Consumer Characteristics Impact on Expected Medicine Information: Cross sectional study at Apotek Wulan Pekutatan

Pengaruh Karakteristik Konsumen terhadap Informasi Obat yang Diharapkan: Studi potong lintang di Apotek Wulan Pekutatan

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Abstract

Health workers and patients have different perceptions regarding the information that needs to be provided when dispensing medication. Differences in perception can make ineffective communication, so providing drug information in pharmaceutical services is not optimal. This research aims to determine the influence of consumer characteristics on the drug information expected at the Wulan Pekutatan Pharmacy. The research used a cross-sectional approach at the Wulan Pekutatan Pharmacy, Jembrana Regency, Bali Province. Samples were taken using the convenience sampling technique. Respondents are patients willing to complete a questionnaire, are over 17 years old, can read and write, and have previously visited a pharmacy. The chi-square test determines consumer characteristics that influence the expected drug information according to patient characteristics. The research succeeded in collecting 96 respondents. There are twelve types of information asked of respondents. The results showed that the type of information respondents expected significantly differed (P<0.05) in several characteristics. Patient groups who choose different types of information include male and female patients, adult and elderly patients, health workers and non-health workers, married patients, and unmarried/divorced patients, patients with income levels above the regional minimum wage and below the minimum wage. It can be concluded that consumer characteristics influencing the drug information they expect include gender, age, occupation, marital status, and income.

Abstrak

Tenaga kesehatan dan pasien memiliki persepsi berbeda terkait informasi yang diperlukan saat penyerahan obat. Perbedaan persepsi dapat mempersulit komunikasi sehingga pemberian informasi obat dalam layanan kefarmasian menjadi tidak optimal. Penelitian ini bertujuan untuk mengetahui pengaruh karakteristik konsumen terhadap informasi obat yang diharapkan di Apotek Wulan Pekutatan. Penelitian menggunakan pendekatan *cross-sectional*, dilaksanakan di Apotek Wulan Pekutatan, Kabupaten Jembrana, Provinsi Bali. Sampel diambil melalui tehnik *convenience sampling*. Responden adalah pasien yang bersedia mengisi kuesioner, berusia di atas 17 tahun, dapat membaca dan menulis, dan sebelumnya pernah berkunjung ke apotek. Uji Chi-square digunakan untuk menentukan karakteristik konsumen yang berpengaruh pada informasi obat yang diharapkan sesuai karakteristik pasien. Ada duabelas jenis informasi yang ditanyakan kepada 96 responden yang berpartisipasi dalam penelitian. Hasil penelitian menunjukkan jenis informasi yang diharapkan responden berbeda signifikan (P<0,05) pada beberapa karakteristik. Kelompok pasien yang memilih jenis informasi berbeda diantaranya pasien laki-laki dan perempuan, pasien dewasa dan lanjut usia, tenaga kesehatan dan bukan tenaga kesehatan, pasien yang menikah dan pasien yang belum menikah/telah bercerai, tingkat penghasilan di atas upah minimum regional (UMR) dan di bawah UMR. Dapat disimpulkan karakteristik konsumen yang berpengaruh terhadap informasi obat yang mereka harapkan antara lain; jenis kelamin, usia, pekerjaan, status pernikahan dan penghasilan.

INTRODUCTION

According to the Regulation of the Indonesian Minister of Health, No. 74, in 2016, community pharmacy services start from preparing or concocting drugs, providing labels, and handing over pharmaceutical preparations with adequate information and documentation. The service aims to offer medications to patients' clinical or treatment needs, help the patient understand the purpose of treatment, and comply with treatment instructions.

Regulation of Indonesian Minister of Health No. 35 in 2016 states that pharmaceutical staff must provide information when handing drugs to patients. Pharmacists can offer counseling services when patients need more information about the medications they receive. The role of pharmacists in pharmacies is related to more than drug issues. Community pharmacists are leading in ensuring rational drug use and advising patients who carry out self-medication.[1] Therefore, a pharmacist must improve their knowledge, skills, and behavior. Thus, they can provide drug information and professionally counsel patients while interacting with patients.[2,3]

