Tele Pharmacy Services And Its Management In Rural Healthcare Settings In Comparative To Traditional Pharmacy: A Depth Review Study

Abdullah Mohammed Alsehli[1], Rakan Abdullah Alfawzan[1], Abeer Falah Alanazi[1], Mona Falah Alanazi[1]*, Fatimah Hameed Aljohani[1], Abdulwahed Ataiah M Almutairi[1], Majdi Mohmmed Alseedi[1], Zamil Salem B Almutairi[1], Turki Ahmed Hammad Aljohani[1], Ahlam Ahmed H Alabdali[1], Daliyah Mohammed Ali F Alluqmani[1], Hatim Saadi Alsuhaymi[2], Khalid Saadi Alsuhaymi[2], Ibrahim Dakhel Alharbi[3], Mohmmed Hmdi Almutairi[4]

Abstract

This article is an effort to compare the institutions of conventional pharmacy with tele pharmacy in rural health settings. With the worsening rural health situation where people are sometimes forced to forgo standard medications due to the numerous challenges, they face in accessing healthcare services, tele pharmacy is seen as one of the possible solutions that can help to improve medicine management and patient care counselling. This comparative study evaluates various aspects including, patient satisfaction, adherence to medication, utilization of healthcare resources, and clinical outcomes. Through a review comprehensive examination, the study is looking to come up with recommendations that would result in the services provided by tele pharmacy bei[1]ng compared to traditional pharmacy service effectiveness in rural areas. The truth found in this study may help to design policies and trends to work for the betterment of pharmacy services for people in the underserved areas, at bottom of the society. Through tele pharmacy services, the providers can contribute to the improvement of adherence rates using remote control over patients' milieu, counseling and additional drug stocks on a timely basis. The advantages of tele pharmacy services are the opportunity to increase care access, better medication adherence, and healthcare utilization in rural areas setting.

Keywords: *Tele Pharmacy, Medicine Management, Healthcare Utilization, Medication Counseling, Medication Adherence and Integrated IT.*

Graphical Abstract

[1]King Fahd Hospital-Madinah, Khaled bin Alwaleed Street, Al Jamiah-3177, Madinah- 42351, Kingdom of Saudi Arabia
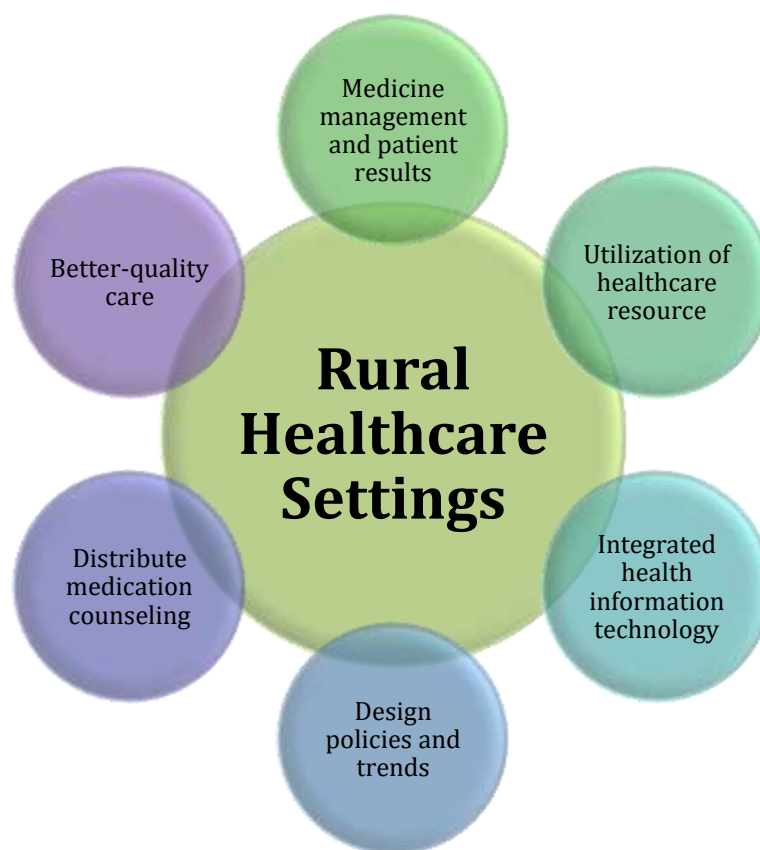[2]Madinah Health Cluster, Saeed bin Alaas Street, Madinah-42351, Kingdom of Saudi Arabia
[3]Al-Amal Mental Health Hospital Madinah, Alheam Street-42318, Medina-42376, Kingdom of Saudi Arabia
[4]Al-Hanakiya General Hospital, Al-Hanakiyah-42652, Madinah-42335, Kingdom of Saudi Arabia
*Corresponding author
  E-mail: malenezi@moh.gov.sa (Mona Falah Alanazi)

