

Evaluation of patient's knowledge level towards rationality of analgesic swamedication drug use in pharmacy x Batam city

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ABSTRACT

Pain is the body's defense mechanism that arises when there is tissue damage, this will cause individuals to react by moving the pain stimulus. Pain can be a problem if the pain is not treated immediately, so that the disease becomes prolonged and can harm the sufferer. Various efforts have been made by humans to relieve pain. With the act of self-medication (self-medication), knowledge and understanding of the rational use of drugs are needed in carrying out self-medication. Identification of the level of patient knowledge of the rational use of analgesic self-medication drugs at Pharmacy X Batam City using descriptive observation method by purposive sampling. Based on univariate analysis, the results of the questionnaire were classified as sufficient with a percentage of 44% and the majority of respondents used drugs rationally 58% and irrationally 42%.

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INTRODUCTION

Pain is the body's defense mechanism, arising when there is damaged tissue and this will cause the individual to react by moving the pain stimulus. Pain can become a problem if the pain is not treated immediately, so that the disease becomes prolonged and can be detrimental to sufferers. Therefore, various efforts have been made by humans to relieve this pain so that it can be reduced. Analgesics or what is often referred to as pain-blocking drugs are substances that can reduce or block pain without losing consciousness (Harianto, 2020).

The use of analgesics is often used freely, this causes dependence and is thought to be the cause of chronic kidney disease in society during the 1900s. (WHO, 2002). Complaints that often encourage patients to use analgesics on a self-medicated basis include: headaches, joint pain, and mouth and teeth disorders. (Widyani, 2020). The majority (>50%) of patients use the drug several times a month (Halim et al., 2018).

For the treatment of inflammation, non-steroidal anti-inflammatory drugs are usually used, one of the non-steroidal anti-inflammatory drugs is diclofenac sodium which has analgesic, antipyretic and anti-inflammatory activity. This compound is a cyclooxygenase inhibitor, besides

that diclofenac appears to reduce the intracellular concentration of free arachidonic in leukocytes by changing the release or uptake of fatty acids.(Setiawan et al., n.d.).

In Indonesia, the behavior of self-medication has been widely practiced by the community. One of the characteristics of self-medication is the behavior of people who keep medicines for self-medication. The data shows that 35.2% of the people have stored self-medication medicines. In this case, the presence of strong drugs and antibiotics for self-medication indicates irrational use of drugs(Riskesdas, 2013)(Marjoni et al., 2021). With a high level of irrational society in carrying out self-medication, the prevalence of high incidence rates and the high percentage of people who do not receive treatment with the help of health workers is 68.9%(Riskesdas, 2013). The researcher wanted to know the description of the patient's level of knowledge about the rationality of using self-medication analgesics at Pharmacy X, Batam City.

Self-medication must be carried out according to the disease experienced, its implementation must meet the criteria for rational drug use as much as possible. Rational drug criteria include the accuracy of drug selection, drug dosage accuracy, absence of side effects, absence of contraindications, absence of interactions, and absence of polypharmacy.(Zeenot, 2013)(Setiawan et al., 2022).

Yanuardi's research results, Aditya's level of knowledge regarding the use of self-medication drugs is in the moderate category with a presentation of 40.6%.(Diponegoro, 2016). The results of Gupta et al's study showed that the percentage of those who self-medicated based on female sex was 69.2%, while 30.8% was for men due to the use of pain medication that was mostly consumed by women because it was needed every month to reduce menstrual pain.(Gupta et al., 2011).

Pharmacy X Batam City is one of the largest pharmacies in Batam city and has a high number of analgesic self-medication patients every day, in a day the number of patients who self-medicate can be more than 100 patients. Therefore the author is interested in conducting research at Pharmacy X Batam City with the title " An overview of the patient's level of knowledge about the rationality of using analgesic self-medication at Pharmacy X Batam City for the period February - June 2020. The body's response to pain is in the form of a hormonal response through the mobilization of catabolic hormones and an immunological reaction which is generally called the stress response. The pain response is very detrimental to the body because it can reduce food reserves, endurance, increase the heart's oxygen demand,(Yuliantini, 2017)(Mulyati et al., n.d.).

Self-medication is the selection and use of drugs by individuals to treat themselves from disease or disease symptoms. The community usually performs self-medication to deal with complaints and minor illnesses that are often experienced, such as fever, aches, dizziness, coughs, influenza, stomach ulcers. Worms, diarrhea, skin diseases, and others. The class of drugs used for self-medication are drugs that are relatively safe, including over-the-counter and limited over-the-counter drugs(Departemen Kesehatan RI, 2007). According to WHO, self-medication has several things that must be considered. Such as the disease suffered is a mild disease and symptoms that do not need to come to the doctor or other medical personnel. In addition, the drugs sold are over-the-counter (OTC) drugs.(WHO, 2002).

