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Assessing community pharmacists' thoughts on telepharmacy in Bali province

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ABSTRACT

Telepharmacy describes the use of technology in interactions between pharmacists and patients. Given that telepharmacy is the most recent development in the delivery of digital pharmacy services, the question of how prepared pharmacists are to provide high-quality services frequently comes up and receives attention. The purpose of this study was to determine the viewpoints of pharmacists in telepharmacy services. From February to April 2023, a cross-sectional survey was done using a Google form. The study population included 111 pharmacists in charge of network pharmacies in Bali Province. Their thoughts were assessed using a credible and reliable questionnaire created by the researchers. The questions were split into two sections: a professional demographic items, and a section describing the perspectives, benefits, and challenges of telepharmacy. To get a more detailed or comprehensive response, open-ended questions were added. In general, especially during a pandemic, pharmacists were aware of being involved in remote services (non-face-to-face interaction) and telepharmacy services. This study makes clear that pharmacists' involvement is essential for creating a long-distance relationship between them and their patients. Therefore, pharmacists should learn how crucial communication is to increase patient satisfaction.

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1. INTRODUCTION

The pharmacy is a critical part of the healthcare system that is accessible to the general public. Pharmacists are licenced professionals who can counsel patients on pharmaceutical regimes in addition to providing medication [1]. A pharmacist delivers pharmaceutical care focused on patient safety in order to meet standards and regulations for safety, quality, and efficacy [2], [3]. In the development of Science and Technology globally, the world is entering the era of sustainable development goals (SDGs 5.0), where there will be many improvements to the quality and strata of human life based on digitalization and automation by Artificial Intelligence which are predicted to start occurring between years 2025-2030. Telepharmacy development is one of these advancements [4], [5].

The COVID-19 outbreak prompted the expansion of telepharmacy [6]. Both opportunities and challenges have been given by the current COVID-19 pandemic issue for pharmacists to develop and broaden their practice [6]–[8]. Telepharmacy, or virtual consultations through the phone, using platforms offered by the government, WhatsApp,S video conferences, Instagram, and more. With the support of digital technology, telepharmacy offers real-time online exchange of doctor's prescriptions as well as drug reviews, self-medication, counseling, and therapy monitoring between patients and pharmacists [6], [8]–[10].

The health system is currently dealing with a challenging issue, notably a shortage of medical staff, including pharmacists [11]. Using new technologies, like telepharmacy, can be the answer to this situation. However, there are still challenges that must be resolved (including ethical and legal considerations), making it difficult for telepharmacy to be used more widely [5], [12], [13]. Stronger evidence of telepharmacy's effectiveness and a fair evaluation of its limitations may convince stakeholders of these services' potential and support its promotion for the benefit of society [14]. Telepharmacy opens opportunities to improve the quality of health services, especially in areas where there are still not enough pharmacies, as well as health service places that provide other medicines [12].

The development of telepharmacy in Indonesia is relatively new. To tackle this, the Indonesian government proposed an effort that will implement telemedicine by July 6, 2021 [15]. Currently, telepharmacy is only playing a role in expanding the reach and coverage area of a healthcare center, as well as facilitating access to the administration of medicines needed by patients, and this has not been widely implemented. Therefore, further development and review of telepharmacy services are needed so that more of the impacts and benefits presented can be felt by all people in Indonesia. This is the first study to investigate the viewpoints of pharmacists working in network pharmacies in Bali on telepharmacy implementation. Considering that we analyze it from the view of regulation as well, which has not been explored much in previous studies, makes it even more interesting.

2. METHOD

2.1. Sampling methods

Researchers used the strengthening the reporting of observational studies in epidemiology (STROBE) checklist to strengthen the reporting of observational studies [16]. A cross-sectional study was conducted, with primary data collected via a Google form sent to a group of pharmacists in nine districts of Bali, consecutively. To reduce selection bias, pharmacy managers who had more than five years of experience and provided telepharmacy were inclusion criteria. Pharmacists in charge of off-network pharmacies were excluded. Dropout referred to incomplete questionnaire responses [17]. The Slovin formula (n=N/1+N(e)2) was used to calculate the sample size to ensure that at least 99 samples were acquired.

