

## Conference Paper

# The Effect of Education Through PowerPoint on Students' Knowledge of Mefenamic Acid Self-Medication

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**Abstract.**

Self-medication refers to the use of medications without consulting a doctor. This study aimed to determine the effect of education on students' knowledge about self-medication of mefenamic acid using Powerpoint slides at the Luhur Islamic Boarding School in Malang City. This was quantitative research with a pre-experimental method and a one-group pretest-posttest design. The number of samples needed was determined using the Slovin formula, and 70 respondents participated. Data were collected using a questionnaire. Respondents filled out the pretest questionnaire to determine the knowledge related to self-medication of the drug mefenamic acid, then the researcher delivered the education by using Powerpoint slides and after that the posttest questionnaire was distributed. The data were analyzed using the Wilcoxon test. The pretest and posttest values were significantly different ( $p < 0.05$ ). Therefore, we can conclude that education about self-medication of mefenamic acid using Powerpoint slides had an effect on the knowledge of students at the Luhur Islamic Boarding School in Malang.

**Keywords:** self-medication, mefenamic acid, education, Powerpoint slides, knowledge level

## 1. INTRODUCTION

Indonesia is a country with a majority Muslim population as well as a country with the largest number of Muslims in the world with a percentage reaching 88% [1]. In connection with that, education in Indonesia is also diverse, not only public schools but also Islamic boarding schools. According to data from the Ministry of Religion, in 2020 there were 27,722 Islamic boarding schools in Indonesia with the number of students reaching 4,175,623. Based on the health profile in 2018, it shows that districts/cities already have a national Clean and Healthy Behavior policy with a percentage of 70.62%, where this figure has exceeded the 2018 Strategic Plan target of 70% [2]. Clean and healthy living behaviors understood by children in Islamic boarding schools include adequate consumption of vegetables and fruit (10.7%), proper hand washing (47.2%), and regular

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exercise (52.8%). Conditions in the pesantren environment still demand attention, in terms of healthy behavior and environmental health aspects [3].

Public health has a very important role to continuously improve the quality of life. Public health is a form of medical service to diagnose how to treat and prevent disease. It can be used to ensure people's standard of living [4]. According to survey results in 2017 it was 69.43% and in 2018 it was 70.74%, this shows that self-medication behavior in Indonesia is still quite large [5].

Self-medication or self-medication is a treatment that is carried out independently without any medical advice from a doctor. Self-medication is usually carried out to treat mild diseases and complaints that are experienced by many people, such as pain, dizziness, stomach ulcers, fever, diarrhea, skin diseases, and others. Self-medication is carried out according to the complaints felt, the treatment must also meet the criteria for rational use of drugs. The criteria for rational medicine include the accuracy of the selection of a drug, the accuracy of the drug dose and the accuracy of how to use it.

Knowledge of self-medication is related to the practice of self-medication carried out by the community, one of which is students. Students are students who are in higher education and belong to the age group that has a broad level of knowledge [6]. The higher education or knowledge that has been learned can trigger self-medication regarding mild complaints that are felt. In daily life, self-medication must be carried out correctly and safely, for that the public must know information about medicines that can be used in self-medication.

The daily behavior of students in Islamic boarding schools is one of the factors that can affect the quality of health. Bad habits such as drying clothes in the room, exchanging personal equipment with other students, and the lack of maintaining the cleanliness of the environment around the lodge cause important health problems [7]. According to Setiyowati, there are several factors that can determine the low quality of the health of students in Islamic boarding schools, namely the regulations set by the cottage, cottage facilities and friends at the cottage.

Research conducted by Muharni et al.,[8] that pain is one aspect that encourages people to seek their own treatment to overcome it. Based on the results of research conducted by Pratiwi et al.,[9] stated that the most common pain complaint suffered by self-medication practitioners was pain (76%). One of the drugs that can be used to treat pain that can be obtained without a doctor's prescription is mefenamic acid. Mefenamic acid is widely used in mild to moderate pain including headache, toothache, dysmenorrhea, rheumatoid arthritis, osteoarthritis and others [10]. Based on research

conducted in Palembang, the use of mefenamic acid was 74.8% [11]. Research conducted by Afifah [12]; Halim et al.,[13].

