

# Pharmacist-led interventions in Brazil: a scoping review protocol

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## ABSTRACT

**Drug-related problems consist an important avoidable risk factor to the hospitalization in the general population. The increase of technologies to promote and recovery health and their use makes the design of services aimed at preventing health and drug problems, as well as their adequate management, a priority for public health. Pharmacist-led interventions are capable to optimize the use of medicines. However, it is important to know the characteristics and assessed outcomes of interventions, since, as a complex intervention, the variability between services can explain different performances. The objective of the scoping review is to explore randomized and non-randomized clinical trial, quasi-experimental and cohort studies to explore characteristics and assessed outcome of pharmacist-led interventions conducted in Brazil. This review will consider studies about pharmacist-led interventions, regardless of patient profile or health setting. Electronic searches will be performed in PubMed, Scopus, and LILACS databases with no time limit of publication. Two researchers, independently, will select registries and extract data of study and service characteristics, and outcomes measures. The findings will be presented in a narrative form including tables and figures to aid in data presentation, where appropriate.**

**Keywords: Community Pharmacy Services. Medication Therapy Management. Patient Care. Patient Safety. Pharmaceutical Services.**

## INTRODUCTION

Drug-related problems (DRP) consist of an important risk factor to hospitalization in the general population (Leendertse et al., 2008), and even more in the elderly (Salvi et al., 2012). In addition, half of these hospital admissions could be avoided (Leendertse et al., 2008; Mastroianni et al., 2009), reducing costs and contributing to the sustainability of the health care system (Ko et al., 2014). The increase of life expectancy (Gulland, 2016), as well as the increase of technologies to promote and recovery health, makes the design of services aimed at preventing health and drug problems, as well as their adequate management, a priority for public health.

In this perspective, pharmacist-led interventions are capable to improve patients' adherence, contribute to better blood pressure control, cholesterol management, chronic obstructive pulmonary disease and asthma control (Milosavljevic et al., 2018), and to promote quality of life (Maidana et al., 2017).

Despite the difficulty in classifying pharmaceutical services into categories, it is known that clinical practice services can range from a more punctual approach to more complex services covering multiple components of care, depending on patients' needs and setting characteristics. Thus, pharmacist-led interventions patient-centered could include health screening, patient education, minor problem management, therapeutic monitoring, medication reconciliation, medication review, health condition management, medication therapy management (The Society of Hospital Pharmacists of Australia, 2014; Conselho Federal de Farmácia, 2016).

In addition to the importance of knowing the impact of pharmacist-led interventions in Brazil, it is important to know the characteristics and assessed outcomes of interventions, since, as a service, it is a complex intervention and, therefore, variability between services can explain different performances. The complexity of the intervention is understood to be due to the multiplicity of possible results or its variability within a target population (May et al., 2007; Craig et al., 2008). In this sense, clinical pharmaceutical services can be understood as complex interventions, since the services can be directed to patients with multiple diseases, both patient and healthcare professional exhibit complex behaviors, and there is flexibility for pharmacists to adapt the intervention to individual patients (Latif et al., 2016).

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the *JBI*

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*Evidence Synthesis* was conducted and revealed that there is no scoping review regarding our propose. However, a review identified ten studies about pharmaceutical services conducted in Brazil and reported their characteristics, outcomes, and results (Ambiel & Mastroianni, 2013). This review provided a relevant discussion about the findings but had a major limitation in the lack of a comprehensive search, systematic data summary and outdated search (2011).

Scoping reviews are relevant when the question of interest has a wide scope, that is, inclusion criteria that are less restrictive for population, concept, context, and type of studies, since the objective is to know and map the available evidence on a given topic (Peters et al., 2015; Aromataris & Munn, 2017). In addition, systematic reviews with meta-analyses can be generated from the results of a scoping review (Peters et al., 2015; Aromataris & Munn, 2017).

Therefore, we aim to conduct a scoping review to explore existing literature related to characteristics and assessed outcomes of pharmacist-led interventions conducted in Brazil.

## REVIEW QUESTION

One main question will be addressed in this review:

- i) What are the characteristics and assessed outcomes of pharmacist-led interventions conducted in Brazil?

## METHODS

The proposed scoping review will be conducted in accordance with the Cochrane Collaboration (Higgins et al., 2019) and Joanna Briggs Institute methodology for scoping reviews (Peters et al., 2015).

### *Inclusion criteria*

**Participants:** This review will consider studies that include patients, regardless of the diagnostic, sex or age;

**Concept:** This review will consider studies that explore characteristics and assessed outcomes of pharmacist-led interventions (i.e. health screening, patient education, minor problems management, therapeutic monitoring; medication reconciliation; medication review; health condition management; and medication therapy management);

**Context:** Only research conducted in Brazil will be included, regardless setting;

**Types of studies:** This review will consider studies reported as randomized and non-randomized clinical trial, quasi-experimental and cohort studies or following a clinical trial, quasi-experimental or cohort design. Studies published in non-roman alphabet languages (e.g. Arabic, Chinese, Russian) will be excluded. Studies published from database inception to the present will be included. The searches will be re-run before writing of the manuscript planned to 2020.

