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Relationship between Patient Knowledge and Attitude Level in the Use of Antibiotic at Tanjung Paku Community Health Center Solok City

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ABSTRACT

Low levels of knowledge about the proper use of antibiotics can lead to incorrect usage, which raises the possibility of antibiotic side effects. The goal of this study is to evaluate patient attitudes and knowledge regarding the use of antibiotics at the community health center in Tanjung Paku Solok City. A questionnaire acted as the data collection tool in a cross-sectional study with a descriptive approach and accidental sampling as the sample process. 60 patients who met the inclusion criteria were included in the sample. The Chi Square test, partial T test, simultaneous F test, and multiple linear regression test were used to examine the results. The results revealed that in good category for knowledge is 57 people (95%), in enough category is 3 people (5%), and there is no one in less category. While the results for good category in attitude is 48 people (80%), in enough category is 12 people (20%) and there is no one in less category. It can be stated that the patients of community health center in Tanjung Paku Solok City has knowledge and attitude category in the use of antibiotic is good. The results of the analysis between knowledge and attitude is having a significant relationship (Sig. = 0.039) but has less influence value, and there is no relationship between variables with the sociodemography (age, gender, lastest education, and occupation). And respondent achievement level (TCR) showed that 80% were good at knowledge statements and 70% were good at attitude statements.
Keyword: Knowledge, Attitude, Antibiotics.

ABSTRAK

Rendahnya tingkat pengetahuan mengenai penggunaan antibiotik dapat menyebabkan penggunaan antibiotik yang tidak tepat, sehingga beresiko menimbulkan efek samping antibiotik. Tujuan penelitian ini untuk mengetahui tingkat pengetahuan dan sikap pasien dalam penggunaan antibiotik di Puskesmas Tanjung Paku Kota Solok. Desain penelitian yang digunakan yaitu metode cross sectional dengan jenis penelitian metode deskriptif dan teknik pengambilan sampel dengan cara accidental sampling menggunakan kuesioner sebagai instrumen pengumpulan data. Jumlah sampel yang digunakan sebanyak 60 orang pasien yang memenuhi kriteria inklusif. Hasil penelitian ini dianalisa menggunakan uji Chi Square, uji T Parsial, uji F Simultan dan uji Regresi Linear Berganda. Didapatkan hasil bahwa kategori baik untuk pengetahuan sebanyak 57 orang (95%), kategori cukup berjumlah 3 orang (5%) dan tidak ada pada kategori kurang. Sedangkan pada kategori baik untuk sikap sebanyak 48 orang (80%), kategori cukup sebanyak 12 orang (20%) dan tidak ada pada kategori kurang. Dapat disimpulkan bahwa pasien di Puskesmas Tanjung Paku Kota Solok memiliki pengetahuan dan sikap kategori dalam penggunaan antibiotik dengan baik. Hasil analisa antara pengetahuan dan sikap didapatkan terdapat hubungan yang signifikan (Sig. = 0,039) tetapi memiliki nilai pengaruh yang kurang, dan tidak ada hubungan antara variabel dengan sosiodemografi (umur, jenis kelamin, pendidikan terakhir, dan pekerjaan). Dan Tingkat Capaian Responden (TCR) menunjukkan bahwa 80% baik pada pernyataan pengetahuan dan 70% baik pada pernyataan sikap.
Kata Kunci: Pengetahuan, Sikap, Antibiotik.

1. Introduction

Antibiotics are compounds produced by various types of microorganisms (bacteria, fungi, actinomycetes) that suppress the growth of other microorganisms. However, common usage often expands the term antibiotic to include synthetic antimicrobial compounds, such as sulfonamides and quinolones [1]. Antibiotics are drugs used to treat bacterial infections. Inappropriate, even excessive and long-term use of antibiotics causes antibiotic resistance. Where this resistance will cause inhibition of bacterial growth by systemic administration of antibiotics at normal doses [2]. Antibiotic knowledge must be used rationally and requires knowledge for patients. The low level of knowledge regarding the use of antibiotics can lead to inappropriate use of antibiotics, thus risking antibiotic side effects [3].

