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The Relationship of the Level of Pharmacy's Knowledge in Telepharmacy on Pharmaceutical Services in Pharmacy in Denpasar City Bali Indonesia

Luh Santhi Utami Wiryani; Iswandi; Wiwin Herdwiani

Faculty of pharmacy, University Setia Budi Surakarta, Indonesia

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Abstract

Telepharmacy is a subset of telemedicine practices that refers to the provision of pharmaceutical services by pharmacists. This service is provided digitally between pharmacists and patients as recipients of health services. The important role of pharmacists in supporting telepharmacy to provide online services and consultations. This research aims to see the relationship between knowledge in telepharmacy and pharmaceutical services (Rahayu et al., 2023). The design of this research is a prospective analytical descriptive study with sampling using cluster sampling. The research instrument uses a questionnaire filled in by respondents. Data were analyzed using the Chi Square Test to see the relationship between knowledge in the application of telepharmacy to pharmaceutical services at the Denpasar Bali Pharmacy (Ajie & Prameswari, 2022). The description of pharmacists' knowledge regarding telepharmacy in pharmaceutical services in pharmacies is in the good category. There is a relationship between pharmacist knowledge and the application of telepharmacy in pharmaceutical services at the Denpasar Pharmacy with a p-value ($p<0.05$).

K*eywords:* *Telepharmacy; Relationship; Knowledge; Pharmaceutical Services*

Introduction

Telepharmacy is a form of pharmaceutical service where the pharmacist is not in the same place as the patient and can interact using information and communication technology facilities. The implementation of pharmaceutical services supported by digital applications shows the potential for its use in modern pharmaceutical practices which can provide greater benefits (Elnaem et al., 2022). The pharmacist's role is very important in carrying out pharmaceutical services in accordance with applicable standards which are not only drug oriented but also patient oriented. The lack of awareness of pharmacists to carry out pharmaceutical services properly, especially in drug counseling, can affect the patient's low knowledge about the disease and drug therapy that is obtained and can also affect patient behavior in non-adherence taking drugs and the patient's quality of life (Juwita, 2021). In telepharmacy services, pharmacists play an active role in conveying information related to pharmaceutical services. It is known that the impact of telepharmacy services has shown that the involvement of pharmacists in remote review for ordering drugs. The implementation of telepharmacy is carried out by pharmacists with a range of services including electronic prescription services which include reviewing drug orders, counseling, education, providing drug

information, and monitoring drug therapeutics. monitoring of pharmaceutical preparations, medical devices and medical consumables (Mukaddas et al., 2020).

The most widely performed service is the provision of pharmaceutical preparations through various mobile applications, namely prescription and non-prescription services, and drug delivery services (Juwita, 2021). This research contributes to providing an overview of pharmacist knowledge in telepharmacy in pharmacy pharmacy services at Denpasar pharmacies from the point of view of service-providing pharmacists. This research is different from previous research in which this research will look at the pharmacist's perception of telepharmacy in pharmaceutical services at the Denpasar pharmacy.

Research Method

The population in this study were all pharmacists in the city of Denpasar, Bali. The number of pharmacists are obtained from the PC Denpasar Bali Indonesian Pharmacist Association as of January 2023. The sample for this research is the pharmacists of the city of Denpasar, and their total is 100 people. The sampling technique used consecutive sampling (Dahlan et al, 2020), which met the inclusion and exclusion criteria (Ikatan Apoteker Indonesia, 2016; Afriansyah et al, 2022). The inclusion criteria in this study were pharmacists who work in pharmacies in the city of Denpasar, Bali, pharmacists who work with a minimum working period of 2 years and pharmacists who carry out telepharmacy or e-commerce telepharmacy service providers. The exclusion criteria in this study were pharmacists whose workplaces did not use telepharmacy or work with e-commerce telepharmacy service providers. The instrument used in this research was a questionnaire.

This method is considered to enable researchers and respondents to build direct relationships, so that researchers will more easily adapt to conditions in the field (Hakim dkk, 2022). The questionnaire in this research has been used by previous research which has been revalidated (Elsa et al., 2022).

Result and Discussion

Respondent Characteristics

This research was conducted by surveying 100 pharmacist respondents who work in pharmacies in Denpasa, Bali. The characteristics of the respondents can be seen in Table 1. The majority of respondents in the age category are aged 26-35 years. The proportion of women is higher, namely 70% while men are 30%. The majority of respondents have worked as pharmacists, namely 6-8 years, amounting to 39%, with the majority of respondents being pharmacists, namely 95%.

