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Review Article

Roles of community pharmacists in health promotion and chronic disease management in low- and middle-income countries: A narrative review of barriers, opportunities, and future directions.

Mr. Tiisetso Aubrey Chuene

Department of Student Health and Wellness Centre, University of Limpopo, Private Bag X1106, Sovenga, 0727, South Africa.

Abstract

The growing burden of chronic diseases continues to place significant pressure on healthcare systems globally, particularly in low- and middle-income countries (LMICs), where shortages of healthcare professionals and limited access to primary health care (PHC) services remain major challenges. Community pharmacists are increasingly recognised as accessible healthcare providers who can contribute substantially to health promotion and chronic disease management. This narrative review aimed to examine the roles of community pharmacists in health promotion and chronic disease management in LMICs, with particular emphasis on existing barriers, emerging opportunities, and future directions for practice. Literature published between January 2015 and December 2025 was identified through PubMed and Google Scholar using search terms related to community pharmacists, health promotion, chronic diseases, non-communicable diseases, primary healthcare, and LMICs. Relevant peer-reviewed articles, policy documents, and grey literature were reviewed and synthesised thematically. Findings indicate that community pharmacists contribute to chronic disease prevention and management through medication therapy management, patient counselling, lifestyle modification education, disease screening, adherence support, vaccination services, and other public health interventions. Pharmacist-led services have been associated with improved medication adherence and better clinical outcomes in chronic conditions such as hypertension and diabetes. However, the full potential of community pharmacists in LMICs is often constrained by inadequate training, regulatory limitations, insufficient reimbursement mechanisms, weak policy support, and poor integration within primary healthcare systems. Emerging innovations, including telepharmacy and digital health technologies, offer opportunities to strengthen pharmacist-led services and expand access to care. Community pharmacists have considerable potential to enhance chronic disease management and health promotion in LMICs. Future research should focus on evaluating the long-term effectiveness, cost-effectiveness, and scalability of pharmacist-led interventions in LMICs. At the same time, policymakers should develop supportive regulatory and financing frameworks to facilitate the integration of community pharmacists into primary healthcare systems.

Keywords: Community pharmacists; health promotion; chronic disease; non-communicable diseases; primary health care; low- and middle-income countries; public health.
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Corresponding Author: Mr. Tiisetso Aubrey Chuene
Email: tiisetso.chuene@ul.ac.za
Department of Student Health and Wellness Centre, University of Limpopo, Private Bag X1106, Sovenga, 0727, South Africa.

Introduction

The global burden of chronic diseases continues to increase and puts substantial pressure on healthcare systems, particularly in low- and middle-income countries (LMICs) where healthcare resources are often limited.1 Rapid urbanisation, unhealthy dietary practices, tobacco use, harmful alcohol consumption, and sedentary lifestyles have contributed significantly to the growing prevalence of non-communicable diseases (NCDs) such as hypertension, diabetes mellitus, cardiovascular diseases, and chronic respiratory conditions.2 These conditions are associated with considerable morbidity, mortality, and economic consequences, posing major challenges to healthcare delivery and sustainable development worldwide.3 Approximately three-quarters of global deaths attributable to NCDs occur in LMICs, where health systems frequently struggle to provide adequate prevention, early detection, and long-term disease management services.4

Although high-income countries have made progress in addressing chronic diseases through comprehensive public health strategies and well-established PHC systems, many LMICs continue to face persistent barriers, including

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shortages of healthcare professionals, fragmented healthcare systems, escalating healthcare costs, and inequitable access to healthcare services.4,5,6 These challenges highlight the need for innovative and community-oriented healthcare approaches that strengthen prevention, promote early intervention, and improve long-term chronic disease management.