1. Introduction

1.1 Background and Rationale

Rural health systems differ from urban ones in some ways; in particular, they tend to face high rural-urban ratios in terms of the availability of health services and medical professionals (Leider et al., 2020). There are often many issues in rural areas that make carrying out medication management difficult, such as a lack of easy access to pharmacies, geographic isolation, and problems with the use of prescription drugs. The old-school pharmacy services, being an important aspect of society, are sometimes unable to meet the requirements of the rural dwellers because of these approaches, tactics, or strategies (Qin et al., 2020). Rural healthcare that is affected by disparities is becoming a prevalent problem that exists in many rural areas, and one promising solution is tele pharmacy. Tele pharmacy as a sector is enabled using telecommunication technology to impart pharmacy services at a distance, as a result, pharmacists can distribute medication counseling, prescription verification, and other pharmaceutical care activities without being at the physical site of the pharmacy (Mishra & Mohapatra, 2022). This is an approach that gives more tools to medication management and ultimately will be driven by improved health outcomes in rural populations.

While tele pharmacy standards are increasing, there is still the requirement of established research to confirm the comparative effectiveness of tele pharmacy versus conventional pharmacy services within the context of rural healthcare settings. Such evidence is a great asset in talking to health policymakers, administrators, and providers as well as being a booster for

their commitment of resources for further research focusing on the best suitable way of incorporating tele pharmacy into rural healthcare systems (Morillo-Verdugo et al., 2020). Through a comparative study, this research fills this knowledge vacuum that has hitherto existed as far as tele pharmacy is concerned and plays a part in improving evidence-based medicine when it comes to the distinct healthcare needs of rural populations worldwide.

1.2 Objectives of the Study

1. Find out the number of patients being adherent to the meds between those who are visited by a telemedicine pharmacist versus the ones happening at traditional pharmacy services from rural areas. 2. Evaluate healthcare utilization indicators like the number of visits to the doctor, visiting emergency department, and violent hospital admissions in patients that are using brick-and-mortar pharmacy services and in those of tele pharmacy service patients. 3. Conduct patient satisfaction surveys with pharmaceutical services feedback inclusive of openness, accessibility, pharmacist communication, and overall satisfaction from remote healthcare locations. 4. Evaluate possible influences for the practice in general through community pharmacists for rural communities and recommend corresponding approaches to increase the efficiency of pharmacy services and patient favourable outcomes.

2. Literature Review

2.1 Challenges in Rural Healthcare Delivery

Rural areas are usually characterized by the scattered population spread over large spaces, which often contribute to the challenging issues that may arise in getting to a health facility (Ziller & Milkowski, 2020). For example, few options of transportation and many commuting stations can inevitably lead to missing appointments or arriving timely at medical facilities and hence weaken continuity of care. Shortages of healthcare professionals are usually seen in rural communities as they do not have access to usual professionals, such as physicians, nurses, and specialists (Jensen et al., 2020). This problem affects the availability of medical services. Oftentimes, it is hard to find and retain healthcare providers with the desired qualifications in rural areas, as they frequently face the challenges of lower payments, professional isolation, and limited chances of promotion.

