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COVID-19 Patients' Satisfaction with Pharmacists' Drug Telemedicine Counseling Services: A Cross-Sectional Study

Fonny Cokro[1*], Yenni Ferlia[1], Hadiyanto Usman[2]

Artikel Penelitian

Abstract: *Telemedicine has been used extensively since the COVID-19 pandemic. However, the non-face-to-face interactions make telemedicine services more challenging. This study was conducted to determine the satisfaction of drug counseling services provided by pharmacists through telemedicine in Jakarta, Indonesia, and to assess the correlation between the type of telemedicine and the provision of pharmacists' drug counseling. This investigation is cross-sectional, and data were collected from February to May 2022 through Cluster and Snowball sampling methods. Chi-Square was used to measure the relationship between telemedicine models and the provision of drug counseling. Of the 448 respondents, 85.71% received counseling, giving the pharmacist's counseling performance a good value of 64.06-98.18%. More than 80% of respondents were satisfied in all aspects of satisfaction. The bivariate analysis shows a significant relationship between the type of telemedicine and drug counseling services (p=0.032). This research highlights the importance of optimizing telemedicine approaches to enhance patient care in pharmaceutical services.*

Keywords: *Counseling, COVID-19, Patients' Satisfaction, Pharmacists, Telemedicine*

[1] Department of Pharmacy, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta, 14440, Indonesia
[2] Department of Public Health and Nutrition, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta, 14440, Indonesia

Korespondensi:

Fonny Cokro
fonny.cokro@atmajaya.ac.id

Abstrak: *Telemedicine* telah digunakan secara luas sejak pandemi COVID-19. Namun, interaksi non-tatap muka membuat layanan telemedicine menjadi lebih menantang. Penelitian ini dilakukan untuk mengetahui kepuasan layanan konseling obat yang diberikan oleh apoteker melalui telemedicine di Jakarta, Indonesia; dan menilai korelasi antara jenis telemedicine dan penyediaan layanan konseling obat oleh apoteker. Penelitian ini bersifat cross-sectional, dan data dikumpulkan pada bulan Februari-Mei 2022 melalui metode sampling Cluster dan Snowballing. Chi-Square digunakan untuk mengukur hubungan model telemedicine dengan pemberian konseling obat. Dari 448 responden, sebanyak 85,71% mendapatkan konseling, dengan kinerja konseling apoteker bernilai baik sebesar 64,06-98,18%. Lebih dari 80% responden merasa puas pada seluruh aspek kepuasan. Analisis bivariat menunjukkan adanya hubungan yang signifikan antara jenis telemedicine dengan layanan konseling obat (p=0,032). Penelitian ini menyoroti pentingnya mengoptimalkan pendekatan telemedicine untuk meningkatkan pelayanan pasien dalam layanan farmasi.

Kata kunci: Apoteker, COVID-19, Kepuasan Pasien, Konseling, *Telemedicine*

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Introduction

COVID-19 was first reported in Indonesia on March 2, 2020. The increase in cases that continue to emerge has encouraged the Indonesian government to introduce various measures to suppress the spread of the virus. The policy was established as Large-Scale Social Restrictions, called PSBB, and then changed to The Community Activities Restrictions Enforcement, or CARE, also known as PPKM. By restricting social activities, the government has urged the community to use telemedicine to access healthcare services, particularly in populations at high risk of transmission (1,2). Telemedicine is a remote healthcare service provided by professionals using information and communication technology (3). The Ministry of Health is working with healthcare professionals to launch a telemedicine platform to help the community, particularly for COVID-19 patients in independent isolation (4). With this collaboration, all patients confirmed positive could receive health services on time due to the services accessible through telemedicine. Based on the report of the Minister of Health in the Limited Cabinet Meeting on 6 April 2020, there were 15 million people who had accessed telemedicine for a consultation about the Coronavirus (2). Jakarta is the region with the most cases of COVID-19 in Indonesia (5). Therefore, the existence of telemedicine can help people gain access to health services and reduce activities outside the home.

