REVIEW
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Quality assessment of community pharmacies: a scoping review

Avaliação da qualidade das farmácias comunitárias: uma revisão de escopo

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ABSTRACT

Introduction: Assessing quality in healthcare environments favors decision making with the lowest possible risk and the identification of strengths and weaknesses, leading to the structuring of reliable services. **Objective:** To synthesize current knowledge and existing literature on assessing the quality of community pharmacies (CF). **Methods:** This is a scoping review (SR) aligned with the methodology proposed by the JBI Manual for Evidence Synthesis, carried out in four databases, covering the period from 2012 to 2022. Basic qualitative content analysis and descriptive statistics were used. **Results:** Of the 1,103 documents retrieved, 64 were selected. Quality assessment has been carried out, most of the time, from the patient's perspective (54.7%), through quantitative studies (62.5%), cross-sectional studies (59.4%), and using questionnaires developed or adapted by the researchers themselves (51.6%). From the analysis, seven thematic categories and 36 subcategories were identified, highlighting, respectively, "pharmaceutical services" (81.25%) and "dispensing" processes (73.44%); "infrastructure and ambience" (70.3%) and "ambience and accessibility" (54.7%); "user experience and satisfaction" (67.2%) and "evaluation of community pharmacy services" (35.9%). It was observed that the categories of "people management", "patient safety", and "storage and disposal of medicines" were less evaluated and not all instruments used addressed all categories. **Conclusions:** This SR mapped scientific production regarding quality assessment in CF. This study shows the need to develop a standardized instrument encompassing the various evaluative aspects, which were listed based on the categories and subcategories identified in this review, in order to provide a complete overview of CF.

KEYWORDS: Pharmacies; Practice Patterns, Pharmacists; Quality of Health Care; Total Quality Management

RESUMO

Introdução: Avaliar a qualidade em ambientes de saúde favorece a tomada de decisões com o menor risco possível e a identificação de potencialidades e fragilidades, levando à estruturação de serviços confiáveis. **Objetivo:** Sintetizar o conhecimento atual e a literatura existente sobre a avaliação da qualidade das farmácias comunitárias (FC). **Método:** Trata-se de uma revisão de escopo (RE) alinhada à metodologia proposta pelo *JBI Manual for Evidence Synthesis*, realizada em quatro bases de dados, compreendendo o período de 2012 a 2022. Foi utilizada a análise de conteúdo qualitativa básica e estatística descritiva. **Resultados:** Dos 1.103 documentos recuperados, 64 foram selecionados. A avaliação da qualidade tem sido realizada, na maioria das vezes, na perspectiva do paciente (54,7%), por meio de estudos quantitativos (62,5%), transversais (59,4%), utilizando questionários desenvolvidos ou adaptados pelos próprios pesquisadores (51,6%). Foram identificadas sete categorias temáticas e 36 subcategorias, com destaque, respectivamente, para "serviços farmacêuticos" (81,25%) e os processos de "dispensação" (73,44%); "infraestrutura e ambiência" (70,3%) e "ambiência e acessibilidade" (54,7%); "experiência e satisfação do cliente" (67,2%) e "avaliação dos serviços de farmácias comunitárias (FC)" (35,9%).

Observou-se que as categorias “gestão de pessoas”, “segurança do paciente (SP)”, “armazenamento e descarte de medicamentos” foram menos avaliadas e nem todos os instrumentos utilizados abordaram todas as categorias. **Conclusões:** Ao mapear a produção científica quanto à avaliação da qualidade em FC, este estudo mostra a necessidade de elaboração de um instrumento padronizado englobando os vários aspectos avaliativos, os quais foram elencados a partir das categorias e subcategorias identificados nesta revisão, de maneira a fornecer um panorama completo da FC.

PALAVRAS-CHAVE: Boas Práticas Farmacêuticas; Farmácias Comunitárias; Melhoria Contínua da Qualidade; Qualidade da Assistência à Saúde

INTRODUCTION

Evaluating quality in healthcare environments is a complex task, but it can help to understand and measure the quality of the service and help managers make more assertive and coherent decisions, contributing to the structuring of reliable services that will be better prepared to respond effectively to both everyday situations and situations involving disease outbreaks, pandemics, or other complex emergency situations[1,2].

Quality health services must have the following attributes: efficacy (care practices and obtaining benefits based on scientific evidence); effectiveness (tackling waste of time, ideas, and resources); equity (care of the same quality for all); patient-centered care/humanization (respect for the patient, their values, and preferences, ensuring that clinical decision-making is guided by these values); safety (reducing risk, the occurrence of avoidable harm, and the impact of harm when it does occur, making errors less likely); and punctuality/timeliness/access (reducing waiting and delays in necessary care)[2,3].

The community pharmacy (CF) is a private, non-hospital health service establishment, where the community has quick and temporary access, can buy/acquire medicines and related products, and take advantage of the pharmaceutical services offered, and has a robust legal framework regulating its activities[4,5,6]. It performs functions that enable the preservation and restoration of the health of its clients, with medication as the main strategy, and should encourage its rational use[4].

The World Health Organization and the International Pharmacy Federation[7] have long addressed the importance of pharmacists and their role in promoting quality service. These documents guide CFs to adopt these guidelines and develop their own regulations for Good Pharmacy Practices (GPP). They are instructional guides and do not have an evaluative function, although they do provide guiding recommendations.

The health care provided in CFs is centered on GPP[8]. However, there are barriers to the effective provision of pharmaceutical services[9,10] and errors that can compromise the quality of the service[11,12], which need to be identified and assessed.

