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Clinical services provided by pharmacists in Primary Health Care in Latin America: A Scoping Review Protocol

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Abstract

Objective: To map and characterize the evidence on clinical services provided by pharmacists in primary health care in Latin America, including service types, components, implementation strategies, populations served, and reported outcomes. **Methods:** This scoping review will follow the PRISMA-ScR guidelines. A structured search strategy will be conducted in multidisciplinary databases (MEDLINE, Embase, Scopus, CINAHL, LILACS), regional platforms, and gray literature sources, without restrictions on language or publication date. Study selection will occur in two stages: (1) screening of titles and abstracts to exclude clearly irrelevant records, and (2) full-text assessment to determine eligibility based on predefined criteria. The process will be conducted by two independent reviewers, with disagreements resolved by consensus or a third reviewer. Data will be extracted using a standardized and piloted form. Results will be synthesized using descriptive and thematic approaches, including mapping of service types, components, implementation contexts, and outcome domains. **Results:** The review will provide a structured mapping of clinical services provided by pharmacists in primary health care across Latin America. **Conclusions:** This review will identify evidence gaps related to implementation, sustainability, integration within health teams, and equity in access, informing future research and health system organization.

Keywords: pharmacist-led clinical services; primary health care; pharmacists; pharmaceutical care; Latin America.

Serviços Clínicos providos por Farmacêuticos na atenção primária à saúde na América Latina: protocolo de revisão de escopo

Resumo

Objetivo: Mapear e caracterizar as evidências sobre os serviços clínicos prestados por farmacêuticos na atenção primária à saúde na América Latina, incluindo tipos de serviço, componentes, estratégias de implementação, populações atendidas e desfechos relatados. **Métodos:** Esta revisão de escopo seguirá as diretrizes PRISMA-ScR. Uma estratégia de busca estruturada será conduzida em bases de dados multidisciplinares (MEDLINE, Embase, Scopus, CINAHL, LILACS), plataformas regionais e fontes de literatura cinzenta, sem restrições de idioma ou data de publicação. A seleção dos estudos ocorrerá em duas etapas: (1) triagem de títulos e resumos para excluir registros claramente irrelevantes e (2) avaliação do texto completo para determinar a elegibilidade com base em critérios predefinidos. O processo será conduzido por dois revisores independentes, com as divergências resolvidas por consenso ou por um terceiro revisor. Os dados serão extraídos utilizando um formulário padronizado e testado. Os resultados serão sintetizados utilizando abordagens descritivas e temáticas, incluindo o mapeamento de tipos de serviço, componentes, contextos de implementação e domínios de desfecho. **Resultados:** A revisão fornecerá um mapeamento estruturado dos serviços clínicos prestados por farmacêuticos na atenção primária à saúde em toda a América Latina. **Conclusões:** Esta revisão identificará lacunas de evidências relacionadas à implementação, sustentabilidade, integração em equipes de saúde e equidade no acesso, fornecendo informações para pesquisas futuras e para a organização do sistema de saúde.

Palavras-chave: serviços clínicos providos por farmacêuticos; atenção primária à saúde; farmacêutico; cuidado farmacêutico; América Latina.

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Introduction

Primary health care (PHC) is globally recognized as the cornerstone of health systems that aim to be responsive, equitable, and cost-effective, and constitutes a key pathway toward universal health coverage (UHC).[1] In Latin America, a region marked by social inequalities, geographic disparities, and heterogeneous health system organization, PHC plays a central role in care coordination, chronic disease management, and health promotion.[2] Strengthening PHC is therefore essential to improve population health and reduce avoidable morbidity and mortality.

