

PATIENT PERCEPTIONS ON THE ROLE OF A PHARMACIST AND THE UNDERSTANDING OF THE RATIONAL USE OF MEDICINES (RUM)

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Abstract: The role of pharmacists is vital in increasing the rational use of medicines (RUM) and the overall goal of drug control. This study aimed to determine patient perceptions about the role of pharmacists as well as their understanding of the RUM. The research was a cross-sectional study, with a total sample of 104 patients from 30 pharmacies in Denpasar City, Indonesia. The data were collected between November–December 2018 using a questionnaire-based interview. The data were analysed using a binary logistic analysis test. The results show that counselling and trust do not provide significant relationship ($p > 0.05$). Perceptions of patients about pharmacist's knowledge on treatments provide a significant relationship toward the understanding of RUM ($p < 0.05$). Patient perceptions about pharmacists can provide the safe use of drug treatments and based on patient needs in the choice of drug therapy can increase the understanding of RUM. The RUM in terms of antibiotics use needs attention, and policies for delivering medicine must go through pharmacists.

Keywords: Sustainability, patient, pharmacists, antibiotic, drug.

Introduction

Usage of prescribed drugs by patients often requires supervision from pharmacists. The role of the pharmacist includes counselling and treatment, and requires trust (Bornman *et al.*, 2006). Pharmacists can help prevent abuse, and reduce the risk of patient drug therapy problems (Kehrer *et al.*, 2013). However, many pharmacists are not allowed to serve in this role. Research shows that pharmacists are in pharmacies less than 20 hours/week, and spend less time interacting with patients (Hermansyah *et al.*, 2012). Other research results showed that services pharmacists are focused on pharmacy management (Saira *et al.*, 2009). Thus, the usual role of the pharmacist is such that patients consider pharmacists only as drug sellers (Oyelami-Adeleye *et al.*, 2011). However, without consultation patients may make medication errors due to limited information. Research has shown that irrational use of medicines can reach more than 50% in some communities (WHO, 2002). For instance, in the city of Penyangungan, irrational medicine

use data reached 40.6% (Harahap *et al.*, 2017). Another study in Iran also stated the percentage of irrational drug use reached 42.7% (Hashemi *et al.*, 2013). Based on these problems, the role of pharmacists and the rational use of medicine (RUM) are related. This study aims to determine patient perceptions about the role of pharmacists as well as their understanding of RUM.

Materials and Methods

Study Design and Sampling Methods

The study used a cross-sectional survey design. Researchers in this study gave direct questions on a questionnaire to patients. This study obtained an ethical clearance number No.001/IIK BALI/EC/XI/2018. This research was carried out between November–December 2018 with a questionnaire-based interview. The sampling method used purposive sampling. The number of sample calculations used the Levy and Lameshow formula, because the population is unknown (Levy & Lameshow, 1997).

$$n = \frac{(1.96^2) 0.5 (1-0.5)}{0.1^2}; n = 104$$

$$n = \frac{z_{1-\alpha}^2 p(1 - p)}{d^2}$$

Where, n = Sample, p = Chance, d = Limit error or absolute precision, $z_{1-\alpha}^2$ 1st metric

The minimum sample used in this study was 104 patient samples from 30 pharmacies in Denpasar City. The inclusion criteria of this study were patients with the age of 18–60 years and obtaining services from pharmacists. The exclusion criteria of this study patients were a health worker.

Data Collection Tool and Analysis

The questionnaire was made based on theory and focus group discussion (FGD) with pharmacists in Denpasar City. Test validity and reliability was carried out using 42 samples. The test results are valid-reliable with values of $R > 0.304$ and Cronbach’s $\text{Alpha} > 0.60$. The validity test result of patient’s perception (17 items) about the role of pharmacist shows the lowest score was 0.313, and the count of reliability test was 0.884. Questionnaires about the understanding

of RUM (15 items) received the lowest validity test score, 0.310, with the reliability count 0.79. The method of analysis uses a binary logistic test.

Results and Discussion

Patient Socio-Demographic Characteristics

Patient socio-demographic characteristics are shown in Table 1. A total of 63.5% of the patients were female and 36.5% male; 69.2% were married and 30.8% single. Among the patients, 47.1% had achieved ES/JHS/SHS (elementary/junior high/senior school) and 52.9 % university education. In terms of employment, 23.1% were unemployed, 60.6% private employees, and 16.3% entrepreneurs. The percentage of patients with ages 18–40 and 41–60 were 82.7% and 17.3%, respectively.

