence of ARI under five in Tlatah Village, Bojonegoro Regency.

Table 2. Relationship between Livestock Maintenance and Incidence of ARI on Toddlers in 2020 in Tlatah Village, Bojonegoro Regency

Livestock Maintenance	Incidence of ARI on toddler				Total	p value	PR
	Yes	%	No	%			
Yes	18	81.82	13	72.22	31	0.470	1.3
No	4	18.18	5	27,78	9		
Total	22	100	18	100	40		

The results showed that there was no relationship between raising livestock and the incidence of ARI in toddler because the p value was 0.470, which was greater than 0.05. In addition, the PR value (Prevalence Ratio) was 1.3, which means that respondents who keep livestock at home have a risk of ARI 1.3 times compared to respondents who do not keep livestock at home.

DISCUSSION

The results of statistical analysis in this research indicate that there is no relationship between raising livestock and the incidence of ARI in children aged 0-2 years in Tlatah Village, Bojonegoro Regency. Although the results of statistical tests did not show a correlation between raising livestock and the incidence of ARI under five in Tlatah Village,

Bojonegoro Regency, the PR value showed 1.3. This value means that respondents who raise livestock have a 1.3 times risk of contracting ARI than respondents who do not keep livestock in their homes.

This research is not in line with research conducted by Puspita (2014) which stated that there was relationship between the location of livestock in the house and the incidence of ARI in Patokan Village, Bantaran District, Probolinggo Regency. Livestock located in the house can potentially cause ARI. However, this research has the same results as the research conducted by Ochtarena (2020) namely there is no relationship between raising livestock and the incidence of ARI in toddlers in the working area of the Rumbai Public Health Center (p value = 1,000). These results indicate that raising livestock are not necessarily cause ARI because maintaining the cleanliness of livestock and their sanitation and minimizing direct contact with livestock can prevent the emergence of infections or diseases transmitted by these livestock. In addition, the research conducted by Sidiq (2016) also showed that there is no relationship between the distance of the house and the cattle shed on the incidence of pneumonia in children under five in Lambatee Village, Darul Kamal District, Aceh Besar District with p value = 0.331.

Another research also proved that there was no significant correlation between the interaction of toddlers with pets in the home environment with ARI disease in toddlers in the working area of the Southeastang Health Center, Bondowoso Regency with p value = 0.258. However, if viewed from the OR value of 3,000, toddlers who interact with pets in the home environment are three times at risk of developing ARI disease compared to toddlers who do not interact with pets in the home environment (Mahardika I, 2015).

Although the statistical results of this research indicate that there is no correlation between keeping livestock in the house and the incidence of ARI in toddlers in Tlatah Village, Bojonegoro Regency, it can be seen in Table 2 that the number of toddlers who experience ARI and there are more livestock animals in their homes than toddlers who have ARI. keep livestock without experiencing ARI. Toddlers who have livestock in their homes and suffer from ARI are 81.82% or 18. Meanwhile, around 72.22% or 13 toddlers do not have

livestock in their homes but suffer from ARI. In addition, there are 18.18% (4 toddlers) who suffer from ARI but do not keep livestock in their homes and 27.78% (5 people) toddlers who do not suffer from ARI at the same time there are no livestock in the house. Therefore, eventhough statistically there is no significance correlation between both variables, based on the table, it can be seen that the number of toddlers who suffer from ARI and keep livestock in their homes still dominates the number or is more than toddlers who do not keep livestock in their homes.

In addition, the incidence of ARI in children under five is still a major health problem in the world, both for developed and developing countries. In developing countries, the incidence of death caused by ARI is 5-10 times higher than in developed countries (Ramani, Pattankar, and Puttahonnappa 2016). According to Masriadi (2017), ARI episodes in Indonesian toddlers were predicted to reach 3-6 times per year or an average of 4 times per year, which means that an average toddler gets a cough and cold attack 3-6 times a year. There are many factors that trigger the occurrence of ARI in toddlers. Although the livestock rearing factor in this research did not prove a correlation with the incidence of ARI in toddlers, it is possible that there are other factors that cause ARI in toddlers in Tlatah Village, Bojonegoro Regency. Another factor that most likely causes the results of this research to have no correlation is sanitation and hygiene of livestock. Livestock that are kept with good sanitation can prevent the transmission of infections or diseases originating from these livestock.

In addition, minimizing direct contact with livestock and maintaining the cleanliness of the cage and feces can minimize the occurrence of ARI due to livestock (Saputri 2016).

Limitation

The limitation of this research is the lack of searching or digging for information related to the variable of raising livestock on the respondents. This variable only consider whether the respondent keeps livestock in the house or not, thus it eliminates some considerations at other factors such as cleanliness of livestock cages and management of livestock manure.

CONCLUSION

It can be concluded from the research that there is no significant relationship or correlation between raising domestic livestock and the incidence of ARI in children under five in Tlatah Village, Bojonegoro Regency since p value = 0.364. The incidence of ARI under five in Tlatah Village, Bojonegoro Regency is predicted due to other factors such as the presence of family members who smoke, the physical condition of the house, demographic factors, etc.

SUGGESTION

Further research should examine other factors that trigger ARI in toddlers: the presence of family members who smoke in the house, the physical environment of the house, waste management, cleanliness of livestock cages, management of livestock manure, etc.

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