Based on experience and research, if someone has good knowledge, they will have good behavior too. A person's knowledge determines his behavior, the better his knowledge, the better his behavior, so it can be concluded that if good knowledge will have a good attitude too [4]. The optimal and judicious selection of antimicrobial compounds for the therapy of infectious diseases requires clinical judgment and detailed knowledge of pharmacological and microbiological factors. Unfortunately, the decision to use antibiotics is often taken lightly, without regard to potential infecting microorganisms or the pharmacological properties of the drug. Antibiotics can cause serious toxicity, and unwise use of antimicrobial compounds can increase the selection of resistant microorganisms [1]. Research conducted by Fatmah (2019) to Mataram University students with the results of the study showed that the level of knowledge of students regarding the use of antibiotics in self-medication was classified as high (5.4%), moderate (63.1%), and low (31.4%) [5]. Another study conducted by Yulia (2019) on the community at the Rasimah Ahmad Bukittinggi Health Center, showed 17 people (17%) respondents had poor knowledge, 60 people (60%) respondents had sufficient knowledge and as many as 23 people (23%) had good knowledge. From these results it can be concluded that the overall level of public knowledge of the use of antibiotics is in the sufficient category [6].

2. Research Method

2.1 Research Design

This research is a type of research using a descriptive approach by distributing questionnaires directly to respondents.

2.2 Research Time and Place

This research was conducted from February to June 2023 at the community Health center in Tanjung Paku Solok City.

2.3 Population and Sample

The population in this study were patients who sought treatment at the community Health center in Tanjung Paku Solok city, the research sample taken was 60 people who met the inclusion criteria. Inclusion criteria include patients who seek treatment and receive antibiotic prescriptions at the Tanjung Paku Health Center, patients who are not illiterate and patients who are willing to become respondents. Exclusion criteria are patients who are not willing to become respondents.

2.4 Research Instrument

The instrument used in this study was a questionnaire sheet. The questionnaire consists of three parts, namely demographic data of respondents (name, age, gender, latest education, occupation) as well as the name of antibiotics used by respondents, respondents' knowledge related to antibiotics and respondents' attitudes related to antibiotics. Each questionnaire was tested for validity and reliability, using 30 respondents at Nan Balimo community health center. The results of the validity and reliability test of the questionnaire obtained from 20 statements, the results were declared valid and reliable because the calculated r value obtained was greater than r table and the Pearson Cronbach's Alpha value obtained was > 0.630. So, all 20 statements can be used as research instruments.

3. Results and Discussion

3.1 Results of questionnaire data

3.1.1 Results of validity and reliability tests of questionnaires

Questionnaire validity test results showed all statements used in the questionnaire are valid with r count> 0.361 in the Corrected item-Total Corellation section. After conducting reliability testing, the calculated r value on the questionnaire with Cronbach's alpha was 0.907 for the knowledge questionnaire and

0.908 for the attitude questionnaire, and this means that both questionnaires are declared reliable because r count> 0.630 and can be used in research so that the questionnaire used by researchers has a level of accuracy and trust.

3.1.2 Respondent Characteristics Data

3.1.2.1 Respondent Age

Table 1. Frequency Distribution of Respondents Based on Age

Age	Frequency	(%)
15-24 years old	9	15
25-39 years old	23	38,3
40-65 years old	28	46,7
Total	60	100

Source: Results of primary data processing, 2023.

Based on the table above, it shows that the most age is 40-65 years as many as 28 people (46.7%) and the least is 15-24, totaling 9 people (15%).

3.1.2.2 Respondent Gender

Table 2. Frequency Distribution of Respondents Based on Gender

Gender	Frequency	(%)
Male	16	26,7
Female	44	73,3
Total	60	100

Source: Results of primary data processing, 2023.

Based on the table above, it shows that there were 16 male respondents (26.7%) and 44 female respondents (73.3%).

3.1.2.3 Respondent Lastest Education

Table 3. Frequency Distribution of Respondents Based on Lastest Education

Education	Frequency	(%)
Elementary School	2	3,3
Middle School	5	8,3
Senior High/Vocational School	32	53,3
College	21	35
Not in School	0	0
Total	60	100

Source: Results of primary data processing, 2023.

Based on the level of education, it is known that the respondents with the most recent education are High/Vocational School as many as 32 people (53.3%), the least is elementary school totaling 2 people (3.3%), and no one is not in school (0%).

3.1.2.4 Respondent Occupation

Table 4. Frequency Distribution of Respondents Based on Occupation

Occupation	Frequency	(%)
Civil Servant	13	21,7
Farmer	5	8,3
Self-employed	14	23,3
Housewife	19	31,7
Other	9	15
Total	60	100

Based on occupation, it is known that the most occupations are housewives as many as 19 people (31.7%) and the least are farmers totaling 5 people (8.3%). In the "Other" occupation are respondents who are still in school or not working, or so on.