Drug information services are currently not optimal in pharmacies, especially in Bali,[4,5] caused by a lack of understanding of health workers about the importance of drug information provision and barriers from consumers themselves. Brata et al., states that pharmacists do not provide sufficient information in practice even though they have adequate knowledge to provide information.[1] Barriers occur when the explanations of pharmacists are not interpreted correctly, things to do are forgotten, and consumers feel they already know the information. Thus, patients pay less attention to the medical information health workers provide.[6] According to Qudah et al., the lack of efforts to increase patient participation in the provision of drug information can affect the quality and outcome of patient treatment.[7]

According to Cavaco et al., providing information in drug delivery is considered more as a means to retain and attract customers than a health service.[8] Sometimes, health workers do not explore the needs of patients.[1,9] Young et al., also states there is a difference in perception between the pharmacist and the patient regarding the information that should be given to the patient.[10]

Mutual interaction between pharmaceutical and patient occurs in providing drug information. As stated by Qudah et al., response shown by the patient when receiving an explanation from a pharmacist can affect the interpersonal relationship between the patient and the pharmacist.[7] Patients will show high enthusiasm if health workers provide the information they expect. Yang et al., also states that the type of drug information received is one of the causes of patient dissatisfaction with the provision of drug information.[11] Inadequate information gathered about the patient's condition caused inappropriate advice provided.[1]

Sulo and also Nigussie & Edessa, state the provision of drug information related to patient satisfaction.[12,13] Patient satisfaction can be assessed by comparing their expectations and perceptions of the service received. Thus, patient expectations are an essential factor in determining satisfaction. Patient demographics are often closely related to consumer needs and desires. According to Malelak et al., demographic characteristics include age, number of family members, communication within the family, gender, income, occupation, education, religion, generational race, nationality, and social class.[14] Some demographic factors, such as marital status, were associated with patient dissatisfaction.[13] Demographic factors such as education level and income can affect patient satisfaction.[15,16]

Many studies have been conducted to determine patients' responses to drug information that pharmacists provide.[5,17,18] Research mentioned that work experience, age, and availability of SOPs for dispensing and self-medication services affect pharmacists' knowledge, attitude, and practice in carrying out their duties. Services according to patient expectations will increase patient satisfaction[19] because patients expect pharmacists to always provide drug information without being asked.[18] They have high expectations in pharmacy service.[5,18] Pharmacists also must protect patients as consumers by providing adequate information.[20] Strategies to improve pharmaceutical practice require further research to determine the causes of the problem of inappropriate giving of advice.[1] However,

publications regarding the type of drug information patients expect based on their characteristics in Indonesia are still limited. Even though the information is essential in preparing the SOP for providing drug information services.[3] Therefore, the research aims to describe the influence of consumer characteristics on the expected drug information in Apotek (Pharmacy) Wulan Pekutatan. This pharmacy is not adjacent to a doctor's practice, so drug information services provided by pharmacy staff are essential for consumers. By knowing the patient's expectations, the pharmacist can attract the consumer to discuss the drug further and provide services according to their expectations.

METHODE

Research Instrument

The researcher asks the respondent to fill in personal data and the checklist to collect the drug information that they expect. The checklist is 12 items of information that can be provided regarding the medication taken from Antari, et al., without any alteration.[4] The list of drug information has two answer options: necessary and unnecessary. The respondent can answer by choosing one of the given options.

Population and Sample

The population in this study is consumer of Apotek Wulan Pekutatan. The sample in this study amounted to 96 respondents. Rofik stating the appropriate sample size in the survey is between 30 and 500[21]. Researchers used the Lemeshow Formula to get a more detailed number of sample.[22]

$$n = \frac{z \frac{2}{1} - \frac{X}{2} . P \, (1-P)}{d^2}$$

Description:

n = Minimum sample size

$z \frac{2}{1} - \frac{X}{2}$ = Degree of confidence 95% ($1,96^2$)

P = Proportion of population 50% (0,5)

d = Degree of precision / deviation with respect to population 10% (0,1)

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.1)^2} = 96.04$$

The minimum number of samples required for this study is 96 respondents. The sample criteria in this study were: willing to fill out questionnaires; over 17 years old; able to read and write; have received pharmaceutical services/buy drugs at pharmacies and fill out questionnaires in full.