A scoping review (SR) is the most efficient strategy to learn how the quality assessment of pharmacies is carried out around the world, as it allows us to: map the general panorama covering studies with different methodological designs; answer different types of questions raised; systematize and disseminate the evidence found; enable the incorporation of new concepts and identify gaps in the literature[13,14,15,16].

To this end, a preliminary search was carried out in the PROSPERO, Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis databases and no current or ongoing systematic and scoping reviews on the subject were found. Therefore, in order to provide a comprehensive overview of the topic, this scoping review (SR) aimed to synthesize current knowledge and existing literature on the assessment of CF quality.

METHOD

This SR was aligned with the methodology proposed by the JBI Manual for Evidence Synthesis[13] and followed the recommendations of the Preferred Reporting Items for Systematic and Meta-Analyses - Extension for scoping review (PRISMA-ScR)[14]. A protocol was drawn up which was registered and can be accessed on the Open Science Framework (https://osf.io/) (DOI: 10.17605/OSF.IO/4XRZC).

Scope review questions

What has the literature presented in relation to evaluating the quality of pharmaceutical services offered in CFs? The review’s sub-questions are:

I. In which countries has quality been assessed in CFs?

II. How has quality assessment been carried out in CFs? Have instruments been developed?

III. What is the profile of the respondents who took part in the quality assessment studies carried out at the CFs?

IV. What were the objectives of the quality assessment in the CF?

V. What are the main categories and subcategories addressed in the instruments used to assess quality?

Inclusion criteria

Population

This review considered studies that were carried out in CF or that dealt with CF.

Concept

Studies that have explored the assessment of quality in health care, i.e. levels of excellence that characterize the services or health care provided based on quality standards. As well as studies that looked at norms, criteria, standards, questionnaires, and other direct quantitative and qualitative measures used to determine and assess the quality of healthcare in CF.

Context

Studies that addressed the pharmaceutical services provided to the public by CF, including: the pharmaceutical care cycle (selection, programming, acquisition, distribution, dispensing, ensuring the quality of products and services, monitoring, and evaluating their use), pharmaceutical care, aspects of the provision, and distribution of health services.

Types of documents and exclusion factors

Quantitative, qualitative, mixed-methods, methodological studies, and guidelines that explored issues related to quality assessment in CF were considered eligible. Any type of literature review, bibliometric analysis, editorial, report, commentary, opinion article, letter to the editor, executive summary, poster, congress proceedings, conference proceedings, or symposium review were excluded as exclusion factors 1. Studies aimed at exclusively compounding pharmacies, which addressed a certain type of disease, medicine, specific public or service, a certain age group, or national program were also excluded as exclusion factors 2.

Search strategy

A limited and initial search was carried out in the MEDLINE database (PubMed) to retrieve articles on the subject. Titles, abstracts, and keywords of these identified articles were read and analyzed in order to select descriptors and terms that could be used to develop a complete and robust search strategy, and new descriptors were searched on the Descriptors in Health Sciences/Medical Subject Headings (DeCS/MeSH) platform[17].

The authors of this SR discussed the different possibilities for search strategies and, after consulting an independent librarian, arrived at the final search strategy. This strategy was then adapted for each database included and a full search was carried out in the period August 16-19, 2022. The complete search strategies for each database are provided in Chart 1.

Additional studies were identified by searching the reference lists of the articles selected at the end of the process of selecting the studies that were read in full. Studies identified up to November 30, 2022, by other means, such as reading different journals, indications made by the authors of this SR, and searches on Google Scholar were incorporated and complied with the same inclusion and exclusion factors.

This review retrieved studies published between January 1, 2012, and November 30, 2022, as the authors considered working with the most recent quality assessments, thus searching for literature published in the last ten years. Studies published in English, Spanish, and Portuguese were included. Due to financial restrictions for translations, articles published in other languages were excluded. As previously mentioned, studies aimed exclusively at compounding pharmacies, which dealt with a certain type of disease, medicine, specific public or service, a certain age group, or national program, were not considered for the research, as they could lead to the recovery of very specific instruments, which would de-characterize the evaluation of quality as a whole in CF.

The following databases were searched because they index specialized literature in public health and health sciences: Medical Literature Analysis and Retrieval System Online - MEDLINE (PubMed); Virtual Health Library (BVS), Scopus, and Web of Science, accessed via the *Portal de Periódicos* of the Coordination for the Improvement of Higher Education Personnel (CAPES). The search for gray literature was carried out via OpenGrey and the Brazilian Digital Library of Theses and Dissertations (BDTD).

Selecting the source of evidence

The records retrieved from the databases were imported into the Rayyan software (Rayyan Systems Inc, Cambridge, MA, USA), which made it possible to characterize and remove duplicate works[18].

Chart 1. Document search strategy by database. Search carried out on August 16, 2022.

Database	Search strategy
PubMed	((((((“Pharmacies”[Mesh]) NOT “Pharmacy Service, Hospital”[Mesh])) NOT “Hospitals”[Mesh]) AND “Quality of Health Care”[Mesh]) OR “Quality Indicators, Health Care”[Mesh]) AND “Community Pharmacy Services”[Mesh]
BVS	(tw:(“Pharmacies”)) AND NOT (tw:(“Pharmacy Service, Hospital”)) AND NOT (tw:(“Hospitals”)) AND (tw:(“Quality of Health Care” OR “Quality Indicators, Health Care”)) AND (tw:(“Community Pharmacy Services”))
Scopus	(“pharmacies” AND NOT “hospital pharmacy” AND NOT “hospital”) AND (“Quality of Health Care” OR “quality improvement” OR “healthcare quality indicators”) AND (“community pharmacy services” OR “pharmaceutical services”)
Web of Science	(((TS=(“pharmacies”))) NOT TS=(“hospital pharmacy”)) NOT TS=(“hospital”) AND TS=(“Quality of Health Care”)) OR TS=(“healthcare quality indicators”) AND (TS=(“pharmaceutical services”)) OR (TS=(“community pharmacy services”))

Source: Prepared by the authors, 2023.
BVS: Virtual Health Library.