3.1.2.5 Antibiotics Used by Respondent

Table 4. Frequency Distribution of Respondents Based on Antibiotics Used

Antibiotic	Frequency	(%)
Amoxillin	51	85
Cotrimoxazole	4	6,7
Cefadroxil	5	8,3
Total	60	100

Source: Results of primary data processing, 2023.

Based on the table above, the most widely used antibiotic was Amoxillin by 51 people (85%), and the least was Cotrimoxazole by 4 people (6.7%).

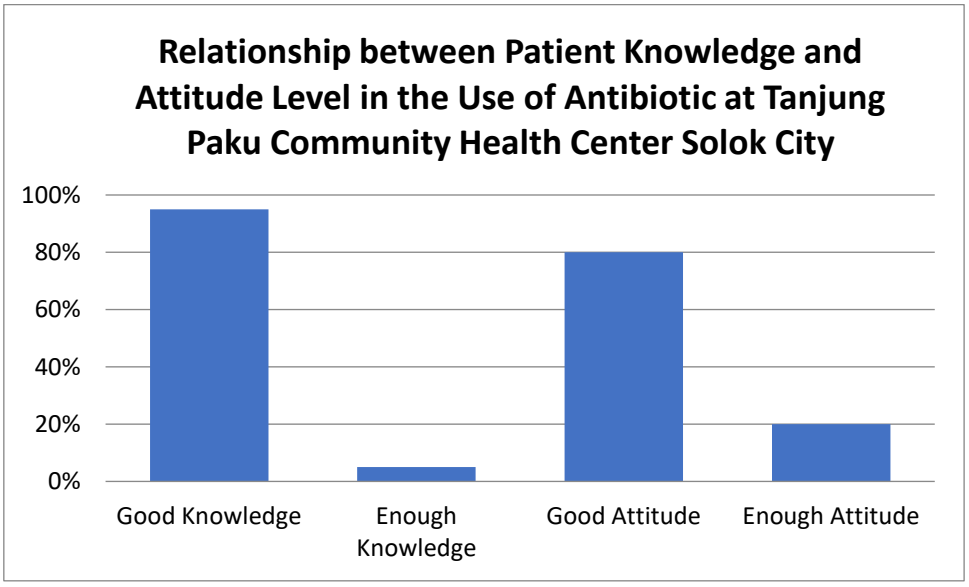
3.1.3 Respondent Answers of Knowledge and Attitude Questionnaire

Table 5. Questionnaire Answers

Gender	Frequency	(%)
Knowledge		
Good	57	95
Enough	3	5
Total	60	100
Attitude		
Good	48	80
Enough	12	20
Total	60	100

Source: Results of primary data processing, 2023.

Based on the table above, the following results were obtained:



3.1.4 Hypothesis Testing

3.1.4.1 Chi Square Test

At the Chi Square test, it is known that if the value of Asymp sig. <0.005 or the same value, then there is a significant relationship between these objects, while if the Asymp sig value. > 0.005, then there is no significant relationship between these objects.

Table 5. Chi Square Test Results

Sosiodemography	Knowledge	Attitude
Age	No relation (p = 0,335)	No relation (p = 0,088)
Gender	No realtion (p = 0,789)	No realtion (p = 0,189)
Lastest Education	No realtion (p = 0,298)	There is a relation (p = 0,001)
Occupation	No realtion (p = 0,343)	No realtion (p = 0,166)

Source: Results of primary data processing, 2023.

Chi Square test was also conducted between knowledge and attitude, it was found that there was no significant relationship between knowledge and attitude (p = 0.038).

3.1.4.2. Partial T test and simultaneous F test

In the Partial T test, the following T_{table} formula is used [7]:

$$T_{table} = \left(\frac{\propto}{2} : n - k - 1\right)$$

Known as:
α = Confidence level 95% that is 0,05.
n = Total of respondents.
k = Number of independent variables.
Thus:

$$T_{tabel} = \left(\frac{0{,}05}{2} : 60 - 2 - 1\right)$$

$$T_{tabel} = (0{,}025 : 57)$$

The value is then found in the distribution of the t table value, then the T table value is found to be 2.00247. Based on the coefficients output, if the T value is greater than 2.00247 and the significance value (Sig.) is not more than 0.05, it is concluded that there is a significant relationship between these objects, otherwise if the T value is less than 2.00247 and the significance value (Sig.) is more than 0.05, it is concluded that there is no significant relationship between these objects. Based on the test results that have been carried out, the T value is 2.116 and the sig. value is 0.039. It can be concluded that knowledge and attitude have a relationship.