Based on the Decree of the Minister of Health of the Republic of Indonesia, Number HK.01.07/MENKES/4829/2021, regarding the Guidelines for Health Services Through Telemedicine During the Corona Virus Disease 2019 (COVID-19), pharmacists are expected to convey information on pharmaceutical preparations to patients in writing and through electronic systems and provide drug counseling (6). A qualitative study in Sario District, North Celebes, showed that online pharmacy service during the COVID-19 pandemic is urgently needed to protect both patients and pharmacists (7). Previous studies showed the positive impacts of drug counseling conducted by pharmacists, including minimization of adverse drug reactions, and an increase in therapy adherence and satisfaction (8–10). The results of these studies show the importance of pharmacists in drug counseling. However, providing services through telemedicine is more challenging because pharmacists do not meet with patients in person. When the drug is delivered through a third party without proper counseling, this could cause medication errors throughout the distribution process to the patients. Meanwhile, a cross-sectional study revealed that both patient expectations and the adoption of literacy-based communication approaches by pharmacists were low (11). To maximize the effectiveness of patient therapy, pharmacists must be knowledgeable about effective medication counseling approaches. No similar studies provide supporting data regarding pharmacists' drug counseling services through telemedicine applications. Therefore, this study aimed to describe COVID-19 patients' satisfaction with pharmacists' drug counseling through telemedicine, to ensure the success of therapy. Nowadays, there are hospital-provided telemedicine and start-up-built telemedicine. Additionally, this study tries to evaluate the relationship between these types of telemedicine and pharmacists' provision of drug counseling services.

Materials and Methods

Study Design

This study uses a cross-sectional design, and it first describes the socio-demographic characteristics of the respondents, the type of telemedicine (application-based, such as Halodoc, Alodokter, YesDok, LinkSehat, GetWell, and Milvik; or hospital-based), the telemedical counseling services, and patient satisfaction. Additionally, this study analyzes the correlation between the type of telemedicine and the counseling services pharmacists provide through the platform. Therefore, the independent variable in this case is counseling services conducted by Indonesian pharmacists through various telemedicine platforms. Before the commencement of this study, the research design had been approved by the Atma Jaya Catholic University of Indonesia (AJCUI) research ethics committee with approval number 05/02/KEPFKIKUAJ/2022. This study publication's writing follows the Strengthening of the Reporting of Observational Studies in

Epidemiology (STROBE) guidelines for cross-sectional studies.

Sampling

The target sample of this study was residents of Jakarta, Indonesia, who had a history of COVID-19 and were using telemedicine to receive healthcare services that met the inclusion criteria. Individuals between the ages of 17 and 55 were selected to become respondents, with a history of COVID-19, and who used telemedicine for treatment. Respondents who did not submit the informed consent or did not complete the questionnaire were excluded. The sample size was measured according to the Slovin formula, with a 0.05 error rate and population target of 722,032. The population target was acquired based on the number of people in Jakarta infected with COVID-19 on December 3, 2021 (12). According to the Slovin formula, 400 respondents were required to participate in this study. The total number of needed samples was then divided according to the distribution of COVID-19 patients in six cities in Jakarta. Additionally, 10% of respondents were added to consider the probability of drop-out. Therefore, the minimum number of respondents required was 89, 129, 51, 64, 106, and 1, respectively, from West Jakarta, East Jakarta, Central Jakarta, North Jakarta, South Jakarta, and the Thousand Islands. Cluster random and snowball sampling were used to obtain samples.

Data Collection

The recruitment period was carried out from February to May 2022 by disseminating the questionnaire link. The questionnaire was built using QuestionPro, a web-based survey creation tool. The link to QuestionPro was distributed to the target population through various social media, including Telegram, Facebook, Instagram, WhatsApp, and LINE. Furthermore, the questionnaire consists of several parts, including respondents' identity and sociodemographic characteristics, the type of telemedicine used, the profile of drug counseling services conducted by pharmacists, and patient satisfaction level towards pharmacists' counseling service through telemedicine. Before filling out the main questionnaire, the prospective respondents were informed about crucial information for respondents' consent, including the aim of the study, inclusion and exclusion criteria, and confidentiality of the respondents' identities. Therefore, by signing the informed consent form, the prospective respondents agreed regarding suitability with the inclusion criteria and consented to provide correct answers based on actual conditions they faced when receiving telemedicine services. All the data from completing the questionnaire was converted into Microsoft Excel for further analysis.