Three evaluators (two researchers directly involved in the selection of studies and a judge responsible for the final word in cases of disagreement between the two researchers) participated in the pilot test to adjust the study selection form, calibrate the evaluators, and analyze the agreement of the answers to ensure greater reliability of the screenings[15,19]. The first pilot test consisted of 30 studies selected by systematic sampling and six by convenience sampling[20]. In the second pilot test, the same proportion was maintained, but one less study was selected in the convenience sampling, totaling 35 studies[20].

The studies were selected by having the evaluators read the titles and abstracts independently, with the blinding tool activated in the Rayyan software. The evaluators analyzed the pilot test studies and filled in the study selection form in an Excel spreadsheet[19,21]. The data from the form was exported and analyzed using Stata software version 15.1.

The concordance analysis of the selection of articles between the two evaluators was carried out by calculating the Kappa concordance index and its p-value[13,19,22]. A Kappa value below 0.0 was interpreted as no concordance; if between 0.00-0.20, poor concordance; between 0.20-0.40, superficial concordance; 0.40-0.60, reasonable concordance; 0.60-0.80, good concordance; 0.80-0.92, very good concordance; 0.92-1.00, excellent concordance [22].

Only when the concordance between the evaluators in the pilot test was equal to or greater than 0.75[13] in the "decision" item of eligibility in the selection instrument and when there were no considerable changes to this instrument would the screening be carried out with the other articles. In the first pilot test, concordance of 0.84 (p-value: < 0.05) was achieved in the decision item. However, changes were made to the definitions of the eligibility criteria to make them clearer and more standardized among the evaluators. It was therefore decided to carry out a second pilot test with 35 new studies, which showed a Kappa of 0.87 (p-value: < 0.05). Differences in the process were analyzed jointly by the two evaluators, seeking consensus. The studies used in the two pilot tests were different from each other and those selected were included in the full-text review.

The general selection process for the other articles was carried out by the evaluators by reading the titles and abstracts. The selected studies were read in full by both evaluators independently and reassessed whether they would remain on the list of selected studies. After full reading and selection of the studies, all the references of the studies that remained in the final screening were analyzed, using the same process and form for selecting studies[14,15]. Studies identified up to November 30, 2022, by other means, as previously reported, underwent duplicate analysis and followed the same selection process.

Data extraction

A standardized data extraction form was developed and tested with a small number of studies[16] and then applied to all included studies, as indicated in the *a priori* protocol. Two previously trained researchers collected the data independently[16].

To identify the profile of the studies, the following information was extracted: title; year of publication; authors; country; journal; type of publication (article, dissertation, thesis, or guideline), study design, perspective (target audience), instruments, and objectives (Chart 2).

In order to identify to which target audience (respondents) the surveys were aimed at, the studies were divided into three perspectives: technical, patient, and mixed. The studies in which the respondents were pharmacists, technicians, assistants, and other pharmacy professionals, pharmacy managers, and owners, doctors and representatives of government bodies were considered to be from a technical perspective, as were the guidelines drawn up. Studies whose target audience was customers were considered to be from the patient's perspective. Finally, studies in which the questionnaire was answered by at least one representative from each of the two previous perspectives were considered to have a mixed perspective.

The categories and subcategories evaluated were those identified in the research instruments used in the quantitative and methodological studies and in the guidelines, as well as those listed by researchers who carried out qualitative studies.

Disagreements between the researchers were resolved through discussion or with a third reviewer.

