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PROFILE OF DRUG INFORMATION SERVICES TO PATIENTS WITH ANTIBIOTIC RECIPES AT PRIVATE PHARMACY IN BATAM CITY

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ABSTRACT

Rational use of antibiotics needs to be based on knowledge about antibiotics. This knowledge is important because it influences the success of antibiotic therapy and prevents the spread of bacterial resistance. The purpose of this study was to determine the profile of drug information services provided by pharmacists in pharmacies to patients with antibiotic prescriptions and to determine the components of drug information provided by pharmacists to patients receiving antibiotic prescriptions. This research is a descriptive type research that explains the role of pharmacists in clinical pharmacy services, especially drug information services with antibiotic prescriptions at Regional Pharmacies in Batam City. The instrument in this research is a questionnaire. Based on the results obtained from 100 respondents from the two pharmacies, the data were obtained using Microsoft Excel and presented in the form of tables and diagrams. The drug service profile data obtained did not have a specific comparison between Saing Farma Pharmacy and Budi Farma Pharmacy. The percentage diagram for the gender of the Saing Farma Pharmacy are female (58%) and male (42%), Budi Farma Pharmacy are female (70%) male (30%). For duration of use, pattern of administration, source of information on antibiotics, types of information on antibiotics, types of information about antibiotics, complaints, and actions taken by Budi Farma Pharmacy are superior compared to Saing Farma Pharmacy.

Reseach Paper

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Kata Kunci: Antibiotics, Drug Service Profiles, Patients, Pharmacies

INTRODUCTION

Pharmaceutical services are an integral part of health services. Pharmaceutical services at this time have shifted their orientation from drugs (drug oriented) to patients (patient oriented) which refers to Pharmaceutical care. Pharmaceutical service activities, which were originally only focused on managing drugs as a commodity, have become comprehensive services aimed at increasing knowledge, skills and behavior so that they can carry out direct interactions with patients (Kuncahyo, 2008). The forms of this interaction include carrying out the provision of information, monitoring the use of drugs to find out the end goal is as expected and well documented. Pharmacists must understand and be aware of the possibility of medication errors. For this reason, pharmacists must try to prevent and minimize drug-related problems (Directorate of Pharmacy and Clinical Development, 2008).

Rational use of antibiotics needs to be based on knowledge about antibiotics. This knowledge is important because it influences the success of antibiotic therapy and prevents the spread of bacterial resistance (Norris et al., 2009). Providing information by health workers, doctors and pharmacists to patients about pharmacological effects, side effects, drug interactions, instructions for use and drug warnings for their diagnoses are some of the main reasons for someone to use drugs rationally. Not much information in medicine is one of the main reasons why a patient uses the

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wrong drug as prescribed. Information provided by doctors and pharmacists is needed to improve patient compliance because inappropriate information provides insufficient knowledge to patients which can lead to non-adherence in medication therapy (Norris et al., 2009).

Some people do not know the causes of resistance and what are the dangers of resistance. This is what attracts researchers to conduct research on why this problem occurs. Thus researchers can invite pharmacists and health workers in providing information to the public so that people know better and are more selective in using antibiotics. From the description above, the researcher is interested in conducting a profile research on drug information services for patients with antibiotic prescriptions at private pharmacies in Batam City.

METHOD

Research design

This research is a descriptive type research that explains the role of pharmacists in clinical pharmacy services, especially drug information services with antibiotic prescriptions at Regional Pharmacies in Batam City.

Population

The population in this study were all patients who came to two pharmacies in two areas in Batam City. The target population of this study were patients who were prescribed antibiotics

Sample

Samples were taken at random systematically using a non-probability sampling technique by side purposive method. To determine the sample to be selected, inclusion criteria were determined for the patient, namely: the patient was willing to be sampled, had come to the pharmacy before using antibiotics at least once. Then the minimum sample formula is used to determine the number of referral patients for sampling.

$$n=\frac{Z^2\ 1-\alpha/2p\ (1-p)}{d^2} \qquad (1)$$

Information:

n = minimum number of samples

Z 1-α/2 p (1-p) = degree of meaning

P = proportion of patients

d = level of precision / deviation

By setting Z = 1.96; p = 0.5 and d = 0.1 obtained a minimum sample size of 96 people and rounded up to 100 respondents.