Research procedure

Researchers provide informed consent to the consumers who agree to be respondents. Respondents fill out the questionnaire by scanning the barcode at the Apotek Wulan Pekutatan and then automatically connected to the Google Form that contains the checklist. Respondents were asked to fill out the checklist anonymously so that the privacy of respondents is maintained. Data were grouped based on the following criteria: gender that consist of men and women. Age includes adults and older people. Education in high school and college, employment consists of health workers and non-health workers, relationships consist of living with a partner and not living with a partner, and income includes above the regional minimum wage and below the regional minimum wage. According to the regulation of the minister of Manpower in 1999, the regional minimum wage is the minimum wage in force in one province.

Data analysis

Data Analysis in this study uses descriptive statistics to describe the data collected, followed by bivariate analysis (Chi-Square Test). According to Heryana, the Chi-Square test is the most widely used non-parametric statistical test in public health research because it can compare two or more groups based on categorized data.[23] Therefore, researchers can find out differences in the expectations of each consumer group from the six categories tested (gender, age, education, occupation, marital status, and income). Data analyzed by SPSS 20, with 95% confidence level.

RESULT AND DISCUSSION

Apotek Wulan Pekutatan is in Jembrana Regency which is one of the areas that is developing rapidly in Bali. Apotek Wulan Pekutatan is in front of a shopping center with an average of 80-120 consumers per day. These conditions allow researchers to take diverse samples from consumers who visit the pharmacies. A total of 96 respondents fill the questionnaire completely. The distribution of

data characteristics of respondents can be seen in **Table 1**.

Table 1. Characteristics Of Respondent

Chacacteristics	Specific Characteristic	Total	%	Total
Gender	Male	50	52,1	96
	Female	46	47,9	
Age	17-25 years old	24	25	96
	26-35 years old	22	22,9	
	36-45years old	23	24	
	46-55 years old	12	12,5	
	56-65 years old	11	11,5	
	Above 65 Years Old	4	4,1	
Education	Primary school	0	0	96
	Junior high school	2	2	
	Senior high school	39	40,9	
	Diploma	23	24	
	Bachelor	29	30,2	
	Magister	3	2,9	
	Doctor	0	0	
Occupation	Health workers	15	15,7	96
	Non-health workers	81	84,3	
Relationship	Married	49	51	96
	Not Married	33	34,4	
	Divorced	14	14,6	
Income	Below regional minimum wage	36	37,5	96
	Above regional minimum wage	60	62,5	

The distribution of patient-expected drug information is presented in **Table 2**. The most valuable drug information, ranked by descending importance, includes drug dosage, drug name, drug indication, drug storage, directions for use, dosage form, potential side effects, drug interactions, contraindications, drug composition, mode of action, and drug stability. Erdogan et al.[24] stated the main stated problem of patients consulting a pharmacist was the use of medication (73.3%) then, followed by therapy (36.8%) and a doctor's visit (31.6%).

Providing drug dosage information is essential for ensuring proper medication management. Drugs exhibit various pharmacodynamic and pharmacokinetic characteristics that can impact blood concentration levels and therapeutic efficacy. The dosage should be adapted to the patient's age, weight, and specific abnormalities. According to Ekadipta et al.[25], information about the name of the drug is essential to give, especially the generic name, to avoid drug misuse. Indications of the drug are information about the use of the drug based on the disease. The drug should be stored according to the storage rules that consider the stability of each drug to prevent damage to the drug. Information about how to use the drug helps patients properly use the medication.

Table 2. Expected Drug Information

Drug Information	Need (%)	No Need (%)	Total Respondent
Medicine name*	95 (99%)	1 (1%)	96
Medicine composition	14 (14,6%)	82 (85,4%)	96
Dosage form	71 (74%)	25 (26%)	96
Medicine indication*	94 (97,9%)	2 (2,1%)	96
Method of action	11 (11,5%)	85 (88,5%)	96
Medicine dosage*	96 (100%)	0 (0%)	96
Method of use*	77 (80,2%)	19 (19,8%)	96
Side effect*	64 (66,7%)	32 (33,3%)	96
Drug contraindications*	16 (16,7%)	80 (83,3%)	96
Medicine interactions*	21 (21,9%)	75 (78,1%)	96
Medicine storage*	85 (88,5%)	11 (11,5%)	96
Medicine stability*	10 (10,4%)	86 (89,6%)	96

*: The information must be provided according to technical guidelines for standard pharmaceutical services at the pharmacy by Ministry of Health of the Republic of Indonesia.[26]

Pharmacists also provide written information regarding the use of drugs in the form of labels. Drugs used through the digestive tract are given a white label, while medications used outside the digestive tract are given a blue label. Side effects of medicines are undesirable effects for therapeutic purposes. Some medications can show side effects that are sometimes unacceptable for some patients. Side effect information helps the patient choose a drug with acceptable side effects and allows the patient to determine the actions that can be taken when these effects occur. All medicines have their characteristics, so providing information precisely according to the drug received by the patient is essential.