Community pharmacists (CPs) are increasingly recognised as accessible and trusted healthcare professionals who can contribute significantly to health promotion and chronic disease management, particularly in underserved communities.7,8 Due to their frequent interactions with patients and their presence within local communities, CPs are well-positioned to provide preventive healthcare services, including patient education, lifestyle counseling, medication therapy management, disease screening, vaccination services, and adherence support.9,10,11 Over the past two decades, the role of CPs has evolved beyond the traditional focus on dispensing and compounding medicines toward more patient-centred and public health-oriented responsibilities.12 This transformation reflects growing global recognition of CPs as important contributors to multidisciplinary healthcare delivery and public health initiatives.13

In LMICs, integrating CPs into PHC systems is a potentially cost-effective strategy to address healthcare workforce shortages and improve access to chronic disease prevention and management services.5,14 Evidence suggests that pharmacist-led interventions may improve medication adherence, clinical outcomes, and patient self-management among individuals living with chronic diseases.15 Furthermore, CPs can support national efforts aimed at reducing the burden of NCDs through community-based health promotion and preventive care initiatives. However, despite their potential contributions, the involvement of CPs in health promotion and chronic disease management in LMICs remains inconsistent and underutilised. Barriers, including limited policy support, inadequate training, weak interprofessional collaboration, regulatory restrictions, and insufficient reimbursement mechanisms, continue to hinder the expansion of CPs' clinical and public health roles.9,16

Although previous studies have examined CPs' roles in patient care and pharmaceutical services,8,17,18,19 there is limited consolidated evidence specifically addressing the evolving role of CPs in health promotion and chronic disease management within LMIC contexts.9,20 Furthermore, existing literature frequently concentrates on individual interventions or specific country settings, with inadequate emphasis on broader systemic barriers, emerging opportunities, and future directions for pharmacy practice in resource-limited environments.9,11,20 Therefore, this narrative review explores the role of CPs in health promotion and chronic disease management in LMICs. The review examines current contributions of CPS to preventive healthcare and chronic disease management, identifies barriers limiting their effective participation, and discusses emerging opportunities related to digital health technologies, policy development, interprofessional collaboration, and pharmacy education reform. Understanding these factors is essential for strengthening the integration of CPs into PHC systems and enhancing their contribution to improving population health outcomes in LMICs.

Methodology

Study design

A narrative review was employed to explore the role of CPs in health promotion and chronic disease management within LMICs. A narrative review was selected because it offers greater flexibility in examining broad and evolving healthcare issues and is particularly valuable for exploring contextual, professional, and policy-related dimensions of healthcare delivery.21 The review focused on CPs' contributions to preventive healthcare services and chronic disease management, while also exploring the barriers and emerging opportunities affecting their integration into PHC systems.

Although the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework was not strictly applied due to the narrative nature of the study, methodological transparency was maintained using a clearly defined search strategy, eligibility criteria, and thematic synthesis approach. Studies were selected based on their methodological rigor, relevance to the review objectives, and contribution to understanding the role of CPs in health promotion and chronic disease management in LMIC settings.

Search strategy

A comprehensive search of the literature was conducted between January and February 2026 using PubMed and Google Scholar to identify relevant studies published between January 2015 and December 2025. The search strategy utilised combinations of keywords and Boolean operators consistent with the objectives of the review. Search terms included: "community pharmacists," "health promotion," "chronic disease management," "non-communicable diseases," "community pharmacy," "primary health care," and "low- and middle-income countries."

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Additional searches incorporated related terms such as "medication therapy management," "pharmacist-led interventions," "public health pharmacy," "telepharmacy," and "pharmacy practice" to capture a broader range of evidence relevant to the review topic. The reference lists of selected articles were also examined to identify additional studies.

In addition to peer-reviewed journal articles, grey literature, policy documents, and reports from international health organisations were reviewed to provide contextual and policy-related perspectives relevant to pharmacy practice in LMICs.

Eligibility and selection of studies

Studies and reports were included if they addressed the role of CPs in health promotion, chronic disease prevention and management, public health interventions, or PHC delivery within LMIC contexts. Eligible sources comprised qualitative and quantitative studies, review articles, policy papers, and relevant grey literature published in English between January 2015 and December 2025.

Studies exclusively related to hospital pharmacy practice, pharmaceutical manufacturing, or clinical interventions unrelated to the review topic were excluded. The literature was further screened according to its relevance to the review objectives and its contribution to understanding the barriers, opportunities, and future directions associated with community pharmacy practice in LMICs.

Data extraction and management

Relevant information from the included studies was extracted and organised using Microsoft Excel. The data extracted comprised author(s), year of publication, country or region of study, study objectives, study design, key findings, and themes related to CPs' roles, as well as barriers and opportunities in health promotion and chronic disease management. The extracted data were systematically reviewed and organised to enable cross-study comparison and to support the thematic synthesis of findings.