RESEARCH METHOD

This type of research is descriptive observational research. Descriptive research is a research method that is carried out with the aim of knowing a description or description of a problem, both in the form of risk factors and effect factors. This study illustrates or describes the level of knowledge and rationality of using self-medication analgesics. The research design used in this research is a survey. Location is the place or location where the research is taken(Diponegoro, 2016). This research will be carried out at Pharmacy X Batam City.

Working Method

a) Population

The population is the subject or group that is the target of the research. The population of this study were patients at Pharmacy X Batam City.

b) Sample

The sample in this study were patients who self-medicated analgesic drugs at Pharmacy X, Batam City. Period February - June 2020. The number of samples taken in this study used the Lemeshow formula, this is because the population size is unknown.

Here's the formula Lemeshow [Lwanga, SK, Lemeshow S., 1991]

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

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 = Accuracy level of 10% (Setiawan et al., 2022) (Mulyati et al., 2022)

based on the formula,

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

The sampling technique in this study was carried out using purposive sampling; namely certain considerations made by researchers based on previously known characteristics or characteristics of the population. a) Inclusion Criteria, are characteristics that need to be met by each member of the population that can be taken as a sample. Inclusion criteria in this study are: Patients who self-medicated analgesics at Pharmacy X Batam City in February - June 2020 used analgesics were: a) Maximum: $1 \times 18 = 18$, b) Minimum: $0 \times 18 = 0$, Provisions for the total score of questionnaire questions about knowledge and rationality of self-medication analgesic drugs: a) < 55% with a score of 0 - 9: Lack of knowledge level, b) 56-74% with a score of 10-12 : The level of knowledge is sufficient, c) > 75% with a score of 13 - 18 : The level of knowledge is good.

The processed data was then analyzed using univariate analysis. The statistics used for data analysis in this study are descriptive statistics. Univariate analysis (descriptive analysis) is an analysis carried out on each variable from the research results. In general, this analysis only produces the distribution of frequencies and percentages of each variable which explains the number or number of presentations for each group of each variable. The part that will be carried out univariate analysis is the part of the respondent's identity (gender, age and recent education), level of knowledge and rationality of using self-medication analgesics.

RESULTS AND DISCUSSIONS

Results

Characteristics of Respondents

The novelty of this study is that in terms of questionnaires, researchers tested the validity of patient knowledge research instruments on the rationality of using analgesic self-medication drugs in 30 people. With the conclusion obtained $r \text{ count} < r \text{ table}$, and invalid items are not used in the research questionnaire. The results of the reliability test of the patient knowledge questionnaire on the rationality of using analgesic self-medication drugs obtained by Cronbach

alpha of 0.796 > r table (03.61). So that the questionnaire is said to be reliable and can be used as a research questionnaire.

Respondents studied amounted to 100 samples who were at Pharmacy X Batam City. Respondent characteristics that were seen included gender, age and education. This research was conducted in X Bukittinggi.

Table 1. Distribution and frequency of respondent characteristics

No	Characteristics of respondents	amount (n = 100)	percentage (%)
1	Gender		
	Man	25	25%
	women	75	75%
2	Age(years)		
	Late Teens 17 - 25 years	20	20%
	Early Adult 26 - 35 years	37	37%
	Late Adult 36 - 45 years	22	22%
	Early Elderly 46 - 55 years	21	21%
3	last education		
	SD	19	19%
	JUNIOR HIGH SCHOOL	12	12%
	SENIOR HIGH SCHOOL	56	56%
	S1	11	11%
	S2	2	2%

Based on the results of this study, respondents were dominated by women as much as 75 (75%) with an age group between 26-35 years (37%) the reason was because pain medication according to Riskesdas in 2013 showed that women suffer more pain than men (Riskesdas, 2013). The majority of recent education was high school as much as 56 (56%). This shows that those with high school education generally have good knowledge about self-medication. Education greatly influences a person's behavior as stated by Notoadmodjo that the higher a person's education, the higher the intellectual. Someone who is highly educated has better knowledge than other education. Education has an important role in determining human quality, where the higher a person's education, the higher the quality of his life. (Diponegoro, 2016) (Fika et al., 2022).