Instrument

In this study, the main instrument is the questionnaire. The questionnaire assessment about good counseling parameters was derived from the Ministry of Health Regulations (6,13,14). Another part of the assessment of the questionnaire respondents' satisfaction was derived and modified from the study of Novaryati et al (15). This instrument was tested for validity and reliability before being made available to respondents. Additionally, validity and reliability tests were conducted on 79 non-respondents with similar inclusion and exclusion criteria, and validity was measured using the Product-Moment formula. As a valid requirement, the r-score must be greater than the r-table. Meanwhile, reliability was analyzed using the Cronbach Alpha formula, where the Cronbach Alpha value = 0.918, which is reliable because the value is bigger than 0,600. All of the questionnaire components are considered valid and reliable.

Data Analysis

The data from Questionpro were encoded and then analyzed using the SPSS Base version 22 application. Data on the sociodemographic characteristics of respondents, type of telemedicine, drug counseling services through telemedicine, and patient satisfaction level are presented descriptively. Additionally, Chi-Square was used to analyze the relationship between the type of telemedicine and the availability of counseling services conducted by pharmacists.

Results and Discussion

Results

This study involved 554 respondents at the beginning and was considered eligible. However, 106 respondents were excluded due to an incomplete survey response. Therefore, 448 respondents were involved, while the majority were between the ages of 17 and 25 years (190 respondents or 42.41%), female (259 respondents or 57.81%), and lived in East Jakarta (131 respondents or 29.24%), as seen in Table 1. Of the total respondents, 371 (82.81%) used application-based telemedicine. Meanwhile, the rest of the respondents, about 77 (17.19%), used the telemedicine platform provided by the hospital.

Table 1. Sociodemographic Characteristics of Respondents

Variable	Number of Respondents (n)	Percentage (%)
Age (years old)		
17 – 25	190	42.41
26 – 35	188	41.96
36 – 45	67	14.96
46 - 55	3	0.67
Sex		
Male	189	42.19
Female	259	57.81
Domicile		
Central Jakarta	51	11.38
North Jakarta	65	14.51
South Jakarta	106	23.66
West Jakarta	92	20.54
East Jakarta	131	29.24
Thousand Islands	3	0.67

Among all the respondents, about 384 (85.71%) confirmed the availability of pharmacist drug counseling services. This confirmation is derived from 84.10% of respondents who received application-based telemedicine service and 93.51% who received hospital-provided telemedicine service, as shown in Table 2. Additionally, Chi-Square test results show that the type of telemedicine is correlated significantly with drug counseling services conducted by pharmacists (p = 0.032).

Table 2. Correlation between Type of Telemedicine and Drug Counseling Conducted by Pharmacists

Type of Telemedicine	Drug Counseling Via Telemedicine				Total	P Value
	Yes		No			
	n	%	n	%		
Application-based	312	84.10	59	15.90	371	0.032
Hospital-provided	72	93.51	5	6.49	77	
Total	384	85.71	64	14.29	448	

The results of the drug counseling parameters (Table 3) shows that most respondents give an excellent rating of pharmacists' drug counseling through telemedicine. Meanwhile, pharmacists asked three main questions about drug indication, treatment regimen, and physicians' treatment expectations, which were 91.93%, 90.63%, and 73.44% of respondents, respectively. Pharmacists were also shown to have good communication skills for 98.18% of respondents. Moreover,

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pharmacists provided clear information on the purpose of treatment (97.14%), how to use medications (95.05%), duration of treatment (93.75%), side effects of drugs (68.75%), and drug storage (64.06%). Most respondents (70.83%) also confirmed the availability of verification through drug counseling conducted by pharmacists to ensure that the patients comprehend crucial drug information.

Table 3. Drug Counseling Parameters Conducted by Pharmacists

Drug Counseling Parameter	Number of Respondents (n)	Percentage (%)
The pharmacist requested three-prime questions.		
The pharmacist requested information from the doctor regarding the drugs' names and indications.	353	**91.93**
The pharmacist requested information from the doctor regarding the dose regimen.	348	**90.63**
The pharmacist requested information from the doctor regarding expectations after drug treatment.	282	**73.44**
No available requests.	3	**0.78**
The pharmacist initiated good communication.		
Yes	377	**98.18**
No	7	**1.82**
The pharmacist provided clear information regarding the purpose of the treatment.		
Yes	373	**97.14**
No	11	**2.86**
The pharmacist provided clear information about how to use the drug.		
Yes	365	**95.05**
No	19	**4.95**
The pharmacist delivered information about the duration of drug use.		
Yes	360	**93.75**
No	24	**6.25**
The pharmacist provided clear information regarding the risk of side effects and recommended action if side effects occur.		
Yes	264	**68.75**
No	120	**31.25**
The pharmacist provided clear information regarding drug storage.		
Yes	246	**64.06**
No	138	**35.94**
The pharmacist verified the patient's understanding of the drug information previously delivered.		
Yes	272	**70.83**
No	112	**29.17**
Total	384	100

