



Review Article

# Intervention research to enhance community pharmacists' cognitive services: A systematic review

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## Abstract

**Background:** Positive impact of community pharmacists' cognitive pharmaceutical services (CPS) is well documented. However, community pharmacists have been slow to expand CPS roles. This systematic review explores how community pharmacy intervention research can help inform efforts to expand cognitive pharmaceutical service delivery.

**Objectives:** To: 1) identify community pharmacy CPS intervention studies that report data on pharmacist behaviors, either as a final study outcome itself or as a fidelity measure in patient outcome studies, and 2) describe the state of this research to help frame future research agendas.

**Methods:** Empirical articles examining improvement or expansion of community pharmacist cognitive services published through December 2010 were searched using various search engines, bibliography searches and authors' libraries. Studies were included if they: 1) reported findings on pharmacist behaviors during cognitive service delivery, 2) employed a minimum of pre-post design or two study arms for pharmacists/pharmacies, and 3) were in community-based pharmacies.

**Results:** A total of 50 studies evaluated impact of community pharmacy based CPS delivery; however, only 21 included a pharmacist behavior outcome measure as a final outcome or as a fidelity measure. The majority (14 out of 21) of studies used a randomized controlled trial design. Nearly half (10 of 21) addressed asthma or tobacco cessation. Limited details were provided about interventions to prepare pharmacists for CPS delivery. The most frequent measures of pharmacist behavior were patient surveys and observation of pharmacists' behavior by secret shoppers; electronic data sets were rarely used.

**Conclusions:** There is a need for well-designed intervention research that evaluates how interventions impact on pharmacist cognitive service behavior. Positive findings from this review reinforce that planned interventions have the potential to improve and expand pharmacist cognitive service delivery; however, more detail is needed in study publications for this potential to be fully realized.

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**Keywords:** Community pharmacy; Community pharmacists; Pharmacist behaviors; Implementation research; Intervention research

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## Introduction

The positive impact of community pharmacists' cognitive services is well documented.<sup>1–6</sup> That pharmacists can improve medication use and reduce risk of adverse events have been further affirmed as the Centers for Medicare and Medicaid Services (CMS) provided reimbursement for these services. However, despite growing reimbursement for cognitive pharmaceutical services, a recent national observational study found that community pharmacists generally provide limited information to patients.<sup>7</sup> Little has changed in the last several years since a similar national study was conducted about a decade ago.<sup>8,9</sup> Given that pharmaceutical care studies consistently document positive patient outcomes from community pharmacists' cognitive services, the question is what will it take to help pharmacists deliver more and better cognitive services. Second, what type of research can help move this agenda forward?

A subset of descriptive studies has explored pharmacists' perceptions of barriers and facilitators to cognitive pharmaceutical services (CPS) defined here as, "those services provided by a pharmacist to... a patient that are either judgmental or educational in nature."<sup>10</sup> Their focus is on the pharmacists' behavior and how to support it to deliver CPS. These studies identified lack of time, staffing and reimbursement and other systems issues as barriers.<sup>11–13</sup> They recommended that interventions are needed to help pharmacists with their work sites and systems through assistance with organizational planning and support, delegation of roles to technicians, better documentation, billing for services, and analyzing one's site from a system's approach.

In addition to these descriptive studies, intervention studies may help identify how to investigate and promote pharmacist delivery of CPS. Although intervention studies have been used in the past primarily to investigate CPS impact on patient outcomes and health system costs, subsets do measure intervention impact on pharmacist outcomes in terms of their delivery of cognitive services. Often this subset of studies includes the pharmacist behavior only as a fidelity measure of the patient intervention. This paper explores how well these studies describe the interventions that researchers used to modify pharmacist behavior, as well as their measures of pharmacist cognitive service delivery quality. This paper also summarizes the literature on community pharmacy-based intervention studies

which focus on improving or expanding pharmacists' behaviors as the primary outcome itself.

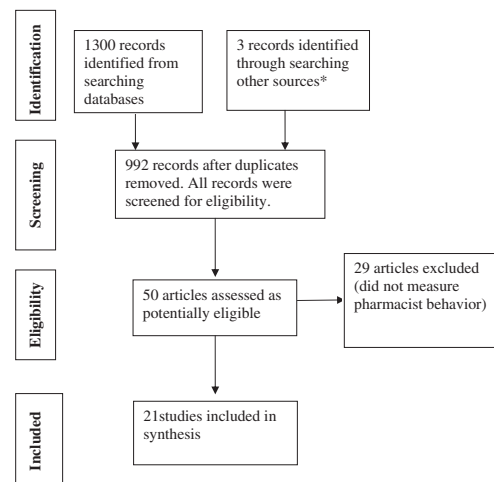
## Objectives

The aims of this systematic review were, first, to identify community pharmacy intervention studies that measure and report data on pharmacist behaviors, either as a final study outcome or as a fidelity measure in a patient outcome study, and second, to describe the characteristics and state of this research in order to help frame future research and publication agendas. To accomplish this, key study design choices were identified and described to help set agendas for future research needed to refine strategies and tools to enhance pharmacist cognitive roles.

## Methods

This review follows the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines for reporting systematic reviews.<sup>14</sup> Evidence for the quality, quantity, and gaps in community pharmacy intervention research was summarized by:

- I. study designs
- II. health problem/issue focus
- III. use of theoretical framework(s)
- IV. sample
- V. intervention characteristics
- VI. outcome measures of pharmacists' behaviors



\*Other sources included references from eligible articles, personal libraries and articles shared by colleagues.

Fig. 1. Study selection process.

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