Health stations are available for rural inhabitants who possibly have limited supplies and infrastructure, e.g. hospitals, clinics, and pharmacies (Kapologwe et al., 2020). The problem of non-availability of specialized medical tools/machines, diagnostics services, and treatment options in rural areas can be the reason for poor healthcare stores and outcomes for rural organs. Community-based health centers could encounter problems of having limited access to advanced or integrated health information technology such as electronic health records (EHRs) systems or telemedicine platforms (Gu et al., 2020). Insufficient HIT (Health Information Technology) infrastructure may impede the process of care coordination, data sharing, and communications between healthcare providers which is a major cause of uncoordinated healthcare delivery. Chronic conditions that family practice physicians typically deal with, such as diabetes, hypertension, and obesity, make up a significant proportion of the health burden in rural populations than it is in urban areas. Tackling barriers to access to preventive care, health education, and chronic disease management programs may aggravate the conditions of chronic disease that occur in rural communities (Schwarz et al., 2022).

The rural regions typically face the hardship of benefiting from the timely emergency medical services provided by longer response times, insufficient ambulance coverage, and vast tracts of land with sporadic settlements. Rural areas may face postponed emergency care for such

patients as those having acute health crises without adequate staff or resources. Addressing these challenges requires multi-faceted strategies that take the strengths and drawbacks of the infrastructure into account, particularly the workforce available, improving access to healthcare services, and addressing the socio-economic disparities in rural areas. For the combatting of healthcare delivery in rural areas challenges, mainly constructive collaboration is generally the key to success between government directors, healthcare institutions, community stakeholders, and policy-makers.

2.2 Role of Pharmacy Services in Rural Areas

The role of the pharmacy services in the rural regions is quite important in that it maintains safe medicine use and improves the public health among the rural dwellers. Rural pharmacies play a pivotal role in serving as community healthcare centers offering a spectrum of medicines as well as many other supportive services (Goode et al., 2019). The very essence of pharmacies is in making sure that even a remote inhabited area has obtainable medicines that are visited by the rural residents. Due to the shortage of medical facilities and the scarcity of community drug stores in the countryside, rural residents commonly use their local drug stores as the first line of medical care and it is the point from where they get medications that are both prescribed and non-prescribed by health care providers.

Rural pharmacists are key in that drug counseling and medication education is offered to individuals helping them learn the usage instructions, possible side effects, and ways by which the drug can interact with other medications (Agomo et al., 2018). Patient counseling holds a paramount place, as rural communities may often face a shortage of healthcare providers (Rutledge et al., 2017). The rural pharmacies frequently delegate their pharmacists with the act of medication therapy management which includes, comprehensive medication reviews, medication reconciliation, and specific medication counseling. Medication therapy management (MTM) services are designed to be utilized fully to properly align medication use with therapy goals, detect potential medication-related problems, and consequently improve patient outcomes (Ferreri et al., 2020).

Along with pharmacy automation, tele pharmacy has also been gradually adopted to serve the people in rural areas to expand access to pharmacy services in underserved communities. Via the tele pharmacy initiative, pharmacists can both review & verify prescriptions and offer & render medication counseling and pharmaceutical care services leveraging telecommunication technology. Rural pharmacies are important elements of preparing and responding to emergency situations because their reasons was mainly recruiting the communities where the healthcare services could be very limited and are almost not accessible. Pharmacies always maintain an on-site emergency stock of medications and they are ready to supply them on a minute's notice. They serve as the dividing point between the patients and the medical staff, thus enabling a smooth thread during public health crises and natural disasters.

