

PHARMACISTS AND COMMUNITY-BASED PHARMACIES IN AN EXPANDED ROLE IN PATIENT CARE AND PUBLIC HEALTH IN THE U.S.

Darrell Norman BURRELL¹

Abstract: *The COVID-19 pandemic catalyzed the rapid integration of telehealth and digital health technologies, presenting both transformative opportunities and profound challenges in healthcare delivery. While these innovations promise to enhance access to care, they have also exposed and, in some instances, exacerbated existing health disparities. In response to these challenges, pharmacists have the potential to function in expanded roles as frontline healthcare providers, transitioning from traditional medication dispensers to key public health leaders. Community-based pharmacies emerged as critical hubs for vaccination campaigns, tele-pharmacy services, and chronic disease management, offering culturally responsive care in accessible spaces. This perspective paper explores the evolving role of pharmacists and community pharmacies in addressing health disparities through innovative care models that integrate digital health solutions and community-based outreach in roles as primary care pharmacists, health educators, recruiters for clinical trials, and facilitators for telehealth visits. By leveraging their trusted relationships within communities, pharmacists are uniquely positioned to promote digital literacy, increase diverse patient engagement in clinical trials, and advocate for culturally tailored care strategies. The paper underscores the ethical imperative of ensuring digital health equity while offering practical solutions for bridging the digital divide. It advocates for a reimagined pharmacy model that prioritizes access, equity, and innovation, positioning pharmacists and community pharmacies as pivotal change agents in building a more inclusive and just healthcare system. Through this inquiry, the paper calls on policymakers and healthcare leaders to adopt community pharmacy and pharmacist-driven strategies that advance health equity for all populations.*

Keywords: *Health Equity, Clinical Trial Recruitment, Community-Based Pharmacies, Telehealth, Pharmacist, Primary Care, Urgent Care, Health Education, Health Disparities.*

JEL Codes: I10, I11, I12, I14, I18.

¹ “Dr. Darrell Norman Burrell, Marymount University, USA, & Georgetown University Pellegrino Center for Clinical Bioethics, USA, ORCID # <https://orcid.org/0000-0002-4675-9544>

1. Introduction

The rapid integration of telehealth and digital health technologies during the COVID-19 pandemic marked a turning point in healthcare delivery, revealing both the potential for expanded access and the significant challenges of ensuring equitable care. While digital innovations have opened new doors, they have also amplified existing health disparities, particularly for marginalized populations. Technology-driven inequities, such as racial bias in medical devices, pose urgent bioethical dilemmas [1]. For example, pulse oximeters and infrared thermometers, widely used during the pandemic, have shown varying levels of accuracy based on skin pigmentation, disproportionately affecting Black patients and increasing the likelihood of misdiagnosis or delayed treatment [2]. These disparities are more than technical flaws; they reflect systemic gaps in healthcare innovation that demand new engagement models and greater inclusion in clinical trials and community settings.

Pharmacists have long been recognized for their expertise in medication management, but the pandemic catapulted them into more dynamic roles as key clinical care providers. No longer confined to dispensing prescriptions, pharmacists became essential public health leaders, merging pharmaceutical knowledge with practical interventions to address emerging crises. Pharmacists have expanded their scope of practice during the pandemic to include risk assessment, screening for COVID-19 symptoms, and triaging potential cases [3]. Their role in educating communities on infection prevention measures positioned them as trusted sources of information, helping to counter misinformation and build confidence in public health efforts.

One of the most visible examples of pharmacists' expanded roles was their integration into vaccination campaigns. Pharmacists were instrumental in administering COVID-19 and influenza vaccines, improving access for diverse and often underserved populations. Picture a bustling community pharmacy transformed into a vaccination hub, pharmacists engaging patients in multiple languages, addressing their concerns, and delivering care in familiar, accessible spaces. This community-centered approach helped bridge the gap for those who might otherwise face barriers to vaccination, including limited transportation, lack of primary care providers, or distrust of larger healthcare institutions.

The pandemic also accelerated the adoption of tele-pharmacy, further expanding pharmacists' reach and redefining how they deliver care [4–7]. Through virtual consultations, pharmacists provided medication reviews, chronic disease management, and remote follow-up care, ensuring continuity of treatment while adhering to public health safety protocols [3]. Tele-pharmacy services allow pharmacists to maintain close connections with patients, particularly those with chronic conditions requiring ongoing management [4–7]. Imagine a patient with hypertension logging into a virtual consultation with their pharmacist, receiving personalized medication adjustments and counseling from the comfort of their living room. This kind of care reduces the logistical challenges of traditional in-person visits and empowers patients to take a more active role in managing their health [4–7]. However, while tele-pharmacy offers clear benefits, its success hinges on addressing the digital divide.

Addressing the digital health divide is not merely a technical challenge. It is an ethical imperative. Ensuring that telehealth and other digital innovations reach all populations requires intentional strategies prioritizing equity and inclusion. Pharmacists, deeply embedded in the communities they serve, are well-positioned to lead these efforts. By partnering with local organizations, schools, and faith-based institutions, pharmacists can promote digital literacy and health education, helping patients navigate telehealth services more effectively. They can also play a critical role in advocating for the inclusion of diverse populations in clinical trials, ensuring that new medical technologies are tested across a broad range of demographics.

Moreover, pharmacists can act as cultural brokers, bridging the gap between technology and community by offering clinically sound and culturally responsive care. For instance, pharmacists can tailor communication strategies to resonate with specific cultural values, ensuring that telehealth interactions are meaningful and building trust. This trust is essential for improving patient engagement and outcomes, particularly in communities historically marginalized by the healthcare system.

The expanded role of community pharmacies provides an opportunity to reimagine healthcare delivery with a focus on equity, accessibility, and innovation. These pharmacies can serve as holistic health centers, offering medication services, chronic disease management, preventive screenings, and digital health support. By incorporating telehealth services and acting as hubs for clinical trial recruitment, community-based pharmacies can bring cutting-edge care directly to the neighborhoods that need it most.

