

The Effectiveness of Education on the Prevention and Transmission of Acute Respiratory Infections (ARI) on the Level of Public Knowledge in the Service Area of the Kunciran Community Health Center in 2025

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ABSTRACT

Acute Respiratory Infections (ARIs) are one of the infectious diseases with high morbidity rates in Indonesia. The public's level of knowledge plays a crucial role in efforts to prevent and control ARIs. The objective of this study is to determine the public's level of knowledge regarding the prevention and transmission of ARIs in the service area of the Kunciran Community Health Center in 2025. This study employed a quantitative descriptive design using a cross-sectional approach. Data were collected using a structured questionnaire administered to a randomly selected group of individuals visiting the Kunciran Community Health Center on June 13, 2025. The data were analyzed descriptively to determine the frequency distribution of the respondents' knowledge. The results of this study indicate that the majority of respondents have a good level of knowledge regarding the prevention of acute respiratory infections (ARIs), particularly regarding mask use, cough etiquette, and handwashing. However, understanding regarding the proper use of antibiotics remains low. The conclusion of this study is that the community in the service area of the Kunciran Community Health Center has a relatively good level of knowledge regarding the prevention of ARI; however, knowledge regarding the appropriate use of antibiotics still needs to be improved. Regular health education is needed to enhance understanding, particularly regarding the rational use of antibiotics.

Keywords: Respiratory tract infections, antibiotics, public awareness, prevention, transmission.

INTRODUCTION

Acute Respiratory Infections (ARIs) are one of the most common health problems in the community, particularly in developing countries. ARIs encompass a range of diseases that affect the respiratory tract from the nose to the alveoli, with a duration of less than 14 days. These illnesses can be caused by various microorganisms, such as viruses, bacteria, or fungi; however, the majority of ARI cases are caused by viral infections that resolve on their own without the need for antibiotics.

According to data from the World Health Organization (WHO), acute respiratory infections (ARIs) are the leading cause of morbidity and mortality among children under five years of age and represent a significant global public health burden. In Indonesia, according to the Ministry of Health, ARI ranks among the top 10 most common illnesses treated at primary healthcare facilities. Transmission typically occurs through droplets when an infected person coughs or sneezes; therefore, prevention can be achieved through clean and healthy living practices, such as handwashing, wearing masks, maintaining a strong immune system, and getting vaccinated.

Antibiotics are often used inappropriately for upper respiratory tract infections, especially when the cause of the illness is a virus. The off-label use of antibiotics contributes to rising antibiotic resistance, which is currently a serious threat to global health. The world health organization (WHO) emphasizes that antibiotic resistance can make infections harder to treat, increase treatment costs, and raise the risk of death.

The public's lack of knowledge regarding the causes of respiratory tract infections (RTIs), prevention methods, and appropriate uses of antibiotics is one of the main factors contributing to antibiotic misuse. Proper understanding of URIs is crucial for preventing disease transmission, reducing unnecessary antibiotic use, and curbing the rate of antimicrobial resistance. Therefore, research on the public's level of knowledge regarding URI prevention and appropriate antibiotic use is essential as a foundation for effective health promotion and intervention efforts.

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RESEARCH METHOD

The research method used in this study was a quantitative study with a one-group pretest-posttest design. The research subjects were all patients who visited the Kunciran Community Health Center on Friday, June 13, 2025, and were willing to complete the pretest and posttest. A total sampling technique was used, resulting in a sample size of 43 participants. Each subject will be asked to take the pre-test and then receive a knowledge intervention in the form of counseling on the prevention and transmission of acute respiratory infections; after the intervention, the subjects will be asked to complete the post-test. The test results will be evaluated and then compared using a paired t-test or the Wilcoxon test.

