

Evaluation of the rationality of OTC (Over The Counter) drug self-medication in patients in Pasaman Barat District pharmacy

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ABSTRACT

Self-medication also means treating all complaints about oneself with medicines purchased directly at pharmacies or drug stores on their initiative without a doctor's prescription. OTC (Over The Counter) drugs are medicines that can be purchased without a prescription, namely over-the-counter and limited over-the-counter drugs, including fever-reducing drugs, pain relievers and inflammation relievers, cough medicines, cold medicines, ulcer medicines, diarrhea medicines, and skin medicines. The use of drugs in self-medication is carried out correctly to ensure the accuracy, rationality, and safety of drug use in self-medication. This study aimed to determine the demographic data characteristics of self-medication patients, the rationality of self-medication, and the influence of patient demographic data characteristics on rationality in OTC (Over Counter) drug self-medication patients. This study used a cross-sectional method. As many as 100 respondents aged 18-60 who self-medicated OTC (Over Counter) drugs at the West Pasaman District Pharmacy were involved in this study. Data collection was carried out using a questionnaire. Data were analyzed using Statistical Product And Servicer Solution (SPSS) 23. The results of this study showed that the majority of respondents who self-medicated OTC (Over Counter) drugs were 58% women, 63% of the age group 18-60 years, the last education group was low (SD, SMP, SMA) by 77% and the non-PNS/non-private employee group is 82%. Respondents who used self-medication rationally were quite large, namely 86%. The factor that influences self-medication is age. While gender, education, and occupation do not affect self-medication.

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INTRODUCTION

The Central Bureau of Statistics noted that in 2017 Indonesian people who dealt with their health problems with outpatient treatment were as many as 46.3%, and the rest did not take

outpatient treatment for various reasons (Badan Pusat Statistik, 2018). Data from the Central Bureau of Statistics for 2020, as many as 61.05% of Indonesians carry out self-medication (Probosiwi, 2022). Based on data on the 2020 West Sumatra BPS website, self-medication is also the biggest reason, with a percentage of 49.11% (Badan Pusat Statistik, 2020). Self-medication is a person's attempt to treat symptoms of illness or disease without consulting a doctor first (Shobah, 2013). Self-medication also means treating all complaints on oneself with medicines that are purchased freely at pharmacies or drug stores on their own initiative without a doctor's prescription. Self-medication itself offers easy access to OTC (Over The Counter) treatment which has lower medical costs and is less time-consuming when compared to doctor consultations which are more expensive. OTC (Over The Counter) drugs are drugs that can be purchased without a prescription, namely over-the-counter drugs and limited over-the-counter drugs (Candradewi & Kristina, 2017). Types of drugs that are sold freely in the market and can be purchased without a doctor's prescription based on pharmacology include fever-reducing drugs, pain relievers and inflammation relievers, cough medicines, cold medicines, ulcer medicines, diarrhea medicines, skin medicines (Departemen Kesehatan, 2007).

The use of drugs in self-medication needs to be done correctly to ensure the accuracy, rationality and safety of drug use in self-medication (Harahap et al., 2017). Therefore, before using the drug there are a number of things that must be considered, including reading the instructions for use before taking the drug as well as the expiration date, paying attention to the composition of the active substances contained therein, ensuring that the drug to be taken is in accordance with the symptoms felt, taking the drug as directed, and according to the prescribed treatment period. The use of over-the-counter drugs and limited over-the-counter drugs in self-medication is not intended for continuous use because they can cause unwanted effects (Departemen Kesehatan, 2007).

RESEARCH METHOD

Research Design

This type of research uses a descriptive method with a cross-sectional design where the research collected at one point is completed. The sampling technique was purposive sampling, with predetermined inclusion criteria. Data was collected using a questionnaire filled in by patients who self-medicated at several pharmacies in West Pasaman District.

Working Method

1. Population

The population in this study were all patients who self-medicated from January to June 2022 at several pharmacies in West Pasaman District.

2. Sample

The Sample in this study was patients who self-medicated OTC (Over The Counter) drugs at several pharmacies in West Pasaman District from January to June 2022. The number of samples taken in this study used the Lemeshow formula, and this is because the population size is unknown or unknown. Finite.