This model envisions pharmacists as healthcare providers and community advocates, creating spaces where technology and human connection converge to improve health outcomes. In this new paradigm, the pharmacy is more than a place to fill prescriptions. It is a critical touchpoint in the healthcare continuum, where patients receive personalized care, build lasting relationships with providers, and gain access to the tools they need to live healthier lives.

The lessons learned during the COVID-19 pandemic underscore pharmacists and community-based pharmacies' critical role in addressing health disparities and expanding access to care. By embracing tele-pharmacy and leveraging their trusted relationships within communities, pharmacists can help close the digital divide and ensure that all patients benefit from technological innovations. As [1] argued in previous research, the future of healthcare must be inclusive and equitable, driven by models that prioritize diversity, access, and patient engagement. Pharmacists are poised to lead the charge in this evolving landscape, transforming healthcare delivery and shaping a more just and connected world.

2. Problem Statement

The rapid expansion of telehealth and digital health technologies during the COVID-19 pandemic represents a transformative moment in healthcare delivery, with promising opportunities and significant challenges. While digital health has the potential to revolutionize access to care, these innovations have also exposed and, in some cases, worsened existing health disparities. These disparities, particularly in the context of racially biased

medical devices such as pulse oximeters and infrared thermometers, are not merely technical glitches but bioethical dilemmas [1]. These devices, foundational in modern clinical practice, often produce inaccurate results for Black patients, increasing the likelihood of misdiagnosis or delayed treatment [2]. The consequences of these inaccuracies are particularly profound in clinical settings where timely diagnosis and treatment are crucial, underscoring the urgent and pressing need for more inclusive health technologies and equitable healthcare practices. This need is not just important, but urgent, and it also highlights the significant role of diverse participants in clinical trials in drug and medical device development, making your work promoting health equity even more crucial. These trends necessitate new approaches for engagement as they relate to clinical trial recruitment and health disparity engagement [8–12].

Health disparities and limited health literacy create formidable barriers to healthcare delivery, particularly in rural, low-income, and minority communities. This issue is magnified for elderly patients and individuals with chronic conditions requiring polypharmacy. The presence of pharmacists in underserved areas is not just a potential solution, but a crucial one. It positions them as accessible healthcare providers, not just as primary care clinicians, but also as health educators, clinical trial recruiters, and medicine management advisors. Pharmacists are uniquely equipped to address these challenges, blending clinical expertise with community-based outreach [3]. Gallagher [13] emphasizes that 89% of the U.S. population resides within five miles of a community pharmacy, which outlines that pharmacists and community-based pharmacies are not just well-positioned,

but essential in making a significant impact on health disparities and healthcare outcomes due to their accessibility to so many community members.

2.1. Purpose Statement

This perspective paper explores the expanding role of pharmacists and community-based pharmacies in addressing health disparities, particularly in the context of telehealth and digital health innovations. Drawing on recent developments during the COVID-19 pandemic, the paper examines how pharmacists have transitioned into broader public health roles, emphasizing their potential as key players in promoting health equity.

Through an in-depth discussion of how pharmacists can integrate telehealth, vaccination campaigns, and chronic disease management into routine care, this paper advocates for a new model of community-based healthcare that prioritizes access, equity, and cultural responsiveness. The goal is to illuminate how pharmacists can reduce health disparities and ensure that emerging healthcare technologies serve all populations equitably.

Furthermore, this paper highlights pharmacists' unique position as cultural brokers and advocates for vulnerable populations. By leveraging their accessibility and trust within communities, pharmacists can promote digital literacy, support diverse patient engagement in clinical trials, and create spaces where personalized, culturally competent care thrives. Through these efforts, pharmacists have the potential to reshape healthcare delivery, ensuring that digital health innovations do not merely represent technological progress but also a

meaningful step toward achieving health equity for all. This inquiry addresses not only the bioethical implications of digital health disparities but also offers practical solutions for bridging these gaps through the evolving role of pharmacists and community-based pharmacies.

2.2. Significance of the Inquiry

The significance of this inquiry lies in its focus on pharmacists and community-based pharmacies as pivotal agents of change within the evolving healthcare landscape. At a time when health disparities are under increasing scrutiny, exploring the role of pharmacists and community-based pharmacies offers a fresh perspective on addressing these challenges at the community level. Pharmacists' accessibility, particularly in underserved areas, positions them as vital healthcare providers capable of implementing practical solutions to longstanding inequities. By integrating telehealth, vaccination services, and chronic disease management into their practices, pharmacists are uniquely equipped to expand access to care while promoting culturally responsive patient engagement. This inquiry emphasizes how pharmacists' and community-based pharmacies in expanded roles can help close critical gaps in care and improve outcomes for populations historically marginalized by the healthcare system.

In addition, the paper contributes to the broader discourse on health equity by addressing the digital divide and its impact on healthcare delivery. As healthcare systems increasingly adopt telehealth and digital health solutions, understanding the structural barriers that prevent certain populations from accessing these services is essential. This inquiry highlights the

ethical imperative of ensuring that digital health innovations are inclusive and equitable, advocating for pharmacists to build community-based solutions. Doing so offers a blueprint for a more just and connected healthcare future in which pharmacists and community-based pharmacies can serve as providers and advocates for systemic change.

2.3. Nature of the Inquiry

A prospective academic paper is a scholarly article that offers an interpretative and critical analysis of a specific topic, providing a well-informed viewpoint rather than presenting new empirical data [14]. Unlike research articles on data collection and statistical analysis, perspective papers synthesize existing knowledge to propose new conceptual frameworks, highlight emerging trends, and address pressing issues in each field [14]. Perspective papers are uniquely valuable in academic discourse, providing a platform to synthesize existing knowledge and present new conceptual frameworks that inform practice and policy [14]. This inquiry employs the perspective format to offer a holistic view of how pharmacists can reshape healthcare delivery, particularly in addressing health disparities and improving digital health equity. Unlike empirical studies, which focus on presenting data-driven findings, perspective papers allow for a broader, more interpretative approach that draws connections between disparate fields, such as digital health, public health ethics, and community pharmacy practice, creating a cohesive narrative that can inspire innovation and reform.