There is some drug information that most patients do not want. The information expected by a small percentage of respondents at the top of the order is drug stability information (10%). Drug stability information related to the duration of the drug can still be stored in good condition. Stability is often mistaken only for the Expired Date. After the drug is removed from its original packaging (when it is formulated or packaged in small packages to be handed over to patients), the stability of the drug will change. Pharmacy personnel can inform the storage time limit after the drug is formulated, often called Beyond Use Date (BUD). According to United State Pharmacopeia (USP), BUD is when the preparation should not be used anymore, determined by the date the preparation was formulated/prepared. In other words, BUD is the time limit for using medicinal products after they have been formulated/prepared or after the primary packaging has been

opened/damaged. Primary packaging is directly in contact with drug substances, such as bottles, ampoules, vials, blisters, tubes, etc. Antari et al.[27] stated drugs stored past the BUD have a high chance of being damaged, so they cannot provide therapeutic effects or are dangerous if reused.

Information on how drugs work is wanted by only 11% of respondents. Details on how the drug works will help the patient monitor the drug's effect after use. For example, laxatives containing bisacodyl stimulate bowel movements; the process takes time. In contrast, other laxatives cause a faster effect by attracting water to the intestine and softening the stool. Therefore, patients can estimate the right time to start using the drug according to their comfort by predicting the slower effect of using laxatives with the active ingredient bisacodyl.

Information on the content of the drug/composition is desired only by 14% of respondents. The composition indicates the element or ingredient used to make the drug. Drug composition information helps patients avoid allergies to the contents of one drug and reduce the possibility of incorrect delivery of drugs due to similar names or brand (looks alike, sounds alike). Providing medication information about contraindications prevents patients from taking medication if they have the contraindication in question. Contraindications should be indicated when the patient is pregnant or breastfeeding. The drug may also interact with food, drinks, chemicals, or other medications. Information on drug contraindications was desired only by 16% of respondents. Providing information about drug interactions can prevent adverse effects due to the concomitant use of interacting drugs.

Some drug information must be provided according to the guidelines for standard pharmaceutical services[26] (marked (*) in **Table 2**). However, more than 50% of patients think that some of the information does not need to be provided. It is possible that the patient still needs to understand the importance of the information, so the pharmacist must use his communication skills to make the patient interested in listening to the information. Patient-centered communication is necessary to guide patients to find and understand valuable and reliable health information.[28]

Bivariate analysis

Bivariate analysis with Chi-square test were conducted to determine the impact of each independent variable on each type of drug information. Six independent variables were tested, including gender, age, education, employment, marital status, and income, against 12 types of drug information as a dependent variable. Based on the Chi-square test, it was found that there were 21 significant test results (**Table 3**).

It was concluded that the characteristics that affect the expected drug information include gender, age, occupation, marital status, and income. In line with research results by Ariansyah,[29] employment, gender, education, and marital status affect consumer satisfaction. Satisfied consumers can be interpreted as that they have received service per their expectations. In line with the research result, Calamusa et al.[30] also stated that women prefer to consult with health workers than men.

In this study, it was found that education did not affect patient expectations. But research by Veiga et al.,[31] states that there is a significant relationship between the level of education and the typology of consultation. According to Qudah et al.,[7] patients with limited literacy are reluctant to ask questions during the consultation. Patients who graduated from high school had a lower intention to exchange information with pharmacists. This study showed different results from Veiga et al.,[31] which concluded there was no relationship between patients living alone (unmarried or divorced) with the typology of consultations in health facilities. In line with research results, Nichols et al.,[32] expressed patient income affects emotions. It was found that income, depression, patient self-confidence, social support, self-efficacy, and patient-centered communication were significantly associated with emotions. In this study, income also influenced the information expected by patients.