The following is Lemeshow's formula (Riduwan ; Akdon, 2010):

$$n = \frac{(z_{\alpha})^2(P)(Q)}{L^2} \quad (1)$$

Information :

n = Minimum number of samples required

Z_{α} = Standard value of the distribution according to the value of $\alpha = 5\% = 1.96$

P = Outcome prevalence; because the data has not been obtained, then 50% is used

$$Q = 1 - P$$

$$L = \text{Accuracy level of 10\%}$$

Based on the formula:

$$n = \frac{(1,96)^2(0,5)(0,5)}{(0,1)^2} = 96,04 = 100 \text{patient} \quad (2)$$

The sampling technique in this study was carried out using purposive sampling; that is, certain considerations were made by the researchers based on previously known characteristics or characteristics of the population.

Inclusion Criteria

Inclusion criteria are criteria or characteristics that need to be met by each member of the population that can be taken as a sample; the inclusion criteria of this study are:

1. Visitors who self-medicate OTC (Over Counter) drugs at several West Pasaman dispensaries in January - June 2022
2. Visitors are male and female aged 18-60 years.
3. Able to communicate well
4. Willing to be a respondent

Exclusion Criteria

Exclusion criteria are characteristics of members of the population that cannot be considered as a sample. The exclusion criteria in this study are:

1. Visitors who buy drugs without a prescription or OTC (Over The Counter) self-medication for other people and are not responsible for the drug, for example, a maid who is asked to help buy medicine by her employer.
2. Visitors with limited speech/hearing (mute/deaf).
3. Visitors who meet the inclusion criteria but are not willing to be respondents.

Operational Definition

Table 1. Operational definition

No	Variable	Operational Definition	Results Measure	Scale Measuring
1	Gender	Respondent's gender.	1. Boy 2. Girls	Nominal
2	Age	The length of a person's life is calculated from when a person is born.	1. 18-39 2. 40-60	intervals
3	Education	Education is the level of learning that the respondent has taken.	1. Low education (elementary, junior high, high school) 2. Higher Education (Bachelor)	Ordinal
4	Work	Activities/activities carried out by respondents to meet their needs.	1. Non-civil servants / non-private employees 2. Civil servants / private employees	Nominal
5	Rationality	Accuracy of self-medication that meets five criteria, including the right indication, the right way of using the drug, right dosage, the right time to use the drug, and the right time to use the drug.	1. Irrational: Score < 5 means that not all rational criteria for drug self-medication are met. 2. Rational: A score of 5 means that all rational criteria for drug self-medication are met	Ordinal

Research Procedures

The research was carried out with the following work procedures:

1. Researchers chose respondents who met the inclusion criteria
2. The researcher made an approach, explaining the research and the purpose to the respondents.
3. If the respondent is willing, the respondent will sign the informed consent sheet, and the researcher will read the questions in the questionnaire to the respondent and write down the answers on the questionnaire according to the answers from the respondent.
4. The researcher will re-check the completeness and ensure that the data is complete and collected.
5. The data obtained were then analyzed.
6. Make discussions and conclusions

Data Collection Techniques

The data collection technique used to measure the Rationality of self-medication is by using a questionnaire. The questionnaire used previously tested the validity and reliability of the questionnaire. The questionnaire used in this study consists of 2 parts, namely:

1. Demographic data questionnaire
The questions used were gender, age, last education, and occupation. The questions above aim to determine the characteristics of the respondents obtained during the study.
2. Self-medication rationality questionnaire
The purpose of the questions used in the self-medication rationality section is to determine the Rationality of self-medication drugs used by respondents. The assessment of each rationality criterion used is as follows:
 - a. Rationale based on the accuracy of drug indications.
 - b. Assessment based on the accuracy of the usefulness of a drug in disease conditions. Correct if, according to the indication, given a value of 1; if not appropriate, given a value of 0.
 - c. Rationality based on the accuracy of how to use drugs.
 - d. Assessment based on the accuracy of how to consume or use the drug. If appropriate, give a value of 1; if not appropriate, give a value of 0.
 - e. Rationality based on the accuracy of drug dosage.
 - f. The assessment is based on the accuracy of how many times the drug is usually taken/used and how many times the drug is taken/used. If appropriate, give a value of 1; if not appropriate, give a value of 0.
 - g. The Rationality of the timeliness of drug use
 - h. Assessment of the timeliness of taking the drug. If appropriate, give a value of 1; if not appropriate, given a value of 0.
 - i. The Rationality of the appropriate length of use.
 - j. Assessment of the accuracy of how long the patient should continue to use self-medication if the complaint has not healed. If it is according to the recommendations, given a value of 1; if it is not appropriate, it is given a value of 0.