The value of a perspective paper lies in its ability to spark critical conversations and generate fresh insights [14]. In this inquiry,

the perspective format is especially well-suited for examining the expanded role of pharmacists in a rapidly evolving healthcare environment. Perspective papers are critical in laying the foundation for future empirical studies by synthesizing existing knowledge, identifying research gaps, and proposing new conceptual frameworks to shape subsequent investigations. Unlike empirical studies that focus on collecting and analyzing data, perspective papers offer a broader and interpretative approach, allowing scholars to connect insights from multiple disciplines and create cohesive narratives that spark innovation and inspire new lines of inquiry. In healthcare delivery and digital health equity, perspective papers highlight emerging trends and propose novel ideas, such as the expanded role of pharmacists in addressing health disparities, that can later be explored through empirical research. These papers encourage critical conversations among practitioners, policymakers, and academics and provide a conceptual roadmap for designing future studies [14]. By framing key issues and offering potential solutions, perspective papers act as catalysts for deeper investigation, helping to bridge theory and practice while setting the stage for data-driven research that can validate and expand upon their ideas [14].

3. Telehealth and the Expanding Digital Divide: A Dual Reality of Progress and Inequity

The sudden and widespread adoption of telehealth during the pandemic revealed critical shortcomings in the U.S. healthcare system. Before 2020, telehealth was used by only about 5% of patients, but during the pandemic, this number surged to 70%, with 25% of patients continuing to use it as

of 2023 [15]. This shift was a necessary response to the public health crisis. Still, it highlighted several bioethical concerns, including unequal access to digital technologies, disparities in health literacy, and the digital divide that disproportionately affects low-income and minority communities. These issues exemplify the broader bioethical challenges of deploying healthcare technologies without sufficient attention to equity.

COVID-19 forced meteoric rise of telehealth and health technologies represents both a beacon of innovation and a stark reminder of existing inequities in healthcare [16]. Digital health technologies promise to enhance access to care, particularly for those living in remote or underserved areas. However, this potential remains unevenly distributed, raising profound concerns about how structural barriers limit equitable access. While [1] emphasize that telehealth and biotechnology innovations can serve as a transformative tool for expanding care and fostering health equity, the full realization of this promise depends on how these technologies are designed and implemented. Without intentional inclusion and thoughtful planning, telehealth risks becoming another mechanism that exacerbates health disparities rather than ameliorating them [16].

3.1. The Potential of Telehealth to Foster Health Equity

Telehealth is often heralded as a revolutionary step forward, enabling patients to connect with healthcare providers from the comfort of their homes, reducing travel burdens, and improving access to specialists [17]. [18] note that when properly integrated into healthcare

systems, telehealth can significantly bridge the gap in care delivery for rural and underserved populations. For a working parent in a rural area, for example, the opportunity to consult a physician via a virtual platform can mean the difference between timely medical intervention and delayed care due to transportation challenges or inflexible work schedules. In this light, telehealth offers the potential for a more inclusive healthcare model that prioritizes accessibility and convenience.

However, this idealized vision of telehealth as a democratizing force in healthcare overlooks the stark realities faced by marginalized communities. The unequal distribution of digital resources, commonly known as the digital divide, presents a formidable obstacle to the equitable deployment of telehealth services [17]. While many assume that access to the internet is universal, the reality is far more complex. Rural communities, low-income households, and older adults are disproportionately affected by limited access to reliable broadband, making it challenging for them to benefit from telehealth innovations [1].

3.2 Structural Barriers: An Invisible Wall

Access to reliable internet and a computer is only the beginning of understanding the digital divide and its influence on health outcomes. Even in communities where connectivity exists, challenges related to digital literacy, language barriers, and cultural differences in patient-provider communication hinder effective telehealth utilization [17]. Consider an elderly patient with limited digital literacy attempting to navigate a complex telehealth platform to attend a

medical appointment. The stress of managing unfamiliar technology can easily overshadow the intended benefits of the virtual visit, leaving the patient feeling alienated and underserved. Furthermore, cultural differences and communication styles can complicate virtual interactions, particularly when providers fail to account for patients' unique cultural contexts and health beliefs [17].

Trust is a critical factor in healthcare for many patients from marginalized backgrounds. The absence of a physical presence in virtual consultations can erode this trust, leaving patients feeling disconnected and hesitant to disclose essential health information [16]. Telehealth interactions can sometimes feel transactional rather than relational, reinforcing existing feelings of exclusion and systemic neglect in healthcare in ways that require new levels of engagement and assistance.

Far from being a panacea, telehealth risks unintentionally reinforcing the disparities it seeks to eliminate. [17] cautions that failing to address structural inequities such as limited digital access, language differences, and cultural dynamics may widen the care gap between privileged and underserved populations. Patients with access to private spaces, high-speed internet, and fluency in digital tools will inevitably experience the full advantages of telehealth, while others, particularly those in rural or economically disadvantaged areas, will find themselves further marginalized [16].

The risk of telehealth becoming a "digital front door" that remains closed to many is a sobering reminder of the persistent inequalities that shape healthcare experiences. A digital divide in healthcare could mean that patients already on the margins of the healthcare system are left

even further behind, excluded from critical innovations that could transform their health outcomes [1].

3.3. Integration and Collaboration in Healthcare

The pandemic underscored the necessity for an integrated healthcare model, with pharmacists working in tandem with other healthcare professionals in multidisciplinary teams. This collaborative approach elevated pharmacists' status within healthcare systems, revealing their capacity to contribute to comprehensive care models. This integration transformed community pharmacies into “medical-pharmaceutical networks,” where pharmacists played a pivotal role in coordinating care, ensuring therapeutic continuity, and advocating for public health initiatives [3]. These evolving responsibilities signified a departure from the traditional, product-centered focus toward a more holistic, patient-centered approach [19–21]. Policy changes reflected this evolution, with increasing discussions around expanding the scope of pharmacists' practice. Their roles in drafting public health guidelines and participating in pandemic response strategies exemplified their growing influence on healthcare policy and decision-making [3]. Recognizing pharmacists as essential healthcare providers highlighted the need to integrate their services and community pharmacies into telehealth and primary care treatment interventions.