Normality Test Result

The results of the normality test of patient perceptions about the role of a pharmacist and the understanding of RUM are shown in Table 2. The results show the obtained data are not normally distributed ($p < 0.05$).

Table 1: Socio-demographic characteristics of patient sample

Socio-demographic characteristics of patient sample	f	%
Gender		
Female	66	63.5
Male	38	36.5
Marital Status		
Single	32	30.8
Married	72	69.2
Education		
ES/JHS/SHS	49	47.1
University	55	52.9
Job		
Unemployed	24	23.1
Private Employees	63	60.6
Entrepreneurs	17	16.3
Age		
18-40	86	82.7
41-60	18	17.3

Table 2: Normality test

Variables in normality test	P
Counselling	0.001
Treatment	0.001
Trust	0.001
The Understanding of RUM	0.009

Patient Perception Scores

Patient perception scores from the questionnaire about the role of pharmacists are shown in Table 3. Highlights of the answers provided by the patients are presented below. In terms of counselling, the highest percentage with a better perception score was 86.5% (the diagnosis given by the pharmacist follows the patient’s complaint) and for excellent, 23.1% (explanation of the pharmacist is understandable). The highest percentage for poor perceptions (5.8%), and average (15.4%) were for the question whether Pharmacist asks about the history of other diseases suffered by the patient. In terms of the patients’ perception of treatment, the highest percentage for excellent was 25% (pharmacists can provide about safe use of drug treatments); for better, 76% (pharmacists provide medicines based on patient needs); and for average 11.5% and poor 12.5% (pharmacists offer additional alternatives for patient disease complaints). Finally, for the patients’ perception of trust, the highest percentages for strongly agree and agree, were 30.8% and 74%, respectively (pharmacists are essential in providing information about drugs). The highest percentages of patients answering strongly disagree and disagree were 1.9% and 2.9%, respectively (pharmacists are always ready to advise medicines).

The Questionnaire Score of RUM

Results of the study on the understanding score of RUM (15 question items) are presented in Table 4. The question most answered incorrectly was whether an antibiotic was used to treat viruses (90.4%). The question most answered correctly was whether drugs should be selected according to the patient’s condition (87.5%). The most not answered (“don’t know”) questions were

whether drugs that contain the same brand, and different prices have different effects (34.6%).

Total Score Patient Perception and RUM

Total score patient perception and RUM are shown in Table 5. The percentage of patient perceptions about counselling being good was 73.1% and not good 26.9%. The percentage perceptions of patients about pharmacist’s knowledge about treatments being good was 70.2% and not good at 29.8%. The percentage perceptions of patients about trust being good was 93.3% and not good at 6.7%. The percentage perceptions of patients who rated their understanding RUM as being good was 54.8% and not good 45.2%.

Logistic Binary Test

Results of the logistic binary regression of patient perceptions about the role of a pharmacist and the understanding of RUM shown in Table 6. Analysis result of the binary logistic test shows that the result for patient’s perception about treatment provided a significant relationship with the understanding of RUM ($p = 0.03$; Odds Ratio (OR) = 2.54; Confidence Interval (CI) =1.07–6.03). Patients perception about counselling ($p = 0.49$; OR = 0.68; CI = 0.23 - 2.02) and trust ($p = 0.14$; OR = 3.69; CI = 0.64 - 21.31) did not provide a significant relationship.

Results showed that the relationship between patient perceptions about treatment and the understanding of RUM provided a significant correlation ($p = 0.03$; CI = 1.07 - 6.03; OR = 2.54). Interactions between pharmacists and patients in the selection of drug therapies can improve RUM. The results of the study are similar to research on treatment by