In determining the accuracy of the drug indication, the accuracy of the method of use, the accuracy of the dosage, the timeliness of drug use, and the accuracy of the duration of drug use, the researcher was guided by the information contained on the packaging or brochures, MIMS, ISO and other information related to the drug mentioned by the respondent.

2.5. Data Processing and Analysis

a. Data processing

1. Editing
Re-checking the data obtained for further processing. The data obtained from the questionnaire sheet included the characteristics of self-medication patients including gender, age, education level, occupation, indications, method of use, dosage, time of use, duration of drug use in self-medication visitors at several pharmacies in West Pasaman District in 2022.
2. Coding
After all the observation sheets have been edited or edited, coding is then carried out, namely converting the data into numerical data
3. Data Entry or Processing
Data that has been edited and coded is then entered into a computer program, the data processing uses a data processing computer application.
4. Cleaning
When all the data has been entered, it needs to be checked again to see if there are code errors, incompleteness and everything, then corrections or corrections are made.
5. Tabulation.
Create data tables, according to the research objectives or what the researcher wants (Fika, 2017).

Data analysis

Univariate analysis is an analysis performed for one variable or each variable. The aim is to see how big the proportion of the variables studied and presented in tabular form. Univariate analysis was carried out to describe or explain each of the variables studied in the form of the frequency distribution of each research variable.

Bivariate analysis was performed to determine the relationship between the independent and dependent variables, using the Chi-Square test, with a degree of confidence/CI 90% and $\alpha=0.05$. The basis for taking the research hypothesis is based on the significant level (p value), namely: Confidence interval 95% with $\mu=0.05$.

Bivariate analysis is an analysis involving an independent variable and a dependent variable. Because the data is in the form of categorization, to determine the relationship between the independent and dependent variables, a statistical analysis of the Chi-square test is used using an alpha value of 0.05. To obtain a meaningful relationship with the research variables, a computer was used to analyze the Chi-square test, using the SPSS 23 program. The rules that apply to the Chi-square test:

1. If the 2x2 table is found the expected value (expectation) is less than 5, then the fisher's exact test is used.
2. If the table is 2x2 and there is no expected value (expectation) greater than 5, then the test that is used otherwise is continuity correction.
3. If the table is more than 2x2, for example 2x3, 3x3 and so on, then the test is used pearson Chi-square (Harahap et al., 2017)(Mulyati et al., 2022).

RESULTS AND DISCUSSIONS

Results

Characteristics of Respondents

Based on the number of 100 respondents people, the demographic characteristics of the respondents are shown in Table 2.

Table 2. Demographic data of respondents on OTC (Over The Counter) drug self-medication at several pharmacies in West Pasaman District

Characteristics	Classification	Amount	Total	Percentage
		Respondents	Respondents	(%)
Gender	Man	42	100	42
	Woman	58		58
Age	18 - 39 Years	63	100	77
	40 - 60 Years	37		23
Education	Low (SD, SMP, SMA A)	77	100	77
	High (College)	23		23
Work	Non PNS / Non Employee / Private	82	100	82
	Civil Servants / Private Employees	18		18

Rationality of self-medication

Based on an assessment of the rationality of drug use, the results are shown in Table 3.

Table 3. Frequency of rationality for OTC (Over The Counter) drug self-medication at several pharmacies in West Pasaman District

Characteristics	Classification	Amount	Total	Percentage
		Respondents	Respondents	(%)
Rationality	Irrational	14	100	14
	Rational	86		86

The rationality of drug use is assessed through the accuracy of the indication, the accuracy of the method of use, the accuracy of the dosage used, the accuracy of the time of use and the accuracy of the duration of use. The results of the assessment of each are shown in Table 4.