This research was conducted at the Luhur Islamic Boarding School in Malang. From several surveys that we have conducted at Islamic boarding schools in Malang City, the number of respondents who are adequate in conducting our research is the Higher Institute of Islamic Boarding Schools in Malang City compared to other Islamic boarding schools. One of the administrators at the Luhur Islamic Boarding School in Malang explained that there was still a lack of health facilities in the cottage, so this was the reason for choosing this cottage as a place for our research.

This study aims to increase the knowledge of students on the behavior of self-medication of mefenamic acid as an anti-pain drug using power point slides. In accordance with its function of delivering health messages or information, health promotion media are divided into 3 namely print, electronic and outdoor media [14]. In Taadi & Suyatmi's research [15] it was concluded that an effective health promotion was using slide media. By using slide media in the hope of increasing students' knowledge about the correct use of mefenamic acid self-medication.

## 2. RESEARCH METHODS

The research design used was a pre-experimental method, using a one group pretest posttest research design. The study was conducted at the Institute of Islamic Boarding School Luhur Malang City on August 20, 2021. The population is the entire subject and object in the study which has certain quantities and characteristics [16]. The population in this study were all students of the Luhur

Data analysis used was normality test, univariate test and bivariate test. In this study, univariate analysis was used to measure each of the independent and dependent variables with the help of the SPSS 23.0 application. In this study, bivariate analysis was used, namely to determine whether there was an influence or behavioral relationship on the accuracy of self-medication use of diarrhea drugs. The analysis used is the Chi-square test. Islamic Boarding School in Malang, amounting to 211 students.

The research instrument used was a questionnaire. The sample calculation is based on the slovin formula so that 67.84 respondents are obtained then rounded up by the researcher to 70 respondents with an error tolerance of 10%. sample.

In this study, the inclusion criteria were:

1. Students of the Luhur Islamic Boarding School in Malang, aged 18 years and over [17]
2. Students of the Luhur Islamic Boarding School in Malang who are willing to take part in the research
3. Students of the Luhur Islamic Boarding School in Malang who live in male/female dormitories
4. Students of the city's Luhur Islamic Boarding School who are currently studying majors other than pharmacy, medicine, and nursing.

While the exclusion criteria were respondents who did not fill out the questionnaire data completely.

In this study, respondents were given treatment in the form of education using power point slides. The instrument used in the form of questionnaires given before education or pretest and after being given education or posttest. The data obtained are in the form of respondents' demographic data and level of knowledge before and after being given education. The results obtained can be grouped into three categories, namely "Good", "Enough", and "Not good" [18].

Validity test is a test conducted to determine the validity/accuracy/accuracy of a question in measuring the variables studied. The validity test carried out in the study was the face, content, and construct validity test. Then the questionnaire was tested on 30 respondents outside the research sample which were similar to the inclusion and exclusion criteria, namely at different Islamic boarding schools, at Sabilurrosyad Islamic Boarding School Malang City to maintain the confidentiality of the instrument so as to avoid data bias. The indicators in the questionnaire can be said to be valid if the calculated  $r$  value is greater than  $r$  table [19].

The reliability test in this study used the Cronbach Alpha formula with the help of the SPSS 25.0 program. The data used for the reliability test is dichotomous data, namely data with only two possible scores (0 and 1) [20]. Reliability testing with internal consistency is done by testing the instrument once and then the data obtained is analyzed using certain techniques [21]. The minimum value of Cronbach Alpha for a measuring instrument is 0.622. The results of this study were analyzed using a computer with SPSS 25.0 program. The test used in this research is the paired category comparative hypothesis test, namely the Wilcoxon test.

This research will be carried out after obtaining research ethics approval obtained from the Health Research Ethics Commission (KEPK) Faculty of Medicine, University of Muhammadiyah Malang with number No.E.5.a/201/KEPK-UMM/IX/2021.

### 3. RESULTS

This research was conducted on August 20, 2021. The data obtained are as follows:

TABLE 1: Demographic Characteristics of Respondents.