Data analysis and presentation

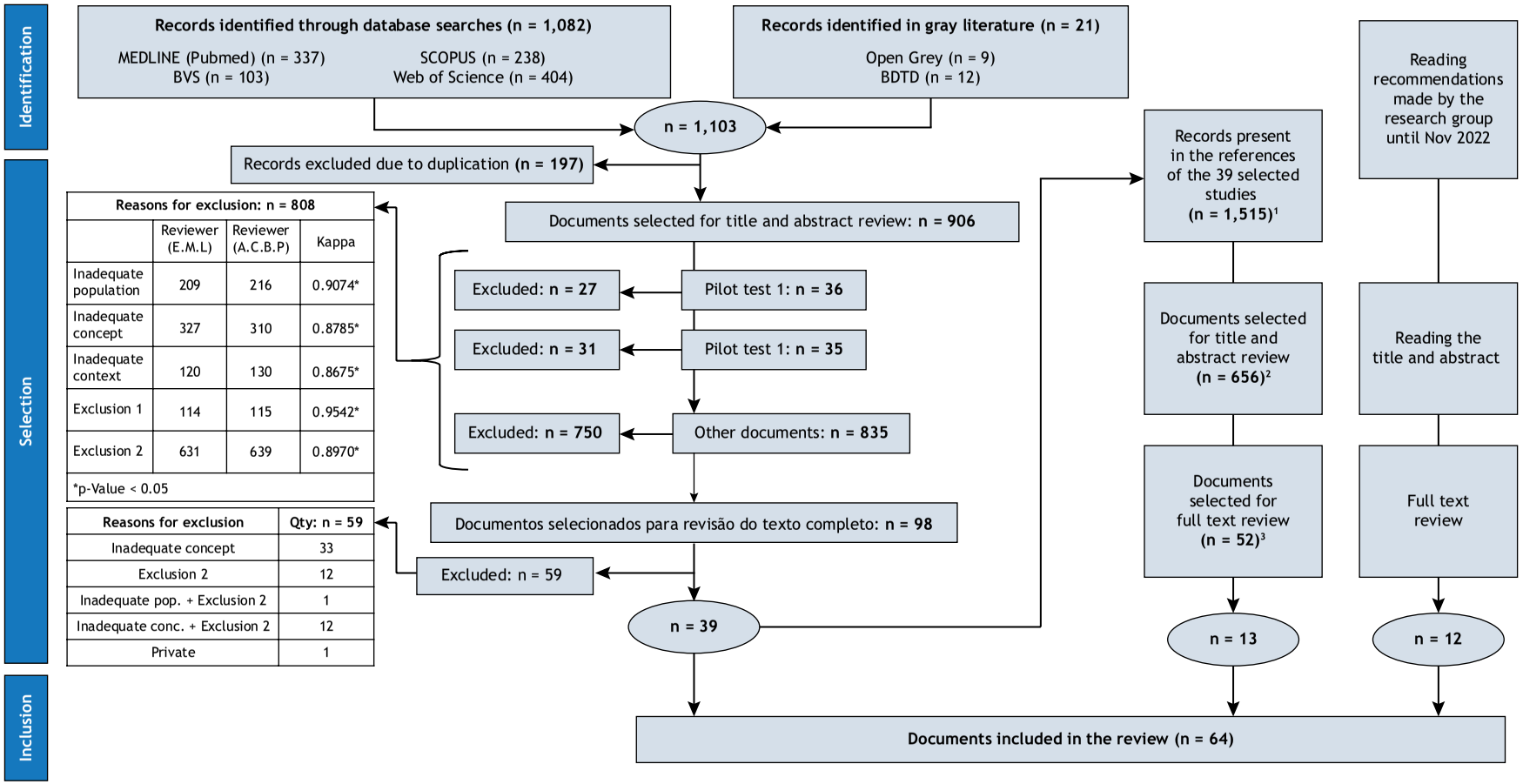
Basic qualitative content analysis was used[16,23] based on the different categories (titles of domains, dimensions, among other names), subcategories, and questions identified in the instruments used in each quantitative survey, methodological study, or guideline, as well as in the qualitative studies.

The results were described from the technical, patient, and mixed perspectives, and the objectives and methodology (study design, participants, data collection instrument or method, and country) were presented (Chart 2). In the Table, the data is presented based on the categories and subcategories, and their absolute and relative frequencies are expressed considering the total number of articles retrieved. A narrative summary accompanies the tabulated results and describes how they relate to the aim and questions of the review.

RESULTS

Document inclusion

A total of 1,103 documents were identified. A flowchart of the selection process can be seen in the Figure. In the analysis of duplicates, 323 documents were identified as possible repetitions by the Rayyan software, of which 197 were confirmed as copies and excluded, resulting in 906 documents. The Kappa



Reasons for exclusion: n = 808			
	Reviewer (E.M.L)	Reviewer (A.C.B.P)	Kappa
Inadequate population	209	216	0.9074*
Inadequate concept	327	310	0.8785*
Inadequate context	120	130	0.8675*
Exclusion 1	114	115	0.9542*
Exclusion 2	631	639	0.8970*
*p-Value < 0.05			

Reasons for exclusion	Qty: n = 59
Inadequate concept	33
Exclusion 2	12
Inadequate pop. + Exclusion 2	1
Inadequate conc. + Exclusion 2	12
Private	1

Source: Prepared by the authors, 2023.
[1] 859 records excluded because they were published before 2012. [2] 604 records excluded: of these, 346: wrong population; 514: wrong concept; 407: wrong context; 75: exclusion factor 1; 49: exclusion factor 2. [3] 39 records excluded: of these, 22 were duplicates; of the remaining 17, 5: wrong population; 13: wrong concept; 1: wrong context; 2: exclusion factor 1.

Figure. PRISMA flow diagram[14]. Flowchart of the process of identifying, selecting, and including studies.

concordance index for the "Decision" item of the document selection tool for pilot test 1, pilot test 2, and the remaining documents were 0.84, 0.87, and 0.78 respectively, all with a p-value < 0.05. Of the 906 documents, 808 were excluded, leaving a total of 98 selected for full-text reading. After reading the full text of the 98 selected, 59 were excluded, leaving 39. A total of 25 new documents were incorporated into this review, 13 obtained from the references of the studies retrieved and 12 from the reading recommendations of the authors of this SR, giving a total of 64 studies selected for this SR.

Characteristics of the documents included

The selected studies came from 33 countries, mainly the United States of America (USA) (n = 10; 15.6%)[12,24,25,26,27,28,29,30,31,32], Australia (n = 5; 7.8%)[33,34,35,36,37], and the United Kingdom (n = 4; 6.25%)[38,39,40,41]. The majority of the studies had a quantitative approach (n = 40; 62.5%), especially cross-sectional studies (n = 38; 59.3%)[9,11,12,24,28,29,39,42-72], followed by qualitative studies (n = 10; 15.6%)[25,32,33,37,38,40,41,73,74,75] (Chart 2). Methodological studies (n = 9; 14.1%)[34,35,36,76,77,78,79,80,81] which aimed to evaluate, adapt, and test the validity and feasibility of instruments and indicators for evaluating the quality and safety of medication use and for assessing client satisfaction with CF services were identified. Guidelines (n = 4; 6.2%)[26,27,82,83] and one study that developed both qualitative and quantitative methodology (n = 1; 1.6%)[10] were identified.