Table 4. Distribution of assessment status for each criterion of rationality for OTC (Over The Counter) drug self-medication at several pharmacies in West Pasaman District

Criteria	Status		Total
	Wrong	Right	
Indication Accuracy	0	100	100
	0%	100%	
Method Accuracy	0	100	100
	0%	100%	
Dosage Accuracy	3	97	100
	3%	97%	
Punctuality	2	98	100
	2%	98%	
Old Accuracy	12	88	100
	12%	88%	

Effect of Demographic Characteristics on Self-Medication Rationality

Based on the demographic characteristics of the rationality of self-medication, the study's results were analyzed using bivariate analysis, shown in Table 5.

Table 5. Results of bivariate analysis of the relationship between the demographic characteristics of the respondents and the rationality of self-medication.

Variable	Classification	Rationality		P.Value
		Irrational	Rational	
Gender	Man	7 (16,70%)	35 (83,30%)	0,513
	Woman	7	51	

		(12,10%)	(87,9%)	
Age	18 - 39 Years	3 (4,80%)	60 (95,20%)	0,001
	40 - 60 Years	11 (29,70%)	26 (70,30%)	
Education	Low (SD, SMP, SMA A)	12 (15,60%)	65 (84,40%)	0,403
	High (College)	2 (8,70%)	21 (91,30%)	
Work	Non PNS / Non Employee / Private	13 (15,90%)	69 (84,10%)	0,254
	Civil Servants / Private Employees	1 (5,60%)	17 (94,4%)	

Discussions

This study aims to look at the characteristics of patient demographic data, the rationality of self-medication, the relationship between demographic data characteristics, and the rationality of OTC (Over The Counter) drug self-medication at several pharmacies in West Pasaman District. 100 male and female respondents aged 18–60 years who met the inclusion and exclusion criteria were involved in this study. The instrument used was a questionnaire that had previously been tried on 30 respondents outside the study sample with similar inclusion and exclusion criteria. Validity and Reliability tests were carried out using the SPSS 23 program by looking at the significance value. The validity test obtained 8 out of 12 question items with an r count greater than r table 0.361 so that they were declared valid four invalid items were deleted because other question items could represent the question and contained in the same indicator. Furthermore, the eight items were tested for reliability, and the results obtained were 0.703. From these results, the questionnaire is declared valid and reliable.

Based on table 2, it can be seen that the sex characteristics show that women do more self-medication than men, namely 58%. Female respondents were more involved in treatment for themselves and their family members than male respondents. In his research, Gupta Pankaj explained that the reason for the prevalence of more self-medication practices in women might be due to limited mobility outside the home and their status as housewives. This reduces the tendency to seek professional help and prefer self-medication. Similar to Muharni et al.'s research, the 18-39-year-old group, which is the age of young adults, is the one who does the most self-medication. In this study, the number of respondents aged 18-39 was 63%. Young adults are at a productive age and most likely have not experienced serious illnesses, so they prefer to use over-the-counter drugs to treat minor ailments during their activities (Muharni et al., 2016).

Based on table 2, it can be seen that the last level of education, respondents with lower education (elementary, junior high, high school) do more self-medication than respondents with higher education (university), which is as much as 77%. This cannot be separated from the fact that the highest education attained by residents of West Pasaman District is nominated for lower education. The 2018 BPS-Susenas data recorded that only 6.25% of the population of West Pasaman District had graduated from tertiary education (DPPKBPPPA, 2019). A person's education level influences safe, appropriate, and rational treatment. The higher a person's education level, the more rational and careful they choose drugs for self-medication (Kristina et al., 2007; Utari & Setiono, 2016).

Meanwhile, based on table 2, it can be seen that the work of non-PNS/non-private employees such as farmers, traders, laborers, IRT, and others do more self-medication, namely as much as 82%. Own work, apart from the income earned to meet needs, is also related to the workload obtained. Jobs with a relatively high physical load, such as farmers, will certainly be able to cause health problems that are more related to their physique and are quite likely to experience health problems more often (Muharni et al., 2016).