Data analysis

Data were analysed using a descriptive and thematic synthesis approach. The included literature was read and re-read to identify recurring concepts, patterns, and emerging themes related to the role of CPs in health promotion and chronic disease management in LMICs. An inductive approach was used, whereby themes were derived directly from the data rather than from predefined categories. This process involved grouping similar findings across studies and identifying overarching thematic areas that reflected the objectives of the review.

The synthesised findings were organised into major themes, including CPs' roles in health promotion, involvement in chronic disease management, barriers to practice expansion, and emerging opportunities within healthcare systems. This approach facilitated the integration of evidence from diverse sources and supported a comprehensive narrative synthesis of pharmacy practice in LMIC contexts.

Findings and discussion

Role of community pharmacists in health promotion

Community pharmacists are increasingly acknowledged as important contributors to health promotion in LMICs, primarily due to their accessibility and frequent engagement with the public.9,11,19 Although health promotion is widely recognised within pharmacy practice as encompassing behavioural, social, and environmental interventions aimed at improving individual and population health outcomes,11,12 the extent to which CPs operationalise this concept varies considerably across LMICs contexts, reflecting differences in health system integration, policy support, and professional scope of practice.7,17,22 This variation reflects the persistent tension between pharmacists' traditional dispensing functions and their evolving role within public health-oriented pharmacy practice.12,18

Evidence shows that CPs are involved in a broad range of health-promotion activities, including smoking cessation counselling, dietary and nutritional guidance, immunisation services, disease screening, and lifestyle modification interventions.7,13,22 However, the implementation of these activities is not consistent across LMIC settings. While some countries report more formalised and integrated pharmacist-led preventive services, others continue to rely on opportunistic health promotion delivered during routine dispensing encounters, reflecting differences in policy support, workforce development, and health-system integration.9,11 This variation suggests that the practice of health promotion in community pharmacy is influenced more by systemic and institutional support than by professional capacity alone.

Regarding outcomes, pharmacist-led health promotion interventions are associated with improved patient awareness, earlier identification of health risks, and enhanced engagement in preventive behaviours, with evidence from LMIC settings showing improvements in behavioural outcomes and intermediate clinical indicators among patients with chronic diseases such as hypertension

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and diabetes.23,24 Similar findings have been reported in other LMIC settings, where CPs have contributed to improved disease screening, medication adherence, and patient education.13,22 However, much of this evidence is derived from short-term, small-scale, or pilot interventions, limiting conclusions regarding long-term effectiveness. Furthermore, the sustained impact of these initiatives may be constrained by challenges such as inadequate policy support, limited integration of community pharmacy services within PHC systems, weak referral and collaborative care pathways, and insufficient resources to support service continuity.7,9,11 Consequently, although CPs demonstrate considerable potential to contribute to health promotion in LMICs, further evidence is needed to establish the sustainability and scalability of these interventions within routine PHC practice.

This divergence in evidence highlights an important interpretive issue: although individual-level outcomes appear promising, system-level impact remains uncertain. The literature more consistently demonstrates what CPs can achieve under controlled or well-supported conditions than what is achievable within routine LMIC health systems. This suggests a gap between efficacy and real-world effectiveness, which is not always explicitly addressed in existing studies.

Furthermore, although pharmacist-led health promotion is generally viewed positively, the available evidence remains fragmented and highly context-dependent. Studies conducted across LMICs demonstrate substantial variation in pharmacy education, regulatory autonomy, and levels of integration into health systems. For instance, inadequate training has been identified as a key barrier limiting pharmacists' engagement in health promotion activities,7 whereas the effectiveness of community pharmacists in delivering structured preventive services has been demonstrated in settings where enabling systems are in place.13 Rather than being contradictory, these findings collectively suggest that the effectiveness of CPs in health promotion is largely contingent on system-level conditions, reinforcing the notion that professional competence alone is insufficient in the absence of supportive policy and institutional frameworks.

Importantly, the literature frequently presents the expansion of CPs' roles as a promising strategy for improving access to healthcare services and strengthening public health outcomes in LMICs.9,11 However, evidence suggests that the successful implementation and impact of these expanded roles depend on several contextual and health-system factors. Even where CPs demonstrate willingness and capacity to engage in health promotion activities, barriers such as high workload, insufficient remuneration, limited policy support, and weak interprofessional collaboration may constrain service delivery and reduce the potential impact of these interventions.7,9,22 These findings suggest that role expansion alone may be insufficient to achieve meaningful and sustainable improvements in population health without broader reforms that support the integration of CP services into PHC systems.