It was observed that the majority (n = 52; 81.2%) of the instruments used to assess quality in CFs were questionnaires and 63.5% (n = 33) were developed by the researchers themselves by reviewing the literature[9,10,31,41,42,43,45,51,52,54,55,56,58,59,61,62,63,65,66,68,69,70] and adapting other instruments already used in previous studies[12,24,28,29,46,48,50,53,57,60,71]. We found that 31 instruments were adapted or used in their entirety to support the research[11,12,24,28,29,32-36,39,44,46,48,49,50,53,57,60,64,67,71,72,76,77,78,80,81] (Chart 2).

Two studies (3.1%) used validated quality indicators[44,76]; 17 (26.6%) articles, whose questionnaires were developed by the researchers themselves, were validated[9,36,43,51,52,53,54,55,56,57,61,63,65,70,79,80,81]; in one (1.6%) study only reliability was calculated[59] ; and two (3.1%) studies used the validated questionnaire called Pharmacy Survey on Patient Safety Culture (PSOPSC)[11,47]. Three (4.7%) articles used modified versions of validated questionnaires: the modified version of the Behavioural Pharmaceutical Care Scale (BPCS)[46]; the Persian version of the MacKeigan and Larson questionnaire for measuring patients' satisfaction with pharmacy services[64]; and a reduced version of the Perceived Service Quality (pSQS) - pSQ-SF6[35]. One (1.6%) study developed and validated the questionnaire applied to pharmacists and used a modified and validated version of the Pharmacy Services Questionnaire (PSQ) with customers[71]. One (1.6%) study adapted the Medication Safety Self Assessment (MSSA) instrument from the Institute for Safe Medication Practices in the United States of America and tested its usefulness in Finnish CFs[78].

Most studies were carried out from the patient's perspective (n = 35; 54.7%), 22 (34.4%) from the technical perspective, and seven (10.9%) from the mixed perspective (Chart 2).

As for the objectives of the selected studies, they mainly addressed the identification of the CF services offered and the evaluation of quality with a focus on GPP and the structural conditions of the establishments[9,37,41,43,45,46,48,50,73], evaluated customer satisfaction[42,51-61,63,64,65,66,69,72,74,79,80,81], and the perception of professionals about working conditions and the factors that influence the quality of the service[9,24,33] (Chart 2). The studies also looked at the use of indicators to assess quality, used guidelines, or regulations/standards for continuous quality improvement[10,47,32,33,52,74,83] and assessed customer perceptions of the quality of pharmaceutical services offered[10,32,34,35,36,38,40,67,68,71,75] and patient safety culture (PSC) in the context of CF[11,24,25,47] (Chart 2).

The Table shows the seven thematic categories and 36 subcategories identified from the analysis of the studies. It was observed that the vast majority dealt with "pharmaceutical services" (81.25%), especially "dispensing" (73.44%) and "infrastructure and ambience" (70.31%).

DISCUSSION

The study made it possible to identify documents and articles related to assessing the quality of CFs around the world. According to the results of the research, it was observed that the evaluations are mainly focused on the performance of the pharmacist, the services offered in the CF, and the application of GPP, including infrastructure and patient safety (PS), from the perspective of the patient and the pharmaceutical professional.

Evaluating the quality of CFs has been a concern in several countries. Of particular note are the USA, Australia, and the United Kingdom, which have important national institutions working to improve quality in healthcare, especially in pharmaceutical companies, and which are driving research in the area, such as the Agency for Healthcare Research and Quality, which developed the PSOPSC[11,47] , the Institute for Safe Medication Practices, which developed the Medication Safety Self Assessment[78], the Pharmacy Quality Alliance, which created bulletins containing quality measures[32], the United Kingdom National Health System, which uses the Community Pharmacy Assurance Framework[78], the Pharmacy Safety Climate Questionnaire[39], and the Pharmacy Guild of Australia, which uses the Quality Care Pharmacy Program[40].

The use of quantitative methodology, especially cross-sectional studies, is consistent with the objectives of the research, since they aimed to analyze, describe, characterize, examine, evaluate, and identify the characteristics of the pharmacist, the pharmacy team, the processes and activities performed, and

Chart 2. Characteristics of the 64 studies included in the review.

