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Research Article

Knowledge and Perception of Self-Medication of Cough Medication in Pedicab Drivers in Surabaya

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Abstract

Pedicab drivers who are exposed to pollution and have a smoking habit are at high risk of developing COPD (chronic obstructive pulmonary disease). The initial disturbance that occurs is a decrease in lung function which often causes complaints of cough symptoms. A person's knowledge and perception can influence how the pattern of self-medicating cough treatment so far. The purpose of this study was to determine the knowledge and perception of Self-medication of cough medicine. The research design was cross-sectional. The material of this research was in the form of information from subjects using direct questions and answers (interviews) with knowledge and perceptions of self-medicating cough medicine questionnaire. This research was conducted from September to December 2018 and used descriptive data analysis. The respondents involved were 163 peoples. Most respondents had a low level of knowledge of self-medication of cough medicine (97 of 163). The results of perception of self-medication of cough medicine indicated that most respondents had negative level (78 of 163). There was a relationship between knowledge and perception about self-medication of cough medicine (p=0.006). The proper health education strategy by increasing knowledge can also improve perceptions of self-medicine of cough medicine.

Keywords: cough, knowledge, pedicab, perception, self-medication.

Pengetahuan dan Persepsi Pengobatan Batuk Sendiri pada Pengemudi Becak di Surabaya

Abstrak

Pengemudi becak yang terpapar polusi dan memiliki kebiasaan merokok berisiko tinggi terkena PPOK (penyakit paru obstruktif kronik). Gangguan awal yang terjadi adalah penurunan fungsi paru-paru yang seringkali menimbulkan keluhan gejala batuk. Pengetahuan dan persepsi seseorang dapat mempengaruhi bagaimana pola pengobatan sendiri pengobatan batuk selama ini. Tujuan penelitian ini adalah untuk mengetahui pengetahuan dan persepsi Pengobatan Batuk Sendiri. Desain penelitian cross-sectional. Materi penelitian ini berupa informasi dari subyek dengan menggunakan tanya jawab langsung (wawancara) dengan pengetahuan dan persepsi tentang kuisioner obat batuk mengobati sendiri. Penelitian ini dilakukan pada bulan September hingga Desember 2018 dan menggunakan analisis data deskriptif. Responden yang terlibat sebanyak 163 orang. Sebagian besar responden memiliki tingkat pengetahuan pengobatan batuk yang rendah (97 dari 163). Hasil persepsi pengobatan sendiri obat batuk menunjukkan bahwa sebagian besar responden adalah negatif (78 dari 163). Terdapat hubungan antara pengetahuan dengan persepsi mengenai swamedikasi obat batuk (p=0,006). Strategi pendidikan kesehatan yang tepat dengan meningkatkan pengetahuan juga dapat meningkatkan persepsi swamedikasi obat batuk.

Kata Kunci: batuk, becak, pengetahuan, persepsi, pengobatan sendiri.

1. Introduction

Surabaya is a metropolitan city with a very high traffic, so that transportation plays an important role in supporting the development of a city.[1] Becak is one of the means of public transportation used,[2] which is a three-wheeled vehicle, non-motorized, does not use fuel, and is affordable transportation for low-income groups.[3] Pedicab drivers are at high risk of health problems such as cardiovascular disease, respiratory problems, asthma, hypertension, and myocardial infarction.[4,5] Pedicab drivers spend most of their time on the streets, are exposed to pollution for a long time and eating irregularities,[6] also states that smoking is a social habit for pedicab drivers. Socioeconomic status greatly affects a person's status in society, internationally low socioeconomic status results in very high smoking rates among long-term unemployed, mentally ill, prisoners, homeless and some of them are new immigrant groups. Research conducted on the main causes of smoking is social inequality in society. In some areas, such as the southern European Union, socio-economic inequality is starting to emerge among women, and smoking rates are higher for those with lower socioeconomic status in most developed countries.[7,8,9] In another study by Reid et al.[10] also stated that socio-economic differences and education levels affect the level of success of a person to quit smoking.

Smoking is one of the risk factors for COPD,[11,12,13] and has a high prevalence as a cause of respiratory symptoms and pulmonary function disorders.[14] Pulmonary function disorders do not only occur in developed countries, but also in several developing and poor countries. According to WHO in 2000–2012, pulmonary dysfunction has become one of the third deadliest diseases for the past decade. Severe pulmonary function disorders such as COPD can pose a significant burden on a person at working age personally, economically, and socially, therefore further efforts are needed to improve the diagnosis of COPD and therapeutic management in order to obtain maximum results.[15] A smoker is a smoker who is active in smoking and is categorized into three, light smokers, namely people who smoke less than 10 cigarettes per day, moderate smokers are people who smoke 10-20 cigarettes per day, while heavy smokers are people who smoke more than 10 to 20 cigarettes per day. 20 cigarettes per day.[16]

There is a lot of information that smoking causes respiratory problems and other diseases, but few are aware that smoking effects can cause cough reflex sensitivity. Recent studies have shown that in smokers, cough reflex sensitivity is relatively reduced compared to non-smokers.[17,18] Coughing is one of the most common and observable symptoms of smoking. High frequency of cough in smokers because smoking causes almost all respiratory diseases that begin with coughing symptoms, can eventually lead to inflammation of the respiratory tract, mucus hypersecretion, and dysfunctional cilia.[19,20,21]

Coughing is a reflex of physiological defenses to protect the airways from aspiration, infection, or irritation. However, coughing becomes a disease when the reflex is irregular.[22,23] One of the most common complaints of cough patients and most cases of acute cough are <3 weeks in duration due to acute upper respiratory tract infection.24 Whereas chronic cough is a multifactorial syndrome that usually presents as cough hypersensitivity in adults, chronic cough is also a cause of significant morbidity, especially in terms of quality of life and daily activities.[25] Therefore, one way that can be used to treat cough symptoms is the use of drugs without a doctor's prescription or self-medication. Along with the times, the implementation of self-medication is increasingly being carried out by various circles of society, not only among academics. The Central Bureau of Statistics noted that in 2017 there were 69.43% of Indonesia's population underwent self-medication compared to 46.32% of the population seeking outpatient treatment. This figure increased from 2016 to as 63.77%.[26]

There are 35.2% of people in Indonesia who store medicines for self-medication purposes. Self-medication is an alternative chosen by the community to increase the affordability of treatment. In its

implementation, self-medication can be a source of errors in medication (medication error) due to limited public knowledge about drugs and their uses. One of the many drugs that are obtained without using a doctor's prescription or known as over the counter medicine is cough medicine.[27] Several previous studies have also stated that factors that can influence a person in self-medication are age, education level, family attitudes, advertisements for drug manufacturers, laws governing drug issuance and sale and previous experience with symptoms associated with illness,[28] as cited in research,[29] in a study in Tamil Nadu most students practiced self-medication because it saves time, whereas in Punjab, the most common reason for practicing self-medication is to save time. and faster. The use of self-medication also has safety risks, such as the use of cough medicines that are antitussive to cough with phlegm which can increase the risk of bacterial/viral infection.[24,30,31] Cough symptom in smokers that is often experienced is a cough with phlegm, which should receive mucolytic cough medicine therapy, because it can reduce the viscosity of excess mucus due to cilia damage.[32,33]

In addition to the risk of side effects, inappropriate cough medicine self-medication can affect the economic burden of a country. Self-medication has become the biggest socio-health and economic problem of various societies. Especially in developing countries, where more than 60–80% of health problems are associated with self-medication. In some developing countries, many drugs are available to the public without a prescription, and many people are self-medicating because of their lower costs than the cost of medical services. This is why in most developing countries, more than 60–80% of health problems are associated with self-medication.[34] And it turns out that not only in developing countries, but in developed countries also experience the same thing. In the UK, the cost of using cough medicine is estimated at £979 million, comprising £875 million for lost productivity and £104 million costs for the health care system and over-the-counter drug purchases.[24] There are many types of drugs used to treat cough symptoms depending on the type of cough and its cause. One that can be used in coughs that occur due to smoking is the mucolytic type. Smoking can cause mucus hypersecretion because cigarette substances damage the cilia cells in the throat. Mucolytic in this case works by reducing the viscosity of the mucus which is secreted excessively. Mucolytics are expected to reduce cough symptoms that occur in smokers.[35,36] Apart from mucolytics, other cough medicines that can also be used to treat cough are the antitussive and expectorant classes. Mucolytics and expectorants are cough medicines used for coughs with phlegm. While antitussives are used for coughs with phlegm (dry cough) and should not be used for coughs with phlegm, because they can increase the risk of infection by bacteria or viruses. Incompatible use of drugs can have adverse effects on health.[24,37]