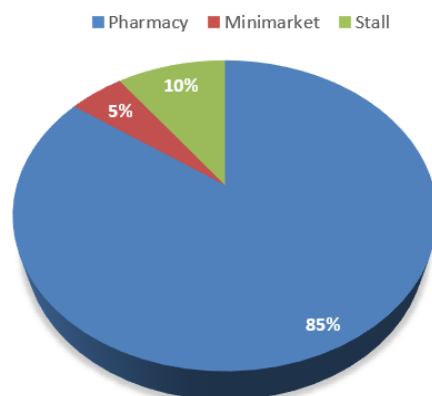


Figure 1. Distribution diagram and frequency of places to obtain self-medication drugs

The place where the respondents obtained self-medication analgesic drugs were 85 respondents (85%) at the pharmacy, 5 respondents (5%) at the mini-market, 10 respondents (10%) bought drugs at the shop, and no respondents bought them at drugstores. From all respondents Most people get painkillers for self-medication, namely at the pharmacy. Rationally, it shows that

pharmacies and drugstores/stalls are the main sources of obtaining household medicines or self-medication (Risksedas, 2013).

Type of Disease Or Disease Complaints

Table 2. Distribution and frequency of respondents against disease types/complaints

The type of disease	N	%
Joint pain	1	1%
Menstrual pain	6	6%
Body ache	11	11%
Toothache	35	35%
Headache	47	47%
Amount	100	100%

Based on the results of this study, the most common pain complaints experienced by respondents were headaches by 47 respondents (47%). In 2011, WHO also stated that as many as 50-75% of adults aged 18-65 years in the world had headaches during the past year. Brain cancer, as well as excessive drug consumption, as a result of an activity and food consumed. Without realizing it, headaches can also arise from trivial routine activities, for example staring at computer or cellphone screens for a long time, sitting for too long, a lot of pressure or stress, lack of sleep, drinking too little, smoking and many other things.

Type of drug used

Table 3. Distribution and frequency of respondents on the type of medicine used

	N	%
Metampiron	4	4%
Potassium Diclofenac	24	24%
Ibuprofen	11	11%
Mefenamic acid	13	13%
Paracetamol	48	48%
Amount	100	100%

Based on table 3, it can be explained that judging from the type of pain medication chosen, most respondents chose to use paracetamol in analgesic self-medication with the most complaints of headaches. This is in accordance with the results of Gissele Sarganas' research which said that paracetamol is a common and easily accessible drug in many countries. (Sarganas et al., 2015).

Respondents in this study used drugs correctly because they were in accordance with the provisions stated by the Food and Drug Supervisory Agency that the classes of drugs used by self-medication were relatively safe drugs, including over-the-counter and limited over-the-counter drugs. (Departemen Kesehatan RI, 2007).

Knowledge level

Table 4. Distribution and frequency level of knowledge of respondents

Knowledge level	Number of Respondents	Percentage
Not enough	35	35%
Enough	44	44%
Tall	21	21%
Amount	100	100%

Based on the results on table 4 can be explained the assessment regarding the level of knowledge, it can be seen that the majority of patients' knowledge levels are classified as sufficient (44%) as many as 44 respondents. Complete data can be seen in table 5.

Table 5. Rationality of use of analgesic self-medication and frequency of respondents' questionnaire answers

No	Precise Indication	Appropriate	%	No Appropriate	%	N
P1	In your opinion, is it true that analgesics are drugs that can relieve or reduce pain?	98	98%	2	2%	100
P2	Is it true that pain relievers are only limited to treating pain?	34	34%	66	66%	100
P4	Can aspirin relieve pain?	34	34%	66	66%	100
P5	Paracetamol is a febrifuge drug. Can paracetamol relieve pain?	58	58%	42	42%	100
Q7	If you have a headache, what kind of medicine should you take?	71	71%	29	29%	100
	Amount	295	59%	205	41%	100
	Right Medicine					
P3	What types of drugs are included in the class of drugs that can only be used on a self-medicated basis?	49	49%	51	51%	100
P 6	What types of drugs do you understand as pain relievers that can be used as self-medication?	59	59%	41	41%	100
	Amount	108	54%	92	46%	100
	Correct Usage					
Q8	Do you know when is the right time to take pain relievers?	91	91%	9	9%	100
	Amount	91	91%	9	9%	100
	Proper Side Effects					
Q9	How to store analgesic drugs at home?	41	41%	59	59%	100
P10	What impact will occur if you use more than the prescribed dose of pain relievers?	33	33%	67	67%	100
	Amount	74	37%	126	63%	100
	Correct Dosage					
P11	Is the dose of pain reliever for children the same as for adult pain relievers?	79	79%	21	21%	100
Q12	Is it true that pain relievers can be used continuously even though	64	64%	36	36%	100
	Right Interaction					
Q13	In your opinion, is it permissible for pain relievers to be used together with ulcer drugs in one dose without a consumption timeframe?	43	43%	57	57%	100
P14	In your opinion, is it permissible for pain relievers to be taken together with coffee?	65	65%	35	35%	100
	Amount	108	54%	92	46%	100
	Exactly contraindicated					
P15	The following pain relievers are safe for consumption for pregnant women?	68	68%	32	32%	100
Q16	Are the following pain relievers safe for consumption by people with stomach disorders?	38	38%	62	62%	100
Q17	In your opinion, can asthmatic patients take aspirin to relieve pain?	41	41%	59	59%	100
	Amount	147	49%	153	51%	100
	The Pain Has Disappeared?					
P18	In your opinion, is it permissible to increase the consumption of pain relievers that are taken in one dose (2 tablets or more at once)?	43	43%	57	57%	100
	Amount	186	62%	114	38%	100