Characteristics Respondent	Amount Respondent	Percentage %
<b>Age (Years)</b>		
18	6	8.57
19	23	32.86
20	21	30
21	10	14.29
22	8	11.43
24	2	2.86
<b>Gender</b>		
Man	20	28.57
Woman	50	71.43
<b>College</b>		
UIN	33	45.71
UM	11	15.71
UB	24	34.29
UNISMA	1	1.43
STT	13	1.43
ASIA	20	1.43
<b>Major</b>		
Science & Technology	28	40
Social & Humanities	42	60
<b>Origin</b>		
East Java	63	90
Central Java	2	2.85
West Java	3	4.29
NTB	1	1.43
East Kalimantan	1	1.43

In table 1 above, it is explained that the respondents in this study were 1-24 years old with the majority of respondents aged 19 years being 32.86%. In accordance with the inclusion criteria of the study, students aged 18 years and over were classified as having a broad level of knowledge [6]. Based on data obtained from Islamic boarding schools, the number of women is indeed more than the number of men, thus supporting the results of the study that the majority of respondents were women as many as 71.43% (50 people) and men as much as 28.57% (20 people). Respondents came from different places, the majority came from East Java as much as 90% and the rest came from

Central Java, West Java, East Kalimantan, to West Nusa Tenggara. This is in accordance with the results of interviews with pesantren administrators that most of the students come from East Java.

The most students were from Maulana Malik Ibrahim State Islamic University Malang with a percentage of 45.71% (32 people). In addition to the State Islamic University of Maulana Malik Ibrahim Malang, there are other universities from the respondents, namely Brawijaya University (UB), Malang State University (UM), Malang Islamic University (UNISMA), ASIA, and Technical College (STT). Based on the results of interviews with boarding school administrators, from year to year the most students and female students are from the Maulana Malik Ibrahim State Islamic University, Malang. This is due to the short distance between the location of the lodge and the campus. The grouping of majors according to Novel [22] is divided into 2, namely science and technology and social and humanities. All respondents came from various majors with the highest percentage from social and humanities majors at 60% (42 people). The higher education or knowledge that has been learned can trigger self-medication regarding mild complaints that are felt.

From table 2, it was obtained information that all respondents in this study had experienced pain, with the frequency of pain being felt the most was headache with a percentage of 60%, in addition to pain felt by respondents were tooth pain and menstrual pain. Based on the time of education in the question and answer session, respondents gave other examples of pain, such as being hit by a knife on the finger which causes the finger to feel pain and even swell. To overcome the pain that appears on the respondents, as many as 54.28% of respondents chose to buy anti-pain medication, 32.86% by going to the doctor, and the rest of the respondents coped with adequate rest, letting the pain go away, and hot compresses. ice. It is known that 64.29% of respondents have ever taken mefenamic acid and 35, 71% of respondents have never taken mefenamic acid. Respondents received mefenamic acid drugs in health services with a percentage of 71.43% and the rest received drugs in non-health services. Examples of health services are pharmacies, hospital pharmacy installations, health centers, and clinics [23]. While non-health services, for example, are stalls and supermarkets [24]. Respondents received information related to the use of mefenamic acid from health workers by 52.86%. according to Respondents received information related to the use of mefenamic acid from health workers by 52.86%. according to Respondents received information related to the use of mefenamic acid from health workers by 52.86%. according to Sarasmita [23]. Health workers include doctors, pharmacists, midwives, and nurses. Meanwhile, respondents received information from non-health

TABLE 2: Have had self-medication, history of pain, pain experienced, pain management, ever taken mefenamic acid, where to get medicine, source of information on the use of mefenamic acid.

Variable	Number of Respondents	Percentage %
<b>Have you ever done self-medication?</b>		
Once	67	95.71
Never	3	4.29
<b>Pain History</b>		
Once	70	100
Never	0	0
<b>Experiencing Pain</b>		
Headache	42	60
Tooth Pain	38	54.29
Menstrual Pain	34	48.57
Others (sliced knife)	10	14.29
<b>Handling Pain</b>		
See a doctor	23	32.86
Buying Painkillers	38	54.28
Others (Leaved, Made to rest, compress with hot water)	9	12.86
<b>Ever Take Mefenemic Acid Drugs</b>		
Once	45	64.29
Never	25	35.71
<b>Where to Get Medicine</b>		
Health Service Center	50	71.43
Non Health Service	20	28.57
<b>Sources of Information on the Use of Mefenamic Acid</b>		
Health workers	37	52.86
Non Health Workers	33	47.14

workers by 47.14%. During the education session, there was a discussion session where the researcher asked the respondents about their understanding of the questionnaire. In this case, the researcher asked where the respondent got information regarding the use of the drug mefenamic acid, the respondent said that the information was obtained through browsing, recommendations from friends/family, advertisements, and print media. This is in line with the results of demographic number 6 regarding where to get drugs, where most respondents get drugs from health care centers so that it supports the results of demographic question number 7 regarding information on the use of mefenamic acid drugs.

