



Overview of Self-medication on the Use of Generic Drugs in Medical Faculty Students and College Students Non-faculty of Medicine

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Self-medication is the choice of using medication without a prescription from a doctor to treat certain minor illnesses. When carrying out self-medication, paying attention to the rational use of drugs is necessary. This study aims to see the picture of self-medication regarding the use of

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generic drugs among students at the Faculty of Medicine and Non-Medical Faculty of the Indonesian Christian University class of 2018, using a descriptive survey method, with a total sample of 134 respondents. When carrying out self-medication, students mainly obtain medicines from pharmacies (61.9%) and information about these medicines from relatives/family/friends (49.2%). Most students use branded generic drugs because these drugs are more effective. Based on drug class, students prefer to use generic drugs with free/limited free groups. Meanwhile, based on the accuracy of using generic drugs, most students use drugs not following the prescribed usage recommendations or not following rational drug use.

Keywords: Self-medication; generic drugs; generic drugs with logos; branded generic drugs; rational use of drugs.

1. INTRODUCTION

Self-medication is using medication without relying on a doctor's prescription to treat certain minor illnesses [1]. In the opinion of Lukovic et al., self-medication is a person's attempt to treat a disease or symptom that is recognized by themselves [2]. According to Vidyavanti et al., self-medication has several advantages as follows: (1) helps prevent and treat symptoms complained of without the help of a doctor, (2) patient complaints are immediately treated and reduces pressure for medical services, (3) increases the availability of health services in rural or regional areas remote (4) patients can control chronic diseases (5) saving costs and time for one's health care. However, this cannot rule out the possibility of causing losses in self-medication efforts as follows: (1) having a toxicity impact if the drug is used in large doses, (2) the emergence of resistance to the use of certain antibiotics, (3) irrational use can increase the risk of reactions adverse drug reactions, such as hypersensitivity reactions [3]. Based on research data by da Silva et al. conducted in Brazil, it was found that 86.4% of students carried out self-medication by complaining of symptoms such as headache, sore throat, fever, menstrual cramps, muscle pain, cough, stomach ache, nausea, vomiting, and allergies [4].

Based on data from Rikesdas in 2013, it was found that 35.2% of Indonesian people stored medicines in their homes, with a proportion storing antibiotics without a prescription of 86.1% [5]. According to Vanany et al., generic drugs are imitation drugs of drugs whose patent has expired and are marketed using the name of the active substance of the drug [6]. People often use generic drugs themselves to carry out self-medication. Based on research by Lewek and Kardas, it was revealed that the price of generic drugs is 30-60% cheaper than the price of drugs with trade names. It makes patients more willing

to continue therapy rather than using trade-name drugs [7].

In Indonesia, generic drugs are divided into generic drugs with a logo and branded ones. Generic drugs with a logo are generic drugs sold according to the drug's generic name as the trademark. Meanwhile, branded generic drugs are drugs sold by pharmaceutical companies under a protected trademark name [8].

Doing self-medication does not mean that someone can take medication without paying attention to the regulations for using the medication itself. To carry out self-medication, especially when using generic drugs, a person's knowledge of using these drugs is very necessary to prevent the emergence of side effects that can be dangerous to health, including the right indication of disease, the right choice of drug, the right dose and also the right way of administering the drug.

Based on the data above, researchers want to see the picture of self-medication regarding the use of generic drugs among students at the Faculty of Medicine and Non-Medical Faculty of the Indonesian Christian University class of 2018, with the main focus being to see what the picture of self-medication of students is based on how to obtain drugs, how to get information about drugs and how to choose them. as well as students' accuracy in carrying out self-medication regarding the use of generic drugs. The problem formulation in this research is: What is the description of self-medication by students of the Faculty of Medicine and Non-Medical Faculty of the Indonesian Christian University class of 2018 based on? The research aims to determine the description of self-medication among students from the Faculty of Medicine and Non-Medical Faculty of the Indonesian Christian University class of 2018 regarding the use of generic drugs.

2. LITERATURE REVIEW

According to Tan and Rahardja, self-medication is treating all complaints that are felt using simple medicines purchased freely at a pharmacy or drug shop on one's initiative without a doctor's advice [9]. Even though using drugs in self-medication does not require supervision from a doctor, it is important to understand how self-medication is appropriate, safe, and rational. It is said that treating a symptom irrationally can cause various losses, such as increasing budget expenditure, the emergence of side effects, and increasing interactions from drug use [10].

The Republic of Indonesia Food and Drug Supervisory Agency (BPOM) stated that self-medication is carried out to treat complaints and minor illnesses that often occur in the community, such as fever, pain, dizziness, cough, influenza, stomach ulcers, worms, diarrhea, skin diseases and others [11].