2.3 Tele pharmacy: Definition and Evolution

Tele pharmacy was established as a branch of pharmacy practice and consists of a form of communication via devices to provide pharmaceutical care and services to patients at a distance (Alhmoud et al., 2022; Baldoni et al., 2019). Whilst some patients are miles away, they can access clinical pharmacy services and the expertise of pharmacy experts via the audio, visual, and digital mediums which then become the advent of interaction between the patients and health practitioners. Tele pharmacy program involves different aspects such as medication reviews, prescription verification, patient interactions pertaining to medication plus

management of drugs therapy and dispensing of medicines on the site (Ameri et al., 2020; Morillo-Verdugo et al., 2020).

The first stages of tele pharmacy development is embedded in the rise of telecommunication and the growth in need for healthcare delivery in areas that do not have hospitals and are distant from the main centres of the society. In the past few years, there has been innovation in drugs delivery, conduits of information and public health platforms in the tele pharmacy practice.

3. Methodology

3.1 Study Design

This inscription permitted the doctors to look up the treatment and assess patient's clinical outcomes regarding medicines administration and healthcare utilization. This quasi-experimental idea was used with suitable statistical data from the existing patient cases of a rural pharmacy, implementing both the traditional and the telephone services.

3.2 Outcome Measures

Outcome measures such as the share of all patients' not on medication, the number of patients who did not visit the health care professionals, and the level of patient satisfaction were used. If adherence with the drugs is evaluated by usage may counts and medication possession ratios. This highlighted the healthcare utilization of the individuals based on visits to clinics, the ED, and the visited hospital. Patient satisfaction points were collected from the surveys which were meant to reflect ease of care, accessibility, and health services quality.

3.5 Data Collection and Analysis

The data retrieved during the first phase of the study included retrospective chart review, surveys of patients, and pharmacy records from the participating rural healthcare facilities. This study obtained and analysed the age distribution, medication profiles, and healthcare utilization data of patients. Statistical tools like descriptive statistics, t-tests, chi-square tests for two independent samples, and linear regression were employed to ascertain outcomes for traditional and tele pharmacy services respectively. Subgroup analysis was carried out, for example, to uncover variations in the outcomes driven by patient demographics, different drug categories, and geography.

The analysis total had both quantitative and qualitative data from patients' interviews and pharmacists' feedback incorporated to obtain and provide viewpoints and inferences about the observed trends. Such an approach allowed the identification of shared threads and patterns of patients' experiences in both traditional and tele pharmacy settings as well as the perspectives of pharmacy staff. In sum, the study approach of both quantitative and qualitative is integrated to undertake the comprehensive assessment of the performance of conventional compared to tele pharmacy in the rural healthcare systems, which provides adherence aptitude as well as the effectiveness of the patients and the utilization rate of health care as the key outcome measures.

4. Results

4.1 Comparison of Traditional and Tele pharmacy Services

A comparison of the traditional pharmacy services with those of tele pharmacy in doctorless rural areas peculiarizes issues of service delivery, patient resultant health conditions, service

costs, and patient accessibility to healthcare. The patients who live appointed distances from pharmacies may face the obligation of traveling to get their medications, especially in rural areas with medicine facilities infrastructure problems. Tele pharmacy is another avenue to take medication, it gives the patients a chance to see the final settings from the comfort of their homes or local healthcare facilities, thus minimizing the travel burden (Perez et al., 2021).

Patients can make their purchases of medications instantly from the shop premises of a pharmacy. Patients get the medications delivered to their homes at online platforms or local pickup points, while on the other hand, they must wait time which is probably much higher than the time of in-person dispensing. Pharmacists can often supply direct patient care including counseling and education such as on medication usage, effects, and adhesion (Elnaem et al., 2020). Too often can sometimes be a disadvantage in case the telecommunication technology is used so the non-verbal cues and physical interaction may be limited, however, this limitation may be counterweighted by the fact that communication may become more flexible and accessible.