Overall, the evidence suggests that CPs have substantial potential to enhance health promotion in LMICs; however, this potential is not consistently realised due to a combination of structural, regulatory, and educational barriers. The findings therefore support a shift away from fragmented, intervention-based approaches towards more integrated, system-supported models of health promotion embedded within PHC systems. Such an approach would likely enhance the consistency, scalability, and long-term sustainability of CPs' contributions to population health outcomes.

Community pharmacists in chronic disease management

Community pharmacists are increasingly positioned as important contributors to chronic disease management in LMICs, particularly in response to the growing burden of NCDs.1,2 While there is broad agreement across the literature that CPs can support medication adherence, counselling, and patient education, the extent of their actual clinical contribution differs significantly across settings, reflecting variation in health system design and regulatory integration. For instance, evidence from Nigeria demonstrates relatively strong clinical impact from pharmacist-led interventions, including improved patient outcomes in cardiovascular risk management among rural populations and improved medication adherence alongside reduced treatment costs among patients with diabetes.25,26 These findings collectively suggest that when CPs are actively engaged in structured patient-facing interventions, they can contribute meaningfully to both clinical and economic outcomes.

In contrast, evidence from Indonesia and Jordan presents a more constrained picture of CPs' involvement. Although pharmacists recognise their potential role in chronic disease management, their actual practice remains largely limited to counselling and medication dispensing.8,17 This contrasts with the Nigerian evidence, suggesting that awareness of professional roles does not necessarily translate into clinical practice. Rather, the divergence highlights the importance of regulatory authority and health system support in enabling expanded pharmacy services. Similarly, South African

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evidence presents a more complex but partially aligned perspective. Positive outcomes from pharmacist-led hypertension interventions, including improved patient outcomes and empowerment, have been demonstrated,27 aligning with arguments that integrating pharmacists into primary health care strengthens service delivery.28 However, despite policy-level recognition of their role, pharmacists remain underutilised in practice.29 This indicates that even in relatively more structured systems, full integration remains incomplete, reflecting a gap between policy intention and operational implementation.

Across contexts, a consistent pattern emerges. Studies reporting positive clinical outcomes are typically based on structured or intervention-driven programmes, whereas studies examining routine practice highlight more limited or fragmented CPs' involvement. Evidence from structured diabetes care interventions in community pharmacies demonstrates improved outcomes,24 while routine practice settings reveal gaps in counselling quality and patient satisfaction.30 This contrast suggests that improvements are more consistently observed under controlled or supported conditions than in everyday service delivery. It raises an important interpretive issue regarding the real-world effectiveness of CP-led chronic disease management, as the literature provides less certainty about the sustainability of outcomes once external support is removed. This reflects a gap between intervention efficacy and health system integration, which is not consistently interrogated in LMIC pharmacy research.

Furthermore, the effectiveness of community pharmacist-led interventions appears strongly influenced by system-level factors. While positive outcomes have been reported in contexts where pharmacists are actively engaged in care delivery,25,27 other studies identify structural constraints such as limited prescribing authority, weak referral systems, and poor interprofessional collaboration.15,31 This suggests that clinical competence alone is insufficient, and that institutional and regulatory support structures are decisive in determining impact. Importantly, differences in policy maturity across LMICs further shape these outcomes. In Indonesia, policy efforts have begun to formalise the role of pharmacists in primary health care and chronic disease management.32 In contrast, evidence from several sub-Saharan African contexts suggests that community pharmacist involvement remains largely informal and dependent on individual initiative rather than institutional mandate.33,34 This highlights how policy frameworks influence not only the scope but also the consistency of pharmacist practice.

Taken together, these findings challenge the assumption that expanding CPs' involvement will automatically lead to improved population health outcomes. While individual studies consistently report positive clinical effects, broader evidence indicates that these outcomes are contingent on factors such as training quality, reimbursement structures, and integration into multidisciplinary teams.5,35 This raises important questions about the sustainability and scalability of CP-led interventions in resource-constrained settings. Overall, the evidence suggests that CPs can play a valuable role in chronic disease management in LMICs; however, their contribution is highly context-dependent and unevenly realised. The divergence between controlled intervention success and routine practice limitations suggests that future efforts should move beyond isolated CP-led programmes toward integrated, system-level models that embed CPs within formal chronic care pathways.