Optimizing PHC performance requires the coordinated work of multidisciplinary teams capable of delivering person-centered, continuous, and comprehensive care. In this context, it is important to adopt a clear conceptual definition. According to the Brazilian Society of Clinical Pharmacy, the recommended term is clinical services provided by pharmacists. These services can be understood as patient-centered activities delivered by pharmacists through direct interaction with patients, with the aim of optimizing pharmacotherapy, promoting health, and improving clinical outcomes[3]. They are part of a broader model of pharmaceutical care and are oriented toward the rational use of medicines and the prevention and resolution of drug-related problems[4]. Clinical services provided by pharmacists have been associated with improvements in patient safety, therapeutic outcomes, and quality of care across different health system settings[5].

Despite the global expansion of these services and the growing body of evidence supporting their contribution to health care, the literature on clinical services provided by pharmacists in PHC in Latin America remains fragmented and heterogeneous[5]. Existing studies reveal considerable variation in service models, methodological designs, and outcomes assessed, as well as an uneven distribution of research among the countries of the region[6-8]. Furthermore, a recent systematic review on the implementation of clinical services provided by pharmacists indicated that most of the evidence comes from high-income countries, suggesting that implementation in PHC in low- and middle-income countries is progressing slowly or remains insufficiently documented in the scientific literature[9]. This scenario may reflect common structural constraints in developing contexts, including limited economic resources, a shortage of pharmaceutical professionals, restricted access to essential medicines, gaps in specialized clinical training, and reduced investment in research infrastructure.

Thus, this protocol outlines the methods for a scoping review aimed at mapping the available evidence on clinical services provided by pharmacists in primary health care in Latin America. Specifically, the review will: (1) identify and categorize the types of services reported; (2) describe their components, such as medication review, pharmacotherapeutic follow-up, health education, and screening; (3) characterize implementation contexts and care settings; (4) describe the populations served; (5) map the reported outcomes across clinical, humanistic, economic, and organizational domains; and (6) identify evidence gaps.

Methods

This scoping review will be conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews and reported following the PRISMA Extension for Scoping Reviews (PRISMA-ScR) checklist[10]. The review protocol was prospectively registered and is publicly available on the Open Science Framework (OSF) (Registration ID: b2ec8; https://osf.io/b2ec8).

Research Question and PCC Framework

The formulation of the research question was guided by the PCC structure (Participant–Concept–Context):

- **Participant (P):** Patients, users, or populations receiving care in primary health care settings formally integrated into health systems (e.g., basic health units, family health strategy services, and community pharmacies integrated into primary health care). Community pharmacies operating exclusively in the private sector without integration into PHC systems will not be considered eligible contexts.

- **Concept (C):** Clinical services provided by pharmacists, defined as patient-centered activities delivered by pharmacists through direct interaction with patients, aimed at optimizing pharmacotherapy, promoting health, and improving clinical outcomes. Activities limited to logistical functions, such as dispensing without clinical interaction, are not considered clinical services within the scope of this review;

- **Context (C):** Primary health care settings in Latin America, including services formally integrated into national or local health systems.

The research question defined for this review is:

"What evidence exists on clinical services provided by pharmacists in primary health care in Latin America, including their characteristics, implementation contexts, populations served, and reported outcomes?"

Search Strategy

The search strategy was developed in partnership with the Library of the Clementino Fraga Filho University Hospital and the Thoracic Diseases Institute (Federal University of Rio de Janeiro). Controlled vocabulary (DeCS, MeSH, Emtree, and CINAHL Headings) and free-text terms will be combined for each PCC component.

The search will be conducted in the following electronic databases: (i) MEDLINE (via PubMed); (ii) Embase; (iii) Scopus; (iv) CINAHL; and (v) LILACS (via BVS)

To enhance the identification of regional and non-indexed evidence, gray literature sources will also be searched, including: (i) ProQuest Dissertations & Theses; (ii) CAPES Theses Database; (iii) BDTD/IBICT; (iv) OATD; (v) EBSCO Open Dissertations; (vi) OAIster; (vii) Redalyc and (viii) Google Scholar (first 200 results)

No restrictions on language or publication date will be applied. Studies will not be excluded based on language during screening or full-text assessment. When necessary, translation tools will be used to support eligibility assessment and data extraction.

