

## Conference Paper

# The Effect of Education on Students' Knowledge of Cough Self-Medication at a Boarding School in Malang

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**Abstract.**

During the Covid-19 pandemic, the medical team, including nurses, have struggled in isolation rooms, helping patients. Isolation rooms pose a greater risk than regular treatment rooms and direct contact can increase the risk of infection. Nurses' anxiety may be high; they may be worried not only about the risk of transmitting Covid-19 to themselves, but also to their families at home, especially for those who are in vulnerable groups. This study aimed to identify the anxiety level of nurses in the Covid-19 isolation room at Universitas Muhammadiyah Malang Hospital. This was a descriptive observational study conducted from May 25 - June 3, 2021 with 16 nurses. The nurses' anxiety was measured using the Hamilton Anxiety Rating Scale Questionnaire. The results showed that 13 nurses (81.25%) in the Covid-19 isolation room had mild anxiety levels.

**Keywords:** anxiety, nurse, Covid-19, isolation room

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## 1. INTRODUCTION

Self-medication, according to WHO, is an effort to select and use drugs without a doctor's prescription to treat the symptoms of a person's illness [1]. Self-medication generally uses over-the-counter drugs and limited over-the-counter drugs that are carried out independently in a rational, appropriate, and responsible manner [2]. Based on the survey results, the percentage of the Indonesian population who use drugs independently is 90.54%. Meanwhile, in East Java, the prevalence of self-medication using modern medicine was 89.42% [3]. The number of drug products easily available at pharmacies creates opportunities for drug-related problems, especially if the drugs used are irrational. Inappropriate self-medication has disadvantages for individuals and groups. Disadvantages for individuals include wrong route or method of drug administration, inadequate or excessive dosage, prolonged use, risk of dependence or abuse,

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and incorrect storage of drugs or beyond the recommended shelf life [4]. In addition to the disadvantages already mentioned, continuous errors in self-medication are feared to increase health risks, such as complications and others [4]. Self-medication carried out without sufficient knowledge will cause adverse side effects due to irrational use of drugs. Irrational treatment, such as incorrect information on the use and determination of drugs, including doses, side effects, and methods of drug use [5]. The use of drugs independently but not accompanied by knowledge will be a source of drug-related problems [4].

Cough is one of the common symptoms that causes a person to practice self-medication. In a study conducted in Saudi Arabia, it was found that cough was the second symptom after headache, which prompted a person to self-medicate [6]. Currently, in Indonesia, the prevalence and specific epidemiological data related to cough symptoms are not yet available, but there is data on the prevalence of ARI incidence; one of the symptoms is cough. According to Riskesdas data in 2018, around 4.3-4.5% of cases of ARI in Indonesia had been diagnosed. From this data, it is known that there are 1,017,290 cases of ARI. Meanwhile, the province with the third most cases of ARI is East Java [7]. Knowledge is a social cognitive factor that influences health-related behavior in individuals [8]. In a study conducted to determine the level of knowledge of high school students in Kediri regarding cough self-medication, the results of the pretest respondents were included in the category of sufficient knowledge [9]. In addition, a study conducted in Pemasang Regency, Central Java, regarding the description of cough self-medication in children, found that the respondents were parents of children giving cough self-medication with sufficient knowledge category [10]. From the research described, it is important to provide health education, especially regarding cough self-medication, to increase knowledge and avoid adverse side effects from irrational use of drugs.

## 2. METHODS

### 2.1. Materials

This research is a pre-experimental study with a one-group pretest-posttest design approach, carried out on June 23, 2021, on students at the Luhur Islamic Boarding School in Malang City with criteria for age 17 years and not currently studying in the health department. The total population was 211 people, while the number of samples from calculations using the Slovin formula obtained 68 respondents.

## 2.2. Tools

The data collection tool used in this research was a questionnaire. The research ethics permit was obtained from the Health Research Ethics Commission University of Muhammadiyah Malang with the number E.5.a/141/KEPK-UMM/VI/2021.

## 2.3. Research Methods

The questionnaire used had been tested for validity and reliability on 30 respondents with similar criteria to the research sample. Respondents to test the validity and reliability were taken from the Sabilurrosyad Islamic Boarding School in Malang City. The data were analyzed using the SPSS program by performing the Wilcoxon test. The independent variable in this study was knowledge about cough self-medication, while education using slides was the dependent variable. The following formula was used to determine the level of knowledge regarding cough self-medication [11]:

$$P = \frac{a}{b} \times 100\%$$

Information:

P = percentage number

a = number of questions answered correctly

b = number of questions

## 3. RESULTS AND DISCUSSION

Characteristics	Frequency	Persentages (%)
<b>Age</b>		
17-20 years old	38	55,88
21-25 years old	30	44,12
<b>Major of Faculty</b>		
Science and Technology	29	42,65
Social and Humanities	39	57,35
<b>Gender</b>		
Male	29	42,65
Female	39	57,35
<b>Total</b>	<b>68</b>	<b>100</b>

**Figure 1:** Frequency of distribution of respondent's characteristics by age, major, and gender.

In this research, the frequency of respondents ages known is 17-20 years old (55,88%). The use of drugs, whether aged less or more than 20 years, is a common thing in the community because the age of 18-25 years is adult age, so that it affects the use of drugs independently [12]. The research data were obtained from 68 respondents, with the most respondents were women (57.35%). This is in line with research on UMM pharmacy students where more women practice self-medication [13]. In other studies, it is also known that women are the most respondents. Many women do self-medication because they; think self-medication is harmless, have experience with certain diseases, and are accustomed to keeping medicines at home [14].