Perception is the experience of an object, event or relationship obtained from inferring known information and interpreting it, giving meaning to the stimulus.[38,39] In other studies, it is also stated that the perception is that there is no need to visit/get advice on services from prescriptions for minor illnesses, self-medication is more economical and does not have to queue long at the clinic. Most of them have a positive attitude in self-medication for minor illnesses.[40] Perception is proven to significantly influence someone in self-medication in the selection of self-medication. Perception is closely related in reacting with certainty to make decisions in certain situations. Therefore, perception is considered a significant determinant of one's self-medication, where orientation, disposition, and inclination play an important role for a person in deciding on self-medication.[41]

Knowledge and perception are very important in order to regulate oneself from a disease in order to avoid the risk of getting a disease and the side effects of drug use.[42,43] The relationship between knowledge and perception is that perceptions are influenced by knowledge.[44] Therefore, a person's source

of information can influence knowledge which will influence him in making decisions.[45] With the development of technology in the world, especially in Indonesia, it is not difficult for people to find and find cough medicines in order to deal with coughs they experience due to smoking. In this regard, self-medication is an alternative that is taken by the community.[46]

Pedicab drivers as one of the occupations with high pollution exposure,[4,5,6] and socioeconomic conditions also affect lifestyle and nutritional intake,[7,8,9,10] were at high risk of decreased lung function which can lead to the risk of chronic lung disease. Mapping data on the level of knowledge and perceptions of pedicab drivers can help include health workers for health education strategies for pedicab drivers in improving the quality of life. The purpose research was to determine the relationship between knowledge and perception of self-medication of cough medication in pedicab drivers in Surabaya.

2. Materials and Methods

The research design was cross-sectional. The material of this research was in the form of information from subjects using direct questions and answers (interviews) with the respondents. The independent variable was knowledge and perceptions of self-medicating cough medicine in pedicab drivers. Pedicab was a three-wheeled vehicle, was not motorized, does not use fuel and is an affordable transportation for low-income groups.[3] The research location used in this research was the base of pedicab drivers on st. Mayjend Prof. Dr. Moestopo Airlangga, Rungkut Baru Market, Bratangjaya Terminal, and Jagir Wonokromo, Surabaya. This research was conducted from September to December 2018, with ethical tests that have been conducted and get no. 026/KE/VI/2018 at University of Surabaya.

2.1. Knowledge of Self-medication of Cough Medicine

Isoniazid (Amsal Chem, India), HPMCP HP 50Knowledge of self-medicated was the respondent's knowledge of self-medication that was obtained without a doctor's prescription or professional advice.[46] In this study, what was meant by knowledge in respondent (smoker) which includes:

a. Knowledge of cough. Respondents' knowledge of the nature/type of cough they suffer, the frequency of coughing, and the causes of coughing were related to the respondent's smoking habits.

b. Knowledge of self-medicated of cough medicines. Respondents' knowledge of the types of cough medicines for self-medication, indications, side effects, contra-indications, dosages, duration of use, and individual effects that occurred on respondents when using these self-medicated cough medicines.

2.2. Perceptions of Self-medication of Cough Medicine

The perceptual process was that individuals are aware of, for example, what was seen, or what was heard, or what was felt, namely the stimulus received through the sense organs. This process was the final process of perception and was the real perception. The response as result of perception can be taken by individuals in various forms.47 In this research, what is meant by perception is the opinion or view of the respondent regarding the following matters:

a. Perception of cough. This aspect relates to the respondent's personal opinion about the cough they experience, limited activity due to the cough they are experiencing, actions taken to overcome the cough.

b. Perception of self-medicated of cough medicines. This aspect is related to the respondents' personal opinions regarding the use of self-medicated cough medicines which include the reasons for choosing a self-medicated cough medicine profile and the benefits obtained by the respondent after using the cough medicine.

2.3. Lung Function Disorders

Pulmonary function was the ability of the lungs to enter air to remove air from the

lungs. A pulmonary function test was a test when you breathe in to find out how well a person was getting in air and expelling air from the lungs. The tool used was spirometry. The results of pulmonary function (FEV1) that were not affected were >70% and the pulmonary function that was affected was <0.70%.19 The pulmonary function of the respondents was tested using the spirometric method. In this study, a validated handheld spirometer was used with the brand Contec Handheld SP10 Spirometer. When using a handheld spirometer, age, gender, weight and height were included, and whether or not smokers were smokers. Check with a spirometer can be done 3 times or more to get more accurate results.

2.4. Population and Sample

The population used in this study was an affordable population, namely builders who are currently working on a project or are active in the East Surabaya area. The sample (subject) was the part of the population that meets the criteria, namely: male, has impaired lung function (FEV1/FVC=<0.70%), 18-60 years old, had been a pedicab driver for at least 5 years,4 did not have chronic lung disease (such as: COPD, tuberculosis, asthma, lung cancer), and has disease. others that can affect lung function, such as heart disease, chronic kidney disease. The number of samples taken in this study uses a formula with an unknown or infinite population, namely:

$$\mathbf{n = (Z^2_{1-\alpha/2}\, P(1-P))/(d^2)}$$

N : Number of samples

$Z^2_{1-\alpha/2}$: Standard normal value (if α = 0.05 then Z = 1.960)

P (1-P) : Estimated population proportion (if P = 0.5 then P (1-P) = 0.25)

d2 : Deviation tolerant (10%)

So the minimum number of samples needed in this study was 62 respondents. The samples were collected using purposive sampling and consecutive sampling.

2.5. Data Collection Methods and Data Analysis

The questionnaire on knowledge and perceptions of cough medicine self-medication was derived from previous studies by Lorensia et al.48 Data on knowledge and perceptions of drug self-medication will be presented descriptively. Knowledge and perception data will be analyzed by chi-square test to find out the relationship between the two variables.

3. Result

3.1. Preliminary Study

The preliminary study was carried out at Soponyono Market, while the Gubeng Terminal was not used because the number of pedicab drivers there was very small and the working time was very tight so that the researchers had difficulty conducting interview sessions. In this preliminary study, 30 respondents who met the inclusion and exclusion requirements were selected, then informed consent was given to ask for the respondent's consent and also filled in demographic data, after the respondents agreed, then the interview process was carried out.

3.2. Questionnaire Validation

The validity test was conducted on 30 people. The validity value test was analyzed with the CITC (Corrected Item-Total Correlation) value. In Knowledge of Self-medication of Cough Medicine questionnaire, with a value of r_{table}=0.361, it was obtained from the product moment table with a significant level of 5%. The value of r_{count} (no.1-10) was >0.361, so the questionnaire was declared valid. The reliability test was declared reliable if the Cronbach Alfa value was ≥0.6. The Cronbach Alfa value was 0.748 which was >0.60 so that the variable was said to be reliable. In Perceptions of Self-medication of Cough Medicine questionnaire questionnaire, with a value of r_{table}=0.361 obtained from the product moment table with a significant level of 5%. The value of r_{count} (no.1-8) was >0.361, so the questionnaire was declared valid. The reliability test was declared reliable if the Cronbach Alfa value was ≥0.6. The Cronbach Alfa value was 0.684 which was >0.60 so that the variable was said to be reliable (Table 1).

Table 1. Result of Validation of Knowledge and Perception of Self-Medication of Cough Medicine Questionnaire

Questionaire	No	Dimensions	Question Item	Validation Tests			Reliability Tests
				r_{value}	r_{table}	conclusion	Alpha cronbach's
Knowledge of Self-Medication of Cough Medicine	1	Definition of cough	Coughing is not a disease but a symptom of a disease	0.799	0.361	valid	0.748
	2	Cause of cough	In normal circumstances (not sick) cough can occur because of a foreign object that enters the respiratory tract	0.578	0.361	valid	
	3	Cause of cough	Dust and air pollution including cigarette smoke and motor vehicle fumes and consuming certain drugs are factors that can cause coughing.	0.468	0.361	valid	
	4	Type of cough	A cough that is accompanied by mucus or mucus is known as a cough with phlegm.	0.720	0.361	valid	
	5	Scope of self-medication	Self-medicated cough medicine is an over-the-counter cough medicine with a green circle sign and a limited-free group with a blue circle	0.715	0.361	valid	
	6	Medicine purpose	Cough medicine has two main functions, namely as a symptomatic drug (functions to relieve symptoms) and a causative drug (serves to cure disease).	0.478	0.361	valid	
	7	How to use the medicine	In consuming self-medicated cough medicine, you must follow the instructions for use contained in the packaging label and the medicine can be used in only 14 days.	0.432	0.361	valid	
	8	How to use the medicine	If there is a statement regarding cough medicine as follows: "2x1 tablet a day after meals". So this statement means, cough medicine is taken twice a day in the morning and during the day.	0.592	0.361	valid	
	9	Definition of self-medication	Self-medication is the activity of selecting and using drugs without using a doctor's prescription on one's own initiative to treat a sick condition in the body.	0.720	0.361	valid	
	10	Definition of self-medication	Self-medication is a form of service that provides and prepares drugs needed by a patient as well as providing consultation, information, and education for patients in the use of free and limited drugs.	0.646	0.361	valid	
Perception of Self-Medication of Cough Medicine	1	Cause of cough	The more often you smoke, the more frequent you cough.	0.464	0.361	valid	0.684
	2	Type of cough	A cough that is often experienced by smokers is a cough with phlegm.	0.428	0.361	valid	
	3	Medicine purpose	If the cough does not go away or even gets worse, then the first treatment to overcome it is to go to a pharmacy to consult a pharmacist and not a doctor	0.452	0.361	valid	
	4	Medicine purpose	The cough medicine used only relieves cough symptoms.	0.468	0.361	valid	
	5	Drug costs	Your main focus in choosing the cough medicine that you use is the affordable price of the medicine	0.567	0.361	valid	
	6	Drug recommendations	In using cough medicine, your main basis for choosing the drug is because of a recommendation from family or closest friends, not from a pharmacist or doctor.	0.646	0.361	valid	
	7	Drug information	Before starting to take the cough medicine, you always first read the instructions for the rules of use contained in the drug packaging label regarding dosage, duration of use, and how to use it, then you follow the recommendations contained in these instructions.	0.592	0.361	valid	
	8	The role of health workers	You fully understand the directions for the instructions for use on the cough medicine packaging label, without first asking the pharmacist or doctor	0.357	0.361	valid	