2.2. Materials

The questionnaire was developed from previous research, with expert input [18], [19]. The questionnaire's contents were validated by the perspectives of two pharmacists. A pilot study was conducted to test the data-acquiring methods and instruments. It helped to identify potential issues with data collection methods or techniques before initiating the main research and has been tested for validity and reliability, carried out on 30 respondents. All questions are valid (p-value <0.05; rxy correlation coefficient ≥ 0.349). Cronbach's Alpha value >0.5, indicating that all questions are reliable [20]. The questionnaire consisted of two sections. The first section of the questionnaire consisted of four questions intended to collect professional demographic information about participants (gender, education level, number of services each shift, and platform used). The second section had five parts, each with a 4-point Likert scale ranging from strongly disagree to strongly agree. The first part included seven questions about the participants' perceptions toward the implementation of telepharmacy. The second part included six questions about pharmacist counseling in telepharmacy services. The third part consisted of four drug-related problem questions. The fourth part consisted of six drug therapy monitoring questions. The last part included two questions about laws and regulations. In addition, open-ended questions were placed on other key issues from the perspective of the participants. Open-ended questions required participants to respond in their own words. They could supply more information to researchers than a simple Yes or No answer.

2.3. Data analysis

The statistical package for the social sciences (SPSS) version 24.0 was used to analyze the data. IW and AS organized and documented the data. Any data inconsistencies found are captured and evaluated for duplicates and errors. PS and AA completed the final analysis and approved all the analyzed data. Data were presented descriptively using absolute numbers and percentages. For open-ended questions data, analysis was done by IW and AS using Excel [21]. Information is presented in themes.

2.4. Ethical consideration

Substantial reviews of research with human subjects have been conducted. Through proper research ethics, research procedures are assessed to ensure the rights of study participants, data confidentiality, and integrity. Approval number 01.028/UNBI/EC/I/2023 was granted by the Bali International University Ethics Committee on January 14th, 2023.

3. RESULTS AND DISCUSSION

A total of 111 participants enrolled, presented in Table 1. Most of the participants are female (71[4.0%]), had a pharmacist education background (104 [93.7%]), performed telepharmacy services less than 10 times per shift (96[86.5%]), preferred WhatsApp only as their platform of choice (75[67.6%]), and all participants (111[100.0%]) reported that they were more active in delivering telepharmacy services during the pandemic. Table 2 shows the participants' perspectives on telepharmacy, which include counseling processes, drug information, drug monitoring, and an understanding of telepharmacy regulations. It shows that people get solutions to health problems quickly (86 [77.5%]) for the perspective, optimally in telepharmacy for counseling (75[67.6%]), drug information must be given in writing (66[59.5%]), and drug therapy monitoring is the most agreed-upon way to ensure safe drug therapy for patients (70[63.1%]. It additionally includes respondents' thoughts on understanding laws and regulations (92[82.9%]) and having a license to practice telepharmacy (96[85.6%]), which were not often explored.

Table 1. Participants' characteristics (n=111)

Characteristics		n	%
Gender	Male	40	36.0
	Female	71	64.0
Education	Pharmacist	104	93.7
	Magister	7	6.3
Telepharmacy services/shift	<10 times	96	86.5
	≥10 times	15	13.5
Platform	WhatsApp only	75	67.6
	WhatsApp + (Grabmart, Tiktok, Halodoc, Go Apotek, Instagram, Facebook, Pharma-apps, Google chat)	36	32.4
	More active during the pandemic	111	100

Table 2. Participants' perspectives (n=111)

Statements	Strongly disagree/Disagree n (%)	Agree n (%)	Strongly agree n (%)
Perspectives on telepharmacy			
Is done when the patient does not need to be in direct contact with the pharmacist	9 (8.1)	59 (53.2)	43(38.7)
Can be used for all classes of drugs	27 (24.3)	47 (42.3)	37 (33.3)
Expanding pharmaceutical services	-	60 (54.1)	51 (45.9)
People get solutions to health problems quickly	-	25 (22.5)	86 (77.5)
Can reduce cost	21 (18.9)	59 (53.2)	31 (27.9)
Must comply with GPP	2 (2.4)	50 (45.0)	59 (53.2)
Very appropriate in the current situation	1 (0.9)	71 (64.0)	39 (35.1)
Counseling in telepharmacy			
Communication between the pharmacist and the patient	9 (8.1)	56 (50.5)	46 (41.4)
Should be done in patients who use special drugs	9 (8.1)	49 (44.1)	53 (47.7)
To ensure patient adherence to medication with short-term therapy	3 (2.7)	61 (55.0)	47 (42.3)
Given to ensure chronic patient adherence	5 (4.5)	48 (43.2)	58 (52.3)
Optimally in telepharmacy	5 (4.5)	75 (67.6)	31 (27.9)
Drugs information in telepharmacy			
Need to be given by the pharmacist	9 (9)	59 (53.2)	42 (37.8)
Must be given in writing	7 (6.3)	66 (59.5)	38 (34.2)
Could be given orally	18 (16.2)	51 (45.9)	42 (37.8)
Should be given during telepharmacy	12 (10.8)	49 (44.1)	50 (45.0)
Drug therapy monitoring			
Can be done at telepharmacy services	3 (2.7)	68 (61.3)	40 (36.0)
To ensure safe drug therapy for patients	3 (2.7)	70 (63.1)	38 (34.2)
To ensure effective drug therapy for patients	13 (11.7)	60 (54.1)	38 (34.2)
To ensure rational drug therapy for patients	5 (4.5)	60 (54.1)	46 (41.4)
Monitoring drug effectiveness	14 (12.6)	70 (63.1)	27 (24.3)
Monitoring side effects of drug	14 (12.6)	64 (57.7)	33 (29.7)
Understanding of laws and regulations			
Understanding regulations	No/19 (17.1)	Yes/92 (82.9)	
Understand the risks	No/21 (18.9)	Yes/90 (81.1)	
	On process	Registered	
Have a license to perform telepharmacy	15 (13.5)	96 (85.6)	
Registered with the pharmaceutical electronic facility provider	23 (20.7)	88 (79.3)	