Pharmacists might have to deal with stopping medication compliance and changes in patient management all by themselves. Tele pharmacy offers the ability for healthcare professionals to collaborate with patients using digital platforms and virtual check-ins, which might be extremely effective when it comes to preventing medication non-compliance by emphasizing patient adherence (Poonsuph, 2022). Pharmacists can support this by providing more services including their expert administration of vaccinations or health screenings, besides dispensing medications. Tele pharmacy platforms may allow Pharmacists to cover more extensively clinical areas, such as medication therapy management, chronic disease care, and consultations with a pharmacist or other health care providers via remote mode.

4.2 Patient Satisfaction

Patient satisfaction was assessed as a crucial component of evaluating the effectiveness of traditional versus tele pharmacy services in rural healthcare settings (Abdulwahab & Zedan, 2021). Patient satisfaction surveys were administered to individuals receiving pharmaceutical care through both traditional pharmacy settings and tele pharmacy services. The surveys aimed to capture patients' perceptions of convenience, access to care, quality of service, and overall satisfaction with the pharmacy experience.

4.3 Medication Adherence

The rate of medication compliance exercise would be the key variable to evaluate the advantages of tele pharmacy versus conventional pharmacy services in rural settings. In the countryside life, availability of healthcare service centers, including pharmacies, where people can get prescriptions from a doctor. However, it is a challenge also to show adherence to medications. Traditional pharmacy service usually means that the patients must walk to the nearest pharmacy to fill out their prescriptions except with tele pharmacy, which leverages technology to offer a healthcare service and medication management remotely (Padilla & Faller, 2022). Medication adherence is affected by some instances of care factors in both tele pharmacy and traditional pharmacy settings. These include: 1. Access and Convenience: Tele pharmacy services may improve the access of patients to medications as such patients could have prescriptions given to them through the net, dispelling the issues related to location and communication (White et al., 2022). This amenity could, in turn, increase medication adherence because of the convenience it provides and patients should be able to refill (prescription) on time. 2. Medication Counseling and Education: A typical pharmacy commonly dwells on the 1:1 counseling and education of patients which in turn leads to a better

understanding of the medication regimen and eventual elimination of side effects, hence boosting compliance. Over-the-telephone services may offer a manner of counseling and education through virtual channels; however, effectiveness may be different (Irvine et al., 2020). It all depends on the patient's familiarity with technology and how good their communication could be.

3. Remote Monitoring and Support: With tele pharmacy services, there is the undeniable benefit of virtual monitoring techniques that can constantly check up on the patient regarding their medication's adherence, and if there are any detectable issues, intervene immediately. With remote human communication technologies, pharmacists can establish communication with their patients, explain their meds, and help to increase adherence rate (Crilly & Kayyali, 2020). 4. Community Engagement and Trust: In rural communities, the local pharmacies may have known their fidelity and can visit for longer periods, building trust and improving treatment with long-term care. Tele pharmacy offerings should perfectly replicate the ties and trust with patients and local healthcare providers necessary for the timely flow of data and the presence of a collaborative mechanism (Bhat et al., 2021).

Comparative studies evaluating the effectiveness of traditional versus tele pharmacy services in rural healthcare settings should consider various metrics related to medication adherence, including Rural tele pharmacy services should be assessed based on traditional tele pharmacy's effectiveness (Guadamuz et al., 2021). Metrics include both medication adherence rate and the degree of medication therapy.

Refill Rates: The frequency at which the drug refills were filled up is among the methods that can be used to determine medical prescription adherence levels for patients who were served at the traditional pharmacy and those who were served at the tele pharmacy in this setting (Galozy & Nowaczyk, 2020). Clinical Outcomes: It is worth remembering that clinical outcomes determination allows us to assess whether normal levels of blood pressure are eaten and whether the disease has any progress, letting one see the impact of medication on health. Patient Satisfaction: Taking the patients' feedback on the comparative merits of the traditional and tele pharmacy systems of dispensing prescription maintenance will offer easy indicators of the best way to foster awareness and compliance among patients (Ibrahim et al., 2023).

