THE RELATIONSHIP BETWEEN KNOWLEDGE LEVEL AND RATIONAL HEADACHE PAIN SELF-MEDICATION BEHAVIOUR ON FIKES STUDENTS AT LAMONGAN MUHAMMADIYAH UNIVERSITY

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ABSTRACT

The prevalence of self-medication in Indonesia is 84.23%, a figure that has been increasing over the past three years. The increase in self-medication in Indonesia, the availability of drugs that can be taken alone without a doctor's prescription, the perception of mild illness, and the relatively low price of drugs. The potential risks of self-medication are incorrect diagnosis of disease, delay in seeking necessary treatment, disease becoming more severe, wrong method administration, and wrong dose. Knowledge of rational use of drug self-medication still lacks students at 55.5%. It is important to know that student self-medication, in which students can overcome minor complaints of their own illness, does not have an impact on health and academic achievement. The incidence of headaches in students is 11-40% and mild headache levels interfere with academic performance. This study measures level knowledge behavior to determine the relationship between level knowledge and rational headache self-medication behavior by students at Muhammadiyah Lamongan University. The research design was cross-sectional descriptive analytics. Data were collected using online questionnaires. The sample included 166 Fike students using a purposive sampling technique. The results indicated level of knowledge: students classified sufficient (59.0%) and rational head pain self-medication behavior classified as good (57.8%). The results of the Spearman Rho test analysis showed a p-value of <0.001 and correlation coefficient of 0.256. This study concluded that there is a relationship between level of knowledge and rational headache self-medication behavior with low correlation strength. This shows that students need to increase their information about rational self-medication because they become caregivers and agents of change and social control to provide benefits to society and their surroundings.

Keywords: Self-medication, Headache, Knowledge, Behaviour

INTRODUCTION

Self-medication is defined as the selection and use of drugs with therapy without the advice of a pharmacist or prescription from a doctor, carried out independently by an individual, starting with the recognition of complaints or symptoms and ending with the choice and use of drugs. Self-medication involves getting medicines without a prescription, buying medicines based on previous prescriptions, sharing medicines with people around you from family, friends, and social circles, or using expired medicines in your home (Harahap *et al*., 2017).

Self-medication with over-the-counter and limited medicines is not recommended for dealing with persistent illnesses. A person who is sick immediately makes efforts to get his body back to normal; options available for recovery include seeking medical attention from a health care professional or self-medication (Widyayanti, 2018). Self-medication is a common practice used to treat mild-to-moderate illnesses, including fever, skin ailments, diarrhea, coughs, influenza, headaches, and other ailments (Restiyono, 2016). Headache can

be treated by self-medication, usually called self-medication, which involves self-medication with non-prescription drugs appropriately and rationally (Adawiyah *et al*., 2017). The prevalence of headache among medical students at Udayana University is around 11-40% with the level of headache complained of being mild, often recurrent, and can interfere with academic quality and performance (Adnyana, 2020).

Self-medication behavior in Indonesia has considerable value. Based on data from the Central Statistics Agency (BPS) for 2021, the prevalence of the population in Indonesia who practice self-medication is 84.23% and has been increasing for the last three years. In 2019, it was 71.46%, while in 2020, the percentage of people who self-medicated was 72.19% (BPS, 2021). Knowledge can improve the rationality of self-medication, and knowledge about the rational use of drugs can be obtained through education or exposure from pharmaceutical personnel (Octavia, 2019).

A lack of understanding can cause an initially mild illness to worsen and can be life-threatening (Fajriaty *et al*., 2019). According to (World Health Organization (WHO) (2012), sufficient knowledge can influence a person to behave or do something, such as self-medication. In a previous study by Harahap (2017) 20.5% of the patients had good knowledge, 41.8% had moderate knowledge, and 37.7% had poor knowledge. The use of drugs for self-medication was 59.4% rational and 40.6% unrational. The majority of patients had a moderate level of knowledge according to the study findings, but 40.6% used self-medication drugs irrationally. The level of knowledge of patients about self-medication showed that the level of knowledge of patients about self-medication was poor. The rationality of patients when self-medication is as high as 67% is irrational (Harahap *et al*., 2017).

