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RELATIONSHIP BETWEEN KNOWLEDGE LEVEL ON DRUG USE REGARDING PURCHASING AND DRUG COMPLIANCE IN TAKING ANTIBIOTIC MEDICATIONS WITHOUT PRESCRIPTION AT AZ-ZAHRA PHARMACY

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Abstract

Antibiotics are drugs used to treat infections caused by bacteria. The uncontrolled use of antibiotics is supported by the ease of obtaining antibiotics freely without using a doctor's prescription. Improper and uncontrolled use will have an impact on increasing the risk of resistance. This research was conducted at the Az-zahra Pharmacy in the Pasar Pedati area in February – April 2023. This research used quantitative research. The statistical test in this study uses bivariate correlation to state the existence of a relationship and the level of closeness, then a linear regression test is carried out to determine the existence of an influence. The aim of this study was to determine the influence of patient knowledge about antibiotics on purchasing medicines and the influence of patient knowledge on adherence to taking antibiotic medication at the Az-zahra Pharmacy. The results of this study show that the characteristics of the respondents are that the majority are aged 26-45 years, 61 people (57.54%), with the highest education being senior high school, 43 people (40.56%), the respondents' occupation as housewives, 21 people (19 .81%), gender is dominated by women as many as 67 people (63.20%), and the majority of antibiotics purchased by the public are amoxicillin as much as 28.30%. Respondents' knowledge about antibiotics has a positive effect on purchasing antibiotics at pharmacies by 5.7% with a significance value of <0.05. Respondents' knowledge about antibiotics has a positive effect on respondents' compliance in taking medication by 33.8% with a significance value of <0.05

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Introduction

Antibiotics are drugs used to treat infections caused by bacteria and also help the body's natural defense system to eliminate these bacteria (Anna, 2013). The relatively high and unwise prescribing of antibiotics in Indonesia creates threats and global problems for health, especially the incidence of bacterial resistance to antibiotics (Ministry of Health, 2011).

According to WHO (World Health Organization) data, the Southeast Asia region has the highest number of antibiotic resistance cases in the world and Indonesia is in the 8th level out of 27 countries with high levels of resistance to antibiotic drugs (Ministry of Health, 2017). According to the Head of the Communications and Public Services Service of the Indonesian Ministry of Health, the public must be wise in consuming antibiotics. People are not allowed to carry out transactions carelessly purchasing antibiotics if there is no doctor's prescription. Antibiotics must be finished and regularly according to doctor's recommendations (Ministry of Health, 2017).

Appropriate and rational use of antibiotics will reduce the level of resistance. The level of understanding of residents when receiving treatment in the form of antibiotics will result in successful treatment and avoid the danger of resistance (Nurmala, S., & Gunawan, 2020).

Methods

Types and Research Design

This research is quantitative research that uses descriptive observational analysis. Research using descriptive methods is research that will describe or explain problems related to questions regarding the existence of independent variables. This research was conducted to see the influence of independent variables (patient knowledge of antibiotics) with the dependent variable (purchase of antibiotics without a doctor's prescription and patient compliance in taking medication). This research instrument was in the form of a questionnaire given to respondents to determine the relationship between the level of patient

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knowledge regarding purchasing antibiotics and the level of compliance with taking antibiotic medication.

Research Location

This research was conducted at Az-zahra Pharmacy with a total sample of 106 patients.

Research Population and Sample

The population in this study were patients who came and bought antibiotics at the Az-zahra pharmacy in the Pasar Pedati area who were selected using purposive sampling according to the inclusion criteria, namely patients who had used antibiotics and bought antibiotics at the pharmacy, patients over the age of 17 years, patients or the patient's family can be invited to communicate. Patients or patient families who are willing to take part in the research. The number of research samples based on the Slovin formula calculation was 106 respondents.