Regarding patient satisfaction level (Table 4), most respondents were satisfied with the drug service provided by pharmacists through telemedicine platforms in all dimensions, i.e., responsiveness, reliability, therapeutic safety assurance, empathy, and tangibility. In terms of the dimension of responsiveness, most respondents were satisfied with the pharmacist's response to patient complaints (81.51%) and their capacity to address patients' drug-related issues (57.55%). In terms of the dimension of reliability, the majority of respondents were satisfied with pharmacists' ability to deliver drug information (50.52%) and their readiness to help (48.18%). In terms of the therapeutic safety assurance dimension, most respondents were

satisfied with the acceptance of trusted drug information from pharmacists (61.98%) and the provision of appropriate medicine (63.28%). In terms of the dimension of empathy, most respondents were satisfied with the provision of courteous and friendly service by pharmacists (62.50%), and pharmacists were concerned with patients' complaints (73.70%). In terms of the tangibility dimension, most respondents were satisfied with telemedicine's understandable and ready-to-use features (67.71%) and adequately provided telemedicine features (53.91%).

Table 4. Patient Satisfaction Level Regarding Drug Service Conducted by Pharmacists via Telemedicine

Satisfaction Level	Number of Respondents (n)	Percentage (%)
Dimension of Responsiveness		
The pharmacist responded immediately to patient complaints.		
Not satisfied	0	0
Less satisfied	2	0.52
Quite satisfied	31	8.07
Satisfied	313	81.51
Very Satisfied	38	9.90
Pharmacists' capacity to address patients' drug-related issues		
Not satisfied	0	0
Less satisfied	3	0.78
Quite satisfied	44	11.46
Satisfied	221	57.55
Very Satisfied	116	30.21
Dimension of Reliability		
The pharmacist's capacity to communicate drug information to patients in a way that is both clear and understandable		
Not satisfied	0	0
Less satisfied	3	0.78
Quite satisfied	42	10.94
Satisfied	194	50.52
Very Satisfied	145	37.76
Pharmacists were always ready to help.		
Not satisfied	0	0
Less satisfied	3	0.78
Quite satisfied	89	23.18
Satisfied	185	48.18
Very Satisfied	107	27.86
Dimensions of Therapeutic Safety Assurance		
Trust in the information provided by the pharmacist.		
Not satisfied	0	0
Less satisfied	2	0.52
Quite satisfied	38	9.90
Satisfied	238	61.98
Very Satisfied	106	27.60
The pharmacist provided the appropriate medicine by prescription.		
Not satisfied	1	0.26
Less satisfied	3	0.78
Quite satisfied	51	13.28
Satisfied	243	63.28
Very Satisfied	86	22.40
Dimension of Empathy		
Pharmacists provided services politely and friendly.		
Not satisfied	0	0
Less satisfied	2	0.52
Quite satisfied	25	6.51
Satisfied	240	62.50
Very Satisfied	117	30.47
The pharmacist paid close attention to the complaints experienced by the patient.		
Not satisfied	1	0.26
Less satisfied	4	1.04
Quite satisfied	66	17.19
Satisfied	283	73.70
Very Satisfied	30	7.81
Dimensions of Tangibility		
The facilities or features provided on telemedicine applications were understandable and easily used.		
Not satisfied	0	0
Less satisfied	2	0.52
Quite satisfied	78	20.31
Satisfied	260	67.71
Very Satisfied	44	11.46
Facilities or features of telemedicine were adequately provided		
Not satisfied	0	0
Less satisfied	2	0.52
Quite satisfied	140	36.46
Satisfied	207	53.91
Very Satisfied	35	9.11
Total	384	100

Discussion

In this study, it was found that the type of medication has a significant impact on pharmacists' provision of counseling services. The majority of respondents claimed that they had received application-based telemedicine. However, the implementation of telepharmacy, a telemedicine aimed at providing pharmaceutical care, is no less important in hospitals. This implementation allows pharmacists to check and verify prescriptions remotely based on patients' history (16–18). Thus, it can support the performance of pharmacists in preventing medication errors. A prospective observational study conducted in the United Arab Emirates showed significant reductions of medication dispensing errors (15.81% vs. 19.43%, $p<0.05$) and prescription-related errors (5.38% vs. 10.08%, $p<0.05$) in the telepharmacy group, compared to without telepharmacy service, probably due to the availability of IT tools to support telepharmacy service. However, this study failed to show a significant effect of telepharmacy service in preventing counseling errors (19).