Barriers to CPS's involvement in health promotion and chronic disease management in LMICs

Across LMICs, the involvement of CPs in health promotion and chronic disease management is persistently limited by a multifaceted and interconnected set of barriers spanning professional, educational, organisational, and policy domains. Rather than occurring in isolation, these challenges are often mutually reinforcing, contributing to systemic constraints that hinder the integration of pharmacists' potential into routine primary healthcare practice.9,15

Interprofessional and system-level barriers

A recurring theme across LMIC studies is the limited integration of community pharmacists within multidisciplinary healthcare teams. Evidence from countries such as Nigeria, South Africa, and Malaysia indicates that community pharmacists frequently function at the margins of clinical decision-making, rather than as fully engaged partners in patient care.18,19,28 Although studies highlight longstanding hierarchical dynamics between physicians and pharmacists,31,32 other evidence demonstrates that the establishment of formalised collaboration structures can improve medication therapy management outcomes.36 This divergence suggests that the challenge extends beyond professional resistance alone and reflects the absence of clearly defined systems that support shared roles, communication, and accountability in patient care.

Accordingly, interprofessional challenges in LMICs should be understood not solely as individual reluctance, but as a

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structural consequence of weakly institutionalised collaborative practice frameworks. In settings where referral pathways and documentation systems are poorly developed, pharmacists' clinical recommendations are often overlooked, even when clinically appropriate.7,14 Overall, this evidence challenges the assumption that improving CPs' competencies alone is sufficient to enhance integration. Instead, it indicates that health system design is a key determinant of the sustainability and effectiveness of interprofessional collaboration.

Educational and professional preparation barriers

Evidence consistently indicates that pharmacy education in many LMICs remains predominantly product-oriented, with insufficient emphasis on clinical reasoning, patient communication, and preventive care competencies.5,37 This misalignment between training curricula and evolving health system needs contributes to reduced confidence among CPs in delivering health promotion and chronic disease management services. However, findings across settings are not uniform. While studies from Ethiopia and Rwanda highlight inadequate training and limited preparedness among pharmacists,7,34 evidence from Indonesia and Malaysia suggests that even where pharmacists are adequately trained and willing, their practice is still restricted by regulatory and organisational constraints.17,18

This variation is significant, as it indicates that educational preparation alone cannot fully account for observed practice limitations. Consequently, curriculum enhancement without parallel systemic reform may be insufficient to produce meaningful changes in practice. The evidence, therefore, challenges a linear assumption that improved training directly translates into expanded service delivery. In addition, continuing professional development (CPD) systems in many LMICs remain underdeveloped and fragmented, thereby limiting opportunities for CPs to update competencies in areas such as chronic disease management, digital health, and interprofessional collaboration.5,28 This contributes to a reinforcing cycle in which limited training constrains service provision, which in turn reduces institutional impetus for further capacity development.

Organisational and financial barriers

At the organisational level, many community pharmacies in LMICs operate as commercially oriented businesses, where financial sustainability is primarily driven by dispensing volume rather than the provision of clinical services. This model strongly influences professional priorities and often restricts the time allocated to preventive care activities.9,38 Evidence from Ethiopia, Nigeria, and Malaysia consistently shows that high workloads, inadequate staffing, and limited infrastructure impede CPs' capacity to deliver private counselling and long-term chronic disease management services.7,18,34 While these findings are widely reported, they also reflect a broader systemic issue: the limited financial recognition of cognitive pharmacy services within LMIC health systems.

Reimbursement mechanisms for pharmacy services remain poorly developed across most LMIC contexts.35 Unlike high-income countries, where pharmacists are increasingly compensated for clinical service provision, CPs in LMICs largely rely on medicine sales as their primary source of income. 12,35 Evidence from donor-supported interventions further underscores this challenge. Although such programmes often demonstrate positive outcomes during implementation, their discontinuation following the withdrawal of external funding raises concerns about sustainability.39 This pattern suggests that many CP-led initiatives are externally driven rather than fully embedded within health system structures.