The frequency of distribution of respondent's majors in this study was social and humanities majors (57.35%), while other majors, science and technology at non-public health faculties, were 42.65%. In line with previous research in Iraq that non-public health faculty students mostly self-medicated as much as 82.2% [15].

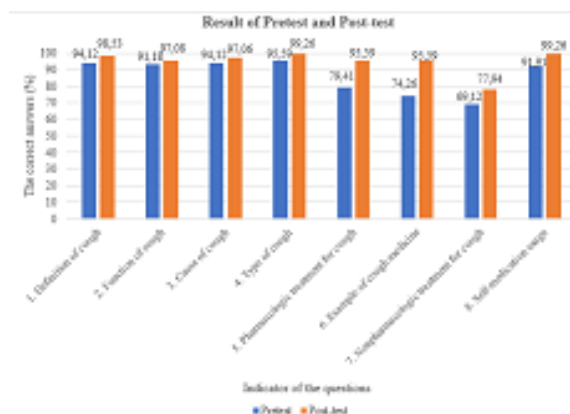
In this study, all respondents (100%) had experienced cough, with the distribution of symptoms of cough with phlegm (42.65%), dry cough (20.95%), and dry cough (36.76%). The different cough symptoms experienced by respondents were caused by different body conditions [13].

Questions	Frequency	Percentages (%)
Have you ever had a cough?		
Yes	68	100
No	0	0
(If yes) What symptom do you ever had?		
Cough with phlegm	29	42,65
Dry cough	14	20,59
Cough with phlegm & dry cough	25	36,76
Did you consume a cough medicine?		
Yes	65	95,59
No	3	4,41
What did you do to treat the cough?		
Visit a doctor	14	20,59
Buy cough medicine	48	70,59
Others	6	8,82
Where did you buy the medicine?		
Healthcare services	50	73,53
Non-healthcare services	18	26,47

**Figure 2:** Distribution of the frequency of answers in the introductory part.

The respondents answered that generally, they had used cough medicine (95.59%) and treated coughs by buying cough medicine (70.59%) at health services (73.53%). In several studies, it is known that many people buy self-medication drugs at pharmacies. Based on research in Nigeria, the percentage of drug purchases at pharmacies is 73.9% (16). Another study on self-medication among students in Baghdad, Iraq, found that the prevalence of buying drugs at pharmacies was 92.9% (15). The common reasons for purchasing self-medication drugs at pharmacies are the proximity of the pharmacy, trust in the expertise of drug sellers in drug selection, and the availability of adequate drugs (8). Purchasing drugs, both in and non-health services, should be followed by the patient's active role regarding knowledge of the drugs used, such as drug indications,

dosages, and side effects. The use of drugs independently (self-medication) without being supported by good knowledge will cause adverse effects on health [9].



**Figure 3:** Pretest and post-test results based on question indicators.

Based on the *pre-test* conducted before the provision of education, 3 out of 8 indicators with the lowest score were obtained, non-pharmacologic treatment for cough (69.12%), example of cough medicine (74.41%), and pharmacologic treatment for cough (79.41%). The other five indicators got an average *pre-test* score of 93.38%. The low score was influenced by the low knowledge of respondents who are non-health students. This is supported by research conducted on students of Mulawarman University, and it is known that non-health student's knowledge of self-medication is lower than that of health students (16). Research conducted among medical and non-medical students at Gondar University, Ethiopia, found that the percentage of self-medication used was mostly used by non-medical students (69%); non-medical students prefer to do self-medication because they feel less comfortable visiting health services and places and they are living far from a hospital or clinic. Therefore, non-medical students prefer to do self-medication [16].

The knowledge level category from the calculation results was divided into three categories, namely good (if the answer is >76%), sufficient (if the answer is correct 56%-76%), and less good (if the answer is correct <56%) [11].

After conducting a calculation, it is obtained that respondents level of knowledge before being given education consists of two categories: good (79%) and sufficient (21%). While the level of knowledge after being given education is in a good category (100%). Therefore, the respondent's knowledge increased after the provision of education about cough self-medication using slide media.

Data analysis in this study used the Wilcoxon test to determine the effect of education using slide media on respondent's knowledge. Based on the analysis, the significance value was 0.000 (<0.05), and the calculated Z value was -4.783 (<-1.96). These results

Category of Respondent's Knowledge (Pretest)

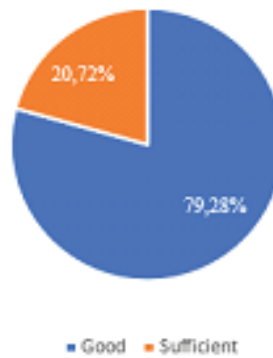


Figure 4: Category of respondent's knowledge at pre-test.

Category of Respondent's Knowledge (Post-test)



Figure 5: Category of respondent's knowledge at post-test.

mean there was an effect between education of cough self-medication using slide media and the knowledge of the Luhur Islamic Boarding School Malang City students.

Test Statistics<sup>a</sup>

	Nilai_postest - Nilai_pretest
Z	-4.783 <sup>b</sup>
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Figure 6: Wilcoxon test data results.

Similar results were obtained in previous studies; it is known that the provision of education using slide media can effectively increase student's knowledge and understanding in the teaching and learning process. In addition, the results of other studies also revealed a significant increase in knowledge between before and after dental health education using slide media for elementary school students in the Yogyakarta area. In a study that compared the effectiveness of slide media with leaflets in increasing mother's knowledge and attitudes about *Measles-Rubella* immunization, it is known that slides are more effective than leaflets. It can be concluded that the provision of education regarding self-medication of cough using slide media affects the student's knowledge of the Luhur Islamic Boarding School Malang City.

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