Inclusion and Exclusion Criteria

1. Inclusion Criteria:

Inclusion criteria are a general description of research subjects from a target population that is reachable and will be studied. The inclusion criteria in this study were:

a. Patients on prescription antibiotics
b. Patients who have come to the pharmacy more than once
c. Willing to be a respondent

2. Exclusion Criteria:

Exclusion criteria are descriptions of someone who does not respond to those around them. The exclusion criteria in this study were:

a. Not a patient on an antibiotic prescription
b. The patient comes to the pharmacy less than one day
c. Not willing to be a respondent

Research Instruments

The research instrument is a tool used in collecting research data, also related to research materials (Supardi, 2014). The instrument in this research is a questionnaire. Questionnaires were given to patients containing fields that had to be answered by patients regarding drug information service activities for patients with antibiotic prescriptions which were always carried out at the pharmacy where the pharmacist worked as the research sample. The questionnaire contains standards for pharmaceutical services, especially drug information services at pharmacies based on Regulation of the Minister of Health of the Republic of Indonesia No. 35 of 2014.

Data analysis

The data obtained will be analyzed, the data analysis includes:

1. Analysis of knowledge about antibiotics to compare understanding of the use of antibiotics in Saing Farma and Budi Farma pharmacies.
2. Data analysis was performed using Microsoft Excel and presented in the form of tables and diagrams.

RESULT AND DISCUSSION

Patient Demographics

1. Gender and Age

In this study, both at the Saing Farma pharmacy and at the Budi Farma pharmacy,

female respondents chose and consumed antibiotics as a treatment. At the Saing Farma pharmacy, there were 29 female respondents (58%) while male respondents were 21 respondents (42%). At the Budi Farma pharmacy, there were 30 female respondents (70%) and 15 male respondents (30%). In this study, both at the Saing Farma and Budi Farma pharmacies, it was shown that respondents aged 24-29 years chose antibiotics more and took antibiotics as a treatment. At the Saing Farma pharmacy, 15 respondents were aged 24-29 years (30%), 12 respondents were aged 30-35 years (24%), 18-23 years were 9 respondents (18%), 36-41 years were 5 respondents (10%), 42-47 years were 5 respondents (10%), and 48-53 years were 4 respondents (8%). At the Budi Farma pharmacy, there were 16 respondents (32%) aged 24-29 years, 13 respondents (26%) aged 30-35 years, 6 respondents aged 42-47 years (12%), 5 respondents (10%) aged 18-23 years, 5 respondents (10%) aged 36-41 years, and 5 respondents (10%) aged 48-53 years (**Table 1** and **Table 2**).

Table 1 Recap of Respondent Gender Percentage Data at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
		Saing Farma Pharmacy		
Gender	Woman	29 Respondents	58%	50 (100%)
	Man	21 Respondents	42%	
		Budi Farma Pharmacy		
Gender	Woman	35 Responden	70%	50 (100%)
	Man	15 Responden	30%	

Table 2 Recapitulation of Respondents' Age Percentage Data at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
		Saing Farma Pharmacy		
Age	18-23 years	9	18%	50 (100%)
	24-29 years	15	30%	
	30-35 years	12	24%	
	36-41 years	5	10%	
	42-47 years	5	10%	
	53-58 years	4	8%	
		Budi Farma Pharmacy		
Age	18-23 years	5	10%	50 (100 %)
	24-29 years	16	32%	
	30-35 years	13	26%	
	36-41 years	5	10%	
	42-47 years	6	12%	
	53-58 years	5	10%	

2. Duration of Antibiotic Use

The duration of antibiotic use at the Saing Farma pharmacy was > 5 days 54% while at the Budi Farma pharmacy the duration of antibiotic use was > 5 days by 70%. In this study, it was found that the duration of pharmacy use at Saing Farma and Budi Farma pharmacies were both > 5 days (**Table 3**).