3.3. Subject Characteristics

Respondent category was seen from age and level of lung function disorder. Most of the respondent were in the range of 46-55 years (early elderly). There was a decrease in lung function at the age of 40 years and over which can affect the results of lung function measurements.49 From the data of respondents with lung function disorders, the average spirometric value obtained was 54.74% ± 12.44 with the highest value of 78% and the lowest value of 25.3% (Table 2).

3.4. Knowledge of Self-Medication of Cough Medicine

The dimensions of the questionnaire were definition of cough (1), cause of cough (2), type of cough (1), scope of self-medication (1), medicine purpose (1), how to use the medicine (2), and definition of self-medication (2). Respondents' answers were divided into: true, false, and do not know, as in Table 3. Assessment of classification of the knowledge was divided into 3, namely: high (correct answers: >70%), moderate (correct answers: 50-70%), and low (correct answers: <50%). The results of the classification of the questionnaire indicated that most respondents had low level of knowledge (97 of 163), followed by moderate (44 of 163) and high (22 of 163).

3.5. Perception of Self-Medication of Cough Medicine

The profile of answers to perceptions of cough medicine medicine can be seen in Table 4. Assessment of classification of the perception was divided into 3, namely: positive (correct answers: >70%), neutral (correct answers: 50-70%), and negative (correct answers: <50%). The results of the peception of the questionnaire indicated

Table 2. Subject Characteristics

Characteristics		Number of Respondents (n: 163)	
		Frequency	Percentage (%)
Age (years)	Late adulthood (36-45)	43	22.69
	Early elderly (46-55)	86	53.37
	Late elderly (56-65)	34	23.92
Comorbidities (from doctor's diagnosis)	Diabetes mellitus type 2	10	6.13
	Hypertension	5	3.07
	Diabetes mellitus type 2 + Hypertension	15	9.20
	Hyperuricemia	3	1.84
	No co-morbidities	130	79.75
Smoking severity[16]	Light smoker (<10 cigarettes per day)	75	46.01
	Moderate smokers (10-20 cigarettes per day)	57	34.97
	Heavy smokers (>20 cigarettes per day)	31	19.02
Level of education	No school	85	52.15
	Elementary school graduate	63	38.65
	High school graduate	15	9.20
Long time working as a pedicab driver (years)	<5	13	7.86
	5-10	88	53.90
	10-15	40	24.54
	15-20	17	10.43
	>20	5	3.07
Spirometry value [19]	Mild (60-80%)	67	41.10
	Moderate (30-59%)	92	56.44
	Severe (30-59%)	4	2.45

Table 3. Frequency Distribution of Knowledge of Self-Medication of Cough Medicine

No	Dimensions	Question Item	Number of Respondents (n: 163)					
			Answer TRUE		Answer WRONG		Answer DO NOT KNOW	
			Freq	Percentage (%)	Freq	Percentage (%)	Freq	Percentage (%)
1	Definition of cough	Coughing is not a disease but a symptom of a disease	70	42.94	36	22.09	57	34.97
2	Cause of cough	In normal circumstances (not sick) cough can occur because of a foreign object that enters the respiratory tract	68	41.72	14	8.59	81	49.69
3	Cause of cough	Dust and air pollution including cigarette smoke and motor vehicle fumes and consuming certain drugs are factors that can cause coughing.	76	46.63	10	6.13	77	47.24
4	Type of cough	A cough that is accompanied by mucus or mucus is known as a cough with phlegm.	70	42.94	10	6.13	83	50.92
5	Scope of self-medication	Self-medicated cough medicine is an over-the-counter cough medicine with a green circle sign and a limited-free group with a blue circle	35	21.47	11	6.75	117	71.78
6	Medicine purpose	Cough medicine has two main functions, namely as a symptomatic drug (functions to relieve symptoms) and a causative drug (serves to cure disease).	56	34.36	15	9.20	92	56.44
7	How to use the medicine	In consuming self-medicated cough medicine, you must follow the instructions for use contained in the packaging label and the medicine can be used in only 14 days.	42	25.77	22	13.50	99	60.74
8	How to use the medicine	If there is a statement regarding cough medicine as follows: "2x1 tablet a day after meals". So this statement means, cough medicine is taken twice a day in the morning and during the day.	59	36.20	24	14.72	80	49.08
9	Definition of self-medication	Self-medication is the activity of selecting and using drugs without using a doctor's prescription on one's own initiative to treat a sick condition in the body.	57	34.97	14	8.59	92	56.44
10	Definition of self-medication	Self-medication is a form of service that provides and prepares drugs needed by a patient as well as providing consultation, information, and education for patients in the use of free and limited drugs.	45	27.61	11	6.75	107	65.64

Table 4. Frequency Distribution of Perception of Self-Medication of Cough Medicine

No	Question Item	Number of Respondents (n: 163)			
		Answer AGREE	Percentage (%)	Answer DISAGREE	Percentage (%)
1	The more often you smoke, the more frequent you cough	125	76.68	38	23.31
2	A cough that is often experienced by smokers is a cough with phlegm	46	28.22	117	71.77
3	If the cough does not go away or even gets worse, then the first treatment to overcome it is to go to a pharmacy to consult a pharmacist and not a doctor	107	65.64	56	34.36
4	The cough medicine used only relieves cough symptoms	97	589.51	66	40.50
5	Your main focus in choosing the cough medicine that you use is the affordable price of the medicine	34	20.86	129	79.14
6	In using cough medicine, your main basis for choosing the drug is because of a recommendation from family or closest friends, not from a pharmacist or doctor	123	75.46	40	24.54
7	Before starting to take the cough medicine, you always first read the instructions for the rules of use contained in the drug packaging label regarding dosage, duration of use, and how to use it, then you follow the recommendations contained in these instructions	46	28.22	117	71.77
8	You fully understand the directions for the instructions for use on the cough medicine packaging label, without first asking the pharmacist or doctor	45	27.60	118	72.39

that most respondents had negative level of perception (78 of 163), followed by neutral (50 of 163) and positive (35 of 163).

3.6. Chi Square Test of Knowledge and Perception of Self-Medication of Cough Medicine

Table 5 and Figure 1, showed that most of the respondents had low level of knowledge and negative level of perception of self-medication of cough medicine. The results of the chi-square test analysis on the level of knowledge and perception of self-medication of cough medicine showed P value= 0.006 (<0.05) which mean that there was relationship between knowledge and perception of self-medication of cough medicine.