The paradigm shift from a product-based practice to patient-centered care represents a significant evolution in pharmacy [19–21]. Historically, pharmacists were primarily responsible for compounding medications and dispensing

drugs, with minimal direct patient interaction [19–21]. As healthcare demands have grown more complex, pharmacists have taken on enhanced roles in patient education, counseling, and comprehensive medication management. This transition aligns with the broader healthcare movement toward personalized medicine, which tailor's treatment plans to meet individual patients' unique needs and preferences [3]. Modern pharmacy practice emphasizes non-pharmacological interventions, such as health screenings, lifestyle counseling, and disease management programs. These services promote overall patient wellness and prevent chronic illnesses rather than merely managing symptoms through medication. Evidence-based practices further anchor this transformation, with pharmacists using data-driven approaches to assess patient needs, evaluate treatment options, and participate in clinical research to improve patient outcomes [3].

3.4. Reimagining Accessible Care in the Evolving Healthcare Landscape

CVS Health's Pharmacy-based MinuteClinic represents a dynamic response to the evolving demands for accessible healthcare. Situated within CVS Pharmacy stores, MinuteClinics provides walk-in services for minor illnesses and preventive care. Staffed by highly trained nurse practitioners (NPs) and physician assistants (PAs), these clinics offer immediate care without the constraints of appointments, bridging a critical gap in the healthcare continuum. By addressing the needs of those lacking a primary care physician or facing extended appointment wait times, MinuteClinics serves as a beacon of accessible and affordable

healthcare. With extended hours and weekend availability, these clinics become a crucial resource for patients seeking timely care beyond the rigid hours of traditional primary care practices [3].

In the broader context of urgent care, CVS MinuteClinics complement primary care and emergency services. Emergency rooms are equipped to handle life-threatening conditions, but they are frequently overwhelmed by patients with non-emergent issues, exacerbating delays and driving up costs. MinuteClinics fills this void by offering affordable and efficient care for ailments such as colds, flu, ear infections, and minor injuries. These clinics also provide preventive services such as vaccinations and health screenings, enhancing their role as community health stewards [3]. By alleviating the burden on emergency departments and offering cost-effective alternatives, MinuteClinics contributes to a more balanced and sustainable healthcare system.

3.5. Envisioning Pharmacies as Healthcare Hubs

The concept of pharmacy-based healthcare facilities like CVS MinuteClinic holds immense potential to redefine community health services. Imagine pharmacies equipped with private rooms featuring internet-enabled computers, offering underserved community members a space for virtual medical consultations. This innovation could democratize telehealth by addressing the digital divide that leaves many without reliable internet access. Beyond telehealth, community pharmacies could serve as recruitment sites for clinical trials, fostering inclusive research participation and ensuring that marginalized communities are not excluded from advancements in medical science.

The emergence of a *primary care pharmacist* model could further revolutionize care delivery. In this model, pharmacists would conduct billable medical appointments, access patient medical records, and collaborate with primary care providers. Such an expansion would grant pharmacists a more active role in medication management, chronic disease monitoring, and therapeutic decision-making, reinforcing their position as essential healthcare providers [22].

3.6. Medication Management and Clinical Interventions

Primary care pharmacists could perform many roles that significantly enhance patient safety and reduce healthcare costs. Medication reconciliation at care transition points is essential for maintaining accurate medication lists and preventing errors that often result in adverse outcomes. Comprehensive medication reviews would allow pharmacists to identify potential issues such as drug interactions, duplications, and inappropriate therapies, ensuring the optimization of each patient's regimen [22].

Clinical interventions by pharmacists, such as recommending adjustments to therapy based on patient response, can transform outcomes. Monitoring adverse drug reactions (ADRs) and managing medication-related problems can significantly reduce preventable complications. Patient counseling on medication adherence and effective usage empowers patients and reduces hospital admissions attributable to medication errors [22]. By engaging in chronic disease management and health screenings, pharmacists contribute to improved clinical outcomes while promoting cost-effective care strategies.

Medication error prevention is pivotal in achieving cost containment within healthcare systems. Pharmacists' active involvement can mitigate adverse drug events (ADEs), which frequently lead to costly hospital admissions and extended lengths of stay. Reducing ADEs shortens hospital stays and decreases the demand for emergency services and other costly interventions [22].

[22] highlight that the financial burden of ADEs can amount to thousands of dollars per patient, underscoring the economic imperative of proactive medication management. Pharmacists help healthcare systems avoid unnecessary expenses by providing cost-effective therapeutic alternatives while optimizing patient outcomes. Through streamlined medication processes and continuous oversight, pharmacists reduce operational inefficiencies, creating a ripple effect of savings and improved resource allocation across healthcare networks.

3.7. Toward a Patient-Centered Future

Integrating primary care services within pharmacy-based models like CVS MinuteClinic reflects a fundamental shift toward patient-centered care. Pharmacists' ability to adapt to evolving healthcare needs, particularly in response to public health crises like the COVID-19 pandemic, exemplifies their growing relevance in modern healthcare. Pharmacists stand poised to reshape the future of healthcare delivery as they continue to expand their roles in chronic disease management, telehealth, and clinical research. This transformation enhances patient outcomes and strengthens the healthcare system's capacity to serve diverse populations more equitably and effectively [19–21].

Pharmacists and community pharmacies have evolved far beyond their traditional roles, becoming indispensable healthcare providers who contribute across multiple facets of patient care. With expertise in pharmacotherapy and patient-centered care, pharmacists are uniquely positioned to address chronic disease management, preventive health, and collaborative treatment planning. These expanded responsibilities reflect a critical transformation in healthcare delivery, driven by the need for accessible, cost-effective care models. According to [22], pharmacists' involvement in chronic disease management, health screenings, patient counseling, and interprofessional collaboration has significantly improved health outcomes, particularly for patients with complex conditions.

