



## **THE INFLUENCE OF ANALGESIC SELF-MEDICATION EDUCATION ON THE KNOWLEDGE OF HAJJ PILGRIMS**

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### **Abstrak**

The self-medication of analgesic drugs by elderly prospective hajj pilgrims in Indonesia requires better education to enhance understanding of safe and rational drug use, thus reducing the risk of side effects. Therefore, the research aimed at providing education to increase the knowledge of prospective Hajj pilgrims. The purpose of this study is to analyze the effects of providing video education on the knowledge level of self-medication with analgesic drugs among prospective Hajj pilgrims in the city of Batu. This study is an pre-experimental research using a one-group pretest-posttest design on 21 prospective hajj pilgrims in the Batu District, Batu City. The sampling was conducted using a purposive sampling method. Data were obtained through questionnaires administered to respondents both before and after the intervention. The analysis of the impact of video education on the knowledge of prospective hajj pilgrims about self-medication with analgetic drugs was performed using the Wilcoxon signed-rank statistical test. After being given education, there was a significant increase in the respondents knowledge about self-medication with analgetic drugs, rising from 19.04% having good knowledge previously to 90.47% after the video education session, with the Wilcoxon test results indicating a significant difference between the pretest and post-test scores; the relatively low z-score (-3.794) and very low p-value (0.00) indicate that the ranking for the group with post-test scores is higher, signifying a significant improvement, thus post-test scores are better than pretest scores.

***Kata Kunci:*** Knowledge, Self-Medication, Analgetic, Hajj



## Background

Health is one of the most important aspects of human life. When someone falls ill, they will do various ways to recover and be able to return to their activities. According to Notoatmodjo (2012) health includes a condition of physical, spiritual, social, and economic well-being. There are several ways to treat illness, such as seeking the help of a doctor, consulting a pharmacist to get medicine, or using self-medication. Indonesia, as one of the countries with the largest Muslim population in the world, organizes the Hajj pilgrims every year. Most Indonesians follow Islam, with a percentage of 85% in 2016 (Syarifuddin, Wijaya and Masudah, 2023). The length of the departure queue list has an impact on the high age of prospective hajj pilgrims, which is above 50 years or in the elderly period. At this age, humans experience a decrease in organ function, such as the musculoskeletal, cardiovascular and respiratory systems. This decrease in physiological function increases the risk of health problems in the elderly (Qonita *et al.*, 2021). One of the efforts to improve health is by conducting education to increase understanding of self-medication in using appropriate and correct drugs. According to the World Health Organization (WHO), self-medication is a person's action in choosing and using drugs without a doctor's prescription to overcome the disorders or symptoms they suffer. The Ministry of Health of the Republic of Indonesia in 2012 reported that 44.4% of Indonesians practiced self-medication. The results of Riskesdas (2013) revealed that 35.2% of families in Indonesia kept medicine at home (Octavia, 2019). The use of drugs independently must comply with the principles of safe and rational use of drugs, as in general. In the practice of self-medication, the criteria for rational drug use include choosing the right drug, the appropriate dose of the drug, and avoiding polypharmacy (Khuluq, 2020). The results of research obtained by (Halim *et al.*, 2018) state that research shows that one of the most widely used drugs in self-medication is analgesics (Efayanti, Susilowati & Imamah, 2019). Many people do self-medication without adequate understanding of the use of analgesic drugs (Khuluq, 2020). This can have an impact on the effectiveness and safety of treatment, especially for prospective pilgrims who often face health problems that require the use of analgesic drugs. Errors in the use of drugs in self-medication practices are still common, mainly due to inaccuracies in choosing drugs and appropriate doses. If analgesic drugs are used inappropriately, they can cause side effects such as nausea, risk of bleeding, ulcers, buzzing ears, and others (Efayanti, Susilowati and Imamah, 2019). In prospective pilgrims who are mostly elderly, of course, complaints of pain due to degenerative diseases and pain due to fatigue are often reported. Data on hyperuricemia patients were taken from Lamongan Regency pilgrimage data, with the results of the number of hyperuricemia in pilgrims at the Babat Health Center as many as 23 out of 57 people, this shows that complaints of pain due to degenerative diseases are still relatively high. The Babat Health Center also reported that those who usually report complaints of gout joint pain are the 40-year-old population (Pangestu *et al.*, 2019). In addition, prospective pilgrims also often have limitations in obtaining information about the use of analgesic drugs, especially for those who live in remote and hard-to-reach areas. People do not have adequate knowledge about the complete information about the drugs they will consume. They are more likely to only know the indication or purpose of the medicine they are taking.