Tabel 1 Respondent Characteristics

No.	Respondent Characteristics		Frequency (f)	Percentage (%)
1.	Age	26-35 year	73	73%
		36-45 year	21	21%
		46-55 year	6	6%
2.	Gender	Female	70	70%
		Male	30	30%
3.	Years Of Service	2 year	9	9%
		3-5 year	32	32%
		6-8 year	39	39%
		> 8 year	20	20%
4.	Education	Pharmacist	95	95%
		Pharmacist+Magister	5	5%

Knowledge Level

The results obtained in this study show that the level of knowledge is in the good category with a frequency of 71 (71%) which aims to analyze the perceptions of pharmacists in telepharmacy in pharmaceutical services at pharmacies in Denpasar, Bali. This research is in line with previous studies where the pharmacist's attitude was in the good category (Tri, 2015). This shows the pharmacist's knowledge and understanding of telepharmacy in Denpasar City pharmacies, Bali so that it can provide positive things for patients who will have drug consultations. Denpasar Bali city pharmacists are already aware of the existence of telepharmacy in pharmacies, Denpasar Bali city pharmacists, some of whose pharmacies have collaborated with telepharmacy service providers (Putri & Wicaksono, 2021).

Table 2 Knwoledge Level

No.	STATMENT	FREQUENCY (%)			
		SS	S	TS	STS
1.	As a pharmacist, you don't have to understand and understand telepharmacy at the pharmacy.	1 (1%)	2 (2%)	49 (49%)	48 (48%)
2.	As a pharmacist, you must know the purpose of telepharmacy.	47 (47%)	50 (50%)	1 (1%)	2 (2%)
3.	The existence of telepharmacy adds knowledge and insight related to technology and scientific developments	57 (57%)	41 (41%)	2 (2%)	0 (0%)
4.	As a pharmacist, you don't have to know the benefits of telepharmacy.	0 (0%)	4 (4%)	50 (50%)	46 (46%)
5.	As a pharmacist, you must understand the procedure for implementing telepharmacy at the pharmacy.	50 (50%)	46 (46%)	4 (4%)	0 (0%)
6.	Electronic prescription services carried out by pharmacists do not refer to pharmaceutical service standards.	11 (11%)	9 (9%)	45 (45%)	35 (35%)

Table 3 Knowledge Level Category

CATEGORY	FREQUENCY	
	AMOUNT	PERCENTAGE (%)
Good	71	71%
Enough	26	26%
Not Enough	3	3%

Implementation of Pharmaceutical Services

The implementation of pharmaceutical services shows that respondents who have good category of pharmaceutical service implementation are 91 people, with sufficient category are 6 people and 3 people are in poor category. This shows that the majority of respondents considered the implementation of pharmaceutical services to be good, namely 91 out of 100 respondents (91%).

Table 4 Implementation of Pharmaceutical Services

No.	STATMENT	FREQUENCY (%)			
		1	2	3	4
A.	**Prescription Review and Service**				
1.	Administrative review.	0 (0%)	1 (1%)	15(15%)	84 (84%)
2.	Pharmaceutical suitability assessment.	1 (1%)	1 (1%)	8 (8%)	90 (90%)
3.	Assessment of clinical considerations.	1 (1%)	1 (1%)	13(13%)	85 (85%)
4.	Communicate with the prescribing doctor if there are errors or recommendations.	0 (0%)	2 (2%)	11(11%)	87 (87%)
B.	**Dispensing dan KIE**				
5.	Provide CIE for drug use in writing or electronically.	0 (0%)	2 (2%)	25(25%)	73 (73%)
6.	Provide KIE benefits of drugs in writing or electronically.	0 (0%)	2 (2%)	22(22%)	76 (76%)
7.	Provide KIE food or drink that must be avoided in writing or electronically.	0 (0%)	2 (2%)	23(23%)	75 (75%)
8.	Provide KIE side effects that must be avoided in writing or electronically.	0 (0%)	2 (2%)	18(18%)	80 (80%)
9.	Provide KIE means of storage that should be avoided in writing or electronically.	0 (0%)	2 (2%)	16(16%)	82 (82%)
10.	Ensuring that the drugs delivered to patients are guaranteed the quality of the drugs and the drug packaging is not damaged.	0 (0%)	1 (1%)	18(18%)	81 (81%)
11	Ensure confidentiality regarding patient condition information when the drug is delivered by a third party.	0 (0%)	3 (3%)	16(16%)	81 (81%)
12.	Ensuring that the drugs delivered arrive at the patient's address and are received by the patient or the patient's family.	1 (1%)	2 (2%)	25(25%)	72 (72%)
13.	Documenting drug delivery.	1 (1%)	2 (2%)	1 (1%)	96 (96%)
C.	**Drug Information and Services**				
14	Providing drug information services by answering consumer or patient questions through electronic communication media.	0 (0%)	32(32%)	2 (2%)	66 (66%)
15.	Distributing posters or brochures through electronic communication media to consumers.	0 (0%)	7 (7%)	2 (2%)	91 (91%)
16.	Documenting drug information services provided	48(48%)	27 (27%)	5 (5%)	20 (20%)
D.	**Counseling Services**				
17.	Provide counseling according to the patient's disease condition.	3 (3%)	2 (2%)	4 (4%)	91 (91%)
18.	Open communication between pharmacists and patients.	3 (3%)	3 (3%)	13(13%)	81 (81%)
19.	Assess the patient's understanding of drug use through the Three Prime Question.	1 (1%)	5 (5%)	3 (3%)	91 (91%)
20.	Providing opportunities to patients on how to solve drug use problems.	1 (1%)	6 (6%)	2 (2%)	91 (91%)
21.	Explain to the patient how to solve the drug use problem.	1 (1%)	1 (1%)	7 (7%)	91 (91%)
22.	Perform final verification to ensure patient understanding.	0 (0%)	4 (4%)	5 (5%)	91 (91%)