4. Discussion

Most of the respondents correctly answered the definition of cough, but they did not understand the causes of cough itself (Table 3). Coughing was one way to clear the respiratory tract from mucus or foreign materials and objects that enter as a defense reflex that arises from tracheobronchial irritation.[22] Coughing was an effort to defend the lungs against various existing stimuli and physiological reflexes that protect the lungs from mechanical, chemical and temperature trauma. Coughing become pathological when it is felt as a nuisance. Such a cough was often a sign of a disease inside or outside the lungs and sometimes an early symptom of an illness. Cough was the most common symptom of respiratory disease and a problem that doctors often face in their daily practice.[22] Productive cough was a cough that produces phlegm or mucus (sputum) so it was better known as a cough with phlegm. A productive cough was characterized by a full and sound chest. Those who experience a productive cough generally had difficulty breathing and are accompanied by expulsion of phlegm. Productive cough should not be treated with cough suppressants because more and more mucus will collect in the lungs.[31,50]

In the cough phase which lasts for about 200ms, the glottis was able to temporarily

Table 5. Chi-Square Test of Knowledge and Perception of Self-Medication of Cough Medicine

Knowledge of Self-Medication of Cough Medicine	Perception of Self-Medication of Cough Medicine			Total
	Positive	Neutral	Negative	
High	10	8	4	22
Moderate	11	14	19	44
Low	14	28	55	97
Total	35	50	78	

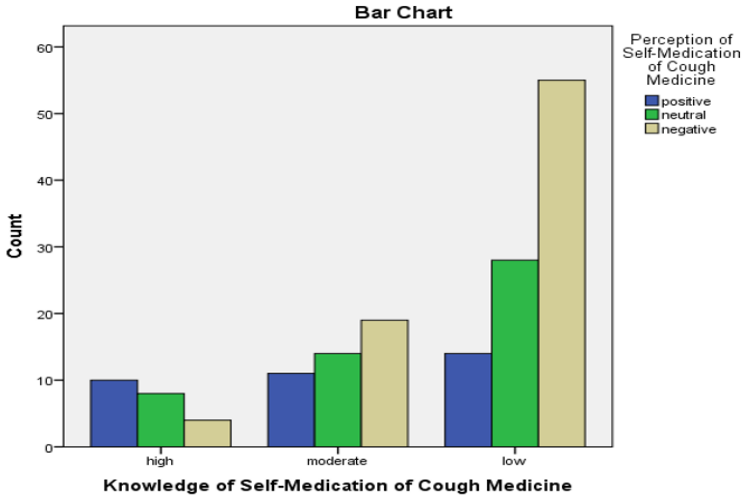

Fig.1. Bar chart visualizing the Knowledge and Perception of Self-Medication of Cough Medicine

close the expiratory muscles. And intrapleural and intra alveolar pressures rise rapidly to values as high as 300 mm Hg (40 Kpa). This phase occured when the glottis opens. The expiratory flow rate depended on the air leaving the central airway. It occured due to the result of high intrathoracic pressure and high alveolar pressure, expiratory muscle contraction occurs. the expulsion phase of the cough itself will last a long time depending on the ups and downs of the inhalation with a large volume or maybe due to the closure of the glottis to a number of expiratory flows, each flow has a pressure for the expulsion phase, what determines the occurrence of cough has not been specifically determined but it may depend on the origin of the cough, on various types of nerves from the receptors being activated or depending on the activation strength of the receptors,[22,23] and mucociliary transport was the main method for clearing the lumen of the respiratory tract in normal conditions but on coughing mucociliary transport clearance becomes obstructed, there was an increase in the amount of mucus secretion, coughing was also effective in clearing mucus hypersecretion, and the definition of dry cough itself was an unproductive cough that produces mucus.[51]

The choice of cough medicine was very important in cough medicine self-medication. Many respondents did not understand what therapy is appropriate for the treatment of cough with phlegm due to smoking (Table 3). Mucolytic was the treatment for patients with the aim of mucus secretion associated with conditions such as acute and chronic bronchopulmonary disorders (for example, pneumonia, bronchitis, lung, tracheobronchitis, chronic asthma bronchitis, tuberculosis, bronchiectasis, major amyloidosis of the lungs); atelectasis caused by a blockage of mucus. Examples of drugs that had mucolytic effects include acetylcysteine, bromhexine, ambroxol.[52,53] Antitussive or cough supressant was a cough medicine whose mechanism of action was to suppress cough. Antitussives alone can cause sputum retention and this may harm patients with a history of chronic bronchitis and bronchietasis. Examples of antitussive drugs themselves included codeine, pholcodine, Dextromethorpan Hbr, and noscapine.[31,54] Expectorants were drugs that can stimulate the release of phlegm from the airways, but there was no specific evidence that expectorants were able to stimulate expectoration in other words, only from empirical experience. Examples of drugs that had the effect of expectorants include Guaiaefenesin and Ammonium Chloride.[55]

According to WHO, self-medication was the selection and use of modern medicine, herbs, and traditional medicine by an individual to treat disease or symptoms. The meaning of self-medication was that the patient himself chooses over-the-counter medicine to treat his illness.[56] Medicines that can be used in self-medication were obat wajib apotek (OWA) or hard drugs that can be handed over by pharmacists to patients at pharmacies without a doctor's prescription, over-the-counter drugs, limited free drugs.[57] However, in its implementation self-medication can be a source of medication error. This occurs due to the patient's lack of knowledge about drugs and their diseases. Likewise, perceptual knowledge can shape decision-making patterns about drugs and illnesses suffered by patients.[58,59]

There were 3 factors that can influence the formation of a person's perception, including: targets and perceptions, the individual concerned, and the situation. The target of perception can be a person, object or event. These traits usually affect the perceptions of the viewer. Perception of targets was not something that was seen in theory but in relation to other people involved. This causes a person to tend to group people, objects, or similar events and separate them from other groups that were not similar.[60,61] When someone sees something and tries to provide an interpretation of what he sees, he will be influenced by individual characteristics such as attitudes, motives, interests, interests, experiences, knowledge, and expectations.[62,63] Perception must be viewed contextually which means the situation in which the perception arises, must

receive attention. Situation is a factor that plays a role in the process of forming one's perception.[64]

This study showed that there was a relationship between knowledge and perception of self-medicine of cough medicine. This was similar to the previous study by Yong et al.65 that with a correlation between knowledge and attitude scores showed a statistically significant positive linear relationship (rs = 0.290). The study provided some insights into the use of cough and cold medications in children from the parents' perspectives. The background of the selection of cough medicine by respondents was similar to the previous study by Lorensia et al.48 which showed that the use of self-medication cough medicine was one of the most common ways for active smokers to reduce the incidence of cough experienced. However, there were still many smokers who are wrong in choosing and using cough medicine because the knowledge that active smokers have on coughing is still inadequate. Research on the level of knowledge with the research subject was pedicab drivers was still very lacking, in Indonesia a similar study is identification of health knowledge of lung function in predicting respiratory disorders in smokers.[66]

The difficulty in research in measuring lung function was to prepare the respondent's condition for the ideal measurement, including:

a. Do not smoke 1 hour before the test in practice, but many respondents spend their spare time while waiting for passengers to smoke, so this can affect the measurement of lung function.[67] According to GOLD (2019)19 cigarette smoke is a major risk factor for respiratory diseases, especially COPD.
b. Not drinking alcoholic beverages 4 hours before the test. In the implementation, almost no respondents found that consumed alcohol.[68]
c. Not having a big meal 2 hours before the test. Most respondents ate breakfast at 7 to 8 and lunch 2 to 3. So interviews were conducted at 9 am to 2 pm to avoid large meals (eating rice and side dishes) so that the measurement results were function lung can be optimal.[69]
d. Not doing any strenuous activity 30 minutes before the test (running, riding a bicycle fast or playing ball). Interviews were conducted by asking the respondent whether there had been any orders to take passengers, to minimize the effect of strenuous activity that could affect the results of measuring lung function.[70]

Complementary diseases in respondents were quite difficult to identify, because most respondents rarely went to a doctor if they had health problems. History of disease Various diseases such as bronchial asthma, allergies, sinusitis, heart disease, osteoporosis, and muscuskeletal diseases can affect lung function.[71]

Several limitations were found in this study, such as: Data collection was carried out at the pedicab driver's base, where there is usually more than one pedicab driver. While conducting interviews, other becak drivers heard and saw the respondent being interviewed. So that it can affect the results of the interview because respondents will feel embarrassed if they cannot answer the questions posed by researchers. There was also a situation when the researcher conducted an interview with the respondent and other pedicab drivers participated in the answer so that it could influence the respondent's answer. Measurements of height and weight are not in accordance with the standards due to the limitations of the tools used and the limitations of the data collection area. Various influences during a pulmonary function test using a spirometric device, such as smoking, eating large meals, doing strenuous activities, wearing heavy clothing. Difficulty getting the same number of samples between respondents who do not experience lung function disorders and respondents who have impaired lung function.

5. Conclusion

Most respondents had low level of knowledge of self-medication of cough

medicine (97 of 163). The results of the peception of self-medication of cough medicine indicated that most respondents had negative level (78 of 163). There was relationship between knowledge and perception of self-medication of cough medicine. Therefore, the proper health education strategy from health workers (pharmacist) by improving by increasing knowledge can also improve perceptions of self-medicine of cough medicine.