Regulatory and policy barriers

Regulatory uncertainty is a pervasive constraint across many LMIC contexts. In numerous settings, the scope of practice for CPs does not explicitly encompass prescribing rights, structured follow-up for chronic diseases, or independent clinical decision-making.15,40 This is particularly evident when contrasting countries such as South Africa and Indonesia, where policy reforms have begun to formally integrate pharmacists into PHC roles, with contexts such as Nigeria and Jordan, where these roles remain largely informal or inconsistently applied.28,32

Such variation indicates that the policy environment, rather than professional competence alone, is a key determinant of the extent of CPs' clinical involvement. It further highlights the heterogeneity of LMICs, which exist along a spectrum of pharmacy practice integration rather than a uniform model. In addition, the lack of clearly defined regulatory frameworks undermines accountability mechanisms, making it challenging to standardise service delivery or systematically evaluate outcomes. As a result, CPs often function within a "grey zone," where professional expectations exceed legal scope, generating uncertainty and constraining innovation in practice.

Taken together, the evidence suggests that barriers to pharmacists' involvement in LMICs are not isolated challenges but part of a reinforcing system of

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constraints.11,35 For instance, weak regulation limits clinical authority, limited authority reduces interprofessional recognition, poor recognition discourages educational investment, weak education reduces service quality and confidence, and low service uptake reduces financial justification for reform. This cyclical relationship explains why incremental interventions such as short training programmes or isolated pilot projects often fail to produce sustained system-level changes.10,20

Overall, the literature demonstrates that while CPs in LMICs possess significant potential to contribute to health promotion and chronic disease management, their involvement is systematically constrained by interlocking barriers embedded within health system structures.9,10 The persistence of these barriers suggests that meaningful expansion of CPs' roles will require coordinated reforms that address regulation, financing, education, and interprofessional governance simultaneously, rather than in isolation.

Future opportunities for strengthening CP's roles in LMICs

Despite persistent structural and professional constraints, the literature indicates that CPs in LMICs are increasingly situated within an evolving healthcare environment characterised by expanding primary healthcare agendas and greater recognition of non-physician health workers.9,11,12 These shifts suggest that existing limitations are not fixed but reflect transitional health systems in which new models of care are still developing

Digital health integration

A prominent opportunity identified in the literature is the integration of digital health technologies, particularly telepharmacy, into chronic disease management and health promotion. Evidence suggests that telepharmacy can help mitigate workforce shortages and geographic disparities by enabling remote counselling, monitoring, and adherence support.41,42 Unlike traditional pharmacy models in LMICs, which are often constrained by uneven workforce distribution and access barriers, telepharmacy offers an alternative service delivery approach that reduces dependence on physical infrastructure. However, its effectiveness is highly context-sensitive; limited connectivity and low digital literacy may reduce its impact in some settings.

Comparative evidence indicates that face-to-face pharmacist interventions may yield stronger behavioural outcomes in certain contexts,24 suggesting that digital approaches are best understood as complementary rather than substitutive. This points to a likely future in which hybrid models of pharmacy practice predominate. Importantly, this perspective challenges the assumption that LMICs must first achieve high-income system readiness before adopting digital health solutions. Instead, incremental digital integration may strengthen existing primary care systems when appropriately supported.

Expansion of pharmacists' role in the PHC system

A second opportunity lies in the progressive integration of CPs into formal PHC structures. Evidence from countries such as South Africa and Indonesia shows that policy recognition of pharmacists within PHC teams enhances medication adherence, chronic disease monitoring, and patient education.28,32

In contrast, where pharmacists are excluded from formal PHC frameworks, service delivery tends to remain fragmented and informal, limiting sustainability and scalability.19 This comparison highlights institutional integration as a key determinant of whether CP-led services become routine practice or remain short-term initiatives. However, formal inclusion alone is insufficient. Without appropriate financing mechanisms, role clarity, and operational support, integration may not translate into meaningful service delivery improvements.

Task shifting and workforce optimisation.