Self-medication should be administered based on a sufficient level of knowledge to avoid drug abuse and therapeutic failure due to inappropriate drug use. The implementation of self-medication has resulted in many medication errors. Medication errors are caused by limited knowledge of drugs, use of drug information, and use of drugs (Muharni *et al*., 2015). Inappropriate self-medication can not only cause a burden for patients but can also cause certain unfavorable health problems such as drug resistance, side effects, and drug interactions, including death (Octavia, 2019). Based on previous research by Hasibuan (2020), many students have insufficient knowledge, namely 208 (55.5%) on the rational use of drugs in self-medication (Hasibuan, 2020). Therefore, as health students, they must play the role of pioneers in medicine so that there is no treatment failure by knowing more about rational self-medication. Students are considered to have a high intellect and the ability to plan actions well (Apsari *et al*., 2020).

Based on the above background, this research needs to be done because many fike students experience headaches and do treatment by self-medication. The purpose of this study was to choose self-medication of headaches in fike students, namely because people trust health workers as a source of drug information and health promotion, to measure the relationship between the level of knowledge and behavior in fike students who are prospective drug information providers because, after graduating, they will become educators and caregivers; therefore, students must understand more about rational self-medication. Because they are equipped with knowledge and easy access to information, students sometimes overcome these health problems by self-medication.

RESEARCH METHODS

The research was a descriptive analytical design using a cross-sectional approach. The population in this study was active students of the 2019 batch at the Faculty of Health Sciences, University of Muhammadiyah Lamongan, totalling 272 students. The sample size of 161 respondents was calculated using the Slovin Formula. Non-probability sampling with purposive sampling was used. Non-probability sampling is used because it only provides the same opportunity for the population to be sampled. Purposive sampling was used because it is based on determining the sample with certain criteria made by yourself based on the nature of the population that is already known beforehand. The inclusion criteria were active

students of Fikes class 2019 at the regular academic level of Muhammadiyah Lamongan University, namely the S1 Nursing, S1 Pharmacy, and S1 Hospital Administration study programs, who had self-medicated headaches, and students who were willing to fill out the questionnaire.

Slovin's formula:

$$n = \frac{N}{1 + Ne^2}$$

Description:
n = Minimum sample size required
N = Total population
e^2 = Allowance for inaccuracy due to tolerable sampling (5%), then squared
tolerable (5%), then squared

Based on the Slovin Formula, the amount of withdrawal of the number of research samples is:
n = N/(1 + (272 x $0{,}05^2$)
n = 272/ (1 + (272 x 0,0025)
n = 272/ (1 + 0,68)
n = 272/1,68
n = 161

Therefore, the sample size in this study was at least 161 active students at the regular academic level of the Faculty of Health Sciences class of 2019 at Muhammadiyah Lamongan University. The instrument used in the data collection process in this research was carried out using a closed questionnaire through google forms. The questionnaire assessment was based on the score obtained by the respondent, where each correct answer was given a score of 1 and if the wrong answer was given a score of 0. The questions were designed by adjusting the topics discussed according to indicators. The instrument was tested for validity and reliability before being distributed to the respondents. The research data used univariate analysis by measuring the level of knowledge and behavior of head pain self-medication and were then placed into three categories: good if the score or value was 76 -100%, sufficient if the score or value was 56-75%, and less if the score or value was < 55%.

The data collected were then analyzed quantitatively, and both data used were ordinal, so bivariate analysis using the Spearman Rho correlation test was used to determine the relationship between the level of knowledge and rational behavior of headache pain self-medication. The Spearman rho test was used in this study to analyze the relationship between two variables, both of which have an ordinal scale. Correlation using Spearman's Rho by looking at the Asymp sig. value 0.05 states that the two variables are not correlated. The bivariate correlation value with a perfect negative relationship direction approaches coefficient number -1, perfect positive approaches coefficient 1, and coefficient 0 states that the direction of the relationship is not linear and is considered not correlated.