Table 3 Recapitulation of Data on the Percentage of Duration of Antibiotic Use at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
		Saing Farma Pharmacy		
Duration of Antibiotic Use	< 3 days	3	6%	50 (100%)
	3-5 days	15	30%	
	>5days	27	54%	
	Tidak Tahu	5	10%	

	the Budi Farma Pharmacy			
Duration of Antibiotic Use	< 3 days	5	10%	50 (100%)
	3-5 days	6	12%	
	>5days	35	70%	
	Don't know	4	8%	

3. Giving Pattern

In this study, both at the Saing Farma pharmacy and at the Budi Farma pharmacy, the pattern of giving the most antibiotics was after eating. At the Saing Farma pharmacy, 45 respondents (90%) used antibiotics after eating, 3 respondents (6%) before eating, 2 respondents (4%) eating together. At the Budi Farma pharmacy, 47 respondents (94%) used antibiotics after eating, 2 respondents (4%) before eating, 1 respondent (2%) at the same time eating (**Table 4**).

Table 4 Recapitulation of Data on the Percentage of Patterns of Antibiotic Administration at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
	Saing Farma Pharmacy			
Pattern of Antibiotic Administration	Before Eating	3	6%	50 (100%)
	After eating	45	90%	
	Eating Together	2	4%	
	Budi Farma Pharmacy			
Pattern of Antibiotic Administration	Before Eating	2	4%	50 (100%)
	After eating	47	94%	
	Eating Together	1	2%	

4. Resources

In this study, both at the Saing Farma pharmacy and the Budi Farma pharmacy, it was shown that the most common source of information was from health workers. At the Saing Farma pharmacy, 48 respondents (96%) received information from health workers, 2 respondents (4%) received information from labels, while those who answered from friends/family/others were not found. At the Budi Farma pharmacy, 47 respondents (94%) received information from health workers, 2 respondents (4%) received information from labels, 1 respondent (2%) received information from friends/family/others (**Table 5**).

Table 5 Recapitulation of Data on the Percentage of Antibiotic Information Sources at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
	Saing Farma Pharmacy			
Resources About Antibiotics	Health workers	47	94%	50 (100%)
	etiquette	3	6%	
	From friends/family/etc	0	0	
	Budi Farma Pharmacy			
Resources About Antibiotics	Health workers	48	96%	50 (100%)
	etiquette	2	4%	
	From friends/family/etc	1	0	

5. Information Type

In this study, both at the Saing Farma pharmacy and at the Budi Farma pharmacy, the type of information about antibiotics that was obtained the most was the instructions for use. At the Saing Farma pharmacy, there were 43 respondents (86%) for information on directions for use, 5 respondents (10%) for information on side effects, 2 respondents (4%) for information on length of use, and none of the information for efficacy was found. At the Budi Farma pharmacy, there were 49 respondents (98%) of information on usage rules, 1 respondent (4%) of

side effects, while there was no information on duration of use and efficacy (**Table 6**).

Table 6 Recapitulation of Data on the Percentage of Types of Antibiotic Information at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
	Saing Farma Pharmacy			
Information Type	How to use	43	86%	50 (100%)
	Side effects	5	10%	
	Delivery Time	2	4%	
	Efficacy	0	0	
	Budi Farma Pharmacy			
Information Type	How to use	49	98%	50 (100%)
	Side effects	1	2%	
	Delivery Time	0	0	
	Efficacy	0	0	

6. Respondent Complaints

In this study, both at Saing Farma Pharmacy and Budi Farma showed that the majority of respondents did not experience any problems after taking antibiotics. At the Saing Farma Pharmacy, 46 respondents (92%) experienced no problems after taking antibiotics, 3 respondents (6%) experienced diarrhea, 1 respondent (2%) experienced nausea, and no fever was found. At the Budi Farma pharmacy, 48 respondents (96%) did not experience any problems after taking antibiotics, 2 respondents (4%) did not experience diarrhea and fever (**Table 7**).

