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PERCEPTIONS CRITERIA OF QUALITY SUBSTANDARD AND FALSIFIED MEDICINE FROM DOCTOR, PHARMACIST AND PATIENT

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ABSTRACT

Background: Indonesia is not free from the circulation of substandards and counterfeit drugs. Perception is one of the psychological factors that play a role in shaping a person's behavior. Knowing the perceptions of doctors, pharmacists, and patients regarding the quality criteria of drugs that do not meet standards and counterfeit drugs in hospitals, pharmacies, health centers, and clinics in DKI Jakarta Province. **Objectives:** Knowing the perceptions of doctors, pharmacists, and patients regarding the quality criteria of drugs that do not meet standards and counterfeit drugs in hospitals, pharmacies, health centers, and clinics in DKI Jakarta Province. **Methods:** The method in this study uses a mixed-methods method with an explanatory sequential research design. Respondents in this study were patients, pharmacists, and doctors, each 100 who met the inclusion criteria and were spread across pharmacies, clinics, hospitals, and health centers in DKI Jakarta. The sampling technique for quantitative research is cluster random sampling, and qualitative research is purposive sampling. The quantitative research instrument is a questionnaire, and qualitative research is an interview guideline sheet. Quantitative statistical analysis is to see the relationship between characteristic factors and perceptions of substandards and counterfeit drugs using the chi-square test and to see the influence and dominant factors of characteristic factors on perceptions of substandards and counterfeit drugs using the logistic regression test. **Results:** In patients, there is a significant relationship with p-value < alpha value (0.10), namely accepting Ha1 is knowledge and experience on drugs that do not meet standards and on fake drugs is knowledge and information. In doctors, there is a

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significant relationship with p-value < alpha value (0.10), namely accepting Ha1 is age, knowledge, and information on drugs that do not meet standards and on fake drugs is education and information. In pharmacists, there is a significant relationship with p-value < alpha value (0.10), namely accepting Ha1 is experience and information on drugs that do not meet standards and on fake drugs is age, gender, experience, and information. In doctors is knowledge, information, and education. In pharmacists is knowledge, experience, and information. The dominant factor that has the greatest influence significantly seen from the highest Exp (B) / OR value, namely accepting the Ha3 hypothesis in patients is knowledge, doctors are information, and pharmacists are information. The criteria for drugs that do not meet standards (substandard) are from factors of physical damage to drugs, damage to drug packaging, circulation in channels without the supervision of doctors and pharmacists, doubts about the efficacy of drugs, identification of the chemical content of drugs, and cheap drug prices, and the criteria for fake drugs are from factors of physical identification of fake drugs, identification of counterfeit drug packaging, circulation in channels without the supervision of doctors and pharmacists, no cure, identification of fake drug content, cheap drug prices, and identification of drug legality. **Conclusion:** The perception of substandard and counterfeit drugs among patients, doctors, and pharmacists is significantly influenced by knowledge, experience, information, and demographic factors. The dominant factor affecting perceptions differs among groups, with knowledge being the most influential for patients, while information plays a major role for doctors and pharmacists.

INTRODUCTION (CHAPTER)

Perception is one of the psychological factors that plays a role in shaping a person's behavior. If there is a perception of an object, event or thing, an action will be taken by the person who perceives it. The actions to be taken are based on a person's positive and negative perceptions of the perceived object (Andi Sudarsono, 2016). With the discovery of many drugs that do not meet standards/substandards and counterfeit drugs in Indonesia, it is necessary to conduct research on how individuals, both patients and health workers have a perception regarding the criteria for substandards and falsified medicine. There are several studies related to the perception of drugs that do not meet standards (substandard) and fake drugs (falsified) that have been carried out in several countries such as Sudan, Egypt, and the United States. In India, according to Anop Nagoraj, doctors' perceptions regarding counterfeit medicines are based on factors of knowledge, attitude and experience (Nagaraj et al., 2015). According to Alfadl, in looking at

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pharmacists' perceptions regarding drugs that do not meet standards (substandard) and fake drugs (falsified) in Sudan, it is influenced by 8 factors, namely drug regulations, drug markets, drug price vulnerability, drug price-quality factors, drug purchasing awareness, views subjective, consumer characteristics and drug knowledge (Alfadl et al., 2013). According to Bashir Amira, pharmacists' perception of substandards medicine and falsified medicine in Egypt is influenced by 6 factors, namely inadequate regulations, inadequate inspections, high drug margins, awareness of drug quality, lack of drug stock. and inadequate licensing (Bashir et al., 2020). According to Sylvester Senyo Ofori-Parku, patient perceptions in the United States regarding substandard and counterfeit drugs are influenced by drug knowledge, subjective attitudes and norms, risk and purchase intentions (Ofori-Parku & Park, 2022). Several studies regarding the identification criteria for drugs that do not meet standards (substandard) and counterfeit drugs have been carried out in European, Asian, African, American and Middle Eastern countries. According to Hauk, C, Hagen, N. and Heide, L, to see substandard medicines is in terms of packaging and chemical content and for fake drugs, look at the authenticity of the drug (Hauk et al., 2021). According to El Dahiyat, looking for substandard medicine includes physical evaluation, drug labels and for fake drugs looking at the packaging design (El-Dahiyat et al., 2021). From several studies it can be concluded that there is a gap regarding the perceptions of doctors, pharmacists and patients in seeing substandard medicines and falsified medicines and there has also been research regarding the identification criteria for substandards and falsified medicine which is carried out in European, Asian, African, American and Middle Eastern countries. From several studies, it can be concluded that there is a gap regarding the perceptions of doctors, pharmacists and patients in seeing substandard and falsified medicine.

