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FACTORS AFFECTING DRUG USE IN THE HOUSEHOLD ENVIRONMENT DURING THE COVID-19 PANDEMIC

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ABSTRACT

Background: Inappropriate use of drugs is a big problem all over the world. The COVID-19 pandemic causes people to be easily influenced by information circulating about drugs that are efficacious to ward off COVID-19 so that many people consume excess drugs to protect themselves from COVID-19. The COVID-19 pandemic has also caused people to take health supplements to protect themselves from COVID-19. **Objective:** The purpose of this study was to determine the factors that influence drug use during the COVID pandemic. **Methods:** This research was an observational study with a cross sectional design. Sample was 115 respondents chosen by purposive sampling. Bivariate statistical test used was chi-square and multivariate test used was binary logistic regression. **Results:** Bivariate analysis result showed that age and distance from health care service did not significantly affect the drug use (p value > 0,05). Education, occupation, income, knowledge were significantly influence the drug use (p value < 0,05). In the multivariate analysis, the OR for education was 4,807, OR for occupation was 4,612, OR for income was 0.146. OR for knowledge 3,400. **Conclusion:** It can be concluded that the factors that significantly affect the use of drugs in the household environment of the Kota Sub-District Kudus Regency during the COVID-19 pandemic are occupation, education, income and knowledge.
Keywords:Appropriate drug use, Drug information, Influence, Pandemic, Supplements

INTRODUCTION

The COVID-19 pandemic (Coronavirus Disease-2019) caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Coronavirus-2) has become an event that threatens public health in general and has attracted worldwide attention. On January 30, 2020, WHO (World Health Organization) has declared the COVID-19 pandemic a public health emergency of international concern[1]. With the 2019 novel coronavirus (2019-nCoV) outbreak currently spreading across the globe, people are looking for various ways to protect themselves from the covid-19 virus which tends to attack the respiratory tract and lungs. WHO recommendations for preventing the spread of COVID-19 include carrying out handy hygiene, social distancing, wearing masks, and boosting the immune system. There are many things that can be done to improve the immune system, one of which is consuming a nutritious and balanced diet, exercising, avoiding stress, improving the digestive system or hormones and taking health supplements[2].

The COVID-19 pandemic that occurred in Indonesia has had an impact on various sectors of people's lives. The rise of unclear information related to health supplement products circulating in the community has caused anxiety and even disrupted the supply of these ingredients, including some health supplement products that are needed during this pandemic[3]. The COVID-19 pandemic causes people to be easily influenced by information circulating about drugs that are efficacious to ward off COVID-19 so that many people consume excess drugs to protect themselves from COVID-19. The COVID-19 pandemic has also caused people to take health supplements to protect themselves from COVID-19. The use of appropriate drugs is defined when patients receive drugs that meet clinical needs, at the right dose, at an adequate time at the lowest cost to the patient and society. Inappropriate use of drugs is a big problem worldwide. According to WHO data, more than 50% of medicines are prescribed, dispensed or sold irrationally, and half of all patients fail to get medicines that are suitable for them[4]. The factors that influence public health behavior are predisposing characteristics (age, education, occupation, and ethnicity), enabling characteristics (facilities, infrastructure and needs characteristics)[5].

The purpose of this study is to determine the factors that influence the use of drugs during the covid-19 pandemic. The results obtained from this study are expected to be input for pharmacists who are in service, especially self-medication services during this pandemic.

Raditiya Firda Maulany, Eva Annisaa', Ragil Setia Dianingati

METHODS

This study used a cross sectional research design. The population in this study was the community of the Kota subdistrict of Kudus Regency, Central Java Province, Indonesia. The sample studied in this study amounted to 115 respondents. The dependent variable in this study was the use of drugs during the COVID-19 pandemic and the independent variables in this study were age, education, occupation, income, distance and knowledge. The questionnaire was developed using the Google Form platform and tested for validity and reliability on 30 respondents, which was then distributed through the WhatsApp and Line platforms. The sampling technique in this study used purposive sampling with a sample size of 115 people, with inclusion criteria, namely respondents aged 20-60 years, had used health facilities during the COVID-19 pandemic and were willing to fill out questionnaires. The exclusion criteria in this study were respondents who works as health professionals and incomplete questionnaires. Data collection was carried out online due to the COVID-19 pandemic. The data obtained were analyzed bivariately using the chi-square test to see the relationship between the dependent variable and the independent variable, followed by multivariate analysis using logistic regression to determine the significance of variables that have a close relationship with drug use during the COVID-19 pandemic.