According to Tan and Rahardja, the advantage of self-medication is that it reduces the burden on medical services in dealing with mild symptoms, especially if there is a lack of medical personnel in a particular health service. On the other hand, there are also disadvantages to self-medication, namely that symptoms that are disguised or not recognized are apparent symptoms of a serious illness, and there are side effects from using drugs that do not follow applicable regulations.

One of the factors that encourages self-medication is the large amount of access to information regarding drug use, namely through advertising or the internet, as well as how to obtain drugs at a low cost and quickly compared to having to consult directly with a doctor.

The knowledge factor about drugs also plays a very important role in preventing side effects from using drugs. Knowledge about medication in self-medication requires the role of professional medical personnel, such as Doctors, Pharmacists, or other Medical Staff, to provide education regarding the appropriate use of medication to patients to prevent the risk of drug interactions, especially for patients with certain conditions, such as pregnancy, and decreased or damaged liver and kidney function [11].

According to the Food and Drug Monitoring Agency of the Republic of Indonesia (BPOM), the following are things that need to be considered when carrying out self-medication [11]: a)

Recognizing body condition - Before carrying out self-medication, patients need to know and recognize the current condition of their body. One condition that needs to be considered is pregnancy, in which case the patient must be more careful in choosing medication because some types of medication can have undesirable effects on the fetus. The choice of medication when carrying out self-medication in patients who are on a certain diet, such as a low-salt diet or a low-sugar diet, needs to be considered, considering that some forms of medication, such as syrup-shaped drugs, generally contain high levels of sugar, and this can harm the patient's condition. Conditions such as breastfeeding, age (toddlers or elderly), and certain health problems must also be considered; b) Understand the possibility of drug interactions - Not a few consumed drugs can interact with other drugs or even food and drink. To avoid this, patients are advised to ask the pharmacist about the drug they want to use and whether it has certain drug interactions if taken with other drugs. Additionally, consuming the drug with food and drinks such as green tea and caffeine can reduce the drug's effectiveness in the body; c) Know the drugs that can be used in self-medication - Drugs that can be used in self-medication must be relatively safe, such as over-the-counter and limited over-the-counter drugs; d) Be aware of side effects - Apart from using the drug itself, it works to treat symptoms, but the drug can also cause unwanted side effects. Side effects include allergic reactions such as itching, rash, drowsiness, and nausea. For this reason, patients need to know what side effects may occur and what to do when experiencing these side effects. If side effects persist, patients should immediately stop using the drug and consult further with a health professional; e) Examining the medicine to be purchased - When buying medicine, patients need to consider the dosage form of the medicine (tablets, syrup, capsules, cream) and carefully check the outer packaging of the medicine, whether there is damage or not. To use medicine in syrup form, make sure that the color viscosity is high and that there are no small particles at the bottom of the bottle or floating in the syrup. If you are using tablet medicine, make sure that the form of the medicine is completely intact and not crushed. When using capsule medicine, make sure that the capsule preparation is not broken or dented and is the same size as all the other capsules in one package. Also, pay attention to how the medicine is stored at the place of sale. It is better to buy medicine in another place with better

storage conditions if it is stored in a place exposed to direct sunlight; f) Know how to use medication correctly - Patients are advised to read the rules for using medication first before consuming it with the instructions listed on the label or medication packaging, for example, taking medication according to the time, using medication according to how it is intended to be used, and using medication according to the specified period recommended. Immediately consult further with a doctor or other health professional if you feel that the medication is not providing the desired effect after the recommended period of use; and g) Know how to store medicine properly - Storing medicine can affect the potency of the medicine itself. For example, drugs in oral dosage forms such as tablets, capsules, and powders should not be stored in damp places, considering that bacteria and fungi can breed. For medicines in liquid preparations, storing them in their original containers and protecting them from direct sunlight is recommended, considering that the liquid preparation itself can be decomposed by light. Apart from that, it is also important that patients pay attention to the expiry date of the medicine they want to consume. Also, consider that the expiration time of the drug may be shorter than the time stated on the label when the drug has been opened from the packaging.

Based on research conducted by Abay and Amelo, the following are complaints often felt when carrying out self-medication efforts among students at the University of Gondar, including fever, cough, flu, stomach pain, diarrhea, and headaches [12]. Medicine is a material useful in treating certain diseases to prevent, reduce, eliminate, and diagnose a disease. The drug's effectiveness depends on the sensitivity of the body's organs and the dose given [13].

According to the Ministry of Health of the Republic of Indonesia, as stated in the GeMa CerMat Agent of Change (AoC) Handbook, the classification of drugs based on their safety is classified into five types, namely over-the-counter drugs, limited over-the-counter drugs, hard drugs, psychotropics and narcotics [14].