3.8. Chronic Disease Management and Preventive Health

Pharmacists act as proactive health advocates in chronic disease management, working directly with patients to manage diabetes, hypertension, and asthma. Through personalized assessments, they adjust medication regimens, provide disease-specific counseling, and monitor treatment efficacy to ensure optimal outcomes [22]. Consider the image of a pharmacist counseling a newly diagnosed diabetic patient, carefully explaining how lifestyle choices, medication adherence, and blood glucose monitoring work in tandem to improve health. This hands-on approach helps reduce complications and empowers patients to take control of their health. Additionally, community pharmacists offer preventive services such as health screenings for high blood pressure and cholesterol, along with vaccinations and guidance on lifestyle

changes that mitigate the risk of disease onset [22].

Point-of-care testing adds another dimension to their preventive care role. Pharmacists can conduct rapid tests for conditions such as blood glucose levels, providing real-time feedback and timely therapeutic interventions [22]. This immediate access to diagnostic information allows pharmacists to make swift decisions, bridging the gap between diagnosis and treatment in ways that enhance patient outcomes. Such services are vital, particularly for underserved communities where timely access to healthcare professionals may be limited.

3.9. Patient Counseling and Medication Therapy Management

Patient counseling and medication therapy management (MTM) are integral aspects of pharmacy practice that exemplify the depth of pharmacists' patient care capabilities. In MTM sessions, pharmacists comprehensively review all medications a patient takes, identifying potential drug interactions, optimizing therapeutic regimens, and addressing barriers to adherence [22]. Picture a pharmacist sitting across from an elderly patient with multiple prescriptions, carefully reviewing each medication's purpose, potential side effects, and the importance of adherence. This personalized interaction ensures that the patient fully understands their treatment plan, reducing the risk of medication errors and improving therapeutic outcomes.

Patient education extends beyond medications to include broader health literacy. Pharmacists educate patients on managing chronic conditions, emphasizing the importance of lifestyle changes and preventive care measures. By demystifying

complex medical concepts, they transform potentially overwhelming information into actionable advice that patients can easily incorporate into their daily lives [22]. This empowerment promotes adherence and fosters a collaborative relationship between pharmacists and their patients.

3.10. The Growing Obesity Epidemic and Its Health Implications

The rapid increase in obesity rates over the past few decades signals an alarming public health crisis with far-reaching consequences. According to [23], 68.8% of U.S. adults are now classified as overweight or obese, placing a significant portion of the population at heightened risk for chronic diseases such as diabetes and coronary heart disease. This trend is not just a current health challenge but a harbinger of a worsening epidemic, with projections suggesting that more than half of the U.S. population will be classified as obese by 2030. The sheer scale of these statistics evokes a troubling image, communities grappling with preventable illnesses, increased healthcare costs, and diminished quality of life. However, despite the well-documented risks of obesity-related conditions, only half of affected patients receive essential counseling on diet and exercise from their healthcare providers [23].

As the healthcare landscape evolves to prioritize prevention and wellness, pharmacists are emerging as essential contributors to public health efforts to combat obesity. Traditionally seen as medication experts, pharmacists now play a broader role in disease prevention and health promotion, making weight management services a natural extension of pharmaceutical care [23]. Unlike many healthcare professionals bound by

appointment schedules, pharmacists are highly accessible and embedded within the community, uniquely positioned to deliver personalized weight management interventions. Their expertise in medication management and their ability to offer ongoing support allow them to act as health coaches, guiding patients through weight loss journeys that require both clinical insight and behavioral change.

Community pharmacists have offered weight management services since the late 1990s, providing structured diet assessments, personalized dietary plans, and behavior modification strategies to support healthier lifestyles [23]. Picture a patient walking into a neighborhood pharmacy seeking advice on managing their weight. Rather than simply filling a prescription, the pharmacist offers an in-depth consultation, creating a tailored plan incorporating medication and lifestyle adjustments. This patient-centered approach transforms the pharmacy into a hub for preventive care, where individuals receive the tools to manage their weight and the encouragement and accountability to sustain long-term change.

The effectiveness of pharmacist-led interventions is particularly evident in the management of orlistat therapy, where pharmacists' support has been shown to improve medication adherence and weight loss outcomes [22]. These successes highlight the potential for pharmacists to fill a critical gap in obesity care, especially for patients who may not have regular access to dietitians or other specialists. Community pharmacies' convenience and frequent interactions provide an ideal setting for sustained engagement and follow-up care, which is essential to any successful weight management program.

While pharmacists play a vital role in weight management, their impact is

magnified when collaborating with other healthcare professionals in multidisciplinary programs. Teams that include physicians, dietitians, exercise physiologists, and pharmacists can offer comprehensive education and support, optimizing patient outcomes holistically [23]. Such programs integrate expertise from multiple disciplines, blending clinical knowledge with behavioral insights to address the complex factors contributing to obesity. Imagine a patient participating in a collaborative clinic where each specialist contributes to a personalized care plan, providing medical oversight, dietary guidance, exercise recommendations, and medication management, all coordinated to ensure the best possible outcome.

Pharmacists in these settings manage medications, reinforce health education, monitor progress, and provide ongoing motivation [19–21]. Their proximity to patients in community-based settings ensures the advice is practical and immediately actionable, bridging the gap between clinical recommendations and real-life implementation. Whether working within community pharmacies or collaborative practice clinics, pharmacists are critical in integrating weight management into everyday healthcare services, helping patients achieve lasting health improvements [23].

The obesity epidemic demands innovative, community-driven solutions, and pharmacists are poised to meet this challenge through their expanded roles in prevention and patient care. By offering accessible, evidence-based weight management services, pharmacists can reduce the prevalence of obesity-related conditions and empower individuals to take control of their health. Their ability to provide continuous, personalized support

positions them as invaluable partners in the fight against obesity. Through collaboration with other healthcare professionals, pharmacists can further amplify their impact, contributing to a healthier future for individuals and communities alike [23].