RESULTS

A total of 147 respondents were willing to complete the online questionnaires, but after adjusting to the inclusion and exclusion criteria, only 115 respondents met the criteria.

Characteristics of Respondents

Table 1 shows that the age group >40 years is 28 respondents (24.3%) and aged <40 years is 87 respondents (75.7%). Respondents who did not work were 35 (30.4%) and 80 (69.6%) working. Respondents with basic education were 59 (51.3%) and respondents with higher education were 56 (48.7%). Income category ≤ regional minimum wage as many as 52 (45.2%) respondents, while income category > regional minimum wage as many as 63 (54.8%). The distance from home to the nearest health facility, most of them have a distance of <2 km, a total of 71 respondents (61.7%). Meanwhile, those

with a distance of >2 km were 44 respondents (38.3%). Respondents with good knowledge about self medication were 89 (77.4%), and in the poor knowledge about self medication category were 26 respondents (22.6%). Respondents behave appropriately as many as 71 respondents (71%) and 44 respondents (44%).

Table 1. Characteristics of the Respondents

Characteristics of Respondents	Frequency	%
Age		
>40 years old	28	24.3
<40 years old	87	75.7
Occupation		
Not working	35	30.4
Working	80	69.6
Education		
Basic education	59	51.3
Higher education	56	48.7
Income		
≤ Regional minimum wage	52	45.2
> Regional minimum wage	63	54.8
House to health facility		
> 2 km	44	38.3
< 2 km	71	61.7
Knowledge about self medication		
Less	26	22.6
Good	89	77.4
Use of drugs during the covid-19 pandemic		
Not appropriate	44	38.3
Appropriate	71	61.7

Bivariate Analysis

Bivariate analysis using Chi square was conducted to determine whether there is a relationship between the independent and dependent variables. If the p value <0.05, there is a significant relationship between the independent and dependent variables. The results of the test of the relationship between independent and intermediate variables are presented in the following table 2.

Table 2 shows that there is a relationship between education, occupation, income, distance, knowledge, and health facilities with drug use behavior during the COVID-19 pandemic with a significance value less than 0,05.

Raditiya Firda Maulany, Eva Annisaa', Ragil Setia Dianingati

Table 2. Relationship between Independent Variable and Dependent Variable Analysis

Independent variable	Drug Use during a Pandemic COVID-19		P
	Not Appropriate (n)	Appropriate (n)	
Age			
>40 years old	14	14	0,142
≤40 years old	30	57	
Education			
Basic education	29	21	0,000*
Higher education	15	50	
Occupation			
Not working	16	19	0,003*
Working	28	52	
Income			
≤Regional minimum wage	15	37	0,009*
>Regional minimum wage	29	34	
House to health facility			
≤2 km	24	47	0,211*
>2 km	20	24	
Knowledge about self medication			
Less	17	9	0,001*
Good	27	62	

Multivariate Analysis

In multivariate analysis using logistic regression, it can be seen that the odds ratio value is used to determine how much the independent variable tends to the significant dependent variable. Odds ratio can be seen in the value of Exp β.

Table 3. Result of the Odds Ratio Analysis

Independent variable	Beta	S.E	P	OR
Education	1,570	0,500	0,002	4,807
Occupation	1,529	0,636	0,016	4,612
Income	-1,923	0,643	0,003	0,146
Knowledge about self medication	1,224	0,544	0,012	3,400

Table 3 shows that respondents with higher education are 4.807 times more likely to behave appropriately in using drugs during the COVID-19 pandemic. Respondents who occupationed were 4,612 times more likely to behave appropriately in using drugs during the COVID-19 pandemic. Respondents who earn less than the minimum wage have a tendency to behave appropriately in using drugs during the COVID-19 pandemic. Respondents who have good knowledge are 3,400 times more likely to behave appropriately in using drugs during the COVID-19 pandemic.

DISCUSSIONS

From the results of research with 115 samples, it was found that the factors influencing the use of drugs during the covid-19 pandemic in the sub-district of the Kudus Regency were education, employment, income and knowledge.

