THE INFLUENCE OF EDUCATIONAL INTERVENTIONS ON DRUG CLASSIFICATION KNOWLEDGE IN WANAR VILLAGE COMMUNITIES, PUCUK SUB-DISTRICT, LAMONGAN DISTRICT

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ABSTRACT

Drugs registered in Indonesia are classified into six drug classes, including over-the-counter (OTC) drugs, cautionary labeling required, prescription drugs, jamu, standardised herbal medicines, and fitofarmaka. Inadequate community knowledge about drug classes has implications for irrational medication. This study aimed to determine the effect of education interventions on community knowledge about the classification of drugs registered in Indonesia. The study was performed using pre-experimental pre-post intervention studies with 55 respondents, and the questionnaire was validated. Factors that affect the level of knowledge of respondents include age, education, and gender (p-value <0.05). Education interventions can increase community knowledge related to the classification of drugs in the community of Wanar Village, Pucuk District, Lamongan Regency.

Keywords*: Drug Classification, Education, Level of Knowledge*

INTRODUCTION

Conventional medicines distributed in Indonesia are classified into 3 categories, including obat keras (prescribed drugs), obat bebas terbatas (over-the-counter medications to use cautiously) and obat bebas (over-the-counter medicines) (Siampa and Edy, 2019). Apart from conventional medicine, there is also traditional medicine which consists of: jamu (herbal medicine), obat herbal terstandar-OHT (standardised herbal medicine) and fitofarmaka (phytopharmaca) (Purwaningsih, 2013). Prescribed drugs are also known as class G drugs (*Gevarljik*), using this class of drugs without a doctor's prescription can be dangerous. Antibiotics, narcotics, and psychotropics are classes of prescribed drugs (Supriyani and Sari, 2019). Obat bebas terbatas (over-the-counter medications to use cautiously), also known as class G drugs (*Waarchuwing*), are prescribed drugs but can be given without a doctor's prescription with precautions in accordance with the instructions for use of this class of drugs. The last class of conventional drugs is obat bebas or also known as over the counter (OTC) are medicines that people can buy and use it without a doctor's prescription (Jo, 2016).

Jamu is a traditional medicine whose use for medical purposes is based on empirical data and has not been scientifically or clinically proven (Nugroho, 2017). OHT is a herbal medicine whose quality has been guaranteed through a series of standardization processes, and its safety and efficacy have also been scientifically proven through pre-clinical tests (Kusuma and Andriani, 2019). The last group of traditional medicine is phytopharmaca, a traditional medicines whose efficacy has been proven in humans because clinical trials have been carried out (Dewoto, 2007). In total, there are six different types of drugs distributed in Indonesia. Each type of drug has a different logo and of course, has different uses, efficacy, and safety.

Lack of public knowledge about the classification of drugs distributed in Indonesia can have implications for irrational medication. Riset Kesehatan Dasar's 2013 results show that 35.2% of households store medicines for self-medication purposes. It was further explained that 35.2% of the drugs stored for self-medication purposes were prescribed drugs and 27.8% were antibiotics (Simanjuntak, 2017). People also prefer traditional medicine and stop the main therapy to treat some chronic diseases such as hypertension (14.5% of people do not use standard therapy for hypertension because they use traditional medicine) and diabetes mellitus (25.29% of people do not use standard therapy for diabetes mellitus because they use traditional medicine) (Kementrian Kesehatan Republik Indonesia, 2018).

Irrational medication causes material waste and loss, and increases the risk of side effects, antibiotic resistance, and also therapeutic failure (Rusmilawati, Adhani, and Adenan, 2017). Educational intervention is a prospective method that can be applied to increase the knowledge of a community to prevent irrational treatment and DRPs related to a lack of public knowledge about the classification of drugs distributed in Indonesia (Bennett *et al*., 2011). This research was conducted to determine the effect of education interventions on the level of public knowledge about the classification of types of drugs distributed in Indonesia with the community in Wanar Village, Pucuk District, Lamongan Regency as research subjects. People in Wanar Village, Pucuk District, and Lamongan Regency with various ages, gender, education, and employment backgrounds are relevant targets for this research. The selected community population can provide researchers with an idea of community knowledge about drug classification and the influence of educational interventions on the level of drug knowledge in a community's population. By knowing the impact of outreach interventions on knowledge about drug classification in a community population, strategic steps can be formulated to increase community knowledge about drug classification so that irrational medication and DRPs in the community can be reduced.

METHODOLOGY

This research used a pre-experimental method with a one group pre-test post-test design.