Providing education and information is very important to prevent the use of analgesics that are not reasonable or not in accordance with medical needs (Ilmi, Suprihatin and Probosiwi, 2021). Education about the use of analgesic drugs is very important so that people can use drugs appropriately and safely in using analgesic drugs. The educational video method was chosen as a learning method because it can reach people easily, even those who live in remote areas. Educational videos can be played many times and can be accessed by anyone at any time. In addition, educational videos have the advantage of audio and images to make content or

information more interesting and easy to understand (Nurfalah and Kurniasari, 2022). With increased public understanding of the use of analgesic drugs in self-medication, it is hoped that it can improve the quality of life of the community, especially for prospective pilgrims who require the use of analgesic drugs. In addition, it is also expected to reduce the risk of side effects and complications that can result from the incorrect use of analgesic drugs in self-medication. In addition to the benefits mentioned above, this study can also provide significant benefits for related parties in terms of developing health education programs.

## **Methods**

In this research, the authors conducted quantitative research using the pre-experimental design method of one group pretest-posttest type (initial test of single group final test) (Notoatmodjo, 2012). Pre-experimental design is a research method that occurs before the true experiment and determines how the researcher's intervention will affect the experiment (Sugiyono, 2017). This research design compares the situation before and after treatment in one group. The target population of this research respondent is prospective Hajj pilgrims in Batu City. The sample criteria for this study are respondents who have registered as prospective Hajj pilgrims in the Batu city area and are willing to fill out a questionnaire, as well as having good abilities including being able to see, read, and hear. The sampling technique used purposive sampling. Sampling using purposive sampling technique is one form of non-random sampling. This technique is usually used when members of the population to be sampled are not homogeneous (Notoatmodjo, 2010). Before starting the intervention, the respondents were given a pre-test questionnaire to assess the initial knowledge of prospective Hajj pilgrims in the Batu city area regarding the use of analgesic medications. Then, they were given an educational intervention lasting approximately 6 minutes through a video education medium. After the intervention, a post-test questionnaire was given to measure the knowledge of prospective hajj pilgrims in Batu District, Batu City after being given education about self-medication for the use of analgesic drugs. The results of knowledge came from the survey of pre and post-test education forms to see the effect of the intervention. The data analysis used was bivariate analysis with the Wilcoxon sign rank test. Bivariate analysis is a statistical method used to analyze the relationship between two variables.

## **Result and Discussion**

In the study, the respondents are prospective Hajj pilgrims in the Batu City area who were selected in August-September 2023. A total of 21 respondents were chosen and met the sample criteria for the study. The percentage of female respondents (47.62%) was less than men (52.38%) because at the time of random data collection, there were fewer female respondents than men. In addition, the age of respondents was mostly in the range of 50-59 years (Table 1). This age is included in pre advanced age, so that a person experiences a decrease in organ and tissue function so that they are more susceptible to degenerative diseases (Widyastuti & Ayu, 2019)

**Table 1. Sociodemographic Characteristics of Prospective Hajj Pilgrims in Batu district, Batu City**

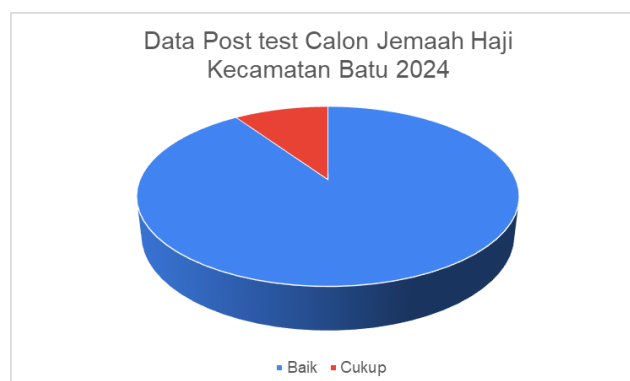
Patient characteristics	n (%)	
Gender	Man	11 (52,38)
	Woman	10 (47,62)
Age (years)	<50	7 (33,33)
	50-59	9 (42,85)
	≥60	5 (23,80)

In the prospective hajj pilgrims of Batu district in 2024, the survey data showed that all respondents had practiced self-medication (100%), where 42.85% of the respondents obtained medicine by buying themselves and 57.14% obtained medicine by prescription or buying themselves.