Additionally, some open-ended questions were posed to the respondents. This was done to enhance the research results and give researchers more information. The following themes and sub-themes were provided as a result, shown in Table 3. This recognizes the involvement of pharmacists in telepharmacy services, especially during the pandemic. For pharmacists, providing written medical information is a complex communication process. The recommendations given are strengthening the quality of human resources, expanding medication monitoring, patient-safety and compliance, and developing a pharmaceutical service platform for problem-solving strategies.

Table 3. Themes and sub themes

Themes	Sub themes	Findings
Service providers' thought	a. The role of pharmacists' in telepharmacy b. Health-care cost savings c. Faster access d. Revenue increased	Overall, pharmacists are aware of their involvement in telepharmacy services, as well as remote services (non-face-to-face interaction), especially during a pandemic.
Obstacles encountered	a. Issues with generation gap b. Issues with networks and advancing technology c. Post-pandemic telepharmacy services	Providing medical information in writing is a complex communication process. It is important for the patient and the pharmacist to understand each other's roles.
Strategies for resolving the challenges	a. Strengthening human resources b. Platform development	Pharmacists recommend strengthening human resource quality, expanding monitoring of medication safety and adherence, and developing a platform to facilitate the pharmaceutical service.

3.1. Service providers' thought

Pharmacists consider that remote drug monitoring services are acceptable, and they have an immense desire to develop telepharmacy services that prioritize patient safety. As shown in Table 2, most of the pharmacists (91.9%) stated that telepharmacy is a distant interaction between pharmacist-patient; 77.5% of respondents thought that people would be able to find quick solutions for health problems with improved telepharmacy; good pharmacy practices (GPP) must be ensued (97.6%); and telepharmacy is particularly useful in the current situations (99.9%). Due to their understanding of their needs and positive feelings toward them, Indonesians regularly utilize telepharmacy services [22]. The regulation of the minister of health (MoH) comprises the details of the present situation. Clinical teleconsultation is a service that allows for remote clinical consultation to help with treatment recommendations and is addressed under article 3 paragraph (1) of MoH regulation number 20 of 2019 [23]. According to article 9 paragraph (1), other healthcare professionals with expertise in information technology may serve as consultants [23]. Pharmacists are obligated to advise patients about medications, medical equipment, medical consumables, and/or dietary supplements in writing and/or electronically. They must also provide counseling and monitor drug use as needed. It is understood that pharmacists who wish to provide telepharmacy services must meet any requirements and respect rules.

To shorten patients', wait times during peak, all pharmacists agree (54.1%) and strongly agree (45.9%) that telepharmacy should be utilized to expand pharmaceutical services. Pharmacy staff, workflow, planning of resources, and terrible pharmacy design can all be potential causes of patient wait times. Telepharmacy allows patients to save money and travel time, which are the major problems encountered, especially by old people, to reach healthcare structures [14]. To avert this, automated queuing, telepharmacy, and supply chains for advanced manufacturing are advised [24]. Pharmaceutical services can be offered more effectively using existing resources through evidence-based telepharmacy workflows.

However, a total of 24.3% of pharmacists disagreed that telepharmacy was used for every drug class. Since telepharmacy makes health services more accessible to people in rural areas, it should benefit people with co-morbidities, especially the elderly. Previous studies have documented public awareness of telepharmacy's existence, how it works, and how relevant it is during the pandemic [7]. Likewise, 18.9% of pharmacists do not agree that telepharmacy can reduce costs. This contrasts with the findings of other studies conducted in hospital settings, where telepharmacy services may help to save costs by reducing unwanted admissions [25]. It seems that more study is needed to figure out whether the practicality of telepharmacy truly encourages more demand for consumption in community pharmacy settings.