Equipment and materials

Educational tools in the form of leaflets and assessment instruments using questionnaires have been tested for validity using the Pearson Product Moment correlation test and reliability testing using the Cronbach Alpha test (Amanda, Yanuar, and Devianto, 2019). Validity and reliability tests of the questionnaire were carried out on 25 respondents. The respondents selected were not part of the inclusion criteria for this study. The leaflet media used contains information about the classification of drugs in Indonesia, including obat bebas (over-the-counter drugs, OTC), obat bebas terbatas (over-the-counter medications to use cautiously), obat keras (prescribed drugs) including narcotics and psychotropics, herbal medicines including jamu, obat herbal terstandar, OHT (standardised herbal medicines), and fitofarmaka (phytopharmaca). The leaflet used in this research can be seen in

Figure 1. The intervention was carried out by giving leaflets to respondents and providing an explanation about the information in the leaflets for 5 minutes.

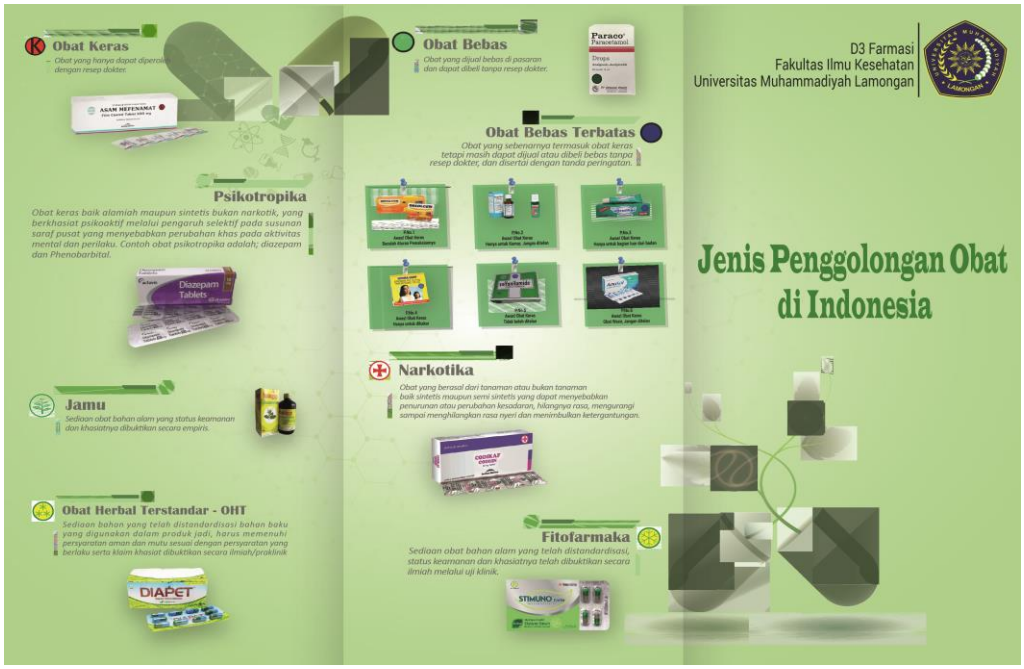

Figure 1. Leaflet media contains information about drug classification in Indonesia.

Research Procedure

1. Population
   The population in this study was the entire community of RT 5 RW 4 in Wanar Village, Pucuk District, Lamongan Regency, totaling 120 people.
2. Inclusion Criteria
   The inclusion criteria used include: being a resident who lives in Wanar Village, Pucuk District, Lamongan Regency; aged 17-56 years; and purchased drugs for self-medication purposes.
3. Exclusion Criteria
   Residents who are deaf and illiterate; people with mental disorders; geriatrics; and residents who work as health workers were excluded from this research sample.
4. Sampling Technique
   The sample used was 55 respondents who met the inclusion and exclusion criteria. The sampling technique was carried out using purposive sampling technique (Nurinda, 2018).

$$N = \frac{n}{1 + N(e)^2}$$

Figure 2. Slovin's formula for sample calculations

Data analysis

Statistical analysis was carried out using SPSS® version 21. To determine the factors that influence the level of knowledge of respondents, a Somers'd Gamma descriptive statistical test was performed. Factors that have the potential to influence the level of knowledge of respondents and were tested in this research include age, education, occupation, and gender. If the statistical test results show a value of approx. Sig. < 0.05, it indicates that there is a correlation between the factors studied and the respondent's knowledge. How strong the correlation is can be observed from the correlation coefficient value obtained (Table I). To determine the difference in the level of knowledge of respondents before and after being given the education intervention, a paired t-test

comparative statistical test was performed. If the paired t-test results show that Sig. (2-tailed) < 0.05, it can be concluded that there is a significant difference in the level of knowledge of respondents before and after the education intervention.