### *Search strategy*

The search strategy will aim to locate published studies. An initial limited search of PubMed was undertaken to identify articles on the topic. The text words contained

in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy for PubMed, which includes MEDLINE and PubMed Central databases, Scopus, LILACS databases (see Appendix A). The search strategy, including all identified keywords and index terms, will be adapted for each included information source. The reference list of all studies selected for critical appraisal, as well as systematic reviews recovered in the search, will be screened to identify any additional papers.

### *Study selection*

Following the search, all identified records will be collated and uploaded into EndNote X7.2.1 (Clarivate Analytics, PA, USA) and duplicates will be removed. Titles and abstracts will then be exported to sheets of Microsoft Excel and screened by two independent reviewers against the inclusion criteria for the review. Potentially relevant papers will be retrieved in full. The full text of selected citations will be assessed in detail against the inclusion criteria by two independent reviewers. Reasons for exclusion of full text studies that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the study selection process will be resolved through discussion, or with a third reviewer. The results of the search will be reported in full in the final systematic review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram (Moher et al., 2009).

### *Data extraction*

Data will be extracted from studies included in the review by two independent reviewers using a data extraction tool developed by the reviewers in Microsoft Excel (Redmond, Washington, USA). The extracted data will include specific details about: i) baseline study characteristics (author names, year of publication, state, institution, setting, professionals, sample size, age group, funding), service characteristics (type of service, instruments used, target morbidity, information source, days of follow-up, appointments), outcomes measures. A draft extraction tool is provided in Appendix B. The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included paper. Modifications will be detailed in the full scoping review. Any disagreements that arise between the reviewers will be resolved through discussion or by a third reviewer.

### *Data presentation*

The extracted data will be presented in graphical or tabular form. Figures, tables and charts will be used, where appropriate. The tables and charts will report: i) characteristics of studies and service, ii) distribution of studies by year, design, state; iii) distribution of outcomes by type. A narrative summary will accompany the tabulated and/or charted results, focusing on outcome measures, instruments and population subgroups, along with their definitions. It will describe how the results relate to the objectives and questions of the review.

## RESUMO

*Intervenções farmacêuticas no Brasil: um protocolo de revisão de escopo*

**Os problemas relacionados aos medicamentos constituem um importante fator de risco evitável para hospitalização na população em geral. O aumento de tecnologias para promover e recuperar a saúde e seu uso torna o desenho de serviços voltados para a prevenção de problemas de saúde e medicamentos, bem como seu gerenciamento adequado, uma prioridade para a saúde pública. As intervenções lideradas por farmacêuticos são capazes de otimizar o uso de medicamentos. No entanto, é importante conhecer as características e os desfechos avaliados das intervenções, pois, como uma intervenção complexa, a variabilidade entre os serviços pode explicar diferentes desempenhos. O objetivo desta revisão de escopo é explorar ensaios clínicos randomizados e não randomizados, estudos quase-experimentais e de coorte para explorar características e desfechos avaliados de intervenções lideradas por farmacêuticos realizadas no Brasil. Esta revisão considerará estudos sobre intervenções lideradas por farmacêuticos, independentemente do perfil do paciente ou ambiente de saúde. As buscas eletrônicas serão realizadas no PubMed, Scopus e LILACS sem limite de data de publicação. Dois pesquisadores independentes selecionarão registros e extrairão dados sobre características do estudo e serviço, bem como medidas de desfecho. Os resultados serão apresentados em forma narrativa, incluindo tabelas e figuras para auxiliar na apresentação dos dados, quando apropriado.**

**Palavras-chave:** Serviços Comunitários de Farmácia. Conduta do Tratamento Medicamentoso. Assistência ao Paciente. Segurança do Paciente. Assistência Farmacêutica.

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## **APPENDIX A: SEARCH STRATEGY**

### **PubMed (MEDLINE and PubMed Central)**

#1: pharmacist\* AND brazil\*

#2: (review[PT] OR letter[PT] OR editorial[PT] OR historical article[PT])

#3: (animals[MH:noexp] NOT (animals[MH:noexp] AND humans[MH]))

Search: #1 not #2 not #3

### **SCOPUS**

#1: ALL(pharmacist\* AND brazil\*)

#2: DOCTYPE (re OR bk OR ch OR cr OR ed OR le)

#3: TITLE-ABS-KEY(animals AND NOT (animals AND NOT humans))

#4: (INDEX(medline))

Search: #1 and not #2 and not #3 and not #4

### **LILACS**

#1 pharmacist\*

#2 brasil\* OR brazil\*

(tw:(pharmacist\*)) AND (tw:(brazil\* OR brasil\*))

## **APPENDIX B: DATA EXTRACTION INSTRUMENT**

### **Sheets in Microsoft Excel with the following columns:**

- Study code
- Surname of first author
- Year
- State
- Study design
- Setting
- Professional
- Type of pharmaceutical service
- Instruments used in service (e.g. educational material, monitoring)
- Information source (e.g. laboratorial test, medical chart)
- Sample size
- Age range
- Target morbidity
- Days of follow-up
- Appointments
- Funding
- Outcome measures