According to the respondents' observations on suitable counseling parameters, the respondents rated the pharmacist's performance in counseling with a good value between 64.06 and 98.18%. These results are in line with the Regulation of the Minister of Health of the Republic of Indonesia (Permenkes RI) No. 73 of 2016 concerning Pharmaceutical Service Standards in Pharmacies, which states that pharmacists use three main questions to initiate the consultation and to match the information patients receive from physicians including indications, dosing regimen, and treatment expectations. During the counseling process, the pharmacist must explain the medication's purpose, the medication schedule, instructions, therapy duration, side effects, signs of toxicity, and the storage process. Additionally, pharmacists are also encouraged to verify at the final stage of counseling to ensure the patient's understanding of the medication (6,13). A qualitative study conducted in an antiretroviral pharmacy in South Africa proved that this verification technique for confirming patient comprehension seems to be a valuable tool that enables pharmacists to spot misunderstandings and start clarifications (20). Therefore, the verification process in drug counseling is a powerful component that pharmacists should conduct.

In this study, pharmacists assessed respondents' satisfaction level with counseling services through telemedicine. Based on the results above, respondents' satisfaction with the counseling services provided by the pharmacy is relatively high. This is beneficial because pharmacists can be more motivated and confident in offering the finest service possible, particularly in drug counseling. This study aligns with the regulation decree of the Minister of Health of the Republic of Indonesia (Kepmenkes RI) concerning Health Services Through Telemedicine. During the COVID-19 Pandemic, pharmacists are required to convey information through drug counseling on pharmaceutical preparations to patients (3). Various Randomized Controlled Trials (RCTs) and observational studies confirm the positive effects of drug counseling through telemedicine on improving health outcomes, the use of health care, and patient adherence to drug treatment. Counseling methods that were widely used in these telemedicine programs were telephone and interactive video (21–26). Other than those outcomes, telepharmacy service in both community and hospital settings has been approved for lowering cost, increasing service coverage, and reducing the patients' concern about the risk of disease transmission, and these factors might contribute to patients' satisfaction with pharmacists' services (27,28). However, according to a study conducted in Ohio, patients have low expectations of the drug counseling services provided by pharmacists. Meanwhile, aversion to humiliation and inadequate awareness were the two factors that might contribute to low patient expectations from pharmacists (29). Since patients' satisfaction is correlated to expectations (30). This could lead to higher satisfaction from respondents. Further updated research is required to determine the actual patient expectations for pharmacists' counseling, especially in Indonesia, due to the probability of different working environments and cultures that can contribute to patients' expectations and satisfaction toward pharmacists' performance. Moreover, an interesting phenomenon shows that Indonesian people tend to respond positively to satisfaction surveys (31). This means this study needs to be evaluated further using different approaches.

This study has several limitations. The results may not be generalizable to locations other than Jakarta because a cross-sectional design study was used to observe the objectives. Therefore, further investigation using different methods is needed to confirm these results. Also, there was no attempt to analyze the significance of sociodemographic factors and respondents' satisfaction levels. However, there was an attempt to control respondents' domicile using the cluster sampling method, and the distribution of samples is considered even. Regarding gender, it was assumed that the distribution of this factor is similar between males and females. According to a study in Estonia, Finland, Latvia, and Sweden, age does not have a crucial impact on respondents' satisfaction levels (32). In this study, the majority of respondents are in the range of 17 – 45 years, which is considered a productive age.

Conclusion

The majority of respondents received drug counseling through telemedicine, with the provision of telemedicine depending on the type of telemedicine. From a societal point of view, pharmacists, primarily in Jakarta, have provided good counseling on drug services. Further investigation using a different approach is needed to confirm this evidence. In this case, patients' expectations of pharmacists' service must be adjusted.

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Conflict of Interest

This research has no conflict of interest.

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