Table I. Interpretation of correlation coefficient results from the Somers'd gamma statistical test

Correlation coefficient value	The strength of the correlation that occurs
0.00 – 0.25	Very weak
0.26 – 0.50	Moderate
0.51 – 0.75	Strong
0.75 – 0.99	Very strong

RESULTS AND DISCUSSION

Validity and reliability of research questionnaires

The evaluation of public knowledge about the classification of drugs distributed in Indonesia was carried out using a research instrument in the form of a questionnaire. Research instruments are tools used to collect data or measure objects from a research variable (Yusup, 2018). In this study, a research instrument in the form of a questionnaire was used to measure research variables on the level of public knowledge about the classification of drugs circulating in Indonesia.

The number of samples used to test the validity and reliability of the questionnaire was 25 respondents, and these respondents were not part of the criteria for research respondents. The questionnaire used consists of 10 questions with answer options of "yes" or "no". The results of the validity test performed using the Pearson Product Moment test show that all questions are valid with a r-count > r-table value (Table II). Reliability testing was carried out to test the consistency of the questionnaire used. The results of the Cronbach Alpha test show that the questionnaire is reliable, with a Cronbach Alpha value of 0.871 (Table III).

Table II. Validity test results using the Pearson Moment product

Question item	r-count	r-table	Status
1	0,373	0,266	Valid
2	0,459	0,266	Valid
3	0,626	0,266	Valid
4	0,539	0,266	Valid
5	0,499	0,266	Valid
6	0,556	0,266	Valid
7	0,466	0,266	Valid
8	0,389	0,266	Valid
9	0,524	0,266	Valid
10	0,466	0,266	Valid

Questionnaires can be used as research instruments if they have been proven valid and reliable. The higher the r-count value results in high validity, conversely the lower r-count value, the lower the validity of the questionnaire (Matondang, 2009; Alfian and Putra, 2017). The higher the r-count value, the higher validity of a questionnaire, besides, the lower the r-count value resulting in lower validity of the questionnaire (Hidayat, 2021). In this study, the r-count value for each question item ranged from 0.373 to 0.626 (Table II). This shows that there are questions that have low, quite high, to high validity.

Table III. Reliability test results using Cronbach alpha

Cronbach's Alpha	Cronbach's Alpha based on Standardised Items	Status
0.871	0.600	Reliable

Reliability is related to the ability of a research instrument to produce the same measuring results when used for several measurements on the same group of subjects. (Matondang, 2009; Yusup, 2018). If the questionnaire provides inconsistent results, it can be concluded that the questionnaire cannot be trusted (an unreliable questionnaire) (Hidayat, 2021). In this study, the Cronbach Alpha coefficient value of the questionnaire was greater than 0.6 (Table III), so it can be concluded that the questionnaire used was reliable. Furthermore, the reliability coefficient of 0.871 shows that the questionnaire has good reliability.

The effect of educational interventions on knowledge about the classification of the types of drugs distributed in Indonesia

The results of the pre-test vs post-test before and after educational interventions are expressed as a percentage of correct answers. A percentage of correct answers of less than 55% is categorised as a poor level of knowledge, a percentage of correct answers of 56-76% is categorised as a moderate level of knowledge; and a percentage of correct answers of 76-100% is categorised as a good level of knowledge. It can be observed in (**Figure 3**) that outreach interventions are able to increase the level of public knowledge about drug classification in Indonesia.

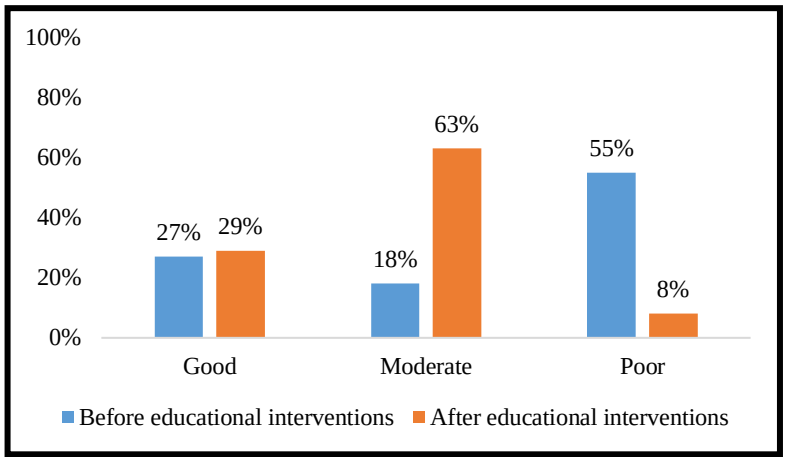

Figure 3. The level of public knowledge about drug classification in Indonesia before and after being given educational interventions