Meanwhile, the distribution of medicines based on the Regulation of the Minister of Health of the Republic of Indonesia Number: HK.02.02/MENKES/068/I/2010 concerning the Obligation to Use Generic Medicines in Public Government Health Service Facilities, is as follows: b) Patent medicines, are medicines that

are still protected by a patent; Generic drugs are drugs whose patent period has expired; c) Branded/trade name generic drugs, are generic drugs that use a trade name based on the name of the drug manufacturer concerned; d) Essential medicines, are medicines that are needed by health services for the community, which act as a means of diagnosis, prophylaxis and therapy for a disease.

Irrational drug use is in the form of overuse of drugs or less than they should, errors in the use of the drugs themselves, polypharmacy, and inappropriate self-medication [15]. According to the Ministry of Health of the Republic of Indonesia in 2011, drug use is said to be rational if it meets the criteria determined as follows: [16] Correct diagnosis - If the diagnosis made is incorrect/wrong, it is likely, that the medication given will not be following the indications of the disease that it should be; b) Appropriate indications of the disease - Medication administration must follow the indications of the disease the patient suffers from. For example, giving antibiotics, which are indicated for bacterial infections; c) Correct drug selection - Correct selection in administering drugs to patients is based on establishing the correct diagnosis so that the drug has a therapeutic effect according to the disease spectrum; d) Correct dosage - The dosage of the drug itself plays an important role in achieving the therapeutic effect of the drug. Giving excessive doses is very risky for side effects; e) Correct method of administering and using medication - Certain medications, such as antacids, must be chewed before swallowing. Likewise, antibiotics should not be mixed with milk, considering that this can interfere with the absorption of the antibiotic or even reduce its effectiveness; f) Timely drug administration intervals - To achieve timely drug administration intervals, doctors are advised to make drug use practical so patients can easily comply. It is said that if the frequency of administering medication in one day is more frequent, the lower the level of patient compliance; g) Appropriate drug administration duration: The drug administration duration must be appropriate to the disease the patient is experiencing. Examples include tuberculosis and leprosy, where the duration of drug administration is the shortest, namely six months; h) Be alert to side effects - In this case, the patient needs to pay attention to whether the patient has a history of allergies to certain uses or even a condition that makes it impossible to give the drug to the patient, for example,

tetracycline which should not be given to children <12 years old, where this can cause abnormalities in teeth and bones that are still growing; i) Correct assessment of the patient's condition - In this case, the doctor needs to pay attention to the patient's response to the drug's effects (for example, when administering theophylline and aminoglycosides); j) Appropriate information - It is said that providing appropriate and correct information regarding drug use can support the success of therapy; k) Appropriate follow-up - Further action is taken if the patient does not recover or experiences side effects after administering medication according to the indications of the disease; and l) Proper delivery of medicines (dispensing) - Pharmacists as dispensers to patients are also very influential in the rational use of medicines. When a prescription is taken to a pharmacy or a drug delivery place, the pharmacist or pharmacist assistant must prepare the medicine according to what is written on the prescription sheet, and it is also important to provide information regarding the medicine the patient will use to the patient himself.

To achieve optimal therapeutic effects, it is necessary to determine the correct time of drug use according to the drug used. To achieve this, the following is knowledge regarding the correct time to use medication [14]: a) medication is taken on an empty stomach before eating. Examples of drugs taken before meals include paracetamol and captopril; b) After eating, this medicine is taken when the stomach is full. Examples of drugs taken after meals include acetoson and mefenamic acid; c) Medium or mealtime is a medicine taken with food or in the middle of a meal. Examples of drugs taken during this time include ibuprofen, griseofulvin, spironolactone, and acarbose; d) At night or before bed, this medicine is taken before bed. Examples are simvastatin, phenolphthalein (laxative with slow action); e) Morning is a drug that is taken in the morning, for example, magnesium sulfate (fast-acting laxative), furosemide, and hydrochlorothiazide.

The rules for drug use or frequency of use are the number of times the drug is taken or used daily. The frequency of drug use is determined based on the half-life of the drug, for example: a) If the drug has a half-life ($t_{1/2}$) of 6 hours, then the drug is taken four times a day (every 6 hours); b) If the drug has a half-life ($t_{1/2}$) of 8 hours, then the drug is taken three times a day (every 8 hours); c) If the drug has a half-life ($t_{1/2}$)

of 12 hours, then the drug is taken two times a day (every 12 hours); d) If the drug has a half-life ($t_{1/2}$) of 24 hours, then the drug is taken once a day (every 24 hours).

Generic drugs are drugs whose patent has expired and can be produced and marketed by other companies. You can see the logo on the medicine packaging to differentiate between generic and other medicines, whereas generic medicines have a green logo that says 'generic.' According to WHO, using generic drugs can enable large cost savings, considering that generic drugs are sold at a cheaper price range [17].

Based on the Minister of Health Regulation no. HK.02.02/MENKES/068/I/2010 generic drugs are drugs that have been determined by the Indonesian Pharmacopoeia and INN (International Nonproprietary Names) with official names that describe the efficacious substances in their contents [7]. In Indonesia, generic drugs are divided into generic drugs with a logo and branded generic drugs [18].