RESULT AND DISCUSSION

A. Validity And Reliability Test Of The Questionnaire

Following Sugiyono (2019), a validity test was used to measure whether a questionnaire was valid. The purpose of the validity test is to determine the extent of accuracy between the data that actually occur on the object and the data reported by the researcher. A bivariate correlational analysis was used to determine the Correlation Coefficient. Compared with the value of the r table for $\alpha = 0.05$, with degrees of freedom (df = N-2), the table r is obtained.

The instrument used was tested for validity and was declared valid if the results of r count> r table (0.312) with a sample size of 40 respondents and a significant value (p) <0.05. The results of the validity test of the knowledge level questionnaire 13 questions and rational behaviour of headache self-medication 10 statements, there were 5 invalid questions from

the knowledge level with the value of the results of r count < r table (0.312). Invalid questions were removed from the questionnaire sheet, so there were eight valid knowledge level questions that were in accordance with the indicators; invalid questions were then modified and distributed again; finally, all questions were declared valid; the results of the validity test of the behavior questionnaire obtained data from 10 statements were all valid. Thus, the questionnaire used in this study was valid.

Reliability is an index that indicates the extent to which a measuring instrument can be trusted or relied upon (consistent). Measurement with the Realibility Analysis test: To determine whether a measuring instrument is reliable or not, a statistical approach is used, namely through the reliability coefficient and if the reliability coefficient if the Cronbach's alpha value is> 0.60, then the entire statement is declared reliable or reliable (Sugiyono, 2019). The results of the reliability test for the knowledge level questionnaire and rational head pain self-medication behavior showed a Cronbach's alpha value of 0.725, which means> 0.60. This shows that the questionnaire was included in the high reliability criteria. Therefore, the instruments used in this study are reliable.

B. Respondent Characteristics

This study was approved by the Research Ethics Commission of Muhammadiyah Lamongan University (approval number:289/EC/KEPK-S1/01/2023. The data obtained in this study were the results of questionnaires distributed to respondents, including the experience of self-medication, level of knowledge, and rational headache self-medication behavior. Based on the obtained data, 166 student respondents met the inclusion criteria. An overview of the characteristics of respondents of Fikes students class 2019 regular class at Muhammadiyah Lamongan University which includes gender, age, and study program is listed in **Table I**.

Table I. Frequency Distribution Based on Gender, Age and Study Programme

Characteristics	Frequency	Percentage %
Gender		
Male	36	21.7
Women	130	78.3
Total	**161**	**100.0**
Age		
20	3	1.8
21	79	47.6
22	69	41.6
23	12	7.2
24	1	0.6
26	1	0.6
28	1	0.6
Total	**161**	**100.0**
Study Programme		
S1Pharmacy	57	34.3
S1 Nursing	76	45.8
S1 Hospital Administration	33	19.9
Total	**161**	**100.0**

Based on **Table I**, the majority of respondents were female (78.3%). The researcher considers that the results of the study are more female because the number of Fikes students in 2019 is dominated by female students, and female respondents are willing to be respondents compared to men. In addition, based on research research Suranadi (2018) found that most health faculty students have a female gender greater than males (71.1%). In

addition, women consider the prevention and use of drugs more effective than men (Agustina *et al*., 2021).

Most of the 2019 Fike students were 21 years old (47.6 %). This is because, at the age of 21 years, the average age of the 2019 class of students was teenage final-year students. A person aged 20-30 years is classified as an age that is still in adolescence to early adulthood. In addition, age can affect a person's ability to capture and think. The older a person becomes, the more his/her capacity to capture and think will also increase, so that the knowledge he/she will be wider (Ra'is *et al*., 2021).

The characteristics of the distribution of study programs show that the percentage of student respondents (45.8 %) is the highest, namely the S1 Nursing study programme. This is because the number of 2019 students at Muhammadiyah Lamongan University is dominated by the S1 Nursing Study Programme, which comprises 170 students. In addition, there are many Fike students in the S1 Nursing study program who are also willing to be respondents.

C. Experience of Rational Headache Self-Medication

The following is the experience of obtaining self-medication, which includes the distribution of places to obtain self-medication and the distribution of information sources for obtaining self-medication, as presented in **Table II**.