Before the comparative statistical test was performed, the percentage of correct answers (scores) from the group before and after educational interventions was first tested for homogeneity using the Kolmogorov-Smirnov test (n = 55). The results show that with a sig value. > 0.05, the data obtained can be concluded to be normally distributed and can be continued with comparative statistical tests. A comparative paired t-test was performed to determine whether there was a significant difference in the pre-test and post-test scores before and after the counseling was carried out. The test results show a Sig value. (2-tailed)

< 0.05, so it can be concluded that there is a significant difference in the pre-test vs post-test scores before and after the educational interventions was carried out.

The public's tendency to choose self-medication to treat health problems is often not in line with public knowledge about the classification of drugs distributed on the market. A number of studies show that educational interventions can increase public understanding about drugs (Meriati, Goenawi and Wiyono, 2013; Octavia, Susanti, and Negara, 2020). The educational intervention activities referred to as "penyuluhan" in Indonesiacome from the Dutch word *voorlichting*, *voor* means front and *lichting* means lamp or torch; simply put, penyuluhan is an activity to provide lighting (Amanah, 2007). In this research, educational intervention in the form of penyuluhan is aimed at making the public aware of the classification of drugs on the market so that they can minimise irrational drug use and the incidence of DRPs can be reduced.

Factors that influence knowledge about the classification of types of drugs in Indonesia

A total of 55 eligible respondents in this study were grouped based on age, education, occupation and gender. The characteristics of these respondents are factors that have the potential to influence public knowledge about the classification of drugs distributed in Indonesia, which can be further observed in Table IV. A total of 67% of respondents were aged 26-56 years; 20% of respondents were aged 21-25 years and 13% of others were 17-20 years old. In terms of education, 55% of respondents were high school graduates, 25% were junior high school graduates, 18% were college graduates, and the remaining 2% were elementary school graduates. Most respondents are 58% farmers, 11% are entrepreneurs, 7% are teachers, and 24% work in other fields. The respondents were 64% female, while 36% of the respondents were male.

To find out what factors influence the level of public knowledge about drug classification, a non-parametric Somers'd gamma associative test was performed. The level of community knowledge is the independent variable, and the characteristics of the respondents are the dependent variable. It can be observed in Table IV that age and occupation have a Sig value <0.05, which indicates that there is a significant relationship between the level of public knowledge about the classification of drugs circulating in Indonesia and the characteristics of the respondent's age and occupation. The correlation coefficient values for age and occupational level of knowledge are, respectively. 0.499 and 0.359, indicating that age and occupational factors have a moderate relationship to the level of public knowledge about the types of drug classification in Indonesia.

Table IV. Somers'd gamma descriptive statistical test results

Respondent Characteristics	Category	Frequency	Approx Sig.	Correlation coefficient
Age	17-20 years	7	0.022	0.499
	21-26 years	11		
	26-56 years	37		
Education	Elementary school	1	0.865	0.035
	Junior high school	14		
	Senior high school	30		
	College	10		
Occupation	Teacher	4	0.047	0.359
	Self-employed	6		
	Farmer	32		
	Others	13		
Gender	Male	20	0.372	0.203
	Female	35		

The relationship and influence between the level of public knowledge about the classification of types of drugs and age is in line with a number of similar studies (Suherman and Febrina, 2018; Simamora, 2019). As people get older, their information and experience about the use and classification of drugs also increase. Occupation also influences knowledge, people who work far from health services tend to have less knowledge about the classification of types of drugs. This research has several limitations. It has not performed an investigation and analysis of a number of factors that have the potential to influence the level of public knowledge about drug classification, such as: (1) experience in purchasing drugs at a pharmacy; (2) experience in obtaining drug prescriptions from health facilities; and (3) having a relationship with health workers. Apart from that, the population used only provides an illustration of the level of public knowledge in rural communities and does not represent the influence of interventions given to urban communities. We hope that further research can be carried out regarding the influence of these factors on the level of public knowledge about drug classification in different populations in future research.

CONCLUSION

Educational intervention was able to significantly increase knowledge about the classification of types of drugs among the community in Wanar Village, Pucuk District, Lamongan Regency, with a Sig. (2-tailed) < 0.05. Factors that influence the level of knowledge are age and occupation (Sig < 0.05). The correlation coefficient values for age and occupational level of knowledge are, respectively, 0.499 and 0.359, indicating that age and occupational factors have a moderate relationship to the level of public knowledge about the types of drug classification in Indonesia.

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