Technical perspective	
Objective	**Methodology (Study design. Participants. Instrument or form of data collection. Country)**
To analyze the profile, intentions, and practices, as well as the structure for providing services, of pharmacists working in private pharmacies[43].	Quantitative (ET). Pharmacists. Online questionnaire, developed by the researchers. Brazil.
Describe the validated quality indicators and their scores[44].	Quantitative (ET). Pharmacists. Online questionnaire, containing a set of 66 validated quality indicators. Netherlands.
Characterize the profiles and activities of pharmacists and the quality indicators[45].	Quantitative (ET). Pharmacists. Online questionnaire, developed by the researchers. Brazil.
To examine pharmacists' perceptions of working conditions at store and company level and their perceived ability to address PS issues without fear of punishment[24].	Quantitative (ET). Pharmacists. Online questionnaire, adapted version of the Agency for Healthcare Research and Quality integrative model of health care working conditions on organizational climate and safety. USA.
Assess how the provision of pharmaceutical care in CF has evolved over time in Europe[46].	Quantitative (ET). Pharmacists. Online, printed and mailed questionnaire, modified version of the Behavioral Pharmaceutical Care Scale. Europe.
Determine pharmacy staff perspectives on PSC in the CF environment[47].	Quantitative (ET). Pharmacist; registered pharmacy technician, pharmacy assistant, trainee. Online questionnaire, PSOPSC, developed by AHRQ. Qatar.
Evaluate whether the pharmacist's practice supports PS[11].	Quantitative (ET). Pharmacists. Self-administered printed questionnaire, PSOPSC, developed by AHRQ. Kuwait.
Identify the types of services currently provided by community pharmacists and explore the barriers to providing high quality services in the CF sector[9].	Quantitative (ET). Pharmacists. Self-administered printed questionnaire developed by the researchers. Jordan.
Evaluate GPP aspects[48].	Quantitative (ET). Pharmacist. Printed questionnaire: part self-administered, and part answered by the inspector, developed by the researchers. Lebanon.
Identify the implementation of the CF Service Quality Guidelines[49].	Quantitative (ET). Pharmacists. Self-completed electronic questionnaire, Profession-driven Community Pharmacy Services Quality Guidelines. Estonia.
Evaluate and report on GPP in CFs[50].	Quantitative (ET). Pharmacy. Printed questionnaire, developed by the researchers, direct observations, review of records and interviews. India.
Describe the CQI regulations for practicing CF[12] .	Quantitative (ET). Representative from each State Board of Pharmacy. Online questionnaire, developed by the researchers (Survey of State Board of Pharmacy requirements related to continuous quality improvement for patient safety). USA.
Test the viability of the quality indicators tool by applying it to independent and network CFs[76].	Methodological study. Pharmacist, pharmacy assistant. Quality indicator tool developed by the Community Pharmacy Association. Thailand.
Assessing the validity of quality indicators[77].	Methodological study. Panel of experts. Indicator validation, set of 52 indicators. Netherlands.
Adapt and test the MSSA tool from the US Institute for Safe Medication Practices[78].	Methodological study. Expert panel, pharmacy owner, pharmacist, doctor. Finnish version of the US Institute for Safe Medication Practices' MSSA tool. Finland.
Identify the CF services that required improvement and/or the development of guidelines[73].	Qualitative (Delphi survey). Pharmacists, policy makers, representatives of pharmacy organizations. Scotland.
Describe the characteristics of the CF work system using the Systems Engineering Initiative model for PS[25].	Qualitative (semi-structured interviews). Pharmacist. Recordings and transcriptions. USA.
To explore pharmacy professionals' perceptions of the factors that constitute a high level of service quality, using the determinants of service quality proposed by the Conceptual Model of Service Quality[33].	Qualitative (structured interviews). Pharmacist; Pharmacy assistant. Zeithaml et al's Conceptual Model of Service Quality. Australia.
Good Pharmacy Practice in Spanish Community Pharmacy[82].	Diretriz, Spain.
Spanish Translation of AHRQ's Community Pharmacy Survey on Patient Safety Culture April 2014[83].	Diretriz, Spain.
Center for Pharmacy Practice Accreditation; Community Pharmacy Practice Standards[26].	Guideline, USA.
Community Pharmacy Survey on Patient Safety Culture[27].	Guideline, USA.
Patient perspective	
Objective	**Methodology (Study design. Participants. Instrument or form of data collection. Country)**
Evaluate patients' experiences and satisfaction with CF services[51].	Quantitative (ET). Consumer. Online questionnaire, developed by the researchers, based on a literature review. United Arab Emirates (UAE).
To assess patient satisfaction with pharmacy services and their confidence in the information received[52].	Quantitative (ET). Consumer. Online questionnaire, developed by the researchers. Romania.
To explore customer satisfaction with the facilities and services received from pharmacies in accordance with GPP standards[53].	Quantitative (ET). Consumer. Online questionnaire, developed by the researchers. Thailand.
To provide information on the population's perception, views and satisfaction with the pharmacist's performance as a healthcare provider[54].	Quantitative (ET). Consumer. Self-administered printed questionnaire, adapted from previous studies. Saudi Arabia.