Table II. Distribution of Information Sources and Places of Obtaining Swamedication Medicine

Distribution	Frequency	Percentage %
Where to obtain medicine		
Warung	22	13.3
Pharmacy	143	86.1
Supermarket	1	0.6
Total	**161**	**100.0**
Information on Obtaining Medicine		
Advertisements from electronic print media	29	17.5
Personal or family drug use experience	107	64.5
Advice from others	27	16.3
Self-medication lectures	3	1.8
Total	**161**	**100.0**

Based on **Table II**, it can be seen that (86.1%) the students get more medicine from pharmacies. Fikes students understand that drug safety and service quality in pharmacies are better. In line with previous research, Oi *et al*. (2019) found that drugs without a doctor's prescription are mostly in pharmacies (58.278%). Compared to other locations where drugs can be purchased, such as supermarkets and stalls, respondents prefer pharmacies because they have more confidence in the quality and authenticity of the drugs, as well as pharmacy staff who offer education and services related to complaints and diseases that respondents may experience (Sholiha *et al*., 2019).

The most common source of information for obtaining self-medication was personal or family drug use (64.5%). The results of this study are in line with Rahmayanti (2018) who found that most respondents obtained sources of information from personal or family drug use experiences because respondents had experienced drug use before this study, and respondents discussed drug use more often with family members, and the majority of respondents were convinced of the experience because it had been proven. In addition, respondents felt confident that, based on previous experience using self-medication, they had achieved the desired results (Notoatmodjo, 2012).

D. Categories of Knowledge Level and Headache Self-Medication Behaviour

The categories of knowledge level and behaviour of rational headache self-medication in Fikes students of 2019 regular class at Muhammadiyah Lamongan University are presented in **Table III**.

Table III. Category Results of Knowledge Level and Rational Headache Self-Medication Behaviour

Category	Frequency	Percentage (%)
Knowledge Level		
Good	47	28.3
Simply	98	59.0
Less	21	12.7
Total	**166**	**100.0**
Behaviour		
Good	96	57.8
Simply	59	35.5
Less	11	6.6
Total	**166**	**100.0**

Based on data from **Table III**, the category of knowledge level regarding self-medication of headache pain in Fike students. Knowledge can be obtained from experience and can overcome the problems that occur so that it becomes an important factor in shaping an action (Madania & Papeo, 2021). The results obtained by the Fikes students showed a sufficient level of knowledge, with a total of 98 students (59.0%). This is in line with research by Madania & Papeo (2021) who found that 67 respondents (80.7 %) had sufficient knowledge related to self-medication. Factors that can affect knowledge include educational level, information, environment, and age (Notoatmodjo, 2018). Although Fikes students are from the scope of health, there are other factors that can affect their knowledge, namely the information factor. The information obtained by some Fikes students is still sufficient regarding self-medication; therefore, the knowledge of Fikes students is in the sufficient category.

This shows that Fikes students already have sufficient knowledge so that the application of knowledge related to self-medication of headache pain can be applied quite well. Knowledge of self-medication is very important for prospective health workers because as prospective health workers they will become educators and caregivers. In addition, the community also trusts health workers as a source of drug information who understand the knowledge of self-medication can provide appropriate self-medication services to ensure the efficacy and safety of the use of over-the-counter drugs and can avoid treatment errors when using self-medication. If knowledge is lacking, what is conveyed to the community will be wrong, so as Fikes students, prospective health workers, the level of knowledge about self-medication must be good.

Based on the results of the rational behavior category in **Table III**, , it was found that the category of self-medication behavior in Fikes students had good behavior, with a total of 96 students (57.8%). Widyaningrum *et al*. (2022) reported that self-medication behavior in students with good behavior categories was 78 respondents (88.6 %). Behavior causes can be influenced by three factors: predisposing factors, which include age, occupation, education, knowledge, and attitudes; enabling factors that are manifested in the physical environment and distance to health facilities; and reinforcing factors, which are manifested in the support provided by family and community leaders (Notoatmodjo, 2014). Knowledge is only one of the factors that influence behavior, possibly because there are other factors that influence behavior; therefore, the category of knowledge level obtained is sufficient and the category of behavior obtained is good. Inappropriate self-medication can also result in dangerous treatment responses, overdoses, and even lethal outcomes.

