

Uses of Telepharmacy in Healthcare Delivery System - A Pilot Case Study

M. Senthil Raja , S.Hemalatha ,C.Kalaivani ,S.Srimathi , S.Gugan, R.Vimal

*Department of Pharmacy Practice
P.S.V College Of Pharmaceutical Science And Research,
Krishnagiri-635108,*

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ABSTRACT:

Background: Its ability to handle medications remotely, telepharmacy has become an essential tool in healthcare, particularly for patients who live in remote places. There is little empirical data on its efficacy and patient experiences in various healthcare settings, despite its increasing popularity.

Aim: The purpose of this study is to examine telepharmacy and remote drug administration from the perspective of patients, illuminating their preferences, attitudes, and difficulties.

Method: The purpose of this pilot case study was to evaluate telepharmacy's application in the healthcare delivery system. Selected participants were given structured data collection forms to complete. The forms asked on demographics, telepharmacy service awareness, usage patterns, accessibility, and satisfaction levels. Based on their experiences using telepharmacy services, participants were asked to complete the forms. To assess the viability and efficacy of telepharmacy services, the gathered data were thoroughly examined, tallied, and examined using descriptive statistical techniques.

RESULT: Participants rated telepharmacy as moderately to extremely effective across a range of criteria, reporting pleasant experiences with it. There were significant age-related differences, with younger individuals having a more positive perception of telepharmacy. Perceptions were not greatly impacted by education levels. Additionally, residential location had no discernible effects.

Conclusion: Telepharmacy, by utilizing telecommunication technology, offers a transformative approach to remote medication management, significantly improving patient care across various healthcare environments.

KEY WORDS: Telepharmacy; health care delivery system; remote pharmaceutical services; patient outcomes; pilot case study

I. INTRODUCTION:

Telepharmacy is the practice of providing patients with pharmacological care remotely by use of information and communication technology.¹ This method makes it easy for patients to obtain prescription drugs and pharmaceutical services. Patient counseling, drug therapy monitoring, refill authorization, formulary compliance monitoring via videoconferencing or teleconferencing, and prior authorization of prescribed medications are all examples of telepharmacy services. Community pharmacies, hospitals, nursing homes, and other healthcare facilities can offer extra services including labeling systems and medicine delivery to rural areas.²

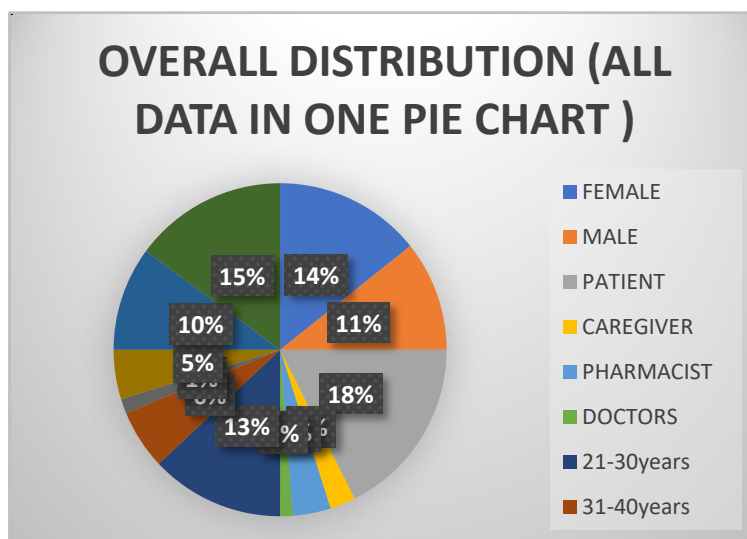
Access to quality medical care is hampered by the lack of medical experts in rural and isolated places.³ Using communication technology, telepharmacy, a subset of telemedicine, makes it possible to provide pharmaceutical treatments remotely.⁴ During the COVID-19 epidemic, its utilization grew, enabling pharmacists to ensure patient safety and accessibility while offering prescription review, medication monitoring, drug information, and patient counseling.^{5,6}

Pharmacies' widespread availability and accessibility make them essential to healthcare systems, especially in developed nations. In addition to administering medications, pharmacists offer pharmacovigilance, dosage advice, and patient education.⁷ Pilot studies are crucial for determining the technological, procedural, and patient-acceptance obstacles that telepharmacy will face in the real world. Preliminary data on safety, effectiveness, and satisfaction are provided by such studies, facilitating successful large-scale implementation. With an emphasis on telepharmacy models, operational procedures, the function of pharmacists, and the related advantages and difficulties in clinical practice, this paper examines the idea of telemedicine.

II. METHODS:

DEMOGRAPHICS CHARACTERISTICS OF PARTICIPANTS:

Variable	Category	Number (n)	Percentage (%)
Gender	Female	69	57.0
	Male	52	43.0
Role	Patient	85	70.2
	Caregiver	12	9.9
	Pharmacist	18	14.9
	Doctor	1	0.8
	Others	5	4.1
	Age group	21–30 years	63
	31–40 years	28	23.1
	41–50 years	7	5.8
	Above 50 years	23	19.0
Area	Rural	49	40.5
	Urban	72	59.5



The research had 121 individuals in total. Of the participants, 57.0% were female. 70.2% of the respondents were patients, and 52.1% of them were between the ages of 21 and 30. 59.5% of the research participants were from urban areas.