Based on table 5, it can be explained that all the respondents who were at Pharmacy X Batam City, not all of them carried out self-medication painkillers rationally and precisely. The behavior of using self-medication anti-pain drugs is assessed from several sub-indicators, namely the right indication, the right drug, the right dose, the right use, the right side effects, the right drug interactions, and the right contraindications.

Table 6. Average rationality of use of analgesic self-medication

Aspects of the Statement	Correct	Wrong	Source Number Statement
Exact indication	59%	41%	1,2,4,5&7
RightMedicine	54%	46%	3&6
proper usage	91%	9%	8
RightSide Effects	37%	63%	9&10
Exact Dosage	62%	38%	11,12&18
RightInteraction	54%	46%	13&14
RightCons	49%	51%	15,16&17
Indication			
Average	58%	42%	

Based on table 6, it can be explained that the average rationality of the use of analgesic self-medication drugs, there is a behavior of using anti-pain medication self-medication which is assessed from several sub-indicators, namely the right indication, the right drug, the right dose, the right use, the right side effects, the right drug interactions, and the right contraindications.

Discussion

Based on the results of this study, respondents were dominated by women as much as 75 (75%) with an age group between 26-35 years (37%) the reason was because pain medication according to Riskesdas in 2013 showed that women suffer more pain than men(Riskesdas, 2013). The majority of recent education is high school as much as 56 (56%). This shows that most respondents with high school education generally have good knowledge about self-medication. Education greatly influences a person's behavior as stated that the higher a person's education, the higher the intellectual. Someone who is highly educated has better knowledge than other education. Education has an important role in determining human quality, where the higher a person's education, the higher the quality of his life(Diponegoro, 2016)

Respondents' places to obtain self-medication analgesics were 85 respondents (85%) at pharmacies, 5 respondents (5%) at mini markets, 10 respondents (10%) bought drugs at stalls, and no respondents bought them at drugstores. Of all the respondents who self-medicated, most of them got painkillers, namely at the pharmacy. Nationally, it also shows that pharmacies and drug stores/stalls are the main sources of obtaining household medicines or self-medication drugs.(Diponegoro, 2016)(Fika, 2020)

The level of knowledge of patients at Pharmacy X Batam City about self-medication is quite good, because more people buy it at pharmacies, namely 85 respondents (85%), where there are health workers who hand over drugs directly and if they don't understand how to use or the rules for using drugs they can't be known. ask directly to the staff at the pharmacy, compared to buying medicine at the shop.

Based on the results of this study, the most common pain complaints experienced by respondents were headaches by 47 respondents (47%). In 2011, WHO also stated that as many as 50-75% of adults aged 18-65 years in the world experienced headaches during the past year. Factors that cause headaches experienced by various types ranging from having a certain disease such as meningitis, brain cancer, or excessive consumption of drugs, to the result of an activity and food consumed. Without realizing it, headaches can also arise from trivial routine activities, for example staring at computer or cellphone screens for a long time, sitting too long, a lot of pressure or stress,

lack of sleep, drinking little, smoking and many other things.