In the Simultaneous F test, the same formula as the T test is used, where a value of 57 is obtained, then it is found in the distribution of the f table value, then the F table value is found to be 2.766. If the F value is greater than 2.766 and the significance value (Sig.) is smaller than 0.05 then there is a relationship between the variables, while if the F value is smaller than 2.766 and the significance value (Sig.) is greater than 0.05 then there is no relationship between the variables. Based on the test results that have been carried out, the F value is 4.476 and the sig. value is 0.039. It can be concluded that knowledge and attitude have a relationship.

3.1.4.3. Multiple Linear Regression Test

Based on the tests that have been carried out, the resulting R Square value is 0.072 (7.2%). This means that the effect of the relationship between knowledge and attitude is 7.2%.

3.1.4.4. Respondent Achievement Level (TCR)

The TCR index is needed to determine the criteria achieved by the respondents. To see the TCR index, the following formula is required:

$$TCR\ Index = \frac{TCR}{Y} \times 100\%$$

Known as:
Y = Highest TCR score (Highest *Likert* score x n).
n = Total of respondents.
Thus obtained:

Table 5. TCR Results

Statements	Knowledge (%)	Attitude (%)
1	90 (Very Good)	82.5 (Good)
2	90.4 (Very Good)	82.9 (Good)
3	81.7 (Good)	89.2 (Good)
4	87.9 (Good)	90 (Very good)
5	81.3 (Good)	75.4 (Good Enough)
6	85.4 (Good)	87.9 (Good)
7	84.6 (Good)	89.2 (Good)
8	85.4 (Good)	81.3 (Good)
9	87.9 (Good)	90.8 (Very Good)
10	89.6 (Good)	84.2 (Good)

Source: Results of primary data processing, 2023.

With those results, it's concluded that the TCR on the knowledge statement is 80% in the good category, and the TCR on the attitude statement is 70% in the good category.

3.2 Discussion

In this study, researcher wanted to know how much the level of knowledge and attitude of the community and its relationship to the use of antibiotics. In determining the number of respondents, the Slovin formula was used with a precision level of 10% [7]. Before the questionnaire was distributed to respondents, the researcher first tested the validity and reliability of the questionnaire which would be used as a research instrument which aims to support data acquisition. This test was conducted on 30 respondents who had the same characteristics as the respondents to be studied. The validity and reliability test values obtained by researchers from 10 statements about knowledge and 10 statements about attitudes, all of which were declared valid and reliable because the calculated r value and the Pearson Cronbach's Alpha value obtained were> 0.630. So statements that can be distributed to respondents who meet the inclusion criteria, so that the questionnaire used by researchers has a level of accuracy and trust.

Based on data from the number of visits to community public health service centers in 2022, in Tanjung Harapan sub-district, Solok city, there are two puskesmas, namely Tanjung Paku and Nan Balimo puskesmas. Puskesmas Tanjung Paku is the puskesmas that has the highest number of visits in Tanjung Harapan sub-district in 2022. The researcher chose Tanjung Paku puskesmas as the research location because it has the largest target population and the highest number of visits in Tanjung Harapan sub-district in 2022. This study observed the knowledge and attitude of the community about the use of antibiotics at the Tanjung Paku Health Center. Observations were made by distributing questionnaires containing several knowledge statements and attitudes towards the use of antibiotics. In this study researchers used a cross sectional method with a descriptive type of research method and sampling technique by accidental sampling using a questionnaire as a data collection instrument.

The distribution of questionnaires was carried out at the Tanjung Paku Community Health Center in Solok City to people who came to the health center with a total of 60 questionnaires consisting of three parts, namely the first part contains the consent page to become a respondent, the second part contains the characteristics of the respondent and the third part contains a statement of knowledge and attitudes about antibiotics. Respondents in this study consisted of several characteristics, namely consisting of name, age, gender, latest education, occupation and the name of the antibiotic used.

As for the distribution of questionnaires, the age characteristics of respondents were dominated by respondents aged 40-65 years as many as 28 people, 25-39 years as many as 23 people, and 15-24 years as many as 9 people. Based on the gender of the respondents, 44 respondents were female and 16 respondents

were male. In the last education section, respondents are divided into elementary school (SD), junior high school (SMP), senior high school / vocational school (SMA / SMK), college and not in school. From the results of the distribution of questionnaires, the most respondents came from SMA/SMK, namely 32 people, then those from college were 21 people, those from junior high school were 5 people, and those from elementary school were 2 people. And no one is not in school.