4. The Critical Need for Diversity in Clinical Trials

Diversity in clinical trials is essential for advancing equitable and personalized medicine [24, 25]. Without representation from a broad array of racial, ethnic, and socioeconomic backgrounds, clinical trials risk producing results that are neither generalizable nor responsive to the health needs of marginalized populations [8–12]. When treatments are tested predominantly on homogenous groups, the nuances of human biology, influenced by genetics and environmental factors, remain unexamined for countless others [24, 25]. For instance, diseases such as hypertension and diabetes manifest differently in African American and Latino populations, often requiring tailored therapeutic approaches. By including a diverse participant pool, clinical research can unlock new insights and create treatments that genuinely serve the full spectrum of society. The absence of diversity, however, perpetuates disparities, leaving entire communities vulnerable to suboptimal care and undetected risks.

4.1. The Importance of Trust and Trusted Providers

Building trust within minority communities is foundational to greater participation in clinical trials [24, 25]. For many communities of color, trust is not a

given but must be earned through consistent, culturally competent engagement. Physicians and healthcare providers known and respected within these communities are crucial bridges between clinical research and hesitant populations [24, 25]. Imagine a long-time neighborhood physician in a predominantly Latino community explaining clinical trials in Spanish during a local health fair. Such a scenario could fundamentally change perceptions of research, transforming fear into informed curiosity and reluctant avoidance into enthusiastic participation. Trusted medical providers are not just conduits of information; they embody the assurance that patients' well-being will be prioritized, and their voices heard. When trust is established, the fear of exploitation diminishes, replaced by a shared vision of improved health outcomes for future generations [8–12].

4.2. Barriers Hindering Minority Participation

Despite the benefits of broader participation, significant barriers obstruct access to clinical trials for minority populations [8–12]. The weight of historical trauma hangs heavy in many communities, casting a long shadow that deters engagement. One cannot overlook the enduring impact of unethical studies like the Tuskegee Syphilis Experiment, which left a legacy of justified suspicion toward medical research [24, 25]. Beyond history, structural inequities further complicate participation. Consider a single mother working multiple jobs who would need to sacrifice income and time to travel across town to a research site, a near-impossible feat when survival demands every available moment. Language barriers can also act as an invisible wall,

preventing individuals from understanding complex medical protocols or trusting the intentions of clinical investigators. Meanwhile, the lack of diversity among clinical researchers often leaves minority participants feeling alienated, as they rarely see themselves reflected in those leading the studies [24, 25]. Health literacy poses an additional obstacle, with potential participants struggling to grasp the implications and benefits of participation in clinical trials [24, 25].

4.3. Breaking Down Barriers and Moving Forward

The future of clinical research depends on dismantling these barriers with intention and compassion [24, 25]. It requires engaging trusted voices from within communities, providing resources that make participation accessible, and ensuring that clinical trials are designed with inclusivity at their core [8–12]. Diversity is not merely an ethical imperative but a scientific one, and only through authentic engagement with minority communities can we create a healthier and more equitable world [24, 25]. Pharmacists can play an essential role in research and the advancement of medical science by promoting participation in clinical trials. They contribute valuable expertise in drug development and treatment protocol evaluation by participating in clinical trials and collaborating with research and patient recruitment teams [22]. Their involvement in these efforts ensures that new therapies are not only effective but also safe and accessible. Furthermore, community pharmacies can serve as vital recruitment sites for clinical trials, promoting diverse participation and helping to bridge the gap between research and real-world application.

Pharmacists' ability to manage polypharmacy in elderly or complex patients further underscores their importance. By reviewing medication regimens and identifying duplications or potential interactions, pharmacists mitigate risks associated with taking multiple medications, ultimately improving patient safety and reducing avoidable healthcare costs [22]. This vigilance protects some of the most vulnerable patient populations and exemplifies the pharmacist's role as a guardian of patient well-being. The expanding roles of pharmacists reflect a paradigm shift in healthcare that prioritizes accessibility, patient-centered care, and collaboration [19–21]. From managing chronic diseases to participating in clinical trials, pharmacists contribute at multiple levels to improve patient outcomes and optimize healthcare delivery. As healthcare evolves, the pharmacist's multifaceted role will remain critical in addressing emerging health challenges and ensuring that communities receive the comprehensive care they need [22]. This transformation positions pharmacists not merely as medication dispensers but as vital partners in the ongoing effort to promote health and well-being for all [26].

5. The Expanding Role of Community Pharmacists

The evolving role of community pharmacists holds transformative potential for individual patient care and the broader healthcare system [22, 26]. Beyond their traditional responsibilities, pharmacists are now considered integral healthcare providers who can offer enhanced services that improve health outcomes and reduce the strain on overburdened healthcare systems. [27] underscores the importance of

expanding the role of pharmacists, emphasizing their unique ability to improve medication adherence, increase access to healthcare services, and promote preventive care initiatives within the community.

Community pharmacists are uniquely situated to provide ongoing, personalized advice on medication use, significantly improving patient outcomes. Through frequent consultations, pharmacists develop strong patient relationships, allowing for tailored interventions that address individual needs. Imagine a pharmacist counseling an elderly patient struggling with a complex medication regimen, patiently explaining the purpose of each drug while offering practical strategies for managing adherence. This consistent, patient-centered care helps reduce medication errors and enhances therapeutic outcomes [27]. By fostering trust and open communication, pharmacists empower patients to manage their health actively, ultimately promoting greater well-being.

5.1. Accessibility as a Cornerstone of Community Health

Unlike many other healthcare providers, community pharmacists are highly accessible and often serve as the first point of contact for individuals seeking health advice. Without needing appointments, patients can walk into a pharmacy and receive immediate assistance for minor ailments or health concerns, making pharmacists invaluable resources for timely and practical care. [27] highlights that this ease of access offers patients greater convenience and promotes early intervention for emerging health issues. Whether advising a parent on treating a child's fever or assisting a patient with managing seasonal allergies, pharmacists

provide swift, evidence-based solutions that can prevent the need for more intensive medical intervention.