The rising burden of NCDs has increased interest in task-shifting approaches, where responsibilities are redistributed to optimise constrained health workforces. Community pharmacists are well positioned within this strategy due to their accessibility and expertise in medicines management. 10,43

Evidence from Nigeria and South Africa indicates that pharmacist-led interventions can improve blood pressure and glycaemic control, demonstrating the feasibility and potential effectiveness of task-shifting to CPs in resource-limited settings.25,27 However, many of these findings originate from pilot or controlled studies, raising concerns about scalability. This suggests that task-shifting should be understood as a redesign of care pathways rather than a simple redistribution of duties. Without institutional support, it may increase workload without corresponding system gains.

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Pharmacists in public health emergencies and health system resilience

Recent global health emergencies have highlighted the critical role of pharmacists in maintaining health system continuity. During the COVID-19 pandemic, CPs contributed to vaccination campaigns, medicine supply chain management, and public health communication.44 Similarly, evidence from outbreaks such as Ebola shows that CPs play important roles in infection prevention and community-level triage.45 These findings demonstrate that CPs contribute not only to chronic disease management but also to broader health system resilience.

However, such roles are often activated in an ad hoc manner during crises rather than being formally embedded in preparedness frameworks. This reactive approach limits long-term capacity building and system learning.

Curriculum reform and professional development

Sustainable expansion of CPs' roles depends on workforce preparedness. Literature consistently emphasises the need to strengthen pharmacy education by incorporating public health, clinical reasoning, communication, and digital health competencies.5,37 Although some LMICs have begun curriculum reform, implementation remains inconsistent, resulting in a mismatch between graduate competencies and health system expectations.

Continuing professional development is also essential for addressing ongoing skill gaps among CPs. However, evidence from several LMIC settings suggests that pharmacists continue to experience training deficiencies and limited opportunities for professional development in areas aligned with emerging public health and chronic disease management responsibilities.5,7,14

Collectively, these emerging opportunities challenge the traditional perception of CPs as peripheral actors in LMIC health systems. Instead, they increasingly emerge as adaptable and underutilised resources within broader PHC transformation agendas. However, without deliberate system-level redesign, these opportunities risk remaining fragmented initiatives rather than evolving into sustained and scalable practice reforms.

Implications for policy and practice

The findings of this review have important implications for strengthening the role of CPs in health promotion and chronic disease management in LMICs. Overall, the evidence suggests that existing gaps in service delivery are driven less by deficiencies in CPs' competence and more by structural, organisational, and system-level constraints.9,10,11 This shifts the focus of reform from individual capacity building to broader health system design and governance.9,20

A key implication is the need for clearer regulatory frameworks that formally define and expand CPs' scope of practice within PHC systems. Although CPs in many LMICs already engage in health promotion and chronic disease management, these activities are often informal and lack legal recognition, which limits accountability, professional autonomy, and integration into multidisciplinary care.15,19 Evidence from settings where pharmacists are formally integrated into PHC teams, such as South Africa and Indonesia, suggests improved structure and consistency in service delivery.28,32 However, policy reform alone is insufficient unless supported by implementation mechanisms such as defined referral pathways, service delivery standards, and monitoring systems.

Closely related to this is the issue of financing. The literature consistently shows that community pharmacy services in LMICs are largely dependent on medicine sales, with minimal reimbursement for cognitive and preventive services such as counselling, screening, and chronic disease follow-up.35 This creates a misalignment between public health goals and existing business models, limiting the sustainability of expanded roles. Integrating pharmacy services into national health insurance schemes or PHC financing systems may improve sustainability, although such reforms require strong political commitment and careful adaptation to resource constraints.

Workforce development is another critical area. Pharmacy education in many LMICs remains predominantly product-oriented, with limited emphasis on public health, clinical reasoning, and interprofessional collaboration.5,37 While curriculum reform and continuing professional development can improve competencies, the evidence indicates that training alone is insufficient if health system structures do not enable the application of these skills in practice.5,7,9 This highlights the need for coordinated alignment between education systems, regulatory bodies, and health service structures.

The findings also underscore the importance of strengthening interprofessional collaboration within primary healthcare. Weak referral systems and hierarchical professional relationships continue to limit the integration of pharmacists' clinical contributions into patient care.14,31 Structured collaboration models, supported by clear communication channels and shared care protocols, may improve continuity of care and reduce medication-related problems. However, their success depends on addressing

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entrenched professional boundaries and fostering mutual recognition of roles.

