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THE RELATIONSHIP BETWEEN THE LEVEL OF PUBLIC KNOWLEDGE ABOUT ANTIBIOTICS AND THEIR ADHERENCE TO THE USE OF ANTIBIOTICS AT THE SUKOWONO HEALTH CENTER

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ABSTRACT

Antibiotics must be used appropriately. Community non-compliance can be caused by a lack of knowledge about antibiotics. At the Sukowono Health Center, 70% low knowledge, 60% low adherence. The purpose of this study was to find out whether there is a relationship between the level of public knowledge about antibiotics and adherence to the use of antibiotics at the Sukowono Health Center. This study used an analytic observational research method with a cross-sectional approach and used a questionnaire. The total population was 217 and the sample was taken using purposive sampling. It obtained a sample of 140 people who visited the Sukowono Health Center and received antibiotic therapy. Data analysis using Spearman's rank. The results of the research on the level of public knowledge about antibiotics were mostly in the sufficient category (47.1%). While the level of public compliance regarding the use of antibiotics was obtained by the majority (60.7%). Based on the Spearman's rank test, there is a relationship between the level of public knowledge about antibiotics and compliance with the use of antibiotics. The level of knowledge was obtained in the sufficient category, while the level of community adherence to the use of antibiotics was also obtained in the sufficient category. There is a relationship between public knowledge about antibiotics and adherence to the use of antibiotics, the higher the knowledge, the higher the level of adherence. Knowledge is sufficient, compliance is also sufficient, and knowledge is low, compliance is also low. It is expected that health workers will provide detailed information about the impact of inappropriate use of antibiotics. Communities are expected to understand the information provided by health workers.

Keywords: Knowledge, adherence, antibiotics

INTRODUCTION

Antibiotics belong to a group of drugs that can be used to treat bacterial infections. Antibiotics are not indicated for self-limiting diseases. Antibiotics must be used according

to the interval and dosage determined based on the doctor's prescription. Compliance with antibiotics, such as taking them regularly, is an essential component of treatment; even if used in long-term therapy for chronic diseases, compliance has a vital role in therapy success (Ayunda dkk., 2019). However, antibiotics are often misused due to low levels of knowledge. The level of expertise influences behaviour related to drug use. So, if the level of knowledge is low, the behaviour or level of non-compliance will be higher (Harahap, 2017). Research conducted in Lisboa; Portugal showed that non-compliance in antibiotic use was between 9.4-57.7%. In Indonesia, as many as 11-87.1% do not comply with antibiotics because they feel they have recovered or experienced improved symptoms (Anggraeni dkk., 2020). In Jember, 105 cases of antibiotic resistance were caused by a lack of public understanding of antibiotics (Yumarlis, 2016).

Based on research by Salman (2023), a lack of understanding and awareness of rational use is the cause of non-compliance. According to Fauiziah (2016), a person's non-compliance in taking medication can be caused by the patient not remembering when to take medication, the patient's family, doctor-patient communication, KIE, and Pharmaceutical Technical Personnel (TTK). There are four signs of compliance, including compliance with usage guidelines, the correct dose, the proper interval, and the right length of use (Fauziah, 2016).

Non-compliance with antibiotics results in the incomplete killing of infecting bacteria, thus triggering antibiotic resistance. When a person is resistant to antibiotics, some infectious diseases that will appear in the future can have fatal consequences because the effectiveness of the antibiotic decreases. Infectious disorders caused by antibiotic-resistant bacteria may be more challenging to treat, have a higher risk of death, and require extended hospital treatment (Muniarti, 2020).

Knowledge is one of the essential things in shaping behaviour to increase compliance. Good knowledge will produce behavioural attitudes that increase more organized compliance. A low level of expertise can trigger errors in accepting incorrect information. A person's level of knowledge can be influenced by factors such as age, education level, experience, and environment (Notoatmodjo, 2015).

With the large number of people using antibiotics at the Sukowono Community Health Center, it is necessary to research the relationship between the level of public knowledge about antibiotics and compliance with antibiotic use at the Sukowono Community Health Center.

MATERIAL AND METHODS

This type of research is analytical observational research with a cross-sectional correlation approach. The population in this study were all patients who visited the Community Health Center and received antibiotics, namely 217 patients with samples taken using a purposive sampling technique, a data collection technique based on specific considerations, and then a sample of 140 patients. The inclusion data for this study were

respondents who visited the Sukowono Community Health Center, respondents who received antibiotics in the last month, and respondents who were over 17 years old.

This research uses an instrument in the form of a questionnaire obtained directly from the community. The compliance questionnaire was measured using the MMAS-8 (Morisky Medication Adherence Scale), which consists of 8 questions with indicators of conformity to taking medication according to the rules, intention to stop taking medication, and the ability to control oneself to continue. The knowledge questionnaire consists of 10 indicators: indications for antibiotics, how to use antibiotics, classification of antibiotics, how to get antibiotics, side effects, and contraindications to antibiotics. The data obtained was then processed using Microsoft Excel and SPSS version 25.

The knowledge level questionnaire in this research has been tested for validity. The questionnaire can be valid if the corrected item-total correlation value > the r table value. Reliability testing was carried out using Cronbach Alpha. A questionnaire is reliable if Cronbach's Alpha exceeds 0.60 (Sugiyono, 2020).

RESULT AND DISCUSSION

The distribution of community characteristics at the Sukowono Community Health Center, Jember Regency, is shown in the table below.