A pilot search conducted on 10 September 2025 retrieved 1,486 records, supporting the feasibility of the strategy. The complete search strategy for at least one database will be provided as supplementary material.

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Eligibility Criteria

The inclusion criteria are based on the PCC mnemonic and study type:

• Population: Studies involving patients, users, caregivers, or populations receiving care in primary health care settings formally integrated into health systems (e.g., basic health units, family health strategy services, and community clinics). Community pharmacies will be included only when explicitly integrated into primary health care systems. Private community pharmacies operating independently from PHC systems will not be considered eligible contexts.

• Concept: Studies describing, evaluating, or reporting clinical services provided by pharmacists, defined as patient-centered activities involving direct pharmacist–patient interaction aimed at optimizing pharmacotherapy, promoting health, and improving clinical outcomes. These services may include one or more components, such as medication review, pharmacotherapeutic follow-up, medication reconciliation, health education, health screening, management of self-limiting conditions, and chronic disease management. Activities limited to logistical or administrative functions (e.g., dispensing without clinical interaction) will not be considered clinical services within the scope of this review.

• Context: Studies conducted in Latin American countries and in primary health care settings formally integrated into national or local health systems.

• Study types: Primary studies of any design (quantitative, qualitative, or mixed methods), pilot studies, programme evaluations, and experience reports, provided that full text is available.

Exclusion criteria

The following will be excluded: (i) reviews, editorials, letters, commentaries, and opinion papers; (ii) studies conducted exclusively in hospital, inpatient, or emergency settings; (iii) studies focused exclusively on logistical, managerial, or administrative pharmaceutical activities (e.g., dispensing without clinical interaction), without direct patient care or clinical components; (iv) studies conducted outside Latin America; and (iv) documents without accessible full text.

Study Selection Process

Study selection will be conducted in two sequential stages by two independent reviewers. Before screening, all retrieved records will be imported into Zotero for initial organization and automatic duplicate removal. The deduplicated dataset will then be uploaded to Rayyan QCRI, where an additional verification of potential duplicates will be performed using built-in tools, followed by manual checking when necessary.

In the screening stage, titles and abstracts will be assessed to exclude clearly irrelevant records. Disagreements during this stage will be resolved by consensus or, when necessary, by retaining the record for full-text assessment.

In the selection stage, the full texts of potentially eligible studies will be retrieved and assessed against the predefined eligibility criteria to determine final inclusion. Disagreements at this stage will be resolved by consensus or by consultation with a third reviewer.

The study selection process will be documented and presented in a PRISMA-ScR flow diagram.

Data Extraction

Data extraction will be performed independently by two reviewers using a standardized and piloted form. Following independent extraction, results will be compared and discrepancies will be resolved through consensus. When necessary, a third reviewer will be consulted. This process aims to ensure accuracy, completeness, and consistency of the extracted data.

The data extraction form was developed based on the review objectives and will capture information across five domains: study characteristics, population, context, service characteristics, implementation characteristics, and outcomes.

• Study identification and characteristics will include author, year, country, source type (journal article, thesis, report), language, and study design.

• Population refers to the individuals or groups receiving care and will include characteristics of the population served (e.g., general population, older adults, patients with chronic conditions), age group, and reported equity dimensions when available.

• Context refers to the setting in which the service is delivered and will include type of primary health care setting (e.g., basic health unit, family health strategy, community pharmacy), sector (public, private, or mixed), and location (urban or rural).

• Clinical services provided by pharmacists are defined as patient-centered activities involving direct interaction between pharmacists and patients, aimed at optimizing pharmacotherapy, promoting health, and improving clinical outcomes. Within this concept, service characteristics will include the name of the service as reported, standardized service category, service components, professionals involved, mode of delivery (in-person, remote, or hybrid), and frequency or duration when available.

• Service components refer to the specific activities that compose the service and may include, but are not limited to, medication review, pharmacotherapeutic follow-up, medication reconciliation, health education, screening, and management of self-limiting conditions.