**Figure 1. Diagram of the percentage of knowledge of prospective pilgrims before education**

Before the education, the researchers conducted a survey with a questionnaire to prospective pilgrims in Batu District. From the survey results, it was found that out of 21 respondents, 19.04% already had good knowledge, 66.66% had sufficient knowledge, and 14.28% lacked knowledge of knowledge about self-medication of analgesic drugs. After obtaining these results, an educational video about self-medication of analgesic drugs was played to the respondents.



**Figure 2. Diagram of the percentage of knowledge of prospective pilgrims after education**

After playing the educational video, the researchers conducted another survey of the previous respondents. From the survey results, an increase of 375% was obtained. Previously, only 4 participants had a good level of knowledge related to self-medication of analgesic drugs. After the video screening, there were 19 participants (90.47%) respondents who had good knowledge related to self-medication. In addition, after the provision of educational video material, it can be seen that none of the pilgrims felt they had insufficient knowledge related to self-medication.

**Table 2. Knowledge increase each indicator**

<b>A. Indicator: Knowledge of the definition of analgesic or pain medication</b>				
No.	Question	Pretest	Posttest	%Increase
1.	Analgesic drugs are used to treat pain	90,5	90,5	0
2.	Aspirin, piroxicam, ibuprofen, and mefenamic acid are among the pain medications.	85,7	95,2	9,5
	Average			4,76%
<b>B. Indicator: Knowledge of the introduction of drug classes that can be used for self-medication</b>				
No.	Question	Pretest	Posttest	%Increase
3.	All pain medications must be purchased with a prescription	57,1	85,7	28,6
	Average			28,6%
<b>C. Indicator: Selection of pain medication to be used based on symptoms and indications.</b>				
No.	Question	Pretest	Posttest	%Increase
4.	Painkillers can be used to treat dizziness	81	95,2	14
5.	Pain medications can be used to relieve fever	100	90,5	-9,5
	Average			2,38%
<b>D. Indicator: Rules for the use of pain medication</b>				
No.	Question	Pretest	Posttest	%Increase
6.	If you forget to take your medicine, you may take a double dose at the next time you take your medicine.	81	100	19
	Average			19%
<b>E. Indicator: Side effects of pain medication</b>				
No.	Question	Pretest	Posttest	%Increase
7.	Taking pain medication can cause sleepiness	42,9	61,9	19
8.	Side effects of pain medications are nausea, vomiting, diarrhea	14,3	71,4	57
	Average			38,1%
<b>F. Indicators: Drug storage and stability</b>				
No.	Question	Pretest	Posttest	%Increase
9.	Painkillers that have passed their expiration date have reduced efficacy.	85,7	81	-4,8

10.	Painkillers in the form of expired tablets or capsules are first crushed or dissolved with coffee grounds and then disposed of on the ground.	19	100	81
	Average			38,1%

Based on the table data above, it is known that the greatest increase in knowledge was in the indicators of side effects of pain medication and in the indicators of drug storage and stability. The indicator of side effects of drugs experienced a quite large increase, namely 19% in the question "taking painkillers can cause drowsiness" and in the question "Side effects of painkillers are nausea, vomiting, diarrhea" with an increase of 57%. It is known that respondents have low knowledge on this indicator with a fairly low pretest score and experienced a fairly high increase after being given treatment. Based on research that has been conducted, it is known that the public has insufficient knowledge of the side effects of drugs because the majority of respondents have never experienced or felt the side effects of pain medication. Respondents generally think that painkillers such as paracetamol, which is an analgesic drug that is often used, are safe analgesics and do not tend to cause allergic reactions, although in reality, paracetamol can also trigger hypersensitivity reactions and side effects in certain conditions (Lydia *et al.*, 2020). According to the Indonesian Ministry of Health (2008), knowing self-medication knowledge, the minimum that is understood by the public is the symptoms of disease, choosing medicine according to the indications of the disease, monitoring the results of therapy and possible side effects and following the instructions stated on the brochure label. Using analgesic drugs that are not according to the prescription can cause unwanted side effects such as gastric ulcers, nausea, risk of bleeding, ringing in the ears, so using analgesic drugs correctly and according to the prescription is important to avoid the risk of existing side effects (Irawati *et al.*, 2021).