STATISCAL ANALYSIS OF DATA:

The current study focuses on the telepharmacy service consumption pattern in the

Krishnagiri area, where minimal use of the services was observed. The percentage of female participants (57.0%) was somewhat higher than that of male participants, which could be because women are more involved in family medication management and healthcare decisions. Patients accounted for 70.2% of users, suggesting that telepharmacy services in this area are more patient-driven than provider-driven. The age group with

the highest representation, 21–30 years old (52.1%), indicates that younger persons are more at ease with technology-based healthcare services than older groups. The results indicate that telepharmacy is mostly used in the Krishnagiri district for drug home delivery rather than thorough pharmacist consultation, despite the fact that telepharmacy seeks to provide distant pharmaceutical care. Due to greater internet connection, more awareness, and enhanced digital literacy in urban regions, telepharmacy services were used by urban participants (59.5%) more frequently than rural ones. A lack of organized telepharmacy infrastructure, inadequate connectivity, and low knowledge may be the causes of the comparatively lower usage in rural regions (40.5%). There is little integration of telepharmacy with multidisciplinary healthcare services, as evidenced by the low engagement rate of medical professionals like physicians (0.8%). Overall, the study indicates that although telepharmacy services are available in the Krishnagiri district, their scope is still mostly limited to home delivery and logistical support rather than comprehensive pharmaceutical treatment.

III. RESULTS:

Patients health outcomes and feedback:

Following medication usage counseling, all patients and family members who responded to a survey expressed satisfaction with their treatment. They feel that any inquiries about illness or the usage of medications are in line with the wishes of the individual being consulted, and they are totally comfortable heeding the advice. When asked why they wanted to keep using the service, respondents mentioned how easy it was to schedule their time and how enthusiastic the consulting pharmacist was. They thus gave the consulting substance a positive evaluation. A high degree of happiness and confidence in the telepharmacy experience is shown by the favorable comments. The ease, accessibility, and individualized treatment provided by telepharmacy consultations were probably valued by users. This implies that telepharmacy was seen by the great majority as a good and successful substitute for in-person consultations. To guarantee that these people receive the care they require, it is still important to respect their wishes. Addressing the desires of the tiny minority that favor direct consultation is crucial. Comprehending the causes behind their discontent may assist enhance the telepharmacy service and guarantee

that every consumer has a satisfying experience. Patients who use tele pharmacies frequently express more satisfaction with their care than those who receive conventional in-person therapy. All things considered, telepharmacy may be a useful choice for those in need of medical treatment due to its many advantages.⁹ People may better manage their drugs with the use of telepharmacy, which will improve their health.¹⁰ There is a digital gap that can exacerbate health inequities since not all patients have access to the technology required for telemedicine and telepharmacy. Some patients and healthcare professionals are not comfortable with technology or prefer more conventional interactions. Additionally, a few patients expressed dissatisfaction with virtual consultations being less intimate than in-person consultations. Although telepharmacy can provide effective counseling, there will be no in-person interaction between the patient and the pharmacist, which could lower the quality of their connection.¹¹

IV. DISCUSSION:

To the best of our knowledge, this study has emphasized the role of community pharmacists in Krishnagiri district who have used telehealth communication to provide healthcare services.^{12,13} This research suggests that a large number of community pharmacists are not prepared to adopt new technological services like telehealth. Many pharmacists are hesitant to offer non-face-to-face services until their healthcare outcomes become clear, according to a cross-sectional survey study done in Krishnagiri district.¹⁴ Reducing patient crowding and the risk of cross-infection during pharmacy visits are two benefits of telecommunication for vulnerable individuals with health conditions.^{15,16}

Nearly all of the participants in this study reported taking their medication exactly as prescribed by their doctors.

Even though patients thought they were following the right method, some poor reports were identified when queried about the kind of usage, as in previous study.¹⁷ The significance of the multidisciplinary team in patient care is subtly illustrated by this fact. Because of this, the pharmacist¹⁸ typically offers information about how to take the medications¹⁷ and their incompatibilities.

As a result, it is strongly advised that community pharmacists use the interactive communication loop with patients who are using telehealth services to seek medical advice, where

the teach-back technique guarantees that both the speaker and the listener comprehend. Lastly, we advise future research to assess the cost-effectiveness of this healthcare paradigm and the impact of telehealth on patients' health outcomes.

UNFLAVOURABLE FACTORS:

Pharmacy regulation laws:

Despite telepharmacy's enormous potential, the laws and regulations controlling pharmacy operations do not adequately meet the growing industry. Among the policy issues that need to be addressed are the physical location of pharmacists who provide telepharmacy services, the minimum amount of time pharmacists must be on site, the types of technology used, and the roles of pharmacists, pharmacy technicians, nurses, or other healthcare providers in medication distribution systems. The laws outline the role telepharmacy plays in providing a broader range of pharmacy services in acute-care settings and govern the operation of a complete medication usage system as well as the system that ensures safe drug handling.¹⁹

Operational difficulties:

Although telepharmacy is unquestionably a fantastic idea, its implementation can oftentimes be difficult. Telepharmacy services in remote hospitals and clinics face resource and operational problems. Telepharmacy services face resource and operational challenges. Only more advanced technology with high-speed digital connections (such as an Integrated Service Digital Network) may be able to provide telepharmacy services, which can be challenging to obtain in distant areas.²⁰

Continuity of care:

Telepharmacy is unquestionably a great concept, but it can oftentimes be challenging to put into practice. There are operational and resource challenges for rural clinics and hospitals that provide telepharmacy services. Telepharmacy services have operational and resource problems. Telepharmacy services may only be possible with more complex and sophisticated technology that has high-speed digital connections (such as an Integrated Service Digital Network), which can be challenging to obtain in rural locations.²¹

V. CONCLUSION:

According to the pilot research, telepharmacy services in the Krishnagiri district are mostly restricted to home delivery of medications.

Low awareness and technological obstacles limit the adoption of telepharmacy, despite the fact that it increases access and convenience. However, telepharmacy services are anticipated to become more crucial to the provision of healthcare in times of public health catastrophes, such as the COVID-19 pandemic.

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