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Knowledge and Perception of Self-Medication of Cough Medication in Pedicab Drivers in Surabaya

Amelia Lorensia, Rivan Virlando Suryadinata, Melly Eva Idamayanti, Gora Dirga Kusuma, Nyoman Yoga Diputra

Abstrak

Pedicab drivers who are exposed to pollution and have a smoking habit are at high risk of developing COPD (chronic obstructive pulmonary disease). The initial disturbance that occurs is a decrease in lung function which often causes complaints of cough symptoms. A person's knowledge and perception can influence how the pattern of self-medicating cough treatment so far. The purpose of this study was to determine the knowledge and perception of Self-medication of cough medicine. The research design was cross-sectional. The material of this research was in the form of information from subjects using direct questions and answers (interviews) with knowledge and perceptions of self-medicating cough medicine questionnaire. This research was conducted from September to December 2018 and used descriptive data analysis. The respondents involved were 163 peoples. Most respondents had a low level of knowledge of self-medication of cough medicine (97 of 163). The results of perception of self-medication of cough medicine indicated that most respondents had negative level (78 of 163). There was a relationship between knowledge and perception about self-medication of cough medicine (p=0.006). The proper health education strategy by increasing knowledge can also improve perceptions of self-medicine of cough medicine.

Kata Kunci

cough, knowledge, pedicab, perception, self-medication.

Teks Lengkap:

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Knowledge and Perception of Self-Medication of Cough Medication in Pedicab Drivers in Surabaya

by Amelia Lorensia

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Research Article

Knowledge and Perception of Self-Medication of Cough Medication in Pedicab Drivers in Surabaya

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Abstract

Pedicab drivers who are exposed to pollution and have a smoking habit are at high risk of developing COPD (chronic obstructive pulmonary disease). The initial disturbance that occurs is a decrease in lung function which often causes complaints of cough symptoms. A person's knowledge and perception can influence how the pattern of self-medicating cough treatment so far. The purpose of this study was to determine the knowledge and perception of Self-medication of cough medicine. The research design was cross-sectional. The material of this research was in the form of information from subjects using direct questions and answers (interviews) with knowledge and perceptions of self-medicating cough medicine questionnaire. This research was conducted from September to December 2018 and used descriptive data analysis. The respondents involved were 163 peoples. Most respondents had a low level of knowledge of self-medication of cough medicine (97 of 163). The results of perception of self-medication of cough medicine indicated that most respondents had negative level (78 of 163). There was a relationship between knowledge and perception about self-medication of cough medicine (p=0.006). The proper health education strategy by increasing knowledge can also improve perceptions of self-medicine of cough medicine.

Keywords: cough, knowledge, pedicab, perception, self-medication.

Pengetahuan dan Persepsi Pengobatan Batuk Sendiri pada Pengemudi Becak di Surabaya

Abstrak

Pengemudi becak yang terpapar polusi dan memiliki kebiasaan merokok berisiko tinggi terkena PPOK (penyakit paru obstruktif kronik). Gangguan awal yang terjadi adalah penurunan fungsi paru-paru yang seringkali menimbulkan keluhan gejala batuk. Pengetahuan dan persepsi seseorang dapat mempengaruhi bagaimana pola pengobatan sendiri pengobatan batuk selama ini. Tujuan penelitian ini adalah untuk mengetahui pengetahuan dan persepsi Pengobatan Batuk Sendiri. Desain penelitian cross-sectional. Materi penelitian ini berupa informasi dari subyek dengan menggunakan tanya jawab langsung (wawancara) dengan pengetahuan dan persepsi tentang kuisioner obat batuk mengobati sendiri. Penelitian ini dilakukan pada bulan September hingga Desember 2018 dan menggunakan analisis data deskriptif. Responden yang terlibat sebanyak 163 orang. Sebagian besar responden memiliki tingkat pengetahuan pengobatan batuk yang rendah (97 dari 163). Hasil persepsi pengobatan sendiri obat batuk menunjukkan bahwa sebagian besar responden adalah negatif (78 dari 163). Terdapat hubungan antara pengetahuan dengan persepsi mengenai swamedikasi obat batuk (p=0,006). Strategi pendidikan kesehatan yang tepat dengan meningkatkan pengetahuan juga dapat meningkatkan persepsi swamedikasi obat batuk.

Kata Kunci: batuk, becak, pengetahuan, persepsi, pengobatan sendiri.

1. Introduction

Surabaya is a metropolitan city with a very high traffic, so that transportation plays an important role in supporting the development of a city.[1] Becak is one of the means of public transportation used,[2] which is a three-wheeled vehicle, non-motorized, does not use fuel, and is affordable transportation for low-income groups.[3] Pedicab drivers are at high risk of health problems such as cardiovascular disease, respiratory problems, asthma, hypertension, and myocardial infarction.[4,5] Pedicab drivers spend most of their time on the streets, are exposed to pollution for a long time and eating irregularities,[6] also states that smoking is a social habit for pedicab drivers. Socioeconomic status greatly affects a person's status in society, internationally low socioeconomic status results in very high smoking rates among long-term unemployed, mentally ill, prisoners, homeless and some of them are new immigrant groups. Research conducted on the main causes of smoking is social inequality in society. In some areas, such as the southern European Union, socio-economic inequality is starting to emerge among women, and smoking rates are higher for those with lower socioeconomic status in most developed countries.[7,8,9] In another study by Reid et al.[10] also stated that socio-economic differences and education levels affect the level of success of a person to quit smoking.

Smoking is one of the risk factors for COPD,[11,12,13] and has a high prevalence as a cause of respiratory symptoms and pulmonary function disorders.[14] Pulmonary function disorders do not only occur in developed countries, but also in several developing and poor countries. According to WHO in 2000–2012, pulmonary dysfunction has become one of the third deadliest diseases for the past decade. Severe pulmonary function disorders such as COPD can pose a significant burden on a person at working age personally, economically, and socially, therefore further efforts are needed to improve the diagnosis of COPD and therapeutic management in order to obtain maximum results.[15] A smoker is a smoker who is active in smoking and is categorized into three, light smokers, namely people who smoke less than 10 cigarettes per day, moderate smokers are people who smoke 10-20 cigarettes per day, while heavy smokers are people who smoke more than 10 to 20 cigarettes per day. 20 cigarettes per day.[16]

There is a lot of information that smoking causes respiratory problems and other diseases, but few are aware that smoking effects can cause cough reflex sensitivity. Recent studies have shown that in smokers, cough reflex sensitivity is relatively reduced compared to non-smokers.[17,18] Coughing is one of the most common and observable symptoms of smoking. High frequency of cough in smokers because smoking causes almost all respiratory diseases that begin with coughing symptoms, can eventually lead to inflammation of the respiratory tract, mucus hypersecretion, and dysfunctional cilia.[19,20,21]

Coughing is a reflex of physiological defenses to protect the airways from aspiration, infection, or irritation. However, coughing becomes a disease when the reflex is irregular.[22,23] One of the most common complaints of cough patients and most cases of acute cough are <3 weeks in duration due to acute upper respiratory tract infection.24 Whereas chronic cough is a multifactorial syndrome that usually presents as cough hypersensitivity in adults, chronic cough is also a cause of significant morbidity, especially in terms of quality of life and daily activities.[25] Therefore, one way that can be used to treat cough symptoms is the use of drugs without a doctor's prescription or self-medication. Along with the times, the implementation of self-medication is increasingly being carried out by various circles of society, not only among academics. The Central Bureau of Statistics noted that in 2017 there were 69.43% of Indonesia's population underwent self-medication compared to 46.32% of the population seeking outpatient treatment. This figure increased from 2016 to as 63.77%.[26]

There are 35.2% of people in Indonesia who store medicines for self-medication purposes. Self-medication is an alternative chosen by the community to increase the affordability of treatment. In its

implementation, self-medication can be a source of errors in medication (medication error) due to limited public knowledge about drugs and their uses. One of the many drugs that are obtained without using a doctor's prescription or known as over the counter medicine is cough medicine.[27] Several previous studies have also stated that factors that can influence a person in self-medication are age, education level, family attitudes, advertisements for drug manufacturers, laws governing drug issuance and sale and previous experience with symptoms associated with illness,[28] as cited in research,[29] in a study in Tamil Nadu most students practiced self-medication because it saves time, whereas in Punjab, the most common reason for practicing self-medication is to save time. and faster. The use of self-medication also has safety risks, such as the use of cough medicines that are antitussive to cough with phlegm which can increase the risk of bacterial/viral infection.[24,30,31] Cough symptom in smokers that is often experienced is a cough with phlegm, which should receive mucolytic cough medicine therapy, because it can reduce the viscosity of excess mucus due to cilia damage.[32,33]