Generic drugs with a logo are sold with the drug name corresponding to the active ingredient content. For example, amoxicillin will still be sold under the name amoxicillin. Branded generic drugs are classified as patented drugs, but their patent period has expired, and they are then sold under the appropriate name according to the wishes of the pharmaceutical manufacturer who produces them.

The difference between generic medicines with a logo and branded generic medicines is in packaging and the active substance content in branded generic medicines, which have several additional substances and solvents.

When compared, the price of branded generic drugs is much higher, namely 40-80 times that of generic drugs with a logo, considering that generic drugs with a logo are produced without being promoted on a large scale (in the media) and the government sets the price. However, this cannot rule out the possibility that people prefer to use branded generic drugs compared to generic drugs with a logo because most people still doubt the efficacy of generic drugs with a logo because the price is relatively low.

Generic drug policy includes policies as an effort to achieve the desired goals in marketing generic drugs, as follows [19]: a) The provision of generic

drugs is mandatory in the form of a formulary for the needs of outpatient and inpatient patients; b) Provincial/district/city health offices are obliged to provide essential medicines with generic names for the needs of community health centers and other health units as needed; c) Must write generic drug prescriptions for patients according to medical indications by doctors on duty at government health service facilities; d) Pharmacists can replace generic drugs with brand-name drugs/patent drugs with the same active components with the approval of the doctor or patient; e) A generic drug prescription can be changed to a branded/trademarked generic drug prescription if a particular generic drug is not yet available, and a doctor does this on duty in the government health service.

The following are the benefits of using generic drugs, including [20]: a) Increasing the level of public health as a means of public health services themselves; b) Can be reached by people from the middle to lower economic groups, considering that the price of generic drugs is relatively low; c) The quality and efficacy of generic drugs are the same as patented drugs when assessed in terms of quality.

3. METHODOLOGY

The type of research used is non-experimental research with a descriptive survey method, where this research aims to see a description of self-medication regarding how to obtain drugs, sources of information about drugs, selection of drugs based on the type of generic drugs, and class of drug, as well as the accuracy of using generic drugs among students at the Faculty of Medicine and the Non-Medical Faculty of Indonesian Christian University, class of 2018. This research was conducted at the Faculty of Medicine, Faculty of Law, Faculty of Engineering, and Faculty of Economics and Business, Indonesian Christian University, class of 2018. This research was conducted in June 2020 – December 2020. The population in this study are students from the Faculty of Medicine, Faculty of Law, Faculty of Engineering, and Faculty of Economics and Business, Indonesian Christian University, class of 2018. When this research was running, the total number of students at the Faculty of Medicine, Indonesian Christian University, class of 2018, was 158 people. The total of students at the Faculty of Law, Christian University Indonesia's class of 2018 is 165 people, and the Faculty of Engineering, Indonesian Christian University's class of 2018 is

120 people. The Faculty of Economics and Business, Indonesian Christian University's class of 2018 is 200 people. So, the total population for this study was 643 people. The sampling method used in this research is the purposive sampling method, which is based on certain considerations made by the researcher based on previously known characteristics or properties of the population [21]. The minimum sample size for this study was determined using the Slovin Formula, namely:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{643}{1 + 643(0,1)^2}$$

$$n = \frac{643}{1 + 6,43}$$

$$n = \frac{643}{7,43}$$

$$n = 86,54$$

Information:

n: number of sample elements/members

N: number of elements/members of the population

e: error level (error level).

Generally used 1% or 0.01, 3% or 0.03, 5% or 0.05, and 10% or 0.1 [22]. It was found that the minimum sample size for this study was 86.54, so the researchers decided to round it up to a minimum of 87 samples that would be taken as research respondents. The respondents that the researchers obtained at the end of data collection were 141 people; however, 134 respondents met the inclusion criteria for this study. The instrument used in collecting data for this research was a questionnaire whose reliability had been tested [21]. The researcher prepared and created the questionnaire; it discusses the description of self-medication in students regarding the use of generic drugs and how students choose and appropriately use generic drugs to carry out self-medication. Instrument testing is carried out in two forms: validity and reliability.

4. RESULTS AND DISCUSSION

To determine the validity of a questionnaire, a comparison will be made between the calculated

r value and the r table value with a significance level of 5% (r table = 0.312). Meanwhile, the reliability value of the questionnaire in this research was using Cronbach's Alpha formula. It is said that if the value is > 0.60, the questionnaire is reliable [23].

Among the 141 respondents who filled out the questionnaire, it was found that 134 people had carried out self-medication or self-medication regarding the use of generic drugs. Meanwhile, as many as six people admitted that they had never self-medicated when using generic drugs, and one person was not willing to fill out a questionnaire or did not fill out informed consent. Therefore, it can be concluded that as many as seven out of 141 people did not meet the inclusion criteria in this study.