Table 7 Data Recap of Percentage of Complaints About Antibiotics at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
	Saing Farma Pharmacy			
Complaints About Antibiotics	Diarrhea	3	6%	50 (100%)
	Nauseous	1	2%	
	Fever	0	0	
	Not occur	46	92%	
	Budi Farma Pharmacy			
Complaints About Antibiotics	Diarrhea	0	0%	50 (100%)
	Nauseous	2	4%	
	Fever	0	0	
	Not occur	48	96%	

7. Actions Respondents Take

In this study, both at the Saing Farma pharmacy and at the Budi Farma pharmacy, it was shown that the majority of respondents preferred to stop taking antibiotics. At the Saing Farma pharmacy, 26 respondents (52%) chose to stop taking antibiotics, 10 respondents (20%) went to the doctor, 14 respondents (28%) went to the pharmacy. At the Budi Farma pharmacy, 31 respondents (62%) chose to stop taking antibiotics, 12 respondents (24%) went to the pharmacy, 7 respondents (14%) went to the doctor (**Table 8**).

Table 8 Recap of Action Percentage Data at Saing and Budi Farma Pharmacy

Characteristics	Group Variation	Frequency	Percentage	Total
	Saing Farma Pharmacy			
Action	Menghentikan	26	52%	50 (100%)
	Ke Dokter	10	20%	
	Ke Apotek	14	28%	

	Budi Farma Pharmacy			
	Menghentikan	31	62%	
Action	Ke Dokter	7	14%	50 (100%)
	Ke Apotek	12	24%	

Discussion

Obtained 100 respondents, namely 50 respondents from the Saing Farma pharmacy and 50 from the Budi Farma Pharmacy. Respondents from the two pharmacies were taken equally because they were both located between two major hospitals so that more respondents bought antibiotics with a prescription. Both Pharmacies are located in the middle of a city where most of the population is middle and upper class. In addition, the following matters can be discussed:

Based on the demographics of the respondents which include age and gender, the presentation of each category can be seen:

1. Gender

In this study, both at the Saing Farma Pharmacy and at the Budi Farma pharmacy, it was shown that more female respondents chose to take antibiotics as a treatment, this was because basically both men and women had and could take antibiotics (Notoadmodjo, 2010). In this case it can be concluded that there is no significant difference regarding antibiotics between Saing Farma Pharmacy and Budi Farma Pharmacy.

2. Age

In this study, both at the Saing Farma pharmacy and the Budi Farma pharmacy, it was shown that respondents aged 24-29 years used the most antibiotics and at the Saing Farma pharmacy it was found that respondents aged 48-53 used the least antibiotics while at the Budi Farma pharmacy the respondents who used the least antibiotics were 18-23 years, 36-41 years, and 48-53 years. This can be seen in the picture. in this case shows that there is no significant effect between age and the use of antibiotics. The age of the respondent is calculated from the time of birth to birthday. The older a person is, the more knowledge one has, which can make the individual wise in taking antibiotics (Notoadmodjo, 2010).

In this study, both the Saing Farma pharmacy and the Budi Farma pharmacy showed the most duration of antibiotic use, namely > 5 days. In the Saing Farma pharmacy, the shortest duration was found, namely <3 days, while in the Budi Farma pharmacy the least duration was the respondent who answered they did not know. In this case, it can be concluded that there is no significant difference between Saing Farma and Budi Farma pharmacies regarding the duration of antibiotic use. In this study, both at the Saing Farma pharmacy and the Budi Farma pharmacy, the pattern of giving the most antibiotics was after meals and it was equally found that the respondents answered at least while eating. In this case it can be concluded that there is no significant difference between Saing Farma and Budi Farma pharmacies in the pattern of antibiotic administration.