In terms of drug storage and stability indicators, in the question "pain medication that has passed its expiry date, its efficacy is reduced" there was a decrease in the percentage of correct answers, namely 4.8%, but for the question "pain medication in the form of tablets or capsules that has expired is destroyed first or dissolved in coffee grounds then thrown onto the ground" experienced a significant increase of 81%. It is known that in the second question on this indicator, respondents had insufficient knowledge and after being given education experienced a quite large increase. Respondents' knowledge about storage and stability in the second question of this indicator was low because respondents did not know how to properly dispose of medicines. Research data in Banjarbaru City shows that the percentage of knowledge related to drug disposal was 52.6 poor, 40.5 sufficient and 6.8 good. This means that the majority of respondents in this study had insufficient knowledge regarding medication disposal at home. The results of this research are in line with research by Damayanti (2020) and Prasmawari, Hermansyah and Rahem (2020) where the majority of respondents had insufficient knowledge about how to dispose of medication. Several factors that cause low knowledge include gender, age, occupation, education and information (Sari *et al.*, 2021).

The increase in knowledge in the treatment group after self-medication education on analgesic drugs increased in several indicators. This is in accordance with the literature which states that providing education can gain knowledge. The more education provided, the greater the knowledge gained or knowledge can be increased. Health education is carried out to increase public awareness and knowledge in improving and maintaining their own health (Siti Aisah and Suhartini Ismail, 2021).

However, there is a decrease in knowledge on the indicators for selecting painkillers to be used based on symptoms and indications, namely in the question "painkillers can be used to relieve fever" and in the storage and stability indicators of drugs in the question "painkillers

that have passed their expiry date will reduce their efficacy. " experienced a decline in knowledge. A decrease in knowledge occurred in the treatment group or the group that received self-medication education on analgesic drugs due to various factors, including forgetting, changes in information, lack of repetition, health problems or aging, and lack of motivation. Some of these causal factors are related to the characteristics of respondents whose average age can be said to be vulnerable to a decline in cognitive function. Cognitive function is generally caused by disorders of the central nervous system which include disruption of oxygen supply to the brain, degeneration/aging, Alzheimer's disease and malnutrition (Ramli & Masyita Nurul Fadhillah, 2022). Based on the choice of analgesic, the majority of respondents did not have good knowledge regarding the types of analgesics that can be used in certain special conditions such as stomach ulcers, pregnancy, breastfeeding and others. After it is known that there is an increase in knowledge after being given education in the form of educational videos, data analysis is then carried out to determine the effect of providing this media. Wilcoxon sign rank test was used to determine the effect. The Wilcoxon sign rank test is used to determine the comparison of two related samples where the data in this study is ordinal data which is included in categorical data which is assumed to be abnormal data (Ernawati *et al*, 2020). The Wilcoxon test results show that there is a significant difference between the pretest and post-test values in this data group. This can be concluded from the fairly low z value (-3.794) and Asymp.Sig. (2- tailed) (0.00). The negative z value indicates that the ranks for the group with post-test scores are higher, so the post-test has better results than the pretest. Furthermore, it can be noticed that the sum rank for the group with positive values is higher (about 171.00) than that for the group with negative values (0.00). This indicates a significant difference between the two groups in terms of score improvement. The Asymp.Sig. (2- tailed) is very low (0.00) indicating that the difference between pretest and post-test scores is statistically significant, and we can reject the null hypothesis that there is no difference between the two. This media acts as a link between the source of the message and the receiver of the information. Based on research, all types of intervention media, whether visual, audio, or audio-visual, can significantly improve knowledge and attitudes about health. The images in the media aid comprehension, and experiential theory suggests that the use of multiple senses in learning enhances the target's recall of health-related Hajj. Studies have proven that learning methods through videos are more effective than using conventional media consisting of a lot of text that can cause boredom (Abdullah *et al.*, 2020; Anggraeni *et al.*, 2020).

## Conclusion

In general, providing educational videos related to the use of self-medication to prospective Hajj pilgrims in Batu District in 2024 had a significant impact on respondents' knowledge. This was marked by an increase of 375% in the knowledge survey of prospective Hajj pilgrims in Batu District from before to after the provision of educational video material. Additionally, the Wilcoxon test results showed that there was a significant difference in improvement between the pretest and post-test, with the post-test tending to have higher scores

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