Based on Table 2 regarding the characteristics of the respondents listed above, the largest age group participating in this research was 20-21 years, namely 87 people (65%), considering that this research took the class of 2018 as research respondents, who had an age range of 20-21 years. If based on gender, women were the largest number of respondents, namely 78 people (58.2%). Meanwhile, based on the division of faculties, more students from the Faculty of Medicine participated, namely 67 people (50%) out of 134 respondents.

Based on Table 3. regarding the description of self-medication regarding the use of generic drugs as stated above, it was found that respondents who had carried out self-medication obtained drugs from pharmacies the preferred place to obtain drugs, namely 49 people (36.6%) from the Faculty of Medicine, and 34 people (25.4%) from non-medical faculties, with a total of 83 people (61.9%) from 134 respondents.

According to the Regulation of the Minister of Health of the Republic of Indonesia Number 9 Article 16 of 2017, it is stated that pharmacies function as a place for managing pharmaceutical preparations, medical devices, and clinical pharmacy services, whether to meet the needs of pharmaceutical installations in hospitals, health centers, clinics, to the needs of patients or society [24]. Pharmacies are generally located in areas that are easy to reach and accessible to the public. These two things are why respondents prefer pharmacies to get medicines consumed to carry out self-medication. Meanwhile, based on sources of information regarding generic drugs, the most frequent

choice chosen by respondents was to obtain information about drugs from relatives/family/friends, namely 37 people (27.6%) from the Faculty of Medicine and 29 people (21.6%) from Non-Medical Faculties, with a total of 66 people (49.2%) from 134 respondents. In research conducted by Wulandari et al. on 213 pharmacy students in 2016, it was stated that the source of information on drug selection was influenced by personal experience (43.2%), lectures (22.5%), from health workers (18.8%) and recommendations from others (10.3%) and advertisements (5.2%) [25]. Meanwhile, based on the results of Suherman et al.'s research in 2018, it was found that the majority of respondents carried out self-medication based on personal experience or family experience, where this is directly related to preventing relatively high costs and the time required if they have to undergo treatment in hospital or clinic [26,27].

From Table 4 regarding the description of choosing types of generic drugs based on the complaints/symptoms listed above, 77 people (58.3%) of 132 respondents, both medical and non-medical faculties, chose to use branded generic drugs. Then, when complaining of fever, 97 people (73%) of the 133 respondents chose generic drugs with the logo. Furthermore, of the 131 respondents who had self-medicated for coughs with phlegm, it was found that 110 people (84%) chose to use branded generic drugs, both from the Faculty of Medicine and from non-medical faculties. Likewise, respondents preferred to use branded generic medicines for dry coughs, with 116 people (90.6%) out of 128 respondents who had self-medicated for coughs. Then, for flu complaints, of the 110 respondents who had done self-medication, it was found that 89 people (80.9%) chose to use branded generic medicines. Likewise, with the first treatment for diarrhea, of the 129 respondents who self-medicated for diarrhea, it was found that 121 people (93.8%) chose to use branded generic drugs. Next were stomach ulcer complaints, where of the 96 respondents who had self-medicated for ulcers, it was found that 86 people (89.6%) chose to use branded generic medicines. Then, of the 60 respondents with a history of allergies and self-medicated for allergies, it was found that 55 people (91.7%) chose to use generic drugs with logos, both from the Faculty of Medicine and Non-Medical Faculties. Next is menstrual pain, where of the 78 female respondents, only 29 self-medicated for menstrual pain, with 16 people

(55.2%) choosing to use generic drugs with logos in their treatment. Finally, there were complaints of toothache, where 37 people (52.9%) of the 70 respondents who had self-medicated for toothache chose to use generic drugs with the logo as a treatment.

Table 1. Validity and reliability test results

Case Processing Summary			
		N	%
Cases	Valid	40	100.0
	Excluded	0	.0
	Total	40	100.0
a. Listwise deletion based on all variables in the procedure			
Cronbach's Alpha		N of Items	
.971		44	

Table 2. Characteristics of respondents

Respondent Characteristics		Total	
		n	%
Respondent's Age	< 20 years	33	24,6%
	20-21 years	88	65,7%
	> 21 years	13	9,7%
	Total	134	100%
Respondent's Gender	Female	79	59%
	Male	55	41%
	Total	134	100%
Respondent Faculty/Department	Faculty of Medicine	67	50%
	Faculty of Law	22	16,4%
	Faculty of Engineering	24	18%
	faculty of Economics and Business	21	15,6%
	Total	134	100%

Table 3. Overview of self-medication on how to obtain medicines and sources of information regarding medicines

