

**Original Article**

**Analysis Of Knowledge Levels With Compliance With Antibiotic Use**

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**ARTICLE INFO**

Article History:  
 Submit, 16 Agt 2020  
 Revised, 29 Sept 2020  
 Accepted, 12 Oct 2020  
 Available online, 30 Des 2020

*Keywords:*  
 Knowledge, Compliance,  
 Patients with antibiotic  
 treatment

**ABSTRACT**

*Background:* Infectious disease is still one of the important public health problems, especially in developing countries. Inappropriate use of antibiotics can cause several effects, namely the occurrence of germ or bacterial resistance. Objective To determine whether there is a relationship between the level of knowledge analysis with the compliance of antibiotic use in outpatients in the Gadung District Health Center. Buol

The design used in this study is Cross Sectional. The population was all outpatients who received antibiotic treatment. The sample size was 42 respondents using total sampling technique. The independent variable of research is knowledge. The dependent variable is compliance. Data were collected using a questionnaire, then data were analyzed using the rho spearment test with a significance level of  $\alpha \leq 0.05$ .

The results showed that almost half of respondents had sufficient knowledge of 18 respondents (42.9%), obedient respondents were 23 respondents (54.8%), the statistical test in this study used the Spearmen's rho test with a  $<0.05$  obtained  $p = 0,000$  where  $H_1$  is accepted and  $H_0$  is rejected, which means that there is a relationship between the level of knowledge and compliance with the use of antibiotics in outpatients in Gadung District Health Center. Buol

There is a relationship between the level of knowledge analysis with adherence to the use of antibiotics in outpatients in the Gadung District Health Center, Buol

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**Introduction**

Infectious disease is still one of the important public health problems, especially in developing countries. One of the mainstay drugs to overcome this problem is

antimicrobial, among others, antibacterial / antibiotic, antifungal, antiviral, antiprotozoa. Antibiotics are the drugs most widely used in infections caused by bacteria (Yunita, 2016).



Inappropriate use of antibiotics can cause several effects, namely the occurrence of germ or bacterial resistance. Resistance to antibiotics is the drug is not able to kill germs or germs become resistant to drugs.

Initially the resistance occurred at the hospital level, but gradually also developed in the community environment, especially *Streptococcus pneumoniae*, *Staphylococcus aureus*, and *Escherichia coli*. Whereas in the Minister of Health Regulation on General Guidelines for the Use of Antibiotics it is stated that the relatively high intensity of antibiotic use raises various problems and is a global threat to health, especially bacterial resistance to antibiotics. In addition to having an impact on mortality and mobility, it also has a very high negative impact on the social economy (Stringer, 2006).

WHO in 2015 said that each country was responsible for controlling antibiotic resistance that occurred (Ventola, 2015). According to the results of the 2018 Riskesdas states that the proportion of households that store antibiotics without a doctor's prescription is 93.4% (Riskesdas, 2018). The use of antibiotics will be beneficial and have an effect when prescribed and consumed in accordance with the rules (Krisnanta, 2018). However, currently antibiotics have been used freely and widely by the public without knowing the effects of unregulated use. Unregulated use results in reduced effectiveness of antibiotics.

Results of a preliminary study in December 2019 found that the average number of patients using antibiotics in the puskesmas was 42 patients. The results of interviews of 10 patients in Puskesmas who received antibiotics found 8 of them stopped antibiotics after feeling the patient had recovered, and 2 patients continued until they were finished as recommended by the doctor, this was due to the absence of supervisors taking medication in the family and the need for a standard or SOP. about supervising the taking of patient's medicines at the health center.

Patients with antibiotics must be consumed completely because adherence to the patient in taking antibiotics will determine the success of therapy. Errors in consuming

antibiotics can trigger antibiotic resistance. Antibiotic resistance is defined as bacterial resistance to antibacterial so that antibacterial has no effect on the usual dosage used (Ventola, 2015). The main factors causing antibiotic resistance one of which is due to the use of irrational antibiotics such as, the use of time is too short, the dose is too low, and the diagnosis of disease is wrong (Tamayanti, 2016).

This results in not achieving the expected therapeutic effect, increasing morbidity and mortality, as well as increasing medical costs that must be incurred by the patient. The main cause of antibiotic resistance is its widespread and irrational use. Resistance begins with the use of antibiotics that do not run out, causing bacteria do not die as a whole but there are still surviving. Most people use antibiotics as self-medication without prescription from doctors and knowledge of antibiotic use. This may be due to the lack of public knowledge about the assumption that antibiotics can treat all kinds of diseases that they are suffering without knowing clearly indications of drugs and causes of the disease (Krisnanta, 2018).

Microbial cell resistance is a natural mechanism of microbial survival (Neal, 2006). In infections by bacteria sometimes it does not work anymore on certain bacteria which turned out to have strong resistance and show resistance to the drug. Danger and resistance are clear, namely the treatment of disease becomes very difficult and the progress is prolonged, also the risk of complications or death (Sibagariang, 2010). If the patient has a lack of understanding and knowledge then the patient may not be able to comply in carrying out the planned treatment therapy.