In addition to the risk of side effects, inappropriate cough medicine self-medication can affect the economic burden of a country. Self-medication has become the biggest socio-health and economic problem of various societies. Especially in developing countries, where more than 60–80% of health problems are associated with self-medication. In some developing countries, many drugs are available to the public without a prescription, and many people are self-medicating because of their lower costs than the cost of medical services. This is why in most developing countries, more than 60–80% of health problems are associated with self-medication.[34] And it turns out that not only in developing countries, but in developed countries also experience the same thing. In the UK, the cost of using cough medicine is estimated at £979 million, comprising £875 million for lost productivity and £104 million costs for the health care system and over-the-counter drug purchases.[24] There are many types of drugs used to treat cough symptoms depending on the type of cough and its cause. One that can be used in coughs that occur due to smoking is the mucolytic type. Smoking can cause mucus hypersecretion because cigarette substances damage the cilia cells in the throat. Mucolytic in this case works by reducing the viscosity of the mucus which is secreted excessively. Mucolytics are expected to reduce cough symptoms that occur in smokers.[35,36] Apart from mucolytics, other cough medicines that can also be used to treat cough are the antitussive and expectorant classes. Mucolytics and expectorants are cough medicines used for coughs with phlegm. While antitussives are used for coughs with phlegm (dry cough) and should not be used for coughs with phlegm, because they can increase the risk of infection by bacteria or viruses. Incompatible use of drugs can have adverse effects on health.[24,37]

Perception is the experience of an object, event or relationship obtained from inferring known information and interpreting it, giving meaning to the stimulus.[38,39] In other studies, it is also stated that the perception is that there is no need to visit/get advice on services from prescriptions for minor illnesses, self-medication is more economical and does not have to queue long at the clinic. Most of them have a positive attitude in self-medication for minor illnesses.[40] Perception is proven to significantly influence someone in self-medication in the selection of self-medication. Perception is closely related in reacting with certainty to make decisions in certain situations. Therefore, perception is considered a significant determinant of one's self-medication, where orientation, disposition, and inclination play an important role for a person in deciding on self-medication.[41]

Knowledge and perception are very important in order to regulate oneself from a disease in order to avoid the risk of getting a disease and the side effects of drug use.[42,43] The relationship between knowledge and perception is that perceptions are influenced by knowledge.[44] Therefore, a person's source

of information can influence knowledge which will influence him in making decisions.[45] With the development of technology in the world, especially in Indonesia, it is not difficult for people to find and find cough medicines in order to deal with coughs they experience due to smoking. In this regard, self-medication is an alternative that is taken by the community.[46]

Pedicab drivers as one of the occupations with high pollution exposure,[4,5,6] and socioeconomic conditions also affect lifestyle and nutritional intake,[7,8,9,10] were at high risk of decreased lung function which can lead to the risk of chronic lung disease. Mapping data on the level of knowledge and perceptions of pedicab drivers can help include health workers for health education strategies for pedicab drivers in improving the quality of life. The purpose research was to determine the relationship between knowledge and perception of self-medication of cough medication in pedicab drivers in Surabaya.

2. Materials and Methods

The research design was cross-sectional. The material of this research was in the form of information from subjects using direct questions and answers (interviews) with the respondents. The independent variable was knowledge and perceptions of self-medicating cough medicine in pedicab drivers. Pedicab was a three-wheeled vehicle, was not motorized, does not use fuel and is an affordable transportation for low-income groups.[3] The research location used in this research was the base of pedicab drivers on st. Mayjend Prof. Dr. Moestopo Airlangga, Rungkut Baru Market, Bratangjaya Terminal, and Jagir Wonokromo, Surabaya. This research was conducted from September to December 2018, with ethical tests that have been conducted and get no. 026/KE/VI/2018 at University of Surabaya.

2.1. Knowledge of Self-medication of Cough Medicine

Isoniazid (Amsal Chem, India), HPMCP HP 50Knowledge of self-medicated was the respondent's knowledge of self-medication that was obtained without a doctor's prescription or professional advice.[46] In this study, what was meant by knowledge in respondent (smoker) which includes:

a. **Knowledge of cough.** Respondents' knowledge of the nature/type of cough they suffer, the frequency of coughing, and the causes of coughing were related to the respondent's smoking habits.
b. **Knowledge of self-medicated of cough medicines.** Respondents' knowledge of the types of cough medicines for self-medication, indications, side effects, contra-indications, dosages, duration of use, and individual effects that occurred on respondents when using these self-medicated cough medicines.

2.2. Perceptions of Self-medication of Cough Medicine

The perceptual process was that individuals are aware of, for example, what was seen, or what was heard, or what was felt, namely the stimulus received through the sense organs. This process was the final process of perception and was the real perception. The response as result of perception can be taken by individuals in various forms.47 In this research, what is meant by perception is the opinion or view of the respondent regarding the following matters:

a. **Perception of cough**. This aspect relates to the respondent's personal opinion about the cough they experience, limited activity due to the cough they are experiencing, actions taken to overcome the cough.
b. **Perception of self-medicated of cough medicines.** This aspect is related to the respondents' personal opinions regarding the use of self-medicated cough medicines which include the reasons for choosing a self-medicated cough medicine profile and the benefits obtained by the respondent after using the cough medicine.

2.3. Lung Function Disorders

Pulmonary function was the ability of the lungs to enter air to remove air from the

lungs. A pulmonary function test was a test when you breathe in to find out how well a person was getting in air and expelling air from the lungs. The tool used was spirometry. The results of pulmonary function (FEV1) that were not affected were >70% and the pulmonary function that was affected was <0.70%.19 The pulmonary function of the respondents was tested using the spirometric method. In this study, a validated handheld spirometer was used with the brand Contec Handheld SP10 Spirometer. When using a handheld spirometer, age, gender, weight and height were included, and whether or not smokers were smokers. Check with a spirometer can be done 3 times or more to get more accurate results.

2.4. Population and Sample

The population used in this study was an affordable population, namely builders who are currently working on a project or are active in the East Surabaya area. The sample (subject) was the part of the population that meets the criteria, namely: male, has impaired lung function (FEV1/FVC=<0.70%), 18-60 years old, had been a pedicab driver for at least 5 years,4 did not have chronic lung disease (such as: COPD, tuberculosis, asthma, lung cancer), and has disease. others that can affect lung function, such as heart disease, chronic kidney disease. The number of samples taken in this study uses a formula with an unknown or infinite population, namely:

$$\mathbf{n = (Z^2_{1-\alpha/2} P(1-P))/(d^2)}$$

N : Number of samples

$Z^2_{1-\alpha/2}$: Standard normal value (if α = 0.05 then Z = 1.960)

P (1-P) : Estimated population proportion (if P = 0.5 then P (1-P) = 0.25)

d2 : Deviation tolerant (10%)

So the minimum number of samples needed in this study was 62 respondents. The samples were collected using purposive sampling and consecutive sampling.

2.5. Data Collection Methods and Data Analysis

The questionnaire on knowledge and perceptions of cough medicine self-medication was derived from previous studies by Lorensia et al.48 Data on knowledge and perceptions of drug self-medication will be presented descriptively. Knowledge and perception data will be analyzed by chi-square test to find out the relationship between the two variables.

3. Result

3.1. Preliminary Study

The preliminary study was carried out at Soponyono Market, while the Gubeng Terminal was not used because the number of pedicab drivers there was very small and the working time was very tight so that the researchers had difficulty conducting interview sessions. In this preliminary study, 30 respondents who met the inclusion and exclusion requirements were selected, then informed consent was given to ask for the respondent's consent and also filled in demographic data, after the respondents agreed, then the interview process was carried out.

3.2. Questionnaire Validation

The validity test was conducted on 30 people. The validity value test was analyzed with the CITC (Corrected Item-Total Correlation) value. In Knowledge of Self-medication of Cough Medicine questionnaire, with a value of r_{table}=0.361, it was obtained from the product moment table with a significant level of 5%. The value of r_{count} (no.1-10) was >0.361, so the questionnaire was declared valid. The reliability test was declared reliable if the Cronbach Alfa value was ≥0.6. The Cronbach Alfa value was 0.748 which was >0.60 so that the variable was said to be reliable. In Perceptions of Self-medication of Cough Medicine questionnaire questionnaire, with a value of r_{table}=0.361 obtained from the product moment table with a significant level of 5%. The value of r_{count} (no.1-8) was >0.361, so the questionnaire was declared valid. The reliability test was declared reliable if the Cronbach Alfa value was ≥0.6. The Cronbach Alfa value was 0.684 which was >0.60 so that the variable was said to be reliable (Table 1).