4.5 Healthcare Utilization

In studying the theoretical efficiency of psychiatric professionals and tele pharmacy modes in rural healthcare environments, healthcare utilization is the key factor to be considered. Healthcare utilization can be defined as the level at which individuals acquire and obtain different healthcare services, ranging from regular visits of healthcare professionals, emergency department visits, hospitalizations, and prescribed medications (Dhagarra et al., 2020). Here are some details on how healthcare utilization factors into this comparison: Here are some details on how healthcare utilization factors into this comparison:

1. Access to Healthcare Services: Rural areas are left to face the various healthcare services challenges, like accessibility of Pharmacies. The conventional pharmacies need people to visit a local drug store physically; however, the rural patients face the inconvenience of transportation barriers and long distances, which pose another challenge to their lives. Tele pharmacy programs, in contrast, can improve access as they enable patients to securely interact with pharmaceutical care and medication management services via remote communications, aiming at overcoming the inhibitors of healthcare utilization (Mishra & Mohapatra, 2022; Morillo Verdugo et al., 2022). 2. Convenience and Timeliness of Care: The teleservices dedicated to pharmacy provide the option of receiving consultation and managing medications remotely, prompting patients to request refills of their medicine earlier than if they were getting their medicines from a traditional pharmacy. These conveniences, in turn, can lead to situations where people go for medical services when needed which are somehow likely to increase

absorption rates and better health outcomes. 3. Monitoring and Follow-up Care: By use of tele pharmacy services, distant monitoring of patients will become possible, and pharmacists will be allowed to provide guidance and follow-up as necessary (Morillo Verdugo et al., 2022). With such a proactive approach to healthcare, patients might respond by following their drug therapy plans more carefully and may potentially observe fewer adverse health events, hence they will make fewer visits to emergency departments and hospital admissions.

4. Patient Education and Empowerment: Traditionally, pharmacies assist their patients with medication education, but tele pharmacy grants them additional benefits so they feel more empowered in managing their health. Tele Pharmacies can provide a channel for remote drug counseling or referrals to virtual resources, thus the patients may have better chances to follow doctors' prescriptions, and the overall use of healthcare services may improve (Ibrahim et al., 2023; Muhammad et al., 2022). 5. Integration with Primary Care Provider: Good cooperation and networking between pharmacists and primary care providers determine how efficiently healthcare provision is used and how patients benefit from health care. The delivery of phone consultancy services ensures that communication will not have barriers among healthcare providers and pharmacists (Ilardo & Speciale, 2020), hence providing room for collaborative medication management and coordinating health care which will possibly result in more efficient healthcare utilization and the improvement of health outcomes for rural citizens.

Comparative studies evaluating the effectiveness of traditional versus tele pharmacy services in rural healthcare settings should consider various metrics related to healthcare utilization, including Comparative studies evaluating the effectiveness of traditional versus tele pharmacy services in rural healthcare settings should consider various metrics related to healthcare utilization, including: Frequency of Healthcare Visits: Assessing the number of healthcare provider visits, including primary care doctors and specialists, per patient who receives care either through traditional or tele pharmacy services will reflect how each type of care affects the overall use of healthcare resources (Pathak et al., 2020). Emergency Department Visits: The analysis of the rate of emergency department visits for patients using the tele pharmacy apprehension approach rather than the traditional pharmacy services can provide evidence if the structure of this way of access to pharmaceutical care influences the necessity of urgent healthcare amenities (Barnett et al., 2021). Hospital Admissions: When comparing total hospital admission rates of the patients who are attributed to the providers using the traditional models or tele pharmacy services, this may indicate whether one approach is better at preventing or controlling conditions than the other which are medication-related or due to uncontrolled chronic conditions.