Inappropriate self-medication also leads to drug dependence, waste of resources, and major health risks (Amaha *et al*., 2019).

E. Indicators of Knowledge Level and Headache Self-Medication Behaviour

Indicators of the level of knowledge and behaviour of rational headache self-medication in Fikes students in 2019 regular classes at Muhammadiyah Lamongan University are presented in **Table IV**.

Table IV. Indicators of Knowledge Level and Rational Headache Self-Medication Behaviour

Variables	Indicators	No. Questionnaire	Percentage (%)
Self-medication knowledge level Headache	1. Definition of self-medication	1	92.77%
	2. Selection of headache medication	2	91.57%
	3. Drug Indications	3	78.92%
	4. Drug dosage usage rules	4,5	67.77%
	5. Use of headache medication	6,7	75.30%
	6. Side effects	8	36.75%
Self-medication behaviour Headache	1. Correct diagnosis	1	97.59%
	2. Right indication	2,3	65.06%
	3. Right indication	4,5	57.53%
	4. Correct drug selection	6,7	75.90%
	5. Proper follow-up	8,9	89.16%
	6. Beaware of drug side effects	10	89.16%

Table IV shows the indicators of the definition of self-medication with the highest percentage (97.77%). This is also in line with research by Maghfiroh (2022), who stated that the correct meaning of self-medication is to treat minor illnesses or symptoms using drugs independently without a doctor's prescription. As stated by Wicaksono *et al*. (2022), in their research, the basis for self-medication must first be known. If someone does not know the definition of self-medication, it is feared that mistakes will occur in the healing process. The importance of knowing about self-medication is so that students know the limits of diseases that need to be self-medicated and diseases that must be treated by doctors according to the type of disease experienced. This is relevant to Ma'rufah *et al*. (2020), who found that as many as (59.1%) mostly after self-medicating, respondents felt better after self-medication, but if they did not recover, they preferred to visit a doctor rather than try self-medication once again.

In the indicator of the level of knowledge of headache self-medication, side effects were the indicator with the lowest percentage (36.75%). This is in line with research by Kuswinarti *et al*. (2022), which also shows that the level of knowledge regarding side effects is also the lowest. When self-medication, knowing the potential side effects of drugs can help users avoid and be aware of them, which can help users determine whether future complaints are diseases or side effects of drugs. Side effects need to be known because of the side effects. Students can be aware of drugs that cause side effects such as drowsiness, and it is not recommended to drive after taking the drug because it can be dangerous when driving and hepatic disorders take long-term. According to Santoro *et al*. (2017), unwanted pharmacological side effects are a major cause of illness and death if the knowledge of side effects is low. The implementation of self-medication is still a problem because of the lack of information about the best way to use medicines, their side effects, and how to choose the right one (Zulkarni R *et al*., 2019).

Based on indicators of rational headache self-medication behaviour, **Table IV** shows the correct diagnosis indicator with the highest percentage (97.59%). The highest number of respondents correctly stated that before self-medication, symptoms or complaints of the disease must be well recognized. This is relevant in research Yusrizal (2015) stated that

when symptoms are not properly identified, the wrong drug is chosen, the wrong dose is used, and there is a delay in getting advice from health workers when complaints persist can cause self-medication to be inappropriate. The potential risks of self-medication include incorrect diagnosis of the disease, delaying necessary treatment so that the condition worsens, administering drugs incorrectly, and using inappropriate amounts (Ahmed *et al*., 2020).

Self-medication can be dangerous because of incorrect self-diagnosis, waiting too long to seek medical advice when needed, inappropriate administration, and incorrect dosage (Octavia, 2019). Therefore, students must understand the correct diagnosis, namely, the drugs given according to the diagnosis. The use of drugs is considered rational when administered at the appropriate dose. If the diagnosis is not properly established, drug selection will refer to an incorrect diagnosis. As a result, the drug given is not in accordance with the supposed indication; therefore, when self-medication, Fikes students must recognize the symptoms or complaints of the disease.