Data Analysis

Before the questionnaire is distributed to patients, it is necessary to test the validity and reliability of the instrument. The validity test is an index that shows the measuring instrument really measures what is measured (Notoadmodjo, 2018). If the calculated r value is greater than table r then the question is valid. Reliability Test is the extent to which measurement results using the same object will produce the same data (Sugiyono, 2017). Usually, in testing, certain limits can be used, namely reliability if the r alpha number > r table (0.6)

Then proceed with bivariate analysis which is used to determine the existence of a relationship between two variables that are thought to be related or correlated, which is then continued with the Simple Linear Regression test to determine the influence between two variables, namely the dependent variable and the independent variable (Notoadmojo, 2010). Data processing was carried out using computer software, namely the SPSS 21 statistical application.

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Results and Discussion

1. Questionnaire Validity Test Results

The results of the validity test from 30 respondents showed that the calculated r was greater than the r table, so that the questionnaire could be declared valid with a significance value of 0.05% and r table 0.361.

Table I. Questionnaire Validity Test Results

Variable	R Count	R Table	Decision
Knowledge Level	0,4-0,544	0,361	Valid
Purchase Level	0,691	0,361	Valid
Drug Compliance	0,656	0,361	Valid

2. Questionnaire Reliability Test Results

From the results of the respondent reliability test, it was found that r alpha was greater than r table 0.6, thus it could be stated that the questionnaire was reliable

Table II. Questionnaire Reliability Test Results

Variable	R Alpha	R Table	Decision
Knowledge Level	0,760	0,60	Valid
Purchase Level	0,618	0,60	Valid
Drug Compliance	0,710	0,60	Valid

3. Respondent Characteristics

The results of this study show that the characteristics of the respondents in this study consisted of age, last education, occupation and antibiotics purchased which can be seen in Table III. The results of this research show that the characteristics of the respondents are that the majority of respondents are aged 26-45 years as many as 61 people (57.54%), the majority of their highest education is SMA/SMK as many as 43 people (40.56%), the majority of respondents' jobs are housewives as many as 21 people. (19.81%), the majority of gender the respondents was 67 people (63.20%), and the majority of antibiotics purchased by the public were amoxicillin, 30 people (28.30%).

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Table III. Respondent Characteristics

Variable	Frequency	Percentage (%)
Age		
17-25 yo	33	31,13
26-45 yo	**61**	**57,54**
46-65 yo	12	11,32
>65 yo	-	-
Total	106	100
Educational Background		
Primary School	5	4,71
Junior High School	18	16,98
Senior High School	**43**	**40,56**
Diploma / Bachelor	40	37,73
Total	106	100
Employment		
Housewife	**21**	**19,81**
Mahasiswa/i	8	7,54
Civil Servant	12	11,32
Emlpoyee	18	16,98
Self-employee	18	16,98
Farmer	10	9,43
Lainnya	19	15,09
Total	106	100
Drug Category		
Generic		
Amoxicillin 500mg	**30**	**37,97**
Ciprofloxacin 500mg	9	11,39
Ampicilin	6	7,59
Cefadroxil	17	21,51
Cefixime	6	7,59
Cotrimoxazole	4	5,06
Metronidazole	7	8,86
Total	79	100
Branded		
Amoxan	3	11,11
Yusimox	8	29,62
Supertetra 250mg	**16**	**59,25**
Total	27	100
Gender		
Men	39	36,79
Woman	**67**	**63,20**
Total	106	100

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4. Respondent Responses

a. Respondents responses regarding knowledge

Table II. Frequency Distribution of Knowledge about Antibiotics

Knowledge Level	Frekuensi	Percentage
Good	54	50,94 %
Moderate	32	30,18 %
Less	20	18,86 %
Total	106	100 %