The next characteristic is based on the occupation of the respondent, in this case the researcher groups into civil servants (PNS), farmers, self-employed, housewives (IRT), and others. Based on the results of the questionnaire, the most respondents' occupations were housewives as many as 19 people, followed by respondents who worked as entrepreneurs as many as 14 people, civil servants as many as 13 people, respondents who had other jobs as many as 9 people, and farmers totaling 5 people. The last characteristic section is the antibiotics used by respondents. The most antibiotics used by respondents were Amoxillin as many as 51 people, Cefadroxil as many as 5 people and Cotrimoxazole as many as 4 people.

Based on the tabulation of knowledge and attitudes in this study, respondents generally had good knowledge of 95%, sufficient knowledge of 5%, had a good attitude of 80% and had a moderate attitude of 20%. Thus it can be concluded that respondents who have good knowledge and attitudes are more than respondents who have sufficient knowledge and attitudes. This is the same as other research conducted by Eka Desnita with the title "The Relationship between Public Knowledge and the Rational Use of Antibiotics in the Working Area of the Gunung Health Center, Padang Panjang City", which shows that the level of public knowledge is high, with a percentage of 66.7% [8]. Another study conducted by Rahmayanti Fitriah resulted in the majority of respondents having good knowledge (78.3%) and a positive attitude (88.5%) towards the use of antibiotics [9].

In this study, several tests were carried out on the independent and dependent variables. The tests used are the Chi Square test, the T & F test, and the Multiple Linear Regression test. In the Chi Square test, all dependent variables with independent variables showed that there was no relationship between these variables. Chi Square testing between the two independent variables, namely knowledge and attitude, also resulted in no relationship between the two variables. The Partial T-test and Simultaneous F-test showed that there was a relationship between knowledge and attitude. However, the Multiple Linear Regression test resulted in an influence between knowledge and attitude of 7.2% which means it has little influence. The Respondent Achievement Rate (TCR) resulted in 80% in the good category for knowledge statements, and the TCR on attitude statements was 70% in the good category for attitude statements.

Research conducted by Esah Meinitasari (2021) found that there was no relationship between knowledge and age ($p = 0.615$), gender ($p = 0.179$), occupation ($p = 0.530$), and income ($p = 0.183$). However, there was an association between knowledge and last education ($p=0.001$). The relationship between knowledge and antibiotic use behavior shows that there is a significant relationship between the level of antibiotic knowledge and antibiotic use behavior with a significance value of 0.000 or <0.05, and a positive correlation direction of 0.528 [10]. The level of public knowledge can influence health behavior, including the use of antibiotics. Knowledge has an important role in shaping beliefs and attitudes regarding certain behaviors. The level of education is considered to have a major influence on the behavior [11].

The questionnaire results showed that 11 people had good knowledge but had an attitude category of "less". Antibiotics are a class of hard drugs that can only be obtained with a doctor's prescription and obtained at a pharmacy. If in using antibiotics do not pay attention to dosage, usage and warnings, it can cause harmful effects on the body. The Center for Disease Control and Prevention in the USA states that about 50 million unnecessary antibiotic prescriptions out of 150 million prescriptions each year. According to research, 92% of Indonesian people do not use antibiotics appropriately [12].

From the test results that have been carried out, it can be concluded that knowledge and attitudes are related but have a low percentage of influence, and knowledge and attitudes have no relationship to age, gender, education, and occupation. However, according to Darsini (2019), that knowledge is closely related to education, where it is expected that with higher education, the person will have wider knowledge. However, it needs to be emphasized, it does not mean that someone with a low education is absolutely low knowledge. A person's knowledge about an object contains two aspects, namely positive aspects and negative aspects. These two aspects will determine a person's attitude, the more positive aspects and objects

known, it will lead to a positive attitude towards certain objects [13]. People who have good knowledge also have good attitudes and behaviors [14].

Attitude is the tendency to act or react favorably or unfavorably towards people, objects or situations. Attitudes have a close relationship with the interests or values that individuals have and are more latent than traits. Therefore, attitudes are closely related to how individuals will behave according to the situation [15]. Meanwhile, job satisfaction is a generalization of attitudes towards their work, various attitudes of a person towards their job reflect pleasant and unpleasant experiences in their work and their expectations of future experiences [16].

4. Conclusion

Of the 60 respondents, the level of knowledge and attitude at the Tanjung Paku Community Health Center in Solok City towards the use of antibiotics was in the good category for knowledge as many as 57 people (95%), the sufficient category amounted to 3 people (5%) and none in the less category. While in the good category for attitudes as many as 48 people (80%), 12 people (20%) in the moderate category and none in the less category.

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