No.	STATMENT	FREQUENCY (%)			
		1	2	3	4
23.	Documenting the counseling performed	48(48%)	34(34%)	3 (3%)	15 (15%)
E.	**Home Pharmacy Care**				
24.	Identify treatment-related problems	0 (0%)	4 (4%)	6 (6%)	90 (90%)
25.	Assess patient compliance	0 (0%)	4 (4%)	6 (6%)	90 (90%)
26.	Provide assistance by giving directions, either by telephone, video call or sending tutorials on managing drugs and/or other medical devices, for example how to use asthma medication and store insulin	0 (0%)	40(36%)	11(14%)	49 (50%)
27.	Provide consultation on drug or health problems in general.	2 (2%)	1 (1%)	32(32%)	65 (65%)
28.	Monitoring the implementation, effectiveness and safety of drug use based on patient treatment records	0 (0%)	26(26%)	5 (5%)	69 (69%)
29.	Documenting drug therapy according to the patient's condition	50(50%)	24(24%)	9 (9%)	17 (17%)
F.	**Drug Therapy Monitoring**				
30.	Monitor drug therapy according to the patient's condition	1 (1%)	25(25%)	4 (4%)	70 (70%)
31.	Identify drug-related problems.	3 (3%)	3 (3%)	3 (3%)	91 (91%)
32.	Determine the priority of problems according to the patient's condition and determine if these problems have occurred or have the potential to occur	2 (2%)	4 (4%)	3 (3%)	91 (91%)
33.	Provide recommendations or follow-up plans	1 (1%)	7 (7%)	1 (1%)	91 (91%)
34.	Documenting drug therapy monitoring activities	45(45%)	33(33%)	15(15%)	7 (7%)
G.	**Side Effect Monitoring**				
35.	Identify the patient's medication side effects	2 (2%)	3 (3%)	28(28%)	67 (67%)

Table 5 Implementation of Pharmaceutical Services Category

CATEGORY	FREQUENCY	
	AMOUNT	PERCENTAGE (%)
Good	91	91%
Enough	6	6%
Not Enough	3	3%

Relationship between Knowledge and Implementation of Pharmaceutical Services

The research results obtained regarding the relationship of pharmacist knowledge in telepharmacy to the implementation of pharmaceutical services. Based on the results of the Chi Square test, it shows that the R value is 0.381 with a significance value of 0.000 ($p < 0.05$). This shows that there is a significant relationship between the level of knowledge on the implementation of pharmaceutical services with a positive or unidirectional relationship. As a health service, it is important for us to know Health Ministerial Decree No. 20 of 2019 concerning the implementation of telemedicine services between health service facilities. The issuance of Minister of Health Regulation No. 20 of 2019 is in order to bring specialist health services closer together and improve the quality of health services in health service facilities, especially remote areas, and various efforts have been made, one of which is through the use of information technology in the health sector in the form of consultation services between health service facilities via telepharmacy (Amalia, 2019). The existence of telepharmacy can increase accessibility, affordability and quality of service to the community. Pharmacists are individuals who carry out pharmaceutical practices based on applicable legal regulations, as well as pharmaceutical requirements and codes of ethics (Rahayu et al., 2023). Apart

from that, pharmacists are the main implementers in pharmaceutical practice, so that pharmacists are closely related to their rights and obligations. Pharmacist responsibilities are drug and patient oriented, this is based on the pharmaceutical care paradigm (El-Sherif et al., 2022). This shows how important it is for a pharmacist to know the benefits of telepharmacy for patients, including existing references, namely pharmaceutical service standards. In this case, the Denpasar Bali city pharmacist's knowledge and implementation have a relationship where if the knowledge is good then the resulting application in the implementation of pharmaceutical services will have good results.

Table 6 Relationships Between Knowledge and Implementation of Pharmaceutical Services

Knowledge	Implementation Of Pharmaceutical Services			Total	P-value	R-value
	Good	Enough	Not Enough			
Good	69 (69%)	1 (1%)	1 (1%)	71 (71%)	0,000	0,381
Enough	21 (12%)	4 (4%)	1 (1%)	26 (26%)		
Not Enough	1 (1%)	1 (1%)	1 (1%)	3 (3%)		
Total	91 (91%)	6 (6%)	3 (3%)	100 (100%)		

Conclusion

The description of pharmacist knowledge in telepharmacy is in the good category with a percentage of 71%. the description of the implementation of pharmacists in telepharmacy is in the good category with a percentage of 91%. there is a relationship between knowledge and implementation of pharmacists in telepharmacy in pharmaceutical services with a p value of 0.001.

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