In this study, to determine the level of knowledge, respondents were divided into 3 categories, namely very knowledgeable if they correctly answered a question with a score of 7-8, said to know if they correctly answered a question with a score of 4-6 and said to be quite knowledgeable if they answered a question with a score of 1-3. In this study, respondents answered with very knowledgeable results, namely 54 (50.94%) respondents, knew as many as 32 (30.18%) respondents and 20 (18.86%) respondents knew enough. Thus it can be seen that the respondent's knowledge is very high. Patients who have good knowledge will influence compliance rational medicine (Febriana, 2012)

b. Respondents' responses regarding purchasing antibiotics at the pharmacy

Table III. Frequency distribution regarding purchasing antibiotics

Purchasing	Frequency	Percentage (%)
Very High	48	45,3
High	44	41,5
Low	14	13,2
Total	106	100

In this study, to determine the level of purchase of antibiotic drugs, it was divided into 3 categories, namely very high if you answered 4 questions correctly, high if you answered 3 questions correctly, and low if you answered 1 or 2 question correctly. Respondents with a very high purchase score were 48 (45.28%) respondents, a high score of 44 (41.50%) respondents and a low score of 14 (13.20%) respondents. So, when purchasing antibiotics, the score most frequently answered by patients was a score in the very high category, namely respondents answered 4 questions.

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In the Pasar Pedati Village area, quite a lot of patients buy medicine antibiotics without a doctor's prescription, this is due to the high cost factor if you have to consult a doctor first, so patients use their knowledge regarding the use of antibiotics as a basic reason for purchasing antibiotics without a doctor's prescription. The majority of respondents' jobs are housewives (housewives). Therefore, it can be seen in table 3 that the majority of respondents buy generic drugs, this is because the price of generic drugs is much more affordable than brand-name antibiotics. According to Yulia Pratiwi (2019), many people still buy medicine without a doctor's prescription because of the high cost, people's lack of knowledge about the correct use of antibiotics and the need for free time to go to the doctor.

c. Respondents' responses regarding compliance with taking antibiotics

Table IV. Frequency distribution of adherence to taking antibiotics

Compliance	Frequency	Percentage (%)
Compliant	27	74,5
Uncompliant	78	25,5
Total	106	100

In this study, to determine the level of compliance with taking antibiotics, it was divided into 2 categories, namely compliance if the respondent answered 6 questions correctly and non-compliance if the respondent's answer was below 6 questions. The results of the study showed that the majority of patient compliance in taking antibiotics fell into the non-compliant category, namely 78 (73.58%) respondents answered non-compliant and 27 (25.47%) patients complied. So in this study many patients were non-compliant in taking antibiotics. According to the research of Novia and Aditya (2016), PIO and length of use Antibiotics do not affect taking antibiotic medication in patients at adolescent health centers. This is reinforced by the answers given by respondents as to why they did not finish antibiotics on time and in accordance with the amount of antibiotics received. The reasons are forgetting to take medicine, feeling like he has recovered, moving for treatment to another place, changing or buying his own medicine, experiencing side effects from the medicine, feeling like there is no change, taking medicine only when sick, stopping taking medicine because the other medicine has run out.

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5. Relationship between variables

Table V. Correlation test results between patient knowledge of purchasing and patient compliance with taking antibiotic medication

Variable	Strength of correlation	P Value
Patient knowledge regarding the purchase of antibiotics	0,239	0,014
Patient knowledge on adherence to taking antibiotics	0,581	0,000

a. Relationship between Knowledge and Purchasing Antibiotic Medicines

In table V, it is known that the relationship between respondents' knowledge and adherence to taking medication has a significant correlation, namely 0.014 <0.05, then it is known that the calculated r value is 0.239 > 0.1891 so it can be stated that there is a low relationship. between respondents' knowledge of purchasing antibiotic drugs. The r count or person correlation results in this analysis are positive, thus the higher the patient's knowledge, the higher the purchase of antibiotics without a doctor's prescription. This can also be seen from the results of the analysis of knowledge and purchases of antibiotics which are in the very high category

b. The Relationship between Knowledge and Compliance with Taking Antibiotic Medications

In table V, it is known that between respondents' knowledge of adherence to taking antibiotics, there is a significant correlation, namely 0.000 < 0.05. Furthermore, it is known that r count is 0.581 > r table 0.1891, so it can be stated that there is a moderate relationship between the level of patient knowledge and compliance with taking antibiotic medication. Because the r count or person correlation results in this analysis are positive, this means that the more the patient's knowledge increases, the more patient compliance with taking antibiotics will increase.