RESULTS AND DISCUSSION

Research results obtained from a sample of 43 participants using a paired t-test were analyzed to determine differences in participants' knowledge levels before and after the intervention (training/counseling). Based on the results of the analysis using the Paired Samples Test, the following results were obtained:

Table 1: Results of the Paired t-Test

Variabel	Mean Difference	t	df	Sig. (2-tailed)
Nilai pre-test – Nilai post-test	-24,884	-16,175	42	0,000

The mean pre-test score was lower than the mean post-test score, with a mean difference of -24.884 (SD = 10.088). The t-value was -16.175 with 42 degrees of freedom (df) and a significance level (p-value) of 0.000 ($p < 0.05$). The negative mean difference (-24.884) indicates that the post-test scores were higher than the pre-test scores. These results indicate that there is a statistically significant difference between the pre-test and post-test scores. This means that the intervention had a significant effect on increasing the respondents' knowledge.

Table 2: Research Data

No	Nama Inisial	Usia	Nilai Pre-test	Nilai Post-test
1	EL	36 tahun	20	60
2	NS	46 tahun	80	100
3	RS	17 tahun	90	100
4	FT	52 tahun	70	100
5	AY	17 tahun	80	100
6	YF	45 tahun	90	100
7	NL	47 tahun	70	90
8	RR	18 tahun	50	90
9	JT	18 tahun	80	90
10	DR	17 tahun	70	100
11	YD	40 tahun	80	100
12	RY	42 tahun	80	100
13	NN	56 tahun	80	100
14	EW	43 tahun	70	90
15	DN	35 tahun	80	90
16	CH	46 tahun	60	80
17	WY	69 tahun	60	90
18	DJ	41 tahun	60	80
19	SL	29 tahun	60	100
20	NA	52 tahun	60	90
21	RT	40 tahun	50	90
22	TR	32 tahun	40	80
23	KN	44 tahun	40	70
24	SM	21 tahun	40	80
25	IK	62 tahun	80	90

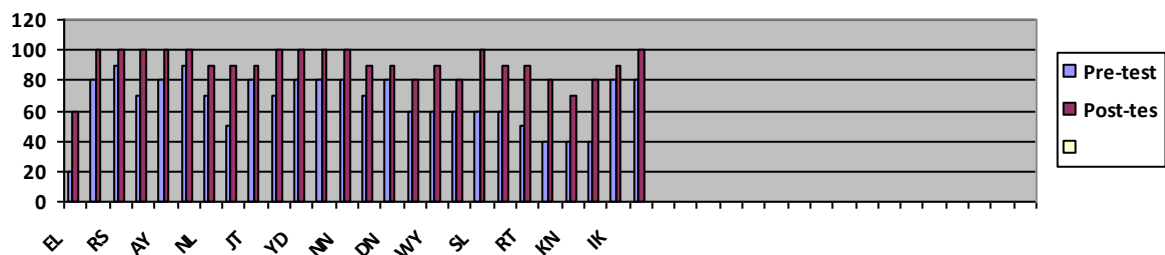
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26	MS	51 tahun	80	100
27	AH	47 tahun	70	100
28	SR	53 tahun	60	80
29	WC	46 tahun	70	100
30	SM	60 tahun	50	70
31	NY	69 tahun	60	80
32	SU	57 tahun	70	100
33	PT	59 tahun	50	80
34	EP	48 tahun	60	90
35	MF	62 tahun	50	100
36	KA	21 tahun	80	100
37	YS	25 tahun	70	100
38	YR	52 tahun	90	100
39	TR	59 tahun	80	100
40	MA	18 tahun	70	100
41	SF	27 tahun	90	100
42	NY	70 tahun	60	80
43	RS	68 tahun	50	80

Overview of pre-test and post-test results

Picture 1. Subjects with pre-test and post-test scores



CONCLUSIONS

The level of knowledge among the community at the Kunciran Community Health Center regarding the transmission and prevention of acute respiratory infections (ARIs) is quite good; however, knowledge regarding the appropriate use of antibiotics for ARIs remains inadequate. After receiving education on the proper use of antibiotics, the community's level of knowledge improved.

The use of antibiotics for influenza is not justified unless there is strong evidence of a secondary bacterial infection, such as bacterial pneumonia following influenza. Educating patients about the "self-limiting nature" of influenza and the importance of antimicrobial stewardship is key. Physicians should be more thorough or use molecular diagnostics (such as RT-PCR) to confirm influenza so that unnecessary antibiotic use can be avoided.

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