Judging from the type of pain medication chosen, most respondents chose to use paracetamol in analgesic self-medication with the most complaints of headaches. This is in accordance with the results of Gissele Sarganas' research which said that paracetamol is a common and easily accessible drug in many countries. (Sarganas et al., 2015). Respondents in this study used the drug correctly because it was in accordance with the provisions stated by the Food and Drug Supervisory Agency that the drug classes used for self-medication were relatively safe drugs including over-the-counter and limited over-the-counter drugs. Based on the results of the assessment regarding the level of knowledge, it can be seen that the majority of the patient's level of knowledge is quite sufficient, namely (44%) as many as 44 respondents. Complete data can be seen in table 4

Of all the respondents who were at Pharmacy X Batam City, not all of them carried out self-medication painkillers rationally and precisely. The behavior of using self-medication anti-pain drugs is assessed from several sub-indicators, namely the right indication, the right drug, the right dose, the right use, the right side effects, the right drug interactions, and the right contraindications. In more detail can be seen in table 5.

The results of the questionnaires that were distributed showed that 59% of the respondents made accurate indications, some of the respondents who had bad scores and did not pay attention to drug indications before taking painkillers, namely around 41%. It is important to pay close attention to the indications for painkillers for the treatment of painkillers, because if the wrong indication of the drug will cause an error in the drug to be used.

The table above shows that the average number of respondents who answered the right drug was 54%, not much different from the number of respondents who had the wrong answer, namely 46%. This is because the community already knows the types of drugs that are understood to treat pain and the majority of people do not know what class of drugs is right to use in self-medication. (Necho et al., 2020; Umam et al., 2023).

The results obtained through the questionnaire showed that there were 62% of respondents who correctly and correctly dosed before self-medicated pain medication and 38% of respondents were incorrect in seeing the dose before using self-medication painkillers. These things really need to be asked of respondents, because this is what happens in society according to research conducted by Puji Pratiwi that out of 100 respondents in Surabaya, only 80 people do the right way to drink and take the right amount of medicine when they want to speed up healing. there were 20 respondents who said they drank two tablets when they wanted to cure the pain they were experiencing. (Pratiwi et al., 2014)

Based on the results obtained from the table, it is known that only 37% of respondents answered rationally with the right sub-indicators of side effects because people did not understand about the side effects of drugs that occur after taking them. Side effects caused by a drug sometimes do not need medical action to overcome them, but some drugs need to be considered in more handling. To prevent more severe side effects, it is best to discontinue the drug and immediately consult with the relevant medical personnel. The side effects of NSAID class drugs (painkillers) according to Goodman & Gilman are generally side effects of stomach bleeding, nephrotoxicity, and bronchospasm if the drug is not used properly.

Some of the things that are used to assess the accuracy of drug interactions are other drugs consumed besides painkillers, allowing taking other drugs and taking drugs with coffee. Drug interactions occur between drugs and drugs and drugs with food. The value that appears for the accuracy of drug interactions is 54% correct for interactions and only 46% for inappropriate drug interactions. This drug interaction needs to be considered, because drug-drug interactions will make the system competitors to one another between one drug and another drug which makes one drug inactive. (Baxter, 2008). accuracy of drug contraindications, the value that appears related to the accuracy of contraindications for this drug is 49% knowing the exact contraindications and 51%

do not know the accuracy of the contraindications. Asthma patients are not allowed to use painkillers freely because of the side effects of pain which causes bronchospasm, especially in patients who have a history of asthma.(Carrasco-Garrido et al., 2014; Rauschert et al., 2022; Shrestha et al., 2021)

Based on the results of the average assessment of drugs, it can be concluded that the majority of respondents at Pharmacy X Batam City used drugs rationally 58% and 42% irrationally. The irrational use of drugs is mostly caused by the inaccuracy of drug side effects 37%. This is in line with Puspitasari's 2019 study which stated that public knowledge about the inappropriateness of drug side effects in self-medication is low.(Baxter, 2008; Elghazaly et al., 2023).

CONCLUSION

Based on the results of the research on describing the level of patient knowledge about the rationality of using self-medication analgesics at the Kimia Farma 137 sagulung pharmacy in Batam, it can be concluded that: a) Most respondents who self-medicated were women by 75%, aged 26-35 years by 37%, and education the last is SMA at 56%. a) Respondents who self-medicated rationally amounted to 58%. a) Factors that influence the rationality of self-medication is the correct use of drugs by 91%. a) The level of knowledge of Batam City X Pharmacy patients is quite adequate with a percentage of 44%. The limitation of the study was the limited population size, namely the period February - June 2020 during the COVID-19 pandemic. It is expected that the public will be more selective in buying and using drugs and ask for complete information, especially related to analgetic drugs to existing pharmacists or pharmaceutical technical personnel.

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