Continue

Continuation

Determining Palestinian consumers' perceptions of pharmacists and the services they offer[55].	Quantitative (ET). Consumer. Self-administered printed questionnaire, developed by the researchers, based on previous studies conducted in the UK and Saudi Arabia. West Bank, Palestine.
Describe significant relationships between use of the pharmacy service, general and specific patient satisfaction, reasons for patronizing the pharmacy and marketing awareness[28].	Quantitative (ET). Consumer. Self-administered printed questionnaire, developed by the researchers. USA.
Assess customer priorities and satisfaction with CF services[56].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Iran.
Determine the degree of satisfaction with CF care and whether and which factors are correlated with satisfaction[57].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers and the Pharmacy Services Questionnaire. Portugal.
To examine similarities and differences in patient satisfaction between urban and suburban pharmacy populations[29].	Quantitative (ET). Consumer. Self-administered printed questionnaire, developed by the researchers. USA.
Assessing Saudi adults' satisfaction with CF services[58].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Saudi Arabia.
To assess patients' attitudes towards the role of the pharmacist[59].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Lebanon.
To assess patient satisfaction and attitudes towards pharmaceutical services[60].	Quantitative (ET). Consumer. Self-administered printed questionnaire, developed by the researchers based on the Community Pharmacy Patient Questionnaire - United Kingdom and the patient satisfaction survey of pharmaceutical care services. UAE.
To assess customers' perceptions of and satisfaction with the services provided by pharmaceutical outlets and to explore the factors associated with their satisfaction and the reasons for their visits[61].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Ethiopia.
Determine patient needs and current pharmacy standards[62].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Pakistan.
To describe the levels of satisfaction and knowledge about pharmacy services[42].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers (New Pharmacy Model). Portugal.
To examine how a patient's constant involvement with the same pharmacist and pharmacy is associated with the evaluation of the quality of pharmaceutical services[63].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers (Survey Regarding Awareness of Pharmacies). Japan.
Measuring patient satisfaction with CF[64].	Quantitative (ET). Consumer. Self-administered printed questionnaire, the Persian version of the MacKeigan and Larson questionnaire for measuring patients' satisfaction with pharmacy services. Iran.
To explore the level of patient satisfaction with pharmacist communication and the quality of the consultation and pharmaceutical services provided[65].	Quantitative (ET). Consumer. Self-administered printed questionnaire developed by the researchers. Sudan.
Examine the effects of pharmacy service factors on patient satisfaction and explore how satisfaction influences CF performance[66].	Quantitative (ET). Consumer. Self-completed electronic questionnaire, developed by the researchers, based on a literature review. Jordan.
Explore patient satisfaction with the pharmacy and its services[72].	Quantitative (ET). Consumer. Self-completed electronic questionnaire, translation of a questionnaire tool previously developed and validated by Aziz et al. Jordan.
To study the quality of patient care provided by CF[67].	Quantitative (ET). Consumer. Direct observation of pharmacy practices and application of the Patient Care Form (WHO guidelines, 1993). Indonesia.
Assessing the value created by CFs - customer perceived value - through elements of service quality[68].	Quantitative (ET). Consumer. Instrument developed by the researchers, based on previous studies. Germany.
Examining the characteristics of the patient experience in CF[30].	Quantitative (retrospective observational study). Consumer. Database analysis using structural topic model. USA.
Measure patient preferences for pharmacy attributes and describe associations between patient characteristics and pharmacy preferences[31].	Quantitative (discrete choice experiment). Consumer. Self-administered printed questionnaire, developed by the researchers. USA.
Validate previously published satisfaction scales and test the relationship between satisfaction and pharmacists' consultation practices[79].	Methodological study. Consumer. Self-administered printed questionnaire, developed by the researchers, based on the six domains of pharmaceutical care described by Cipolle *et al*. Canada.
Validate the questionnaire: Qualitatively and quantitatively-informed servisse quality[34].	Methodological study. Consumer. Self-completed electronic questionnaire. Qualitatively and quantitatively-informed servisse quality questionnaire for Australian community pharmacies with a price-focused marketing strategy (PFMS). Australia.
Develop and validate a tool and use it to assess patient satisfaction with current CF services[80].	Methodological study. Consumer. Self-administered printed questionnaire developed by the researchers. UAE.
Psychometrically test the pSQS and develop a short-form pSQS with acceptable psychometric properties[35].	Methodological study. Consumer. Short version of the pSQS - pSQ-SF6. Australia.
Develop and validate an instrument to assess patient satisfaction with the services provided in pharmacies[81].	Methodological study. Panel of experts, consumer. Questionnaire developed by the researchers. Iran.

Continue

Continuation

Build a model based on the theory of service quality in CF and create an instrument to measure consumer perception of service quality[36].	Methodological study. Consumer. Questionnaire developed by the researchers (Perceived Service Quality - pSQS). Australia.
Describe consumers' ability to interpret pharmacy quality measure data presented in a report card, examine the tools consumers need to interpret the information available in a pharmacy quality report card, and determine whether pharmacy quality measures influence consumers' choice of pharmacy[32].	Qualitative (focus group). Consumer. Recordings and transcripts, using simulated report cards containing the PQA quality measures. USA.
Citizens' perspectives on the quality of services and whether and how quality should be measured[38].	Qualitative (focus group). Consumer. Semi-structured interview. United Kingdom.
To evaluate consumers' expectations and experiences with the services provided by the FC network[74].	Qualitative (face-to-face interview). Consumer. Recordings and transcripts. Pakistan.
To examine patients' perceptions of a pharmacy incident and determine recommendations for improving the quality of pharmacy services[75].	Qualitative (critical incident technique). Consumer. Open-ended interview with recordings and transcripts. Serbia.
Determine the pattern of customers' views regarding their satisfaction with the quality of CF services[10].	Qualitative and quantitative (Q methodology, factor analysis per person). Consumer. Printed questionnaire. Vietnam.
Mixed perspective (patient and technician)	
Objective	**Methodology (Study design. Participants. Instrument or form of data collection. Country)**
Monitor consumer satisfaction with pharmaceutical care and compare the opinions of consumers and pharmacists[69].	Quantitative (ET). Consumer, pharmacist. Self-administered questionnaire, developed by the researchers. Slovakia.
To assess the levels of satisfaction of patients and pharmacists with drug counseling[70].	Quantitative (ET). Consumer, pharmacist. Online questionnaire, two instruments were developed by the researchers (one for patients and one for pharmacists). South Korea.
To investigate organizational factors associated with variation in the safety climate, patient satisfaction and self-reported adherence to medications in CF[39].	Quantitative (ET). Consumer, pharmacist. Self-administered printed questionnaire, Pharmacy Safety Climate Questionnaire; Pharmacy Service Orientation; Satisfaction with Information about Medicines Scale; Medication Adherence Report Scale; Beliefs about Medicines Questionnaire. United Kingdom.
Carry out a spatial analysis of the quality of pharmaceutical services and the correlation with user satisfaction[71].	Quantitative (ET). Expert panel, pharmacist, consumer. Self-administered printed questionnaire (questionnaire for pharmacists: developed by the researchers; questionnaire for patients: modified version of the Pharmacy Services Questionnaire. Brazil.
Develop a conceptual framework characterizing the quality of healthcare in the CF setting[40].	Qualitative (focus group). Consumer, pharmacist. Recordings and transcripts. United Kingdom.
Confirm and classify the importance of a set of characteristics of good pharmaceutical service provision[41].	Qualitative (Delphi type research). Consumer, doctor, pharmacist, clerk, board member of a CF organization, executive of a large CF chain. Structured online questionnaire, developed by the researchers. United Kingdom.
Identify the main determinants of practice that can influence the implementation of CF services[37].	Qualitative (semi-structured interviews). Consumer, pharmacy manager, pharmacist, doctor. Interview guide based on the literature. Australia.