Table 1. Characteristics of the Sukowono Community Health Center community

Characteristics	Frequency	Percentage (%)
Gender		
Woman	82	56,6%
Man	58	41,4%
Age		
17-26	23	16,4%
27-34	36	25,7%
35-41	49	35%
42-59	26	18,6%
Education		
SD	76	54,3%
SMP	24	17.1%
SMA	32	22,9%
Bachelor	8	5,7%

Based on Table 1, the people who participated in this research were primarily women, 82 people or 56.6%; this is because women have the habit of carrying out routine activities, so women pay more attention to health than men (Karlina dkk., 2021). Knowledge is also influenced by age. Table 1 shows that most people are aged 35-41, 49 people or 35%. According to Fitriani (2015), the higher the age, the more mature the ability to think and reason so that the knowledge gained will be broader. The characteristics of the community based on the latest education were primarily people with

primary school (SD) education, 76 or 54.3%. According to Kondoj (2020), the higher the level of education, the easier it is to receive learning. According to researchers, low education does not necessarily mean insufficient knowledge because people can gain understanding from non-formal education. Likewise, at the level of compliance, for people who have low education, this does not affect compliance because higher education does not necessarily have understanding and vice versa. Table 2 below shows the processed knowledge level data obtained from the questionnaire.

Table 2. Percentage of the level of public knowledge about antibiotics at the Sukowono Community Health Center.

Knowledge	Frequency (n)	Percentage (%)
Low knowledge	59	42,1%
Sufficient knowledge	66	47,1%
High knowledge	15	10,7%
Total	140	100%

Based on Table 2, most people's knowledge about antibiotics at the Sukowono Community Health Center is sufficient knowledge, 66 people or 47%. This is by research conducted by Baroroh dkk (2018) on people with expertise with a frequency of 45.16% in the sufficient category. Experience and environmental factors can influence knowledge (Notoatmodjo, 2012). Experience can be obtained from individual experience or relatives, for example, having experience in getting antibiotics. According to Mamusung (2023), environmental factors foster interaction so that it can have a good or bad impact on the surroundings. Table 3 below shows the processed compliance level data obtained from the questionnaire.

Table 3. Percentage of community compliance with the use of antibiotics at the Sukowono Community Health Center.

Adherence	Frequency (n)	Percentage (%)
Low adherence	43	30,7%
Sufficient adherence	85	60,7%
High adherence	12	8,6%
Total	140	100%

Based on Table 3, data on antibiotic use compliance at the Sukowono Community Health Center, most people have adequate antibiotic use compliance, 85 people or 60.7%. This is by research conducted by Wulandari & Rahmawardany (2022) on antibiotic use behaviour in the community with a frequency of 68.9% in the sufficient category. Confidence, discipline, and awareness influence obedience. This relates to decision-making in using the right antibiotics (Pujianti & Anggraini, 2020). Communication also affects compliance. According to Gamble (2011), good communication will produce better impressions, but language harmony between patients and doctors can influence

beliefs during treatment. Table 4 below is a cross-data tabulation measuring two variables' interaction.

Table 4. Cross-tabulation data on community knowledge about antibiotics and compliance with antibiotic use at the Sukowono Community Health Center.

No	Variable	Adherence			Total
		Low	Sufficient	High	
1.	Low knowledge	24 (17,1%)	35 (25%)	0 (0,0%)	59 (42,1%)
2.	Sufficient knowledge	18 (12,9%)	47 (33,6%)	1 (0,7%)	66 (47,1%)
3.	High knowledge	1 (0,7%)	3 (2,1%)	11 (7,9%)	15 (10,7%)
	Total	43 (30,7%)	85 (60,7%)	12 (8,6%)	140 (100%)

Based on Table 4, the cross-tabulation data on knowledge and compliance with antibiotic use at the Sukowono Community Health Center shows that a small % of people with low ability, 24 or 17.1%, have low compliance. Meanwhile, in communities with sufficient knowledge, almost half, 47 or 33.6%, had good observation, and in communities with high ability, a small portion, 11 or 7.9%, had high compliance. Table 5 below shows the statistical correlation test to determine the relationship between the knowledge level and antibiotic use compliance.

Table 5. The relationship between the level of public knowledge about antibiotics and compliance with antibiotic use at the Sukowono Community Health Center.

Correlation	N	Correlation coefficient	P-value
Spearman’s Rank	140	0,376	0,000

Based on Table 5, the results of the Spearman's rank test regarding the relationship between knowledge level and compliance with antibiotic use showed that the p-value was 0.000, which was smaller than alpha (p=<0.05), meaning Ha was accepted and Ho was rejected, or it could be concluded that there was a relationship between knowledge level and compliance level. The coefficient value obtained is 0.376, which is 0.2-0.4, indicating a weak correlation with a positive (+) correlation direction (Dahlan, 2014).

The analysis results show a relationship between knowledge and compliance with antibiotic use; this is by Lawrence Green's theory that there are factors that make compliance achieved, namely knowledge. Knowledge also needs to be based on understanding and awareness. People who have knowledge, experience and awareness will have more knowledge. So, knowledge based on performance and attention will be a reference in the success of treatment because people have the perception of recovery, thereby increasing compliance in taking antibiotics. According to Karen (2013), people

with good knowledge will have a better understanding and awareness, positively affecting drug use compliance. Based on sufficient and insufficient knowledge, this cannot be said to be optimal because there are still people who have misconceptions about the use of antibiotics.

CONCLUSION

The knowledge and compliance with antibiotic use were mainly in the sufficient category. There is a significant relationship between the level of knowledge and compliance with antibiotic use.

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