METHOD

1. MATERIALS

The materials used in this research were respondents, namely doctors, pharmacists and patients from pharmacies, hospitals, clinics and health centers in the DKI Jakarta province.

2. TOOLS

The tool in this research is in quantitatives methods is a written interview sheet (questionnaire) and in qualitatives is a interview sheet.

3. METHODS

The method in this research uses a mix methods with an explanatory sequential research design, which is a combination of quantitative methods as the first stage and qualitative methods as the second stage to be used together in a research so that the data obtained is more comprehensive, valid, reliable and objective. In this research design, the researcher collects and analyzes quantitative data first (first phase), then followed by data collection and qualitative data analysis in the second phase which aims to strengthen the quantitative results in the first phase, and then method triangulation is carried out (Sugiyono, 2018). Materials used in this research were respondents, namely doctors, pharmacists and patients from pharmacies, hospitals, clinics and health centers in the DKI Jakarta province. The tool used in quantitatives methods is a written interview sheet (questionnaire) and in qualitatives is a interview sheet.

RESULT

Quantitative Results

Univariat Analyse

From tables 1 Characteristic of Respondent Data, researchers obtained data that the demographic characteristics in terms of age, gender, employment status of respondents for patients, pharmacists and doctors were adults, the majority were female and had jobs. The

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differences in demographic characteristics of respondents will certainly affect their perceptions. The results of this study are in line with Alfadl in seeing perceptions related to substandard medicine and falsified medicine in Sudan are influenced by 8 factors, namely drug regulations, drug markets, drug price vulnerability, drug price-quality factors, drug purchase awareness, subjective views, consumer characteristics and drug knowledge (Alfadl et al., 2013). In addition, factors that influence perceptions of health services including drug services are from age, gender, education level, type of work, socio-economic, cultural, environmental, personality and life experience (Nasir et al., 2023).

Tabel 1. Characteristic of Respondent Data

Variabel	Responden (n)		
	Patient	Pharmacist	Doctor
Age			
1. Mature Young (18-23 tahun)	16	17	0
2. Mature (24-59 tahun)	49	70	73
3. Old (60-74 tahun)	35	13	27
Gender			
1. Man	28	27	40
2. Female	72	73	60
Education Patient			
1. Low (-/SD)	1		
2. Middle (SMP-SMA	47		
3. High (D3-S3)	52		
Education Doctor			
1. General Doctor			73
2. Subspesialis Doctor			27
Education Pharmacists			
1. Pharmacist		69	
2. Pharmacist master		31	
Education Patient			
1. Working	75		
2. Not working	25		

From Tabel 2. Characteristics of respondents' knowledge, experience and information Data, researchers obtained data that the characteristics of knowledge, experience and information of respondents for patients, pharmacists and doctors are knowledge in the category of quite good, experience in the category of less and information in the category of good. This shows that in official health facilities pharmacies, clinics, hospitals and health centers for respondents both patients, pharmacists and doctors do not have experience with drugs that do not meet standards (substandard) and fake drugs, information about drugs that do not meet standards (substandard) and fake drugs that are owned is good and knowledge about substandard medicine and falsified drugs that are owned is also sufficient and good.

Tabel 2. Characteristics of respondents' knowledge, experience and information Data

Variabel	Responden (n)		
	Patient	Pharmacist	Doctor
Education Substandard Medicine			
1 .Good (≥76-100 %)	19	48	45

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2. Enough (56- 75 %)	53	45	50
3. Poor (≤ 55 %)	28	7	5
Education Falsified Medicine			
1 .Good (≥76-100 %)	12	46	42
2. Enough (56- 75 %)	54	40	45
3. Poor (≤ 55 %)	34	14	13
Information Substandard Medicine			
1. Good (74-100 %)	73	65	79
2. Enough (47-73%)	17	30	11
3. Poor (≤ 46%)	10	5	10
Information Falsified Medicine			
1. Good (74-100 %)	78	85	88
2. Enough (47-73%)	15	10	10
3. Poor (≤ 46%)	7	5	2
Experience Substandard Medicine			
1. Good (74-100 %)	2	1	2
2. Enough (47-73%)	2	2	1
3. Poor (≤ 46%)	96	97	97
Experience Falsified Medicine			
1. Good (74-100 %)	3	1	1
2. Enough (47-73%)	2	1	2
3. Poor (≤ 46%)	95	98	97