Overview of Self-Medication		Faculty/Department				Total	
		Faculty of Medicine		Non-Faculty of Medicine		n	%
		n	%	n	%		
How to get medicine	Pharmacy	49	36,6%	34	25,4%	83	61,9%
	Drug store	2	1,5%	6	4,5%	8	6%
	Supermarket/stall	15	11,2%	26	19,4%	41	30,6%
	Obtained online	1	0,7%	1	0,7%	2	1,5%
	Total	67	50%	67	50%	134	100%
Source of information about drugs	Internet	8	6%	15	11,2%	23	17,2%
	Relatives/family/friends	37	27,6%	29	21,6%	66	49,2%
	Pharmacist	11	8,2%	15	11,2%	26	19,4%
	Supermarket/minimarket cashier	-	-	1	0,7%	1	0,7%
	Seller at a drugstore/caretaker at a drugstore	1	0,7%	1	0,7%	2	1,5%
	Medicine packaging	10	7,5%	6	4,5%	16	12%
Total	67	50%	67	50%	134	100%	

Table 4. Description of the selection of generic drug types when carrying out self-medication

Complaint /Symptom	Faculty /Major	Types of Generic Medicines				Total	
		Generic Drugs with Logo		Branded Generic Drugs		n	%
		n	%	n	%		
Headache	Faculty of Medicine	29	22%	37	28%	66	50%
	Non-Faculty of Medicine	26	19,7%	40	30,3%	66	50%
	Total	55	41,7%	77	58,3%	132	100%
Fever	Faculty of Medicine	52	39,1%	15	11,3%	67	50,4%
	Non-Faculty of Medicine	45	33,8%	21	15,8%	66	49,6%
	Total	97	73%	36	27%	133	100%
Cough with phlegm	Faculty of Medicine	14	10,7%	52	39,7%	66	50,4%
	Non-Faculty of Medicine	7	5,3%	58	44,3%	65	49,6%
	Total	21	16%	110	84%	131	100%
Dry cough	Faculty of Medicine	8	6,3%	54	42,2%	62	48,4%
	Non-Faculty of Medicine	4	3,1%	62	48,4%	66	51,6%
	Total	12	9,4%	116	90,6%	128	100%
Flu	Faculty of Medicine	11	10%	42	38,2%	53	48,2%
	Non-Faculty of Medicine	10	9,1%	47	42,7%	57	51,8%
	Total	21	19,1%	89	80,9%	110	100%
The first treatment for diarrhea	Faculty of Medicine	5	3,9%	60	46,5%	65	50,4%
	Non-Faculty of Medicine	3	2,3%	61	47,2%	64	49,6%
	Total	8	6,2%	121	93,8%	129	100%
Indigestion	Faculty of Medicine	8	8,33%	41	42,7%	49	51%
	Non-Faculty of Medicine	2	2,1%	45	46,8%	47	49%
	Total	10	10,4%	86	89,6%	96	100%
Allergy	Faculty of Medicine	31	51,6%	2	3,3%	33	55%
	Non-Faculty of Medicine	24	40%	3	5%	27	45%
	Total	55	91,7%	5	8,3%	60	100%
Menstrual pain	Faculty of Medicine	11	38%	6	20,7%	17	58,7%
	Non-Faculty of Medicine	5	17,2%	7	24,1%	12	41,3%
	Total	16	55,2%	13	44,8%	29	100%
Toothache	Faculty of Medicine	19	27,1%	11	15,7%	30	42,9%
	Non-Faculty of Medicine	18	25,7%	22	31,4%	40	57,1%
	Total	37	52,9%	33	47,1%	70	100%

Overall, based on the description of the choice of generic drug types, it was found that in six of the ten complaints/symptoms listed in the table above, respondents preferred to use branded generic drugs.

When compared between generic drugs with a logo and branded generic drugs, the price of branded generic drugs is much higher, namely 40-80 times that of generic drugs with a logo, for the reason that promotion of branded generic drugs itself is carried out on a large scale so that more people know and consume branded generic drugs. Apart from that, due to the large-scale promotion of branded generic drugs, the public is also more doubtful of the efficacy of generic drugs with logos [17].

Description of Reasons for Selecting Types of Generic Medicines in Carrying out Self-Medication - regarding the description of reasons for selecting types of generic drugs based on complaints/symptoms felt by respondents, the first complaint in the table listed above is headaches, where respondents mostly choose the reason for choosing drugs because the drug is easy to obtain, namely 55 people (41.7%). Next were complaints of fever, where 43 people (32.3%) chose more effective drugs for reasons of choosing generic drugs, both from the Faculty of Medicine and Non-Medical Faculties. Then sequentially, from complaints of cough with phlegm and dry cough, it was found that the reason for choosing the most medicine was because the medicine used was easier to obtain, of which 37 people complained of cough with phlegm (28.2%) and 43 people complained of dry cough (33, 6%). The next complaint was flu, where it was found that 44 people (40%) chose the drug because the drug worked more effectively. Meanwhile, as a first step in preventing diarrhea, the majority of respondents' reason for choosing generic drugs was because these drugs were easier to obtain, namely 43 people (33.3%). Of the stomach ulcer complaints, most respondents chose generic drugs because the drugs used were more effective, with 30 people (31.3%) choosing this reason. Meanwhile, regarding allergy complaints, the most common reason respondents chose was following usage advice from relatives/relatives/friends, namely 21 people (35%). Next, in sequence, are complaints of menstrual pain and toothache, where the most common reason for these two complaints is because medicine is easier to obtain. Each respondent had two complaints: 11 (38%) of the

29 respondents had self-medicated for menstrual pain, and 30 (42.9%) of the 70 respondents had self-medicated for toothache.