Integrating additional services such as routine health screenings and diagnostic testing into pharmacy practice offers an opportunity to reduce pressure on general practitioners and other primary care providers. By conducting blood pressure, cholesterol levels, and blood glucose tests, pharmacists contribute to early detection and ongoing management of chronic conditions, enabling patients to receive essential preventive care without lengthy wait times [27]. Picture a bustling pharmacy where patients have access to on-the-spot blood pressure checks and counseling on lifestyle changes to reduce cardiovascular risks, these simple but impactful services help bridge critical gaps in primary care.

Expanding the diagnostic and preventive services pharmacists provide has significant implications for public health. Engaging pharmacists in screening and health promotion activities supports early detection of chronic diseases and increases public awareness of health risks and preventive measures. [27] argues that such involvement strengthens community health initiatives by creating a more proactive approach to healthcare. Consider a pharmacist delivering an educational session on diabetes prevention in a community setting, equipping individuals with the knowledge to make healthier choices and seek timely care. This broader public health role positions pharmacists as community health advocates who can influence population health outcomes positively.

5.2. Professional Growth and Advancements in Practice

Extending pharmacists' roles necessitates reexamining their training and

regulatory frameworks to ensure they are equipped to meet new challenges. [27] asserts that such a shift will elevate professional standards and lead to the development of more competent practitioners who can confidently deliver expanded services. Continuous professional development opportunities in diagnostics, chronic disease management, and preventive care enhance pharmacists' skills and foster a deeper sense of professional identity. With advanced training and broadened responsibilities, pharmacists can step into leadership roles in community health management, driving innovation and setting new benchmarks for quality care.

Expanding the community pharmacist's role represents a promising evolution in healthcare delivery. By offering accessible, personalized care and engaging in preventive health initiatives, pharmacists are poised to make substantial contributions to individual and community health outcomes. This transformation alleviates pressure on overextended healthcare systems while empowering pharmacists to play a more significant role in public health promotion and chronic disease prevention. As [27] suggests, the overall impact is a healthcare landscape in which pharmacists serve as critical pillars of patient care, enhancing the quality and reach of community health services for diverse populations.

6. Discussion

The evolving role of community-based pharmacies presents a crucial opportunity to address persistent health disparities and expand equitable healthcare access. Positioned at the intersection of clinical care and community engagement, pharmacists and community-based pharmacies are

uniquely equipped to transform healthcare delivery through innovative, patient-centered models of care. This paper underscores how community-based pharmacies can become healthcare hubs that improve access, reduce healthcare costs, and promote health equity, particularly for underserved populations facing significant barriers to care.

This inquiry offers actionable solutions to real-world problems essential to bridging the gap between theory and practice in public health and healthcare delivery. As demonstrated in the paper on leveraging community pharmacies and pharmacists, such works synthesize existing literature to advocate for new healthcare models, like expanded pharmacist roles and telehealth integration, that respond directly to observed disparities and service gaps.

These recommendations, rooted in both current challenges and validated frameworks, provide a roadmap for practitioners, policymakers, and institutions to implement change and evaluate outcomes in real-time. The value of this approach lies in its pragmatic orientation: it does not stop at critique but ventures into transformation by offering testable strategies that can evolve through future empirical study. When implemented and iteratively refined, these recommendations hold the potential to reshape systems to be more equitable, accessible, and resilient.

Despite their practical value, academic perspective papers that focus on applied recommendations are often undervalued in scholarly circles, dismissed for lacking original empirical data or the perceived rigor of quantitative methodologies. This bias reflects a broader issue in academia, where theoretical novelty is too frequently prioritized over translational impact,

potentially viable community social change actions, and the lived realities of underserved populations are sidelined in favor of abstract models. Such marginalization is not just academic gatekeeping, it has real consequences, especially when applied solutions could guide urgent policy responses or inform community interventions. As shown in the pharmacist-centered framework in the reviewed paper, the power of perspective research lies in its ability to propose and iterate on solutions that are timely, context-sensitive, and ethically imperative. These works serve as catalysts for innovation, equity, and responsiveness in systems often resistant to change, and their dismissal risks missing opportunities for meaningful, scalable impact. Academic scholarship must embrace this model if it truly seeks to serve society.

6.1. Key Strategies for Expanding Pharmacies and Pharmacists' Roles:

1. **Urgent Care Support-** Community-based pharmacies can address immediate care needs by offering health screenings, treatment for minor illnesses, and timely referrals to higher-level care providers.
2. **Telehealth Facilitation-** Pharmacies can bridge the digital divide by providing secure spaces for telehealth appointments, enabling patients without reliable internet access to connect with healthcare providers.
3. **Comprehensive Medication Management-** Pharmacists can enhance patient safety and treatment outcomes through medication reviews, synchronization services, and personalized counseling for patients with complex care needs.
4. **Clinical Trial Recruitment-** Leveraging strong community ties, pharmacists can recruit diverse patients for clinical trials, fostering more inclusive medical research and innovation.
5. **Affordable Medication Access-** Pharmacists can guide patients in navigating prescription discount programs, patient assistance resources, and cost-effective alternatives such as generic medications.
6. **Chronic Disease Management-** Pharmacies can provide disease monitoring, biometric screenings, and self-management education, empowering patients to take control of their health and improve long-term outcomes.
7. **Collaboration with Primary Care Providers-** By participating in multidisciplinary care planning and sharing electronic health records, pharmacists can ensure accurate medication reconciliation and coordinated chronic disease management.
8. **Public Health Leadership-** Pharmacists can serve as public health leaders by managing vaccination efforts, educating communities on preventive health measures, and offering reliable guidance on infection prevention.
9. **Tele-pharmacy Services-** Virtual consultations enable pharmacists to manage chronic conditions and maintain patient relationships, especially in rural and underserved areas.
10. **Culturally Responsive Care-** Acting as trusted health advisors, pharmacists can promote culturally competent care, address language barriers, and build patient trust to improve access and outcomes in diverse communities.