More broadly, the evidence suggests a need to shift away from fragmented, pilot-based interventions toward fully integrated and sustainable models of pharmacy practice. Many pharmacist-led interventions demonstrate positive short-term outcomes but are not sustained due to weak institutional embedding and reliance on external funding.20,39 Embedding pharmacy services within national primary healthcare strategies from the outset would enhance sustainability, scalability, and evaluation.

Overall, the literature reveals a persistent gap between policy recognition and practical implementation. Although policy frameworks increasingly acknowledge the role of CPs in PHC, operational systems often fail to support this role effectively. Addressing this disconnect requires coordinated reforms across regulatory, financing, educational, and organisational domains. The evidence therefore suggests that meaningful progress depends on system-wide alignment rather than isolated interventions, enabling CPs to function as fully integrated members of the healthcare teams.

Conclusion

This narrative review demonstrates that CPs in LMICs have substantial but underutilised potential in health promotion and chronic disease management. The literature shows that CPs provide diverse services, including counselling, medication therapy management, screening, and lifestyle support; however, their impact remains variable and largely shaped by health system contexts rather than individual competence. Limited integration into PHC is driven mainly by structural constraints, including weak regulation, inadequate financing, limited interprofessional collaboration, and gaps in education and training. These factors collectively marginalise CPs within formal healthcare systems, despite their accessibility and trusted status.

Emerging developments such as telepharmacy, PHC reforms, and broader recognition of non-physician health workers offer important opportunities to strengthen CPs' roles. However, realising these benefits requires coordinated system-level reforms rather than isolated initiatives. Future research should prioritise robust longitudinal studies and economic evaluations to strengthen the evidence base regarding the long-term effectiveness, sustainability, and cost-effectiveness of pharmacist-led interventions in LMICs. Overall, strengthening the role of CPs in LMICs requires a shift from fragmented, project-based approaches to integrated, policy-driven models within the healthcare system. Key priorities include regulatory clarity, sustainable financing, workforce development, and enhanced interprofessional collaboration to fully harness CPs' potential in addressing the burden of chronic diseases and improving population health outcomes.

Limitations

This narrative review has several methodological limitations that should be considered when interpreting its findings. First, unlike systematic reviews, it did not include a formal quality assessment or risk-of-bias appraisal of the included studies, limiting the ability to evaluate the overall strength of the evidence. Second, the search strategy was restricted to selected electronic databases, primarily PubMed and Google Scholar, supplemented by grey literature sources. While this approach allowed for broad coverage of relevant studies, it may have excluded studies indexed in other databases or published in non-English languages, thereby limiting the comprehensiveness and potential representativeness of the evidence base.

Third, the included studies were conducted across diverse LMIC settings with considerable variation in healthcare systems, regulatory environments, and pharmacy practice, which limits the generalisability of the findings. Furthermore, much of the available evidence was derived from cross-sectional studies, descriptive reports, and small-scale interventions, providing limited evidence on long-term effectiveness, sustainability, and cost-effectiveness. Finally, the evidence base was concentrated in a relatively small number of countries, particularly South Africa, Ethiopia, Nigeria, Malaysia, and Indonesia, and the narrative synthesis involved interpretive judgement during theme development and evidence integration. Despite these limitations, the review provides valuable insights into the role of CPs in health promotion and chronic disease management in LMICs and identifies important priorities for future research and policy development.

Conflict of interest

The author declares no conflict of interest

Data availability statement

No new data were generated in this narrative review. All information supporting the findings is contained within the article and the cited references.

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List of abbreviations

CPs: Community Pharmacists
CPD: Continuing Professional Development
LMICs: Low- and Middle-Income Countries
NCDs: Non-Communicable Diseases
PHC: Primary Health Care

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Author contribution

Tiisetso Aubrey Chuene conceptualised the study, conducted the literature search, reviewed and synthesised the evidence, drafted and revised the manuscript, and finalised the article. The author is solely responsible for all aspects of the work.

Author biography

Tiisetso Aubrey Chuene is a pharmacist and public health researcher affiliated with the University of Limpopo. He is currently pursuing a PhD in Public Health, with research interests spanning pharmacy practice, pharmaceutical supply management, and health systems strengthening. His work is driven by a commitment to improving healthcare access, strengthening health systems, and addressing emerging public health challenges across African settings.

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