RESULTS AND DISCUSSION

They should be combined. The study results should be clear and concise. Restrict the use of tables and figures to depict data that is essential to the message and interpretation of the study. The results should be presented in a logical sequence in the text, tables and illustrations. The part of result exposes the findings obtained from research data which is related to the hypotheses. The results should summarize (scientific) findings rather than providing data in great detail. The discussion should explore the significance of the results of the work. Explains the findings obtained from research data along with theory and similar research comparison. Make the discussion corresponding to the results, but do not reiterate the results. The following components should be covered in discussion: How do your results relate to the original question or objectives outlined in the Introduction section (what/how)? Do you provide interpretation scientifically for each of your results or findings presented (why)? Are your results consistent with what other investigators have reported (what else)? Or are there any differences?. Include in the discussion the implications of the findings and their limitations, how the findings fit into the context of other relevant work, and directions for future research.

RESULTS AND DISCUSSION 2

They should be combined. The study results should be clear and concise. Restrict the use of tables and figures to depict data that is essential to the message and interpretation of the study. The results should be presented in a logical sequence in the text, tables and illustrations. The part of result exposes the findings obtained from research data which is related to the hypotheses. The results should summarize (scientific) findings rather than providing data in great detail. The discussion should explore the significance of the results of the work. Explains the findings obtained from research data along with theory and similar research comparison. Make the discussion corresponding to the results, but do not reiterate the results. The following components should be covered in discussion: How do your results relate to the original question or objectives outlined in the Introduction section (what/how)? Do you provide interpretation scientifically for each of your results or findings presented (why)? Are your results consistent with what other investigators have reported (what else)? Or are there any differences?. Include in the discussion the

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implications of the findings and their limitations, how the findings fit into the context of other relevant work, and directions for future research.

RESULTS AND DISCUSSION 3

They should be combined. The study results should be clear and concise. Restrict the use of tables and figures to depict data that is essential to the message and interpretation of the study. The results should be presented in a logical sequence in the text, tables and illustrations. The part of result exposes the findings obtained from research data which is related to the hypotheses. The results should summarize (scientific) findings rather than providing data in great detail. The discussion should explore the significance of the results of the work. Explains the findings obtained from research data along with theory and similar research comparison. Make the discussion corresponding to the results, but do not reiterate the results. The following components should be covered in discussion: How do your results relate to the original question or objectives outlined in the Introduction section (what/how)? Do you provide interpretation scientifically for each of your results or findings presented (why)? Are your results consistent with what other investigators have reported (what else)? Or are there any differences?. Include in the discussion the implications of the findings and their limitations, how the findings fit into the context of other relevant work, and directions for future research.

Table 1. Table Title

No	Information	Total

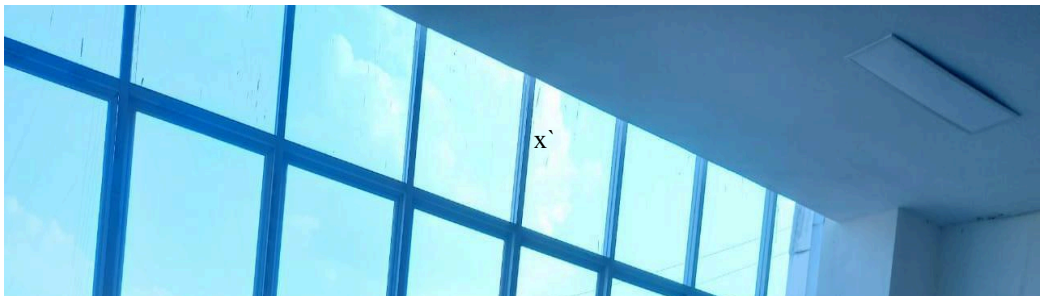

Figure 1. Title Figure

Table 1. Table title table title table title table title table title

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(Writing the Table and Image titles uses Time New Roman font size 9, table content uses Time New Roman font size 8, description uses Time New Roman font size 8)

Conclusion

The main conclusion(s) of the study should be presented in a short conclusion statement highlighting the goals of the study and its importance. State new hypotheses when warranted. Include recommendations when appropriate. Conclusion shall be written in a paragraph. Do not repeat the Abstract, or just list experimental results.

Author Contributions

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To promote transparency, we encourage authors to provide an author statement file detailing their specific contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should list authors' names first, followed by their respective CRediT role(s). For example: Nur Hudha: Conceptualization, Methodology, Software. John Smith: Data curation, Writing - Original draft preparation. Jane White: Visualization, Investigation. Bruce Buck: Supervision. Matt Jr.: Software, Validation. Peter Long: Writing - Reviewing and Editing.

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