Table 1. Result of Validation of Knowledge and Perception of Self-Medication of Cough Medicine Questionnaire

Questionaire	No	Dimensions	Question Item	Validation Tests			Reliability Tests
				r_{value}	r_{table}	conclusion	Alpha cronbach's
Knowledge of Self-Medication of Cough Medicine	1	Definition of cough	Coughing is not a disease but a symptom of a disease	0.799	0.361	valid	0.748
	2	Cause of cough	In normal circumstances (not sick) cough can occur because of a foreign object that enters the respiratory tract	0.578	0.361	valid	
	3	Cause of cough	Dust and air pollution including cigarette smoke and motor vehicle fumes and consuming certain drugs are factors that can cause coughing.	0.468	0.361	valid	
	4	Type of cough	A cough that is accompanied by mucus or mucus is known as a cough with phlegm.	0.720	0.361	valid	
	5	Scope of self-medication	Self-medicated cough medicine is an over-the-counter cough medicine with a green circle sign and a limited-free group with a blue circle	0.715	0.361	valid	
	6	Medicine purpose	Cough medicine has two main functions, namely as a symptomatic drug (functions to relieve symptoms) and a causative drug (serves to cure disease).	0.478	0.361	valid	
	7	How to use the medicine	In consuming self-medicated cough medicine, you must follow the instructions for use contained in the packaging label and the medicine can be used in only 14 days.	0.432	0.361	valid	
	8	How to use the medicine	If there is a statement regarding cough medicine as follows: "2x1 tablet a day after meals". So this statement means, cough medicine is taken twice a day in the morning and during the day.	0.592	0.361	valid	
	9	Definition of self-medication	Self-medication is the activity of selecting and using drugs without using a doctor's prescription on one's own initiative to treat a sick condition in the body.	0.720	0.361	valid	
	10	Definition of self-medication	Self-medication is a form of service that provides and prepares drugs needed by a patient as well as providing consultation, information, and education for patients in the use of free and limited drugs.	0.646	0.361	valid	
Perception of Self-Medication of Cough Medicine	1	Cause of cough	The more often you smoke, the more frequent you cough.	0.464	0.361	valid	0.684
	2	Type of cough	A cough that is often experienced by smokers is a cough with phlegm.	0.428	0.361	valid	
	3	Medicine purpose	If the cough does not go away or even gets worse, then the first treatment to overcome it is to go to a pharmacy to consult a pharmacist and not a doctor	0.452	0.361	valid	
	4	Medicine purpose	The cough medicine used only relieves cough symptoms.	0.468	0.361	valid	
	5	Drug costs	Your main focus in choosing the cough medicine that you use is the affordable price of the medicine	0.567	0.361	valid	
	6	Drug recommendations	In using cough medicine, your main basis for choosing the drug is because of a recommendation from family or closest friends, not from a pharmacist or doctor.	0.646	0.361	valid	
	7	Drug information	Before starting to take the cough medicine, you always first read the instructions for the rules of use contained in the drug packaging label regarding dosage, duration of use, and how to use it, then you follow the recommendations contained in these instructions.	0.592	0.361	valid	
	8	The role of health workers	You fully understand the directions for the instructions for use on the cough medicine packaging label, without first asking the pharmacist or doctor	0.357	0.361	valid	

3.3. Subject Characteristics

Respondent category was seen from age and level of lung function disorder. Most of the respondent were in the range of 46-55 years (early elderly). There was a decrease in lung function at the age of 40 years and over which can affect the results of lung function measurements.49 From the data of respondents with lung function disorders, the average spirometric value obtained was 54.74% ± 12.44 with the highest value of 78% and the lowest value of 25.3% (Table 2).

3.4. Knowledge of Self-Medication of Cough Medicine

The dimensions of the questionnaire were definition of cough (1), cause of cough (2), type of cough (1), scope of self-medication (1), medicine purpose (1), how to use the medicine (2), and definition of self-medication (2). Respondents' answers were divided into: true, false, and do not know, as in Table 3. Assessment of classification of the knowledge was divided into 3, namely: high (correct answers: >70%), moderate (correct answers: 50-70%), and low (correct answers: <50%). The results of the classification of the questionnaire indicated that most respondents had low level of knowledge (97 of 163), followed by moderate (44 of 163) and high (22 of 163).

3.5. Perception of Self-Medication of Cough Medicine

The profile of answers to perceptions of cough medicine medicine can be seen in Table 4. Assessment of classification of the perception was divided into 3, namely: positive (correct answers: >70%), neutral (correct answers: 50-70%), and negative (correct answers: <50%). The results of the peception of the questionnaire indicated

Table 2. Subject Characteristics

Characteristics		Number of Respondents (n: 163)	
		Frequency	Percentage (%)
Age (years)	Late adulthood (36-45)	43	22.69
	Early elderly (46-55)	86	53.37
	Late elderly (56-65)	34	23.92
Comorbidities (from doctor's diagnosis)	Diabetes mellitus type 2	10	6.13
	Hypertension	5	3.07
	Diabetes mellitus type 2 + Hypertension	15	9.20
	Hyperuricemia	3	1.84
	No co-morbidities	130	79.75
Smoking severity[16]	Light smoker (<10 cigarettes per day)	75	46.01
	Moderate smokers (10-20 cigarettes per day)	57	34.97
	Heavy smokers (>20 cigarettes per day)	31	19.02
Level of education	No school	85	52.15
	Elementary school graduate	63	38.65
	High school graduate	15	9.20
Long time working as a pedicab driver (years)	<5	13	7.86
	5-10	88	53.90
	10-15	40	24.54
	15-20	17	10.43
	>20	5	3.07
Spirometry value [19]	Mild (60-80%)	67	41.10
	Moderate (30-59%)	92	56.44
	Severe (30-59%)	4	2.45

Table 3. Frequency Distribution of Knowledge of Self-Medication of Cough Medicine

No	Dimensions	Question Item	Number of Respondents (n: 163)					
			Answer TRUE		Answer WRONG		Answer DO NOT KNOW	
			Freq	Percentage (%)	Freq	Percentage (%)	Freq	Percentage (%)
1	Definition of cough	Coughing is not a disease but a symptom of a disease	70	42.94	36	22.09	57	34.97
2	Cause of cough	In normal circumstances (not sick) cough can occur because of a foreign object that enters the respiratory tract	68	41.72	14	8.59	81	49.69
3	Cause of cough	Dust and air pollution including cigarette smoke and motor vehicle fumes and consuming certain drugs are factors that can cause coughing.	76	46.63	10	6.13	77	47.24
4	Type of cough	A cough that is accompanied by mucus or mucus is known as a cough with phlegm.	70	42.94	10	6.13	83	50.92
5	Scope of self-medication	Self-medicated cough medicine is an over-the-counter cough medicine with a green circle sign and a limited-free group with a blue circle	35	21.47	11	6.75	117	71.78
6	Medicine purpose	Cough medicine has two main functions, namely as a symptomatic drug (functions to relieve symptoms) and a causative drug (serves to cure disease).	56	34.36	15	9.20	92	56.44
7	How to use the medicine	In consuming self-medicated cough medicine, you must follow the instructions for use contained in the packaging label and the medicine can be used in only 14 days.	42	25.77	22	13.50	99	60.74
8	How to use the medicine	If there is a statement regarding cough medicine as follows: "2x1 tablet a day after meals". So this statement means, cough medicine is taken twice a day in the morning and during the day.	59	36.20	24	14.72	80	49.08
9	Definition of self-medication	Self-medication is the activity of selecting and using drugs without using a doctor's prescription on one's own initiative to treat a sick condition in the body.	57	34.97	14	8.59	92	56.44
10	Definition of self-medication	Self-medication is a form of service that provides and prepares drugs needed by a patient as well as providing consultation, information, and education for patients in the use of free and limited drugs.	45	27.61	11	6.75	107	65.64

Table 4. Frequency Distribution of Perception of Self-Medication of Cough Medicine

No	Question Item	Number of Respondents (n: 163)			
		Answer AGREE	Percentage (%)	Answer DISAGREE	Percentage (%)
1	The more often you smoke, the more frequent you cough	125	76.68	38	23.31
2	A cough that is often experienced by smokers is a cough with phlegm	46	28.22	117	71.77
3	If the cough does not go away or even gets worse, then the first treatment to overcome it is to go to a pharmacy to consult a pharmacist and not a doctor	107	65.64	56	34.36
4	The cough medicine used only relieves cough symptoms	97	589.51	66	40.50
5	Your main focus in choosing the cough medicine that you use is the affordable price of the medicine	34	20.86	129	79.14
6	In using cough medicine, your main basis for choosing the drug is because of a recommendation from family or closest friends, not from a pharmacist or doctor	123	75.46	40	24.54
7	Before starting to take the cough medicine, you always first read the instructions for the rules of use contained in the drug packaging label regarding dosage, duration of use, and how to use it, then you follow the recommendations contained in these instructions	46	28.22	117	71.77
8	You fully understand the directions for the instructions for use on the cough medicine packaging label, without first asking the pharmacist or doctor	45	27.60	118	72.39

that most respondents had negative level of perception (78 of 163), followed by neutral (50 of 163) and positive (35 of 163).

3.6. Chi Square Test of Knowledge and Perception of Self-Medication of Cough Medicine

Table 5 and Figure 1, showed that most of the respondents had low level of knowledge and negative level of perception of self-medication of cough medicine. The results of the chi-square test analysis on the level of knowledge and perception of self-medication of cough medicine showed P value= 0.006 (<0.05) which mean that there was relationship between knowledge and perception of self-medication of cough medicine.