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6. The Influence of Knowledge Variables on Antibiotic Purchases

a. The Influence of Knowledge on Purchasing Antibiotic Medicines at the Pharmacy

Table VI. The Influence of Knowledge on Purchasing Antibiotic Drugs at the pharmacy

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.577	.265		9.735	.000
pengetahuan	.106	.042	.239	2.511	.014

The results of the simple linear regression equation are presented in table VI, we get Y = A + bx where the coefficient value is valuable, so it can be said that the respondent's knowledge has a positive effect on purchasing antibiotics at the pharmacy. So you get it The linear regression equation is Y= 2.577 + 0.106. After reading the simple linear regression equation, continue by reading the significance value of 0.014 < 0.05, which means there is an influence between patient knowledge and drug purchases at the pharmacy.

c. Results of Knowledge Correlation Analysis of Antibiotic Purchases

Table VII. Correlation Analysis Results

Model	R	R Square	Adjusted R Square	td. Error of the Estimate
1	.239[a]	.057	.048	.975

The magnitude of the influence Respondents' knowledge of purchasing drugs at the pharmacy is presented in table VII, namely 5.7%, while 94.3% of pharmacy drug purchases were influenced by other variables not studied.

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7. The Influence of Knowledge Variables on the Level of Patient Compliance with Taking Antibiotics

a. The Influence of Knowledge on Compliance with Taking Antibiotic Medications

Table VII. The Influence of Knowledge on Compliance with Taking Antibiotic Medications

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.920	.438		2.103	.038
	pengetahuan	.510	.070	.581	7.281	.000

The results of the simple linear regression equation are presented in the table VII obtained Y= a+ bx where the coefficient value is valuable, so it can be said that the respondent's knowledge has a positive effect on compliance with taking antibiotics. So we get the regression equation the linear is Y = 0.920 + 0.510. After reading the simple linear regression equation, continue by reading the significance value of 0.038 < 0.05, which means that there is an influence between patient knowledge and adherence to taking medication

b. Results of Correlation Analysis of Knowledge on Adherence to Taking Antibiotic Medications

The magnitude of the influence of patient knowledge on compliance with taking antibiotics at the pharmacy is presented in table VIII, namely 33.8%, while 66.2% of drug purchases at the pharmacy were influenced by other variables not studied

Table VIII. Results of Correlation Analysis of Knowledge on Adherence to Taking Antibiotic Medications

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581[a]	.338	.331	1.612

The magnitude of the influence of patient knowledge on compliance with taking antibiotics at the pharmacy is presented in table VIII, namely 33.8%, while 66.2% of drug purchases at the pharmacy were influenced by other variables not studied.

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Conclusion

Based on the research results, it can be concluded that:

1. The results of this study show that the characteristics of the respondents are that the majority of respondents aged 26-45 years are 61 people (57.54%), the majority of their last education was senior high school as many as 43 people (40.56%), the majority of respondents' jobs were housewives as many as 21 people (19.81%), the majority of respondents' gender was female as many as 67 people (63 .20%), and the majority of antibiotics purchased by the community is amoxicillin as many as 30 people (28.30%).
2. Respondents' knowledge about antibiotics has a positive influence on purchasing antibiotics by 5.7% with a significance value of <0.05.
3. Respondents' knowledge about antibiotics had a positive effect on respondents' compliance in taking medication by 33.8% with a significance value of <0.05.

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