Overall, from the description of the reasons for choosing generic drugs, it is known that for 5 out of 10 complaints/symptoms, respondents mostly chose the reason that drugs were more effective, which from this data proves that respondents' knowledge about generic drugs is still lacking. From the results of research on the dissolution test of generic drugs with branded drugs carried out by Yunarto, it was said that generic drugs with logos were no less than branded generic drugs. Dissolution itself is a quality control that can be used to predict bioavailability and bioequivalence, where the dissolution properties of a drug are directly related to the drug's pharmacological activity [28]. Suppose you want to compare the data between students from the Faculty of Medicine and students from the Non-Medical Faculty. In that case, it is known that students from the Non-Medical Faculty more often chose the reason for choosing that the drug was more effective, compared to students from the Faculty of Medicine, which was obtained from complaints/symptoms of fever as many as 22 people (16.5%) of the 43 respondents who chose the reason for choosing that the drug was more effective. From complaints/symptoms of stomach ulcers, as many as 17 people (17.7%) from 30 respondents, and then from complaints/symptoms of toothache, as many as 19 people (27.1%) of the 30 respondents chose the reason that using drugs was more effective.

Based on research conducted by Debora et al. at the University of Lampung on the use of generic drugs, it is said that the level of knowledge, perception, and experience of medical students is better than that of non-medical faculties, where this is influenced by the level of education, sources of information and facilities available owned [22].

Overview of the Selection of Generic Drug Classes in Carrying Out Self-Medication. Regarding the description of the selection of generic drug classes based on complaints/symptoms as listed above, sequentially from complaints of headache, fever, cough with phlegm, dry cough, flu, diarrhea, ulcers, allergies and menstrual pain, it was found that respondents preferred to use drugs with the over-the-counter/limited over-the-counter medication group in carrying out self-medication, where the number of respondents for each

complaint was 124 people (93.3%) from headache complaints, 129 people (97%) from fever complaints, 111 people (84.7%) and 128 people (100%) complained of cough with phlegm and dry cough. Furthermore, 104 people (94.5%) complained of flu, 122 people (94.6%) from the first treatment for diarrhea, 91 people (94.8%) complained of stomach ulcers, 33 people (55%) complained of allergies, and 16 people (55.2%) complained of menstrual pain. The last complaint was toothache, where respondents preferred to use drugs in the hard drug category when self-medicating for toothache, namely 51 people (72.9%) out of 70 respondents. It is known that in 9 out of 10 complaints/symptoms, respondents prefer to use over-the-counter medicines/limited over-the-counter medicines when carrying out self-medication, which is said to be good. The definition of self-medication itself is the act of treating all complaints that are felt using simple medicines purchased freely at pharmacies or drug stores on one's initiative without advice or prescription from a doctor [9]. According to Kristina et al., using drugs used in self-medication is limited to over-the-counter, limited over-the-counter, and mandatory pharmacy drugs (OWA) [29]. Based on this, it can be said that hard drugs are not an option when carrying out self-medication. If this happens, respondents who use hard drugs can be categorized as doing self-medication, which is not good.

Description of the Appropriate Use of Generic Drugs in Self-Medication. Regarding the description of the accuracy of drug use, whether it is seen from the number of drugs used in a day, the time of drug use, and the number of drug uses in one use based on complaints/symptoms as stated above, it was obtained from headache complaints of 108 people (81.8%) who using drugs not under the recommended use based on the number of drug uses in a day. As many as 109 people (82.5%) used drugs according to the recommended time for drug use. Next were complaints/symptoms of fever, where it was found that 95 people (71.42%) used drugs not under the recommended use based on the number of drug uses in a day, and 155 people (86%) of them used drugs under the recommended use based on the time of drug use. in carrying out self-medication against fever. Then, from complaints of cough with phlegm, it was found that 69 people (52.7%) used the medicine according to the recommended use based on the number of medicines used in a day, as well as the time of