The solution to improve medication adherence is to provide assistance by taking family medication, providing information and etiquette that is clear and easy to read by patients or families. Based on the background on the previous page, the researcher intends to conduct a study entitled "Analysis of the level of knowledge with adherence to the use of antibiotics in outpatients at the Gadung Health Center, Kab. Buol "

## Method

The design used in this study is Cross Sectional. The population was all outpatients who received antibiotic treatment. The sample size was 42 respondents using total sampling technique. The independent variable of research is knowledge. The dependent variable is compliance. Data were collected using a questionnaire, then data were analyzed using the rho spearment test with a significance level of  $\alpha \leq 0.05$ .

## Results

The research results obtained data distribution of research variables, namely:

Table 1. Frequency Distribution of Respondents based on Knowledge in Gadung Health Center, Kab. Buol from 7 January to 7 February 2019 (n = 42)

No	Knowledge	Frequency	Percentage
1	Less	7	16,7
2	Enough	18	42,9
3	Good	17	40,5
<b>Total</b>		<b>42</b>	<b>100</b>

The results showed that almost half of respondents had sufficient knowledge of 18 respondents (42.9%).

Table 2. Frequency Distribution of Respondents based on Compliance at the Gadung Health Center, Kab. Buol from 7 January to 7 February 2019 (n = 42)

No	Compliance	Frequency	Percentage
1	Non-compliance	19	45,2
2	Comply	23	54,8
<b>Total</b>		<b>42</b>	<b>100</b>

The results showed that the majority of respondents complied with 23 respondents (54.8%).

Table 3. Test Statistics

### Correlations

			Knowle dge	Complia nce
Spearma n's rho	Knowle dge	Correlat ion Coefficie nt	1,000	,674**

	Sig. (2- tailed)	.	,000
	N	42	42
Complia nce	Correlat ion Coefficie nt	,674**	1,000
	Sig. (2- tailed)	,000	.
	N	42	42

\*\* Correlation is significant at the 0.01 level (2-tailed).

The statistical test in this study used the Spearman's rho test with a  $<0.05$  obtained  $p = 0,000$  where H1 was accepted and H0 was rejected, which means that there is a relationship between the level of knowledge and adherence to antibiotic use in outpatients at the Gadung District Health Center. Buol

## Discussion

The statistical test in this study used the Spearman's rho test with a  $<0.05$  obtained  $p = 0,000$  where H1 was accepted and H0 was rejected, which means that there is a relationship between the level of knowledge and adherence to antibiotic use in outpatients at the Gadung District Health Center. Buol The results showed that nearly half of respondents complied with sufficient knowledge of 17 respondents (40.5%).

According to Niven's research theory (2012) Various strategies have been tried to improve compliance, among others, support for health professionals is needed to improve compliance, the simplest example of this support is the existence of communication techniques. Communication plays an important role because good communication provided by good health professionals Doctors / Nurses can instill obedience for patients. Social support. In this case what is meant is family. Health professionals who can convince the patient's family to support the improvement of the patient's health then non-compliance can be reduced. Determinants or determinants of human behavior are difficult to limit because

behavior is the resultant of various factors. In reality it is difficult to differentiate in determining behavior because it is influenced by other factors, including factors of experience, beliefs, physical facilities, sociocultural society, and so on so that the process of formation of knowledge and behavior can be understood as suggested by Green Lawrence's theory (1980) (Notoatmodjo, 2014). broadly influenced by two main factors, namely behavioral factors (behavioral causes) and factors outside behavior (non-behavioral causes).

Based on the results of the study found that there is a relationship between the level of knowledge with adherence to the use of antibiotics in outpatients in the Gadung District Health Center. Buol The results found that almost half of respondents comply with sufficient knowledge. Respondents who have good knowledge will support medication adherence and ultimately the therapeutic effect can be felt by respondents. Respondents with the use of antibiotics must be consumed until they are exhausted because the patient's obedience in taking antibiotics will determine the success of therapy. There are respondents who have antibiotic consumption errors can trigger antibiotic resistance due to non-compliance and must get antibiotics in larger doses. According to Ventola's (2015) antibiotic resistance as bacterial resistance to antibacterial so that antibacterial does not have an effect on the usual dosage used (Ventola, 2015). This results in not achieving the expected therapeutic effect, increasing morbidity and mortality, as well as increasing medical costs that must be incurred by the patient. The main cause of antibiotic resistance is its widespread and irrational use. Resistance begins with the use of antibiotics that do not run out, causing bacteria do not die as a whole but there are still surviving. Most people use antibiotics as self-medication without prescription from doctors and knowledge of antibiotic use. This may be due to the lack of public knowledge about the assumption that antibiotics can treat all kinds of diseases that they are suffering without clearly knowing the indication of the drug and the cause of the disease.

## Conclusion

1. The results showed that almost half of respondents had sufficient knowledge of 18 respondents (42.9%).
2. The results showed that the majority of respondents complied with 23 respondents (54.8%).
3. The statistical test in this study used the Spearman's rho test with a  $p < 0.05$  obtained  $p = 0,000$  where  $H_1$  was accepted and  $H_0$  was rejected, which means that there is a relationship between the level of knowledge and adherence to antibiotic use in outpatients at the Gadung District Health Center. Buol

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