11. **Patient Counseling-** Pharmacists can correct misconceptions about medications, vaccines, and treatments during direct patient interactions.
 12. **Tailored Communication-** Pharmacists can influence the use of plain language and culturally relevant approaches, pharmacists can improve patients' understanding of complex medical information.
 13. **Health Literacy Assessment-** Pharmacists identify patients with low health literacy and provide targeted education and resources to empower informed decision-making.
 14. **Workshops and Outreach Programs-** Pharmacists can lead health education sessions in community centers, schools, and faith-based organizations to address prevalent misinformation.
 15. **Collaborate with Public Health Campaigns -** Pharmacists can partner with public health agencies to amplify accurate health information, particularly in underserved or rural communities where misinformation may spread more easily.
 16. **Social Media and Online Platforms-** Pharmacists can use social media to share accurate, evidence-based information and counteract misinformation in online forums and patient groups.
 17. **Developing Educational Content-** Pharmacists can contribute to or create online resources, such as blogs, videos, and fact sheets, to promote health literacy.
 18. **Monitor Patient Questions and Concerns-** Pharmacists can be among the first to detect emerging misinformation trends based on common patient questions or refusal of evidence-based treatments.
 19. **Data Collection and Reporting-** Pharmacists can share observations with public health authorities to help track and address misinformation hotspots.
 20. **Combat Vaccine Hesitancy-** Pharmacists can provide credible, research-based answers to vaccine-related concerns. Pharmacists can engage patients with empathy to dispel myths around treatments and emphasize the benefits of preventive care, such as vaccination and chronic disease management.
- In this expanded model, the pharmacy is no longer just a site for dispensing medications but a critical access point for holistic, patient-centered services. By integrating digital health tools and culturally responsive care strategies, pharmacists can bridge the gap between technology and health equity. This reimagined role positions them as leaders in improving access, advocating for systemic change, and ensuring that healthcare innovations reflect the needs of all populations.

6.2. Policy Recommendations

1. **Policy Advocacy and Support-** Policymakers should establish funding and regulatory frameworks that allow pharmacists to be reimbursed for chronic disease management, telehealth services, and medication counseling.
2. **Regulatory Support-** Policymakers should recognize pharmacists as essential public health partners and prioritize their participation in telehealth, chronic disease management, and medication affordability programs.

3. **Infrastructure Investment-** Policymakers should develop policies that address digital literacy and broadband access as core components of healthcare infrastructure to enable equitable access to digital health services.
4. **Billing and Reimbursement Models-** Policymakers should develop policies that support pharmacist-led services by enabling billing for chronic care management, insurance reimbursement for telehealth services, and expanded access to patient full medical records for coordinated care with each patient's primary care physician, therapists, specialists, or any other existing medical providers.
5. **Diversity in Research-** Policymakers should develop programs and policies that encourage pharmacist involvement in clinical trial recruitment to ensure broader representation and innovation that reflects the diverse needs of all populations.

By reimagining practice and policy, this inquiry calls on healthcare stakeholders to leverage the potential of pharmacists in creating a more inclusive, accessible, and connected healthcare future. Community pharmacies can become transformative spaces for patient care, reducing burdens on overstretched healthcare systems while promoting long-term health equity.

7. Recommendations for Future Research

7.1. Qualitative Case Study Research

Qualitative case study research is ideal for exploring the evolving role of community-based pharmacies and pharmacists in addressing health

disparities. This method allows for an in-depth examination of real-world contexts, focusing on specific cases to understand complex phenomena. A case study could explore how individual pharmacies implement telehealth services or support patients with chronic disease management, providing rich, contextual insights into best practices and challenges. One of the primary advantages of qualitative case study research is its ability to capture the nuanced interactions between pharmacists and patients, offering a comprehensive understanding of how innovative models of care are operationalized in diverse settings. This research method also enables a detailed exploration of multiple data sources, such as interviews, observations, and documentation, which can provide a holistic perspective on the impact of community-based pharmacy interventions.

7.2. Action Research

Action research offers a dynamic and participatory approach to examining and improving the evolving role of pharmacists. This method involves planning, action, observation, and reflection cycles, making it particularly well-suited for healthcare environments where continuous improvement is essential. Action research empowers pharmacists to be co-researchers, collaborating with academic scholars and community members to identify problems and implement practical solutions. For instance, action research could investigate how pharmacists address the digital divide by introducing telehealth support services and refining these interventions based on patient feedback. Its strength lies in its collaborative and iterative nature, which fosters real-time change and generates practical knowledge

that can be immediately applied to improve healthcare delivery.

7.3. Narrative Inquiry

Narrative inquiry offers a powerful lens for exploring the lived experiences of pharmacists and their patients in community-based pharmacy settings. This approach focuses on capturing and interpreting personal stories, providing deep insights into how individuals experience and make sense of their roles and interactions in healthcare. Narrative inquiry is particularly valuable for understanding the human dimensions of pharmacists' expanded roles, such as building trust with patients or how patients experience digital health services. Researchers can illuminate the personal and cultural factors influencing healthcare experiences by collecting narratives through interviews or reflective journals. The advantage of narrative inquiry lies in its capacity to humanize research findings, offering compelling, story-driven insights that resonate with academic and community audiences.

7.4. Focus Group Qualitative Research

Focus group qualitative research is a practical and effective method for gathering diverse perspectives on the evolving role of community-based pharmacies and pharmacists. Focus groups provide an interactive platform for discussing shared experiences and opinions, making them ideal for exploring community-based care models and identifying common challenges and opportunities. For example, focus groups could bring together patients, pharmacists, and community stakeholders to discuss telehealth services, medication

management, and recruitment for clinical trials. This method allows researchers to capture group dynamics and understand collective attitudes and experiences better. One of its key advantages is the generation of diverse viewpoints within a single session, which can reveal patterns and themes that may not emerge in individual interviews.

In conclusion, future research on the expanding role of community-based pharmacies and pharmacists will benefit from combining these qualitative approaches. Each method offers unique insights and advantages, contributing to a more comprehensive understanding of how pharmacists can address health disparities, improve patient outcomes, and build more inclusive and equitable healthcare systems.

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