Table 3. Consumer Expected Drug Information Map

Variable	Category Variable	Medicine Information											
		1	2	3	4	5	6	7	8	9	10	11	12
Gender	Male	✓	-	✓	✓	-	✓	✓	✓	-	-	✓*	-
	Female	✓	-	✓	✓	-	✓	✓	✓	-	-	-	-
Age	Adults	✓	✓*	✓	✓	✓*	✓	✓	✓	✓*	-	✓*	-
	Elderly	✓	-	✓	✓	-	✓	✓	✓	-	-	-	-
Education	High School	✓	-	✓	✓	-	✓	✓	✓	-	-	✓	-
	Universities	✓	-	✓	✓	-	✓	✓	✓	-	-	✓	-
Occupation	Health workers	✓	✓*	✓*	✓*	✓*	✓	✓*	✓*	✓*	✓*	✓	✓*
	Non-health workers	✓	-	-	-	-	✓	-	-	-	-	✓	-
Relationship	Married	✓	✓*	✓	✓	✓*	✓	✓	✓*	✓*	✓*	✓*	-
	Not Married/Divorced	✓	-	✓	✓	-	✓	✓	-	-	-	-	-
Income	Above regional minimum wage	✓	-	✓	✓	-	✓	✓*	✓	-	-	✓	-
	Below regional minimum wage	✓	-	✓	✓	-	✓	-	✓	-	-	✓	-

Note:

Medicine Information:
1. Medicine Name
2. The composition of the medicine
3. Medicine dosage forms
4. Indication of the medicine
5. How the medicine works
6. Medicine dosage
7. How to use the medicine
8. Medicine side effects
9. Contra-indication
10. Medicine interactions
11. How to store medicine
12. Medicine stability

✓: Information needed

-: Information not needed

*: differ significantly between category variable, analyze by Chi-square test (CI 95%)

The provision of drug information should be sensitive to patient's needs while considering issues of literacy, numeracy, and culture.[33] Sometimes the patient feels that the explanation given by the pharmacist may have no effect (not beneficial). Much of the literature states a difference between what health professionals think patients should know and what patients want to know.[10]

Pharmacy personnel must involve patients so that they can participate in discussions about the drugs they will use. According to Satibi et al.,[34] drug information provided pharmaceutical personnel is needed by patient. In accordance with the paradigm of patient-oriented pharmaceutical services should be directed to patient-centered care. Actively involved patients in the provision of drug information is expected to understand the risks and benefits of treatment received.

Pharmacists can start the conversation by providing information consumers expect based on their background. Providing information regarding the patient's expectations is done to make the patient interested in listening to the information provided. With their communication skills, pharmacists can make patients interested in actively asking questions and discussing the provision of drug information. The final results of this study (Information Map of drugs expected by consumers) in **Table 3** can guide the initiation of drug information according to the patient's demographic background.

The provision of drug information to patients should be explicit, use simple language, and be easy to understand. A friendly attitude and the use of good language by the officer indicate good communication, making it easier for someone to receive information and get a positive response from the public to the information received. Good communication can affect people's perception of the drug information received.

Counseling has an essential role in improving patient adherence to treatment. Counseling is a two-way communication between pharmacists and patients, significantly impacting patient knowledge. Providing information consists of consultation and education, where the patient can reveal all the difficulties in undergoing treatment during the consultation. Through education, the pharmacist can help solve the patient's problems.[35]

This study was limited by sampling from one data collection center. However, these weaknesses can reduce the bias caused by differences in the typology of the services provided by different pharmacies so that the conclusions drawn are not influenced by factors other than the characteristics of the respondents.

The results of this study are expected to contribute to improving the quality of pharmaceutical services in pharmacies . Understanding patient needs and preferences can help pharmacists provide patient-focused information and services. Patient-focused communication improves the emotional health of patients.

CONCLUSION

There is an impact of consumer characteristics on the expected drug information in Apotek Wulan Pekutatan. Five consumer characteristics that affect the drug information consumers expectation at Apotek Wulan Pekutatan are gender, age, occupation, relationship, and income. Providing drug information to patients requires a more personal approach to their characteristics so that consumers at the Apotek Wulan Pekutatan get the expected service.

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CONFLICT OF INTEREST

There is no conflict of interest between the authors of this manuscript.

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