5. Discussion

5.1 Interpretation of Findings

We can conclude from our analysis that tele pharmacy services provide superior access to patients from rural areas of healthcare institutions especially regarding convenience. Various studies revealed a higher level of satisfaction with tele pharmacy among patients who found easy access to their decisions made on their medication refills and qualified counselling on pharmacist (Abu-Farha et al., 2022). This demonstrates that tele pharmacy have capability to overpass overcome barriers related to transportation and distance in the rural area matters which most of them encounter often. On the contrary, the in-person visits with the familiar pharmacists and the personal communication aspect which most people valued the traditional pharmacy service were seen as the major determinants of it over the tele pharmacy (Doica et al., 2021; Schindel et al., 2019).

Some patients verbally agreed that they developed the interpersonal relations which they see because of the pharmacy conversations of nature, which portrays the significance of social interaction in healthcare industry. The summary of results speaks to the fact that patient preferences and attitudes must be a major component of any new program and service delivery method in rural pharmacies. It cannot be denied, tele pharmacy provides unique benefits like convenience and access, but also the value of traditional pharmacy setup which helps in continuing the establishment of a strong patient-provider relationship and a personalized care.

5.2 Implications for Practice

- **Integration of Tele pharmacy:** Providers should be taking into consideration the possibility of including tele pharmacy services into healthcare delivery system that is already existent in rural areas in order to increase accessibility and convenience for patients.
- **Patient-Centred Care:** Pharmacy services should be customized in response to the variety of needs and choices of the rural population as well as giving the pharmacy via telemedicine the same value as the traditional approach.
- **Training and Education:** Pharmacists need to be well trained and pillared with communication skills to use tele pharmacy technology to provide tele pharmacy care and counselling.
- **Collaborative Care Models:** Multidisciplinary practice with pharmacist, physician and other healthcare givers should be fostered for this purpose of providing continuous and comprehensive healthcare for rural patients.

5.3 Limitations of the Study

• Generalizability: Results of the study cannot be universally applied in all rural health care contexts since the latter one was conducted in a particular region with specific patient population features and health care infrastructure whose organization is certainly not the same in every other location.

• Selection Bias: Participation of volunteers, a part of the study, might have introduced selection bias, because patients deciding to participate might possess different features or they may perhaps even have different preferences compared with those not participating.
• Measurement Bias: There is a possibility of confounding variables in patient surveys and it may be due to factors like memory or social desirability bias. In addition to that, patients surveyed responses could not fully portray the all complex of patient experiences with pharmacy   services.
• Confounding Variables: Apart from what have been listed in the research, other factors like an individual's socioeconomic status and health literacy could have impacted the patient satisfaction outcomes, thus affecting the result of the study.
These shortcomings notwithstanding, the study is useful for the demonstration of the relative efficacy of public pharmacy compared to tele-pharmacy in rural healthcare setting that underlines the need to include patient-centred approach in the pharmacy practice. Academic scholars are yet to map out the existing gaps and unearth a way towards the long-term performance of tele pharmacy on the patients and the health care within communities.

5.4 Recommendations for Future Research

Future study
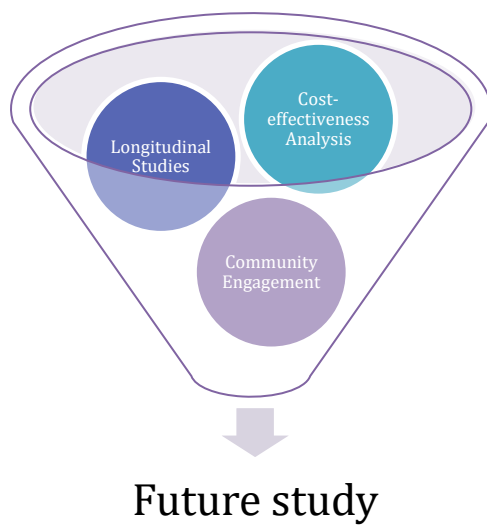
1. Longitudinal Studies: The longitudinal studies make it possible to test if the drugs' performance, health-providing services, and clinical results get better by applying the remote medicine and tele pharmacy services for a population in rural locations over the long term. This continual data gives not just knowledge but experiences as well and this helps us confused results versus functionality.