The type of information about antibiotics at Saing Farma pharmacies and Budi Farma pharmacies does not affect adherence to antibiotic use. in this case it can be concluded that there is no significant difference between Saing Farma pharmacies and Budi Farma pharmacies in the type of information about antibiotics.

The results showed that the type of information about antibiotics obtained by patients was also a factor that influenced the use of antibiotics in this pharmacy. There are still many patients who do not know about antibiotics, therefore the pharmacist's role here is to take an approach in the form of outreach to patients who buy antibiotics at the pharmacy. Socialization includes:

1. Instructions for use and duration of use of antibiotics are given 3 times per day for 3-7 days to kill the pathogens present, except for patients with osteomyelitis.
2. Side effects, each type of antibiotic has side effects, for example, what often occurs include allergic reactions, fever and nausea/vomiting.
3. Efficacy, antibiotics are used for therapy to kill microbes not to kill viruses. Antibiotics should be prescribed by a doctor and adjusted to the patient's condition.

In order for the pharmacist's role to be realized, pharmacists should also attend seminars on infectious diseases and the use of antibiotics to increase their knowledge and understanding of antibiotics.

In this study, both at the Saing Farma pharmacy and at the Budi Farma pharmacy, it

was shown that the most information about antibiotics was obtained from health workers, namely doctors, pharmacists and pharmacist assistants. Respondents were found at the Budi Farma pharmacy who received information from friends/family/others while the Saing Farma pharmacy was not found. in this case it can be concluded that there is no significant difference between Saing Farma pharmacies and Budi Farma pharmacies regarding sources of information.

Based on **Table 7**, the majority answered that there were no complaints. And at the Saing Farma and Budi Farma pharmacies, there were no respondents with complaints of fever. in this case it can be concluded that there is no significant difference between the Saing Farma pharmacy and the Budi Farma pharmacy regarding complaints.

According to Health Minister Endang Rahayu Sedyaningsih, around 92 percent of people in Indonesia do not use antibiotics properly. When used properly, antibiotics provide unquestionable benefits, so that complaints also do not occur. However, when used or prescribed irrationally (irrational prescribing) can cause extensive losses in terms of health and economy. The emergence of pathogenic germs that are resistant to one (antimicrobacterial resistance) or to certain types of antibiotics (multiple drug resistance) greatly complicates the treatment process. Antibiotics are included in the list of hard drugs (K) where to get these antibiotics a doctor's prescription is required (Martindale, 2009).

Prescribing large quantities can increase resistance to new drugs. Prescription is increased when the initial diagnosis is uncertain. Clinicians often have difficulty in determining the right antibiotic because of a lack of training in infectious diseases and administering antibiotics (Utami, 2012). In this study, both at the Saing Farma pharmacy and the Budi Farma pharmacy, it was shown that most answered to go to the doctor when the complaint occurred. In this case it can be concluded that there is no significant difference between the Saing Farma pharmacy and the Budi Farma pharmacy regarding the actions taken when a complaint occurs.

CONCLUSION

The profile of drug information services provided by pharmacists at the Saing Farma pharmacy and at the Budi Farma pharmacy for patients has a good percentage. In this study, it was found that the Budi Farma pharmacy had a superior percentage compared to the Saing Farma pharmacy. Components of drug information provided by antibiotic officers include duration of taking medication, pattern of administration, sources of antibiotic information, types of information about antibiotics, complaints that occur after taking antibiotics and actions to be taken if there is a problem after taking antibiotics. In this study, respondents obtained information about the above components very well from the Saing Farma pharmacy and the Budi Farma pharmacy.

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