Based on the results of the data obtained, the level of knowledge of respondents before being given education varied with the highest percentage having a "ENOUGH"

TABLE 3: Comparison of the level of knowledge of respondents before and after being given education.

Category	Indicator (%)	Number of Respondents			
		Pretest		Posttest	
		n	(%)	n	(%)
Well	76 – 100	21	30	70	100
Enough	56 – 75	41	58.57	0	0
Not enough	55	8	11.43	0	0
Well					
Amount		70	100	70	100

knowledge level of 58.57%, then respondents who had a "GOOD" level of knowledge, namely 30%, and "LESS GOOD" as many as 30%. 11.43%. After receiving education from researchers, respondents posttest. The results show that the level of knowledge of respondents after being given education is 100% "GOOD".

TABLE 4: Wilcoxon's test analysis.

Test Statistics	
	POS_value - PRE_value
Z	
asymp. Sig. (2-tailed)	.000
a. Wilcoxon Signed Ranks Test	
b. Based on negative ranks.	

The data analysis used in this study is the Wilcoxon test, to test the significance of the comparative hypothesis of two samples that are correlated with ordinal data. The results of the Wilcoxon test analysis obtained asymp. Sig 0.000 which means that the data filled in by the respondent before and after being given different education or experiencing an increase in knowledge, then H0 is rejected so it can be stated that education regarding self-medication of mefenamic acid using power point slides has an effect on the knowledge of students at the City Luhur Islamic Boarding School. Poor. In addition, judging from the Zcount value obtained, which is -7.328 smaller than -1.96 (the Z table value for the 5% significance level is  $\pm 1.96$ ) then H1 is accepted, education has an effect on students' knowledge. In addition, the results from Rank show that all respondents or 70 respondents experienced an increase in knowledge after being educated as indicated by the posttest value greater than the pretest value.

#### 4. DISCUSSION

This is directly proportional to the research conducted by Johariyah & Mariati [25] in 2018 with the title "Effectiveness of Adolescent Reproductive Health Counseling by Providing



Modules on Changes in Adolescent Knowledge". The results of the analysis using the Wilcoxon test showed that there was a significant difference in the changes in adolescent knowledge before and after being given adolescent reproductive health counseling with reproductive health counseling. Based on research conducted by Johariyah & Mariati [25] in 2018 with the title "Effectiveness of Adolescent Reproductive Health Counseling by Providing Modules on Changes in Adolescent Knowledge". The results of the analysis using the Wilcoxon test showed that there was a significant difference in the changes in adolescent knowledge before and after being given adolescent reproductive health counseling with reproductive health counseling. Based on research conducted by Mariati [25] in 2018 with the title "Effectiveness of Adolescent Reproductive Health Counseling by Providing Modules on Changes in Adolescent Knowledge". The results of the analysis using the Wilcoxon test showed that there was a significant difference in the changes in adolescent knowledge before and after being given adolescent reproductive health counseling with reproductive health counseling. Based on research conducted by Sari & Rahayu [26] that the provision of education has a positive effect or impact on health, especially in the public health sector, in accordance with the definition of education which is one of the activities to increase health knowledge by individuals at least regarding the management of risk factors for a disease and clean and healthy living behavior in an effort to improve public health, prevent disease recurrence and cure disease [27]. The results of this study are in accordance with the research conducted by Taadi & Suyatmi [15] that health education using power point slides is more effective in increasing knowledge. Research conducted by Yulfitria [28] with the title "The Effect of Health Education in Increasing Knowledge About Prevention of Pathological Leucorrhoea". The results showed that there was an increase in knowledge after receiving health education through power point slides.

## 5. CONCLUSION

The results of the analysis using the Wilcoxon test, namely Asymp. Sig. (p) 0.000 is smaller than 0.05 and the Zcount results obtained are also smaller than Ztable, namely  $-7.328 < -1.96$  (Ztable value for the 5% significance level is  $\pm 1.96$ ) which means that the pretest and posttest values are different or not the same, then H1 is accepted, so that education with slide media affects the knowledge of the students of the Luhur Islamic Boarding School regarding self-medication of mefenamic acid.

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