• Implementation characteristics will include information related to how services are organized and delivered, such as implementation context, level of integration with the health care team, and reported barriers and facilitators.

• Outcomes will be classified into four domains: (i) clinical (e.g., blood pressure control, glycated hemoglobin, medication adherence); (ii) humanistic (e.g., patient satisfaction, quality of life); (iii) economic (e.g., costs, avoided hospitalizations); (iv) organizational (e.g., service performance indicators, team integration). When reported, outcome measures and main findings will also be extracted to support the descriptive synthesis.

Data Synthesis and Presentation

Data will be synthesized using descriptive and thematic approaches. First, a descriptive quantitative summary will be conducted to characterize the included studies in terms of bibliometric and methodological features, including country of origin, study design, primary health care setting, and type of evidence source (indexed or gray literature).

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Second, a conceptual mapping will be developed to group clinical services provided by pharmacists according to their reported characteristics and service components. Service categories will be informed by established conceptual frameworks for pharmacist-delivered clinical services, particularly the framework proposed by the Federal Council of Pharmacy (CFF/ProFar) for services directly intended for patients, families, and communities[11]. Accordingly, categories may include health screening, health education, dispensing with clinical interaction, management of self-limiting conditions, therapeutic drug monitoring, medication reconciliation, pharmacotherapy review, health condition management, and pharmacotherapeutic follow-up. These categories will be applied descriptively and may be refined iteratively during data extraction and synthesis, according to the characteristics reported in the included studies.

Third, an evidence gap map will be constructed to display the distribution of evidence across service categories and outcome domains. Service categories will be represented on the Y-axis and outcome domains on the X-axis, including clinical, humanistic, economic, and organizational outcomes. The map will be generated in R using RStudio and relevant packages for data management and visualization, including *ggplot2*, *dplyr, tidyr,* and *readxl.* A study-by-category matrix will be created from the extracted data, and each cell will represent the number of unique studies contributing evidence to a given combination of service category and outcome domain. This approach will allow identification of areas with greater evidence density, as well as domains in which evidence is limited or absent.

Fourth, a narrative synthesis will be undertaken to describe patterns related to service organization, implementation contexts, populations served, and reported barriers and facilitators.

In line with methodological guidance for scoping reviews, no formal assessment of methodological quality or certainty of evidence will be performed, as the purpose of this review is to map, describe, and characterize the available evidence rather than to estimate intervention effects or support causal inference. The interpretation of the findings will therefore focus on the distribution, characteristics, and heterogeneity of the evidence base, integrating information on study design, implementation context, service categories, and outcome domains to provide a comprehensive overview of clinical services provided by pharmacists in primary health care in Latin America.

Dissemination Plan and Expected Contributions

The findings will be disseminated through publication in a peer-reviewed journal and presentations at scientific conferences. An executive summary (policy brief) incorporating the evidence gap map will be developed to support managers and decision-makers within the Brazilian Unified Health System and other Latin American health systems.

The review is expected to contribute to three domains: (i) Research: by identifying evidence gaps and areas requiring further investigation; (ii) Policy and management: by informing discussions on the organization and potential expansion of clinical services provided by pharmacists in primary health care; and (iii) Practice and education: by supporting the development of professional training initiatives and pharmacy curricula aligned with regional needs.

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Collaborators

BN and YB contributed equally to this work. BN, YB, and ARS contributed to the conception and design of the study. VSM contributed to the development of the search strategy and information sources. LPNL contributed to the methodological design and critical revision of the protocol. ARS supervised the study and coordinated the research process. All authors contributed to the writing of the manuscript, critically reviewed its content, approved the final version, and take responsibility for the integrity of the work.

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Conflict of interests statement

The authors declare that there are no conflicts of interest regarding this article.

Artificial intelligence (AI) systems

Artificial intelligence tools were used exclusively for language editing and grammatical correction of the manuscript. No AI system was used for study design, data extraction, data analysis, interpretation of results, or decision-making processes.

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