The effect of age on drug use in bivariate analysis obtained p-value 0.142 which shows no effect of age on drug use. This is in accordance with existing research which shows that age does not affect knowledge and behavior of drug use[6]. But this study is not in accordance with several studies that show age affects drug use, because a person's age affects perception and thinking patterns that affect behavior[7]. This can be because respondents at the age of young adults ranging from 20 to 40 years have a broad level of knowledge because at the age of young adults usually respondents follow the development of knowledge and respondents who are middle-aged adults ranging from 40-60 years have more experience[8,9].

The effect of education on drug use in bivariate analysis obtained p-value of 0.000 which indicates that there is an effect on drug use. Based on the results of the odds ratio shows that higher education is 4.807 times more likely to behave appropriately in the use of drugs. This is consistent with research showing that education affects drug use. The higher a person's education level, the easier it is to receive information so that the more they receive the knowledge they have. Education determines a person in choosing treatment for himself[10]. The lower a person's education level, the more he tries to treat himself. The higher the education, the more rational the treatment[11]. People with higher education are generally not easily

Raditiya Firda Maulany, Eva Annisaa', Ragil Setia Dianingati

influenced by advertisements and read more labels on drug packaging before consuming them[9].

The effect of occupation on drug use in bivariate analysis obtained p-value of 0.003 which indicates that there is an effect on drug use. based on the results of the odds ratio shows that someone who occupations is 4.612 times more likely to behave appropriately in the use of drugs. There is a relationship between occupation and the level of drug use behavior because with a job, a person is able to support survival for himself and his family. Occupation can make a person gain experience and knowledge, either directly or indirectly. So that someone who occupations can have better drug use behavior because he has more knowledge and experience[12]. Respondents who occupation generally have sufficient educational background, often dealing with the outside world or interacting with colleagues. The process undertaken during occupation at least affects the respondent's mindset and ultimately affects the treatment behavior decision[13].

The effect of income on drug use in bivariate analysis obtained p-value of 0.009 which indicates there is an effect on drug use. Based on the results of the odds ratio, it shows that someone who occupations is 4.612 times more likely to behave appropriately in the use of drugs. Oods ratio results obtained 0.146 which indicates that someone who earns below the minimum wage has a tendency to use drugs that are more appropriate than someone who earns above the minimum wage. Family income has a significant influence on the decision to seek health services. Respondents who have high incomes will visit health facilities more often and get better information about medicines. So that respondents who have high incomes have better drug use behavior than respondents with low incomes[14]. Income in the form of money affects a person's purchasing power to buy something. Income is the most important factor in determining the quantity and quality of health so that there is a close relationship between family income and a person's health condition, where a person's good income does not guarantee a condition that can always support all the needs for a person's health condition to be adequate or fulfilled[15]. In this study, respondents who earn below the minimum wage have more appropriate behavior than respondents who earn above the minimum wage, this can be due to the fact that in the Kota Sub-District, Kudus Regency, there are many health facilities and are easily accessible by the community so that people with low incomes can also visit health facilities. for information on drug use.

The effect of distance house to health facility on drug use in bivariate analysis obtained p- value of 0.211 which indicates there is no effect of age on drug use. This can be caused by the distance between residence and health facilities taken by the people of Kudus City between 1 km - 5 km. In accordance with existing research, it shows that distance does not affect drug use behavior, this is because with easy access to health facilities that are easily accessible either on foot or by vehicle, there is no gap in treatment behavior at long and close distances[16].

The effect of knowledge on drug use in bivariate analysis obtained p-value of 0.001 which indicates there is an effect on drug use. based on the results of the odds ratio shows that someone who has good knowledge is 3,400 times more likely to behave appropriately in the use of drugs. In accordance with existing research which shows there is a relationship between knowledge and behavior in the use of health supplements during the Covid-19 pandemic[17]. The level of knowledge is one of the factors that can affect the accuracy of drug use where the better the level of knowledge, the better behavior to use drugs[18]. Lack of public knowledge about drugs will have an impact on inappropriate drug use behavior. This limited knowledge also causes the public to be vulnerable to getting information about inappropriate drugs, thus allowing irrational drug use behavior if it is not balanced with the provision of correct information[8].

CONCLUSION

Factors that significantly affect the use of drugs in the household environment of the Kota Sub-District Kudus Regency during the COVID-19 Pandemic are occupation, education, income and knowledge.

ETHICAL APPROVAL

This study was registered and approved by the Ethics Committee of Medicine Faculty of Diponegoro University(No. 268/EC/KEPK/FK-UNDIP/XII/2020).

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

Raditiya Firda Maulany, Eva Annisaa', Ragil Setia Dianingati

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