In the indicators of rational headache self-medication behavior, based on the results obtained, Fikes students who did not understand the right dose obtained the lowest percentage (57.53%). This is relevant in research by Harahap *et al*. (2015) and Mellina (2016), whereas in the indicators of rational headache, self-medication behavior based on the results obtained that Fikes students do not understand the right dose obtained the lowest percentage of (57.53%). This is relevant to the research (Ministry of Health, 2015). Fikes students should need to know the accuracy of behaviour regarding the correct dosage of drugs according to the prescribed dose to avoid overdoses or excess doses and drug ineffectiveness due to underdoses or underdoses. Fikes students should need to know the accuracy of behaviour regarding the correct dosage of drugs according to the prescribed dose to avoid overdoses or excess doses and drug ineffectiveness due to underdoses or underdoses. This affects bioavailability, and the accumulation of drugs in the body requires attention to the dose of analgesic drugs used for self-medication (Pratiwi *et al*., 2014).

F. Relationship between Knowledge Level and Headache Self-Medication Behaviour

The analysis of the Spearman Rho correlation test of the level of knowledge and rational headache self-medication behaviour among Fikes students in 2019 regular classes at Muhammadiyah Lamongan University is presented in **Table V**.

Table V. Bivariate Test Results of Relationship Analysis of Knowledge Level and Rational Headache Self-Medication Behaviour

Spearman rho correlation		Knowledge	Behaviour
Knowledge	r value	1.000	0.256**
	Sig.	.	<0.001
Behaviour	r value	0.256**	1.000
	Sig.	<0.001	.

Based on **Table V** carried out statistical tests using the Spearman Rho correlation test, the resulting significance value is Handayani & Kusuma (2013) also stated that the level of knowledge has a significant relationship to self-medication behaviour as evidenced by the p value of 0.000. While the correlation coefficient value in this study was 0.256, which means the strength of the correlation is low in the range of 0.2-<0.4, the results obtained are positive, so the relationship is unidirectional between the level of knowledge and rational headache self-medication behavior, meaning that the better a person's level of knowledge about self-medication, the better the self-medication behavior carried out with a weak relationship strength.

The *correlation coefficient* value of 0.00 - 0.25 is a weak correlation; however, it can still be said that there is a relationship (Hulu & Sinaga, 2019). This indicates that there is a significant relationship between knowledge and behavior regarding rational self-medication for headache pain. However, Feli *et al*. (2022) argued that good health behavior is not

always influenced by knowledge but can also be influenced by attitudes, beliefs, traditions, and the closest people. The results of this study are supported by research Ananda *et al*. (2013) obtained the calculated rs value is greater than the rs table, namely 0.705>0.199, and obtained a significance value of less than α = 0.05 (0.000).

The results obtained Although there was a relationship between the level of knowledge and rational headache self-medication behavior, the correlation coefficient obtained was low. As discussed earlier, what influences behavior is not only knowledge, but there are other aspects or factors that influence it, namely the experience of using family medicine that is trusted and has been proven to get the desired results. Thus, knowledge is only a small part that affects behavior, because knowledge is not the only factor that affects behavior. Therefore, the relationship between knowledge level and behavior is low. Although the level of knowledge of Fikes students is in the sufficient category, it is possible that the behavior carried out is better than their knowledge because there are other factors that influence student behavior.

Based on research by Madania & Papeo (2021), the formation of a person's behavior begins with the formation of knowledge, initially forming a reaction, often referred to as an attitude towards the object, which will then be manifested through behavior. Behaviors based on information can continue longer than behaviors that are not based on knowledge because knowledge is a very important factor in the formation of a person's behavior (Retnaningsih, 2018). Therefore, it can be concluded that a person's behavior will reflect their level of knowledge, with higher knowledge resulting in better behavior and lower knowledge resulting in worse behavior (Rizky & Rostikarina, 2018).

CONCLUSION

The results of this study indicate that there is a significant relationship between the level of knowledge and rational headache self-medication behavior among Fike students at Muhammadiyah Lamongan University. The correlation obtained is low because knowledge is in the sufficient category, while behavior is in the good category because knowledge is not the only factor that influences behavior, and there are other factors that can influence behavior.

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