Table 3: Patient perception scores about the role of pharmacists

Patient perceptions about the role of pharmacists		f (%)			
		Poor	Average	Better	Excellent
Counseling					
1	The diagnosis given by the pharmacist is following the patient's complaint	2 (1.9)	2 (1)	90 (86.4)	10 (9.6)
2	Explanation of the pharmacist is understandable	0 (0)	2 (1.9)	78 (75)	24 (23.1)
3	Pharmacists ask for a history of drug allergy patients	3 (2.9)	12 (11.5)	71 (68.3)	18 (17.3)
4	Pharmacists provide information on drug side effects to patients	4 (3.8)	11 (10.6)	75 (72.1)	14 (13.5)
5	Pharmacists give warnings or prohibitions on taking drugs	5 (4.8)	12 (11.5)	67 (64.4)	20 (19.2)
6	Pharmacists ask about the use of other drugs	3 (2.9)	12 (11.5)	70 (67.3)	19 (18.3)
7	Pharmacists ask for a history of other diseases suffered by patients	6 (5.8)	16 (15.4)	63 (60.6)	19 (18.3)
Treatment					
1	Drug prices are by patient expectations	13 (12.5)	15 (15.4)	69 (66.3)	19 (18.3)
2	The drug given by the pharmacist has guaranteed quality	1 (1)	3 (2.9)	78 (75)	22 (21.2)
3	Pharmacists provide medicines based on patient needs	1 (1)	6 (5.7)	79 (76)	18 (17.3)
4	Pharmacists can provide about safe use of drug treatments	1 (1)	6 (5.7)	71 (68.3)	26 (25)
5	Pharmacists offer additional alternatives for patient disease complaints	13 (12.5)	12 (11.5)	60 (57.7)	18 (17.3)
Trust		Strongly disagree	Disagree	Agree	Strongly agree
1	Pharmacists are essential in providing information about drugs	0 (0)	1 (1)	71 (68.3)	32 (30.8)
2	Pharmacists are always ready to advise medicines	14 (1.9)	3 (2.9)	75 (72.1)	24 (23.1)
3	Consultation with the pharmacist about medicines is more convenient	0 (0)	1 (1)	76 (73.1)	27 (26)
4	Pharmacists have competency in expertise and knowledge about drugs	0 (0)	0 (0)	77 (74)	27 (26)
5	Pharmacists always provide professional services to all patients	0 (0)	0 (0)	70 (67.3)	31 (29.8)

Table 4: Patients' understanding of RUM

	The understanding of RUM	f (%)		
		No	Don't know	Yes
1	Patients choosing drugs must consult other diseases (heart disease, diabetes, etc.)	10 (9.6)	15 (14.4)	79 (76) *
2	Drug selection adapts to the patient's condition (pregnancy, breastfeeding, etc.)	4 (3.8)	9 (8.7)	91 (87.5) *
3	An indication of the medicine is the use of a drug	2 (1.9)	31 (29.8)	71 (68.3) *
4	If I have a drug allergy, I will keep it a secret	86 (82.7) *	8 (7.7)	10 (9.6)
5	I provide information on the use of other drugs before buying drugs	7 (6.7)	8 (7.7)	89 (85.6) *
6	All drugs are taken after meals	40 (38.5) *	12 (11.5)	52 (50)
7	Drugs with the rules of taking 3 x 1 tablets are taken every 8 hours	9 (8.7)	17 (16.3)	78 (75) *
8	Antibiotics can be stored if the symptoms of the disease are gone.	13 (12.5)	25 (24)	66 (63.5) *
9	Each person's drug dosage is the same	78 (75) *	17 (16.3)	9 (8.7)
10	Antibiotics are used to treat viruses	2 (1.9) *	8 (7.7)	94 (90.4)
11	Drugs that contain the same brand, and different prices have different effects.	34 (32.7) *	36 (34.6)	34 (32.7)
12	Medications to reduce the symptoms of coughing, heat, and diarrhoea do not need to be drunk until finished	7 (6.7)	11 (10.6)	86 (82.7) *
13	The number of drugs purchased adjusts to the long duration of taking the drug	6 (5.8)	11 (10.6)	87 (83.7) *
14	Generic drugs have the same effect as patented drugs, although the price is different.	39 (37.5)	24 (23.1)	41 (39.4) *
15	I will choose generic drugs that are cheaper than patent drugs if my money is not enough.	25 (24)	13 (12.5)	66 (63.5) *

*correct answer

Table 5: Total score patient perception and RUM

Total Score Patient Perception and RUM	f	%
Counseling (median)		
Not good	28	26.9
Good	76	73.1
Treatment (median)		
Not Good	31	29.8
Good	73	70.2
Trust (median)		
Not good	7	6.7
Good	97	93.3
The Understanding of RUM (median)		
Not good	47	45.2
Good	57	54.8

Table 6: Logistic binary regression of patient perceptions about the role of a pharmacist and the understanding of RUM