4. Discussion

Most of the respondents correctly answered the definition of cough, but they did not understand the causes of cough itself (Table 3). Coughing was one way to clear the respiratory tract from mucus or foreign materials and objects that enter as a defense reflex that arises from tracheobronchial irritation.[22] Coughing was an effort to defend the lungs against various existing stimuli and physiological reflexes that protect the lungs from mechanical, chemical and temperature trauma. Coughing become pathological when it is felt as a nuisance. Such a cough was often a sign of a disease inside or outside the lungs and sometimes an early symptom of an illness. Cough was the most common symptom of respiratory disease and a problem that doctors often face in their daily practice.[22] Productive cough was a cough that produces phlegm or mucus (sputum) so it was better known as a cough with phlegm. A productive cough was characterized by a full and sound chest. Those who experience a productive cough generally had difficulty breathing and are accompanied by expulsion of phlegm. Productive cough should not be treated with cough suppressants because more and more mucus will collect in the lungs.[31,50]

In the cough phase which lasts for about 200ms, the glottis was able to temporarily

Table 5. Chi-Square Test of Knowledge and Perception of Self-Medication of Cough Medicine

Knowledge of Self-Medication of Cough Medicine	Perception of Self-Medication of Cough Medicine			Total
	Positive	Neutral	Negative	
High	10	8	4	22
Moderate	11	14	19	44
Low	14	28	55	97
Total	35	50	78	

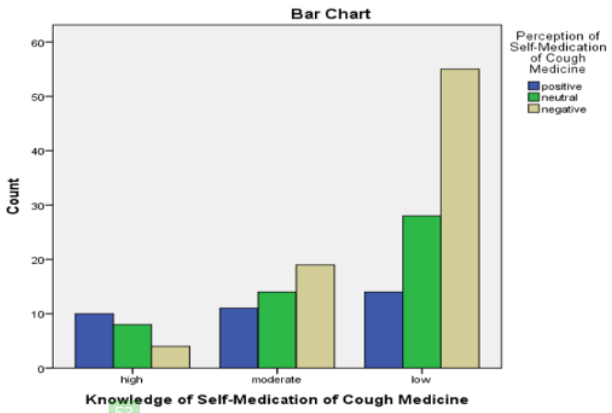

Fig.1. Bar chart visualizing the Knowledge and Perception of Self-Medication of Cough Medicine

close the expiratory muscles. And intrapleural and intra alveolar pressures rise rapidly to values as high as 300 mm Hg (40 Kpa). This phase occured when the glottis opens. The expiratory flow rate depended on the air leaving the central airway. It occured due to the result of high intrathoracic pressure and high alveolar pressure, expiratory muscle contraction occurs. the expulsion phase of the cough itself will last a long time depending on the ups and downs of the inhalation with a large volume or maybe due to the closure of the glottis to a number of expiratory flows, each flow has a pressure for the expulsion phase, what determines the occurrence of cough has not been specifically determined but it may depend on the origin of the cough, on various types of nerves from the receptors being activated or depending on the activation strength of the receptors,[22,23] and mucociliary transport was the main method for clearing the lumen of the respiratory tract in normal conditions but on coughing mucociliary transport clearance becomes obstructed, there was an increase in the amount of mucus secretion, coughing was also effective in clearing mucus hypersecretion, and the definition of dry cough itself was an unproductive cough that produces mucus.[51]

The choice of cough medicine was very important in cough medicine self-medication. Many respondents did not understand what therapy is appropriate for the treatment of cough with phlegm due to smoking (Table 3). Mucolytic was the treatment for patients with the aim of mucus secretion associated with conditions such as acute and chronic bronchopulmonary disorders (for example, pneumonia, bronchitis, lung, tracheobronchitis, chronic asthma bronchitis, tuberculosis, bronchiectasis, major amyloidosis of the lungs); atelectasis caused by a blockage of mucus. Examples of drugs that had mucolytic effects include acetylcysteine, bromhexine, ambroxol.[52,53] Antitussive or cough supressant was a cough medicine whose mechanism of action was to suppress cough. Antitussives alone can cause sputum retention and this may harm patients with a history of chronic bronchitis and bronchietasis. Examples of antitussive drugs themselves included codeine, pholcodine, Dextromethorpan Hbr, and noscapine.[31,54] Expectorants were drugs that can stimulate the release of phlegm from the airways, but there was no specific evidence that expectorants were able to stimulate expectoration in other words, only from empirical experience. Examples of drugs that had the effect of expectorants include Guaiaefenesin and Ammonium Chloride.[55]

According to WHO, self-medication was the selection and use of modern medicine, herbs, and traditional medicine by an individual to treat disease or symptoms. The meaning of self-medication was that the patient himself chooses over-the-counter medicine to treat his illness.[56] Medicines that can be used in self-medication were obat wajib apotek (OWA) or hard drugs that can be handed over by pharmacists to patients at pharmacies without a doctor's prescription, over-the-counter drugs, limited free drugs.[57] However, in its implementation self-medication can be a source of medication error. This occurs due to the patient's lack of knowledge about drugs and their diseases. Likewise, perceptual knowledge can shape decision-making patterns about drugs and illnesses suffered by patients.[58,59]

There were 3 factors that can influence the formation of a person's perception, including: targets and perceptions, the individual concerned, and the situation. The target of perception can be a person, object or event. These traits usually affect the perceptions of the viewer. Perception of targets was not something that was seen in theory but in relation to other people involved. This causes a person to tend to group people, objects, or similar events and separate them from other groups that were not similar.[60,61] When someone sees something and tries to provide an interpretation of what he sees, he will be influenced by individual characteristics such as attitudes, motives, interests, interests, experiences, knowledge, and expectations.[62,63] Perception must be viewed contextually which means the situation in which the perception arises, must

receive attention. Situation is a factor that plays a role in the process of forming one's perception.[64]

This study showed that there was a relationship between knowledge and perception of self-medicine of cough medicine. This was similar to the previous study by Yong et al.65 that with a correlation between knowledge and attitude scores showed a statistically significant positive linear relationship (rs = 0.290). The study provided some insights into the use of cough and cold medications in children from the parents' perspectives. The background of the selection of cough medicine by respondents was similar to the previous study by Lorensia et al.48 which showed that the use of self-medication cough medicine was one of the most common ways for active smokers to reduce the incidence of cough experienced. However, there were still many smokers who are wrong in choosing and using cough medicine because the knowledge that active smokers have on coughing is still inadequate. Research on the level of knowledge with the research subject was pedicab drivers was still very lacking, in Indonesia a similar study is identification of health knowledge of lung function in predicting respiratory disorders in smokers.[66]

The difficulty in research in measuring lung function was to prepare the respondent's condition for the ideal measurement, including:

a. Do not smoke 1 hour before the test in practice, but many respondents spend their spare time while waiting for passengers to smoke, so this can affect the measurement of lung function.[67] According to GOLD (2019)19 cigarette smoke is a major risk factor for respiratory diseases, especially COPD.
b. Not drinking alcoholic beverages 4 hours before the test. In the implementation, almost no respondents found that consumed alcohol.[68]
c. Not having a big meal 2 hours before the test. Most respondents ate breakfast at 7 to 8 and lunch 2 to 3. So interviews were conducted at 9 am to 2 pm to avoid large meals (eating rice and side dishes) so that the measurement results were function lung can be optimal.[69]
d. Not doing any strenuous activity 30 minutes before the test (running, riding a bicycle fast or playing ball). Interviews were conducted by asking the respondent whether there had been any orders to take passengers, to minimize the effect of strenuous activity that could affect the results of measuring lung function.[70]

Complementary diseases in respondents were quite difficult to identify, because most respondents rarely went to a doctor if they had health problems. History of disease Various diseases such as bronchial asthma, allergies, sinusitis, heart disease, osteoporosis, and muscuskeletal diseases can affect lung function.[71]

Several limitations were found in this study, such as: Data collection was carried out at the pedicab driver's base, where there is usually more than one pedicab driver. While conducting interviews, other becak drivers heard and saw the respondent being interviewed. So that it can affect the results of the interview because respondents will feel embarrassed if they cannot answer the questions posed by researchers. There was also a situation when the researcher conducted an interview with the respondent and other pedicab drivers participated in the answer so that it could influence the respondent's answer. Measurements of height and weight are not in accordance with the standards due to the limitations of the tools used and the limitations of the data collection area. Various influences during a pulmonary function test using a spirometric device, such as smoking, eating large meals, doing strenuous activities, wearing heavy clothing. Difficulty getting the same number of samples between respondents who do not experience lung function disorders and respondents who have impaired lung function.

5. Conclusion

Most respondents had low level of knowledge of self-medication of cough

medicine (97 of 163). The results of the peception of self-medication of cough medicine indicated that most respondents had negative level (78 of 163). There was relationship between knowledge and perception of self-medication of cough medicine. Therefore, the proper health education strategy from health workers (pharmacist) by improving by increasing knowledge can also improve perceptions of self-medicine of cough medicine.

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