Based on the assessment results regarding the rationality of drug use in table 3, it can be concluded that most respondents who self-medicated OTC (Over The Counter) drugs at several pharmacies in West Pasaman District used drugs rationally (86%). Based on table 4, it can be seen that the biggest factor of irrational self-medication is the error in the duration of drug use by 12%. This is in line with Supardi and Notosiswoyo's research in 2006 in Bogor, which stated that public knowledge about the length or duration of drug use in self-medication was relatively low (Supardi & Notosiswoyo, 2006). The use of over-the-counter and limited over-the-counter drugs in self-medication is not intended for continuous use because they can cause unwanted effects. (Tyas et al., 2013 ; Fika & Setiawan, 2018)

Table 3 shows that another factor that caused irrational self-medication in this study was an error in the use of the dose, which was 3%. Similar to the results of Apriadi's research in 2017 in Bandar Lampung, where it was found that the existence of measuring spoons that were not included in liquid preparations caused people to often replace them with teaspoons or household spoons as a substitute for drug dosage measurements (Hidayati et al., 2018). In using a household spoon for taking the volume of the drug, the average dose taken is 65% of the recommended dose. Inappropriate drug volume intake results in inaccurate dosing. If the dosage is not correct, for example, if the dose is excessive, it will cause side effects, while if the dose is not enough, the goal of treatment will not be achieved. Errors in taking assistive devices such as measuring spoons are caused by a lack of knowledge about the importance of the accuracy of consuming oral liquid preparations using measuring spoons and a lack of public knowledge about the adverse effects of mistakes in using an oral liquid measuring spoons (Candradewi & Kristina, 2017).

Time to take medication is also important to note on several types of drugs. According to the RI Department of Health 2008, the right time to use antacids is on an empty stomach (Susetyo et al., 2020). In this study, based on table 4, as many as 2% of respondents made mistakes when using the drug. It is known that there were respondents who took ulcer medicine after eating without giving a break of 1-2 hours; there were also those who took heartburn medicine for a while and consumed spicy or fruit food. Errors in drug use occurred because respondents only focused on personal experience and a lack of awareness of reading drug packaging or brochures (Putra et al., 2017).

The Chi-Square test using the SPSS application was carried out to determine the relationship between the rationality of self-medication and the sociodemographic factors of the respondents. The results can be seen in table 5. It can be seen that in this study, the factors of gender, education, and work did not influence the rationality of self-medication because all three obtained insignificant values. Gender has a P.value of 0.513, education has a P.value of 0.403, and employment has a P.value of 0.254, where the P.value of the three is greater than the value of α (0.05). While the age factor is known to influence because it gets a significant value. Age has a P value of 0.001, which is smaller than the value of α (0.05).

In this study, respondents aged 40-60 used drugs irrationally more than respondents aged 18-39 years, even though the older the person, the more experience they have, so their knowledge increases. However, at a certain age or approaching old age, the ability to receive or remember knowledge will decrease (Notoadmodjo, 2003 ; (Fika, 2020).

The research results regarding the relationship between rationality and the demographic data of respondents in this study are different from the results of Nur Aini Harahap et al.'s research in 2015 in the city of Payambungan, Medan, which stated that self-medication rationality has no relationship with sociodemographic factors (Harahap et al., 2017). However, this study is similar to Rahmayanti's 2017 study in Medan Sunggal District, where age is a factor that influences the rationality of self-medication [33]. This can happen because of differences in research methods, the influence of community conditions, and the environment where research is carried out.

CONCLUSION

Based on the results of research on the Rationality Profile of OTC (Over The Counter) Drug Self-Medication in Patients at Several Pharmacies in West Pasaman District in January - June 2020, the following conclusions can be drawn: (1) Most respondents who self-medicated were women by 58%, aged 18-39 years by 63%, low education (elementary, junior high, high school) by 77%, and non-PNS / non-private employee jobs by 82%. (2) Respondents who self-medicated rationally amounted to 86%. (3) The factor that influences the rationality of self-medication is age. Meanwhile, gender, education, and occupation do not affect the rationality of self-medication.

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