In this study, pharmacists claimed that providing telepharmacy services could increase revenues. This study confirms previous studies that observed telepharmacy to be beneficial in terms of ease of access, and which resulted in increased pharmacy turnover [6], [24]. WhatsApp was reportedly particularly effective for marketing and sending promotional messages, per a prior study [26]. It is highly recommended to use

other online platforms like pharmacy websites and popular social media sites like Facebook and Instagram to promote products and share beneficial information about medicines.

3.2. Obstacles encountered

Telepharmacy has a chance to lead the way in enhancing patient medication adherence, but there are concerns there will be gap interactions between pharmacist-patients of different generations. At least 81.50% of pharmacists stated that to accomplish patient medication adherence for patients receiving short-term medications communication between pharmacists-patients must be conducted. Additionally, 97.3% of respondents stated it is essential to ensure adherence for chronic patients. An earlier study has shown that telepharmacy may enhance medication adherence, yet many factors, such as intervention design, adherence assessment, and health behavior, affect this outcome [27]. Some studies reported that the elderly must be assisted in using smartphones, and efforts must be made to reduce smartphone resistance to advance telepharmacy [6], [22]. Internet connectivity was also one of the biggest obstacles in telepharmacy [28]. The success of telepharmacy services depends to a greater extent on the level of technological infrastructures, such as efficient internet connections [29]. To reach the elderly and people with less education, a variety of aspects may need to be taken into attention [30]. Because telepharmacy entails complex written communication via technology, pharmacists and patients must be apprised of each other's roles. Additionally, research is required to determine the best way for pharmacists to assist with patient care and healthcare in rural locations.

The challenge in providing telepharmacy services to patients is determining whether the system can more quickly and precisely help patients. More than 87.4% of pharmacists agree/strongly agree with the use of telepharmacy for the monitoring of medication therapy. At least 86.0% of respondents agreed/strongly agreed that in such situations, this service assures that patients get safe medication therapy, effective drug therapy, rational drug therapy, monitoring of drug effectiveness, and monitoring of drug side effects. When compared to in-person visits, telepharmacy visits had no statistically significant difference in blood pressure control [31]. Another study indicates that telepharmacy has an important chance to help diabetes patients [32]. The findings demonstrate that both specific telepharmacy techniques and direct interactions with patients should be employed to support patient care.

3.3. Strategies for resolving the challenges

An intriguing aspect to be explored in this study is the risks that may be met if professional practice in telepharmacy services occurs negligently. More than 81.1% of pharmacists understand the importance of telepharmacy laws and regulations, as well as all the risks that must be encountered. However, only 79.3% of pharmacies have been registered with the pharmaceutical electronic facility provider. Telepharmacy regulation is being modified to reflect evolving perspectives on pharmaceutical practice [33]. This is also evident in other countries; while there are now laws authorizing telepharmacy, no regulations in every state yet are in place to govern such a program [12]. Associations of pharmacists ought to advocate for telepharmacy regulation, especially for the pharmacies that have focused more and more on this service.

Several respondents suggested improving drug compliance and safety monitoring, enhancing the quality of human resources, and developing a platform to streamline services. Neither pharmacist seem to understand the situation completely. Additional studies may be required to find out what patients and healthcare professionals need from this telepharmacy service.

4. CONCLUSION

To build a long-distance relationship between pharmacists and patients, this study argues that the involvement of pharmacists in telepharmacy services is necessary. These findings indicate that pharmacists are expected to be aware of the important role of communication in increasing patient satisfaction. This study limited addresses pharmacists' views; more inquiry needs to be conducted to learn about patients' and other healthcare professionals' opinions.

Potential solutions, like telepharmacy, might be a solution for issues like a shortage of pharmacists in remote locations. The researchers recommend that decision-makers consider taking these services into account and employ them in teaching strategies. Clinical pharmacists may work online with other medical specialists to provide patients with pharmaceutical counseling.

This study's limitation was the number of respondents who did not match the generalization requirements. Furthermore, questionnaire-based research may overlook participants' experiences and understanding of things, resulting in a lack of depth when presenting or interpreting data. Researchers recommend expanding and increasing the number of samples, establishing open questions, or stressing objectives for specific items that need confirmation so that the overall picture of the research results can better address the problem for which a solution is sought. Qualitative research on telepharmacy service

providers is needed to gain a more comprehensive understanding, making the solutions provided in this study more practicable.

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