use of the medicine, of which 110 people (84%) used the medicine according to the recommendation. From complaints of dry cough, it was found that 74 people (57.8%) used medication that did not correspond to the amount of medication used in a day, and 106 people (82.8%) used medication according to the time of medication use. Sequentially, from complaints of flu, stomach ulcers, allergies, menstrual pain, and toothache, it was found that respondents used more medicines that did not correspond to the number of medicines used in a day, as many as 67 people (60.9%) of complaints of flu, 64 people (66, 7%) complained of stomach ulcers, then 39 people (65%) complained of allergies, 26 people (89.7%) complained of menstrual pain and 39 people (55.7%) complained of toothache. Meanwhile, sequentially, respondents used more drugs according to the time of drug use, where 95 people (86.4%) had complaints of flu, 68 people (70.8%) had complaints of stomach ulcers, 44 people (73.3%) from allergy complaints, then 22 people (75.9%) from complaints of menstrual pain, and 59 people (84.3%) from complaints of toothache. The last complaint/symptom is diarrhea, wherein the first treatment of diarrhea, respondents used more medicines that did not comply with existing drug use recommendations, whether in terms of the number of drug uses in a day, the time of drug use, and the number of drug uses at one-time usage, that is, respectively, 87 people (67.4%) of respondents used drugs not according to the number of uses in a day, then 85 people (65.1%) used drugs not according to the time they should be used. , and as many as 99 people (76.7%) who used drugs did not match the amount of drug used in one use as an effort to carry out self-medication in the first treatment of diarrhea.

Overall, based on the number of drugs used in a day, which is listed in Table 4 above, it is said that 9 out of 10 choices of complaints/symptoms from drug use based on the number of drugs in a day by respondents, do not comply with the recommendations for use that have been determined. Meanwhile, 9 out of 10 choices of complaints/symptoms were based on the time the respondent used the drug in carrying out self-medication following the recommended usage. Apart from that, different from the other nine complaints/symptoms, when carrying out self-medication for complaints/symptoms of diarrhea, it is necessary to pay attention to the amount of medication used in one use, wherein the first treatment of diarrhea generally uses/consumes two tablets at once. Based on the data obtained,

it is known that whether it is the number of drugs used in a day, the time of drug use, and the use of drugs in one use, the majority of respondents use drugs that are not following good self-medication.

Good self-medication is based on the rational use of drugs. According to the Ministry of Health of the Republic of Indonesia in 2011, drug use is said to be rational if it meets predetermined criteria, namely correct diagnosis, a correct indication of disease, correct selection of drug, correct dose, correct method of administering and using the drug, timely and correct drug administration interval duration of drug administration. Drug use is categorized as irrational if there are unmet criteria for the rationality of drug use. [30]. Therefore, it is necessary to promote the rational use of drugs through effective communication, information, and education provided to health workers and the public through various media [31].

5. CONCLUSION

Conclusions that can be drawn based on the results of research regarding the description of self-medication regarding the use of generic drugs among students at the Faculty of Medicine and Non-Medical Medicine at the Indonesian Christian University class of 2018 are as follows: a) Pharmacies are the most preferred method of obtaining medicines, namely 83 people (61.9%) from 134 respondents. Meanwhile, based on how to obtain information about drugs, the most common choice was to obtain information about drugs from relatives/family/friends, as many as 66 people (49.2%) out of 134 respondents, both from the Faculty of Medicine and from Non-Medical Faculties; b) Based on the description of the choice of generic drug types, 6 out of 10 complaints/symptoms that have been determined, students prefer to use branded generic drugs, both from the Medical Faculty and Non-Medical Faculty, where 5 out of 10 of the students' choice of complaints/symptoms is more dominant choosing to use branded generic drugs on the grounds that the drug works more effectively than generic drugs with a logo in carrying out self-medication; c) Overall, 9 out of 10 choices of complaints/symptoms that have been determined, students mostly use generic medicines with over-the-counter medicines/limited over-the-counter medicines, which is said to be good because the choice of medicines when carrying out self-medication is only limited to over-the-counter medicines,

medicines limited free groups and mandatory pharmacy drugs (OWA); d) Based on the number of drugs used in a day, 9 out of 10 choices of complaints/symptoms that have been determined by the majority of students using drugs do not comply with existing recommendations for use. It is different from the time of drug use, where there is only 1 out of 10 choices of complaints/symptoms; students use drugs not according to the recommended time of use. Meanwhile, in carrying out self-medication for treating diarrhea, it was found that almost all students who had carried out self-medication for diarrhea used medication that did not match the amount of medication used in one use. From these three things, based on the accuracy of using generic drugs, it can be concluded that students of the Faculty of Medicine and Non-Medical Faculties have not carried out good self-medication, where good self-medication is based on the rational use of drugs.

Therefore, it is necessary to conduct further research to compare knowledge, perception, and experience between students of the Faculty of Medicine and students of the Non-Medical Faculty of the Indonesian Christian University in carrying out self-medication against generic drugs. Educating students or even the public regarding the rational use of drugs in self-medication is necessary.

CONSENT

As per international standards or university standards, Participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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