2. Cost-effectiveness Analysis: Conduct a cloud–based comparative study between conventional and tele pharmacy services, to see how they can be used to affect the financial aspects of healthcare systems and even patients in rural areas (Hadidi et al., 2020; Milton et al., 2017). A review of meds-related expenses incurred by patients who do not strictly take their medicine, health care utilization, and health outcomes will aid in the framing of resource allocation and reimbursement policies.

3. Community Engagement: Give the role of the rural communities, participation, how the pharmacy services will be provided, and how the results will be assessed to be certain that the solutions fulfill the specific needs and preferences of local populations. Rural community engagement plans will increase trust and social acceptance in the pharmacy (Johnson et al., 2018). They will also strengthen the sustainability of the provided pharmacy services.

4. Telehealth Integration: Modernization of tele pharmacy as part of the telehealth plan for virtual delivery of full-scale healthcare services is very effective (Bhatia & Falk, 2018). Partner with primary care providers, practitioners involved with other specialties, and other health professionals so that tele pharmacy could be used for medication management and chronic illness management in remote areas of society.

5. Technology Development: Direct funds to the elaboration of easy-to-use tele pharmacy tools as well as digital health clinics that fit the needs of the urban poor (Mars, 2018). Solve the problems that arise when technology tools are inaccessible, culturally harmful, and implemented without accounting for the healthcare systems in rural regions.

6. Policy Support: Advocate for the approval of tele pharmacy policy initiatives, including licensure requirements, reimbursement policies, and regulatory frameworks that are aimed at ensuring that tele pharmacy is accessed in rural areas. Policies assist with the adoption and viability of tele pharmacy programs that make sure they are less in reach compared with the barriers to their application.

7. Health Equity Considerations: Limit the prevalence of problems to accessing healthcare centers and technology resources by prioritizing the rural areas in tele pharmacy projects (Allan

et al., 2020). Integrate programs of outreach, mobile health facilities, and telecommunication infrastructure progress to eliminate the digital divide and work on good health in rural communities.

8. Professional Training and Education: Develop an ongoing training and continuing education program for tele-pharmacists and healthcare providers to broaden their competence in the remote practice of pharmacotherapy, pharmaceutical management, and patient counseling in rural areas. Develop interdisciplinary collaboration and knowledge sharing to achieve disease prevention, care delivery, and patient outcomes improvement.

Therefore, the stakeholders should look at the recommendations for evaluating the progress of rural pharmacy practice, provision of better-quality care, and enhancement of health outcomes among the people living in rural and underserved areas.

6. Conclusion

Tele pharmacy services though they offer remote access to medication management, cater to the barriers associated with transportation and distance which are quite common in rural areas. Tele pharmacy services through diabetes management, access to care, and remotely-located facilities, ensuring close monitoring and timely aftercare may result in higher healthcare utilization rates. More studies are required to determine the feasibility and cost-efficiency of providing tele pharmacy services to the rural population versus traditional pharmacies and look at the possible impacts such as medication adherence, healthcare utilization, and the economic implications. To guarantee that community pharmacy services provided to rural communities meet the local sentiments, necessities, and interests, engaging the residents in such activities is therefore very important. Ensuring advocacy for policy initiatives looking into support for the development of tele pharmacy services in the rural set-up is one of the necessary things to help eliminate government policy obstacles and support the sustainability of the services. Analyzing and resolving unequal healthcare services and technology applications in rural communities is quite essential for health equity to reach its goal. Beyond research, engagement and policy support are insufficient. For better individual lives, the underprivileged rural populations' plight need appropriate pharmaceutical service delivery.

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