Patient perceptions about the role of a pharmacist	Odds Ratio	95% CI		p
		Lower Limit	Upper Limit	
Counselling	0.68	0.23	2.02	0.49
Treatment	2.54	1.07	6.03	0.03*
Trust	3.69	0.64	21.31	0.14
Gender	0.92	0.37	2.25	0.86
Marital Status	0.69	0.26	1.81	0.45
Education	1.97	0.88	4.40	0.09
Job	1.46	0.92	2.33	0.10
Age	1.48	0.46	4.78	0.50

*significant

pharmacists increasing RUM to patients (Sharif *et al.*, 2015) using a pre-piloted questionnaire. The questionnaire was distributed to a total of 168 pharmacists. Data were analyzed using SPSS and results were expressed as number of respondents and percentage of total participants. Results: The questionnaire was completed by 149 pharmacists, and response rate was 89% with 53% of respondents being Arabs. Out of the 149 pharmacists respondents, 71 (47.7%). Other studies also state the practice of pharmacist treatment as a promotion of RUM (Hussain *et al.*, 2012). The results of this study show that 70.2% of perceptions of treatment are good or better, especially about safe and drug needs of patients. The results of this study are similar to research that found pharmacists must be able to provide advice, inform, and direct patients to adjust the use of appropriate drugs (Al-Arifi, 2012) views and satisfaction with pharmacist's performance as health care provider in the community pharmacy setting in Riyadh, Saudi Arabia. Method: The study was conducted in Riyadh, Saudi Arabia, from July through December 2010. A total of 125 community pharmacies in Riyadh city were randomly selected according to their geographical distribution (north, south, east, and west).

Results of the study showed that pharmacists offered few alternatives to treat

the disease. The results of this study are similar to pharmacist studies limited to medicine, and patients prefer doctors to consult diseases (Hindi & Schafheutle, 2017). This study states that the most misunderstanding of rational medicine use is the function of antibiotics. Similar research results indicate the causes of errors in antibiotic treatment due to lack of supervision by pharmacists, and most drug information services are carried out by non-pharmacist staff (Hermansyah *et al.*, 2012; Kotwani *et al.*, 2012). The results of other studies indicate the presence and role of pharmacists is significant in providing an understanding of RUM (Gelayee *et al.*, 2017). Results showed that the relationship between patient perceptions about counselling and the understanding of RUM did not provide a significant correlation ($p = 0.49$; $CI = 0.23 - 2.02$; $OR = 0.68$). The pharmacist counselling is good (73.1%), especially in terms of diagnosis and explanation. The results showed that the pharmacist did not ask about the patient's disease history. Our results were similar to reviews of pharmacists (90%) not knowing the patient's disease history (Mahmoud *et al.*, 2018). Counselling patients with pharmacists are looking for more information about the disease, and this is not related to understanding RUM. This result is similar to those found in pharmacist counselling research, using patients limited to chronic diseases (Palaian *et al.*, 2006).

Other studies also shows that patients consult pharmacists about drugs very infrequently and prefer illness as the main topic (Hirsch *et al.*, 2009). The results of this research was differ from previous study regarding pharmacist counselling, where pharmacist counselling activities during treatment increases patients RUM (Volino *et al.*, 2014) and improve clinical outcomes (Sanii *et al.*, 2016). The results showed that the relationship of patient perceptions trust and the understanding of RUM did not significantly correlated ($p = 0.14$; CI = 0.64-21.31; OR = 3.69). The results of the study state that patients' trust is good (93.3%), especially in providing information about drugs. The results showed that pharmacists gave less advice about medicines. The results of this study are similar to studies of pharmacists rarely in pharmacies. (Rodgers *et al.*, 2016). Trust is not related to the understanding of RUM, because pharmacists are not the only provider of drug information. The results of this study state that the most misunderstanding of RUM is in the use of antibiotics. Similar research results suggest patients have not considered pharmacists as the primary source of drug information (Jacqueline, 2013). Other studies have shown that patients obtain antibiotic information from the internet (Zucco *et al.*, 2018). This result is different from research that believes that the quality of pharmaceutical services by pharmacists influences RUM (Hutami & Rokhman, 2013). The limitations of this study include the patient's perception of the role of the pharmacist and need further research on RUM. Recommendations of the results of this study are to make sure medicine delivery must go through a pharmacist, to ensure patients understand RUM.

Conclusion

Perceptions of patients about pharmacist's knowledge on treatments have significant relationship with the understanding of RUM. Patients perceptions about pharmacists can provide the safe use of drug treatments and based on patient needs in the choice of drug therapy can increase the understanding of RUM. The

RUM of antibiotics needs particular attention, and policies for delivering medicine must go through pharmacists.

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