Source: Prepared by the authors, 2023.
ET: Cross-sectional study; PSOPSC: Community Pharmacy Survey on Patient Safety Culture; AHRQ: Agency for Healthcare Research and Quality; PS: Patient Safety; PSC: Patient Safety Culture; CF: Community Pharmacy; GPP: Good Pharmaceutical Practices; CQI: Continuous Quality Improvement; MSSA: Medication Safety Self Assessment; pSQS: Perceived Service Quality; PQA: Pharmacy Quality Alliance.

the structure for providing services at CF[9,11,12,24,43,44,45,46,47,48,49,50], as well as customer satisfaction related to these topics[28,29,39,42,51-72] .

The few qualitative studies addressed the characteristics of the CF work process[25], professionals' perceptions of the factors that lead to a high level of service quality[33], and the services that required improvement[73]. They also identified the perception, expectation, and satisfaction with service quality, and whether CF quality measures influenced customers' choice of pharmacy[32,38,74,75].

In general, there was a predominance of studies that used instruments developed or adapted by the researchers themselves[9,10,12,24,28,29,31,41,42,43,45,46,48,50-63,65,66,68,69,70,71], which may suggest a diversity of services offered in different contexts, making it necessary to use customized instruments that meet these different realities[46] .

On the other hand, the guidelines identified[7,26,27,82,83], which include the joint International Pharmaceutical Federation/World Health Organization guideline[7], establish quality standards in CF practice that can help to build a more homogeneous instrument to be applied in different realities, which should be reviewed and updated regularly[84].

The categories and subcategories identified in this review are related to the very evolution of pharmaceutical services in recent years, which reflects the scope and diversity of services and procedures that have been implemented in CFs, such as: health screening services and procedures, client monitoring[43,45,46,48,49,78,82], health education[48,78,82], immunization[48,49,78,82], pharmacotherapeutic follow-up[76,77], participation in multidisciplinary meetings[44,46,77,78]; the use of software to check drug interactions and stock control, among others[46,48,78].

Table. Frequency of studies in relation to the categories and subcategories constructed from the content analysis (n = 64).

Categories and subcategories	n (%)
Pharmaceutical services	**52 (81.25)**
Dispensing	47 (73.44)
Health education	21 (32.81)
Extended services - Health tracking	13 (20.31)
Extended services - Health condition management	7 (10.94)
Extended services - Other	14 (21.88)
Management of a self-limiting health problem	10 (15.63)
Review of pharmacotherapy	10 (15.63)
Pharmacotherapeutic follow-up	9 (14.06)
Therapeutic drug monitoring	1 (1.56)
Infrastructure and ambience	**45 (70.31)**
Ambience and accessibility	35 (54.69)
Infrastructure	34 (53.12)
Customer experience and satisfaction	**43 (67.19)**
Evaluation of CF services	23 (35.94)
Customer relationship management	20 (31.25)
Accessibility	16 (25.00)
Evaluation of overall satisfaction	10 (15.62)
Consumer privacy	4 (6.25)
Waiting time	3 (4.69)
Management and planning	**36 (56.25)**
Quality management	17 (26.56)
Management	10 (15.62)
Communication	9 (14.06)
Finance	7 (10.94)
Legal requirements	3 (4.69)
People management	**25 (39.06)**
Skills improvement and training	14 (21.87)
Team characteristics	11 (17.19)
Workflow problems	6 (9.37)
Personnel management	3 (4.69)
Patient Safety	**22 (34.37)**
Communication	9 (14.06)
Clinical risk management	7 (10.94)
Teamwork	7 (10.94)
Continuous care	7 (10.94)
PS classification	7 (10.94)
Workplace culture	3 (4.69)
Notification, surveillance, and investigation of adverse events	2 (3.12)
Storage and disposal	**11 (17.19)**
Storage	9 (14.06)
Tools and technology	6 (9.37)
Disposal of medicines and related products	4 (6.25)

Source: Prepared by the authors, 2023.
CF: Community pharmacy; PS: Patient safety.
* Unit of analysis: studies retrieved from the SR; **Percentage: always relative to the total number of studies in the analyzed column.

Thus, the role of the pharmacist has also evolved, becoming one of disseminating knowledge and providing care and other services that go beyond the process of dispensing medicines[9]. In this context, pharmacists need to have adequate skills and time for counseling, build good relationships with clients, work in places with appropriate facilities and resources, and have an adequate number of staff who are sufficiently trained, with collaborative practices between the team working in CFs and health services[80].

Pharmaceutical services are highlighted in this process of evaluating the quality of pharmaceutical services, in which "dispensing" stands out among the subcategories, which may indicate that it is the strongest link in the pharmacist/client interaction, greatly influenced by the practice of counseling, a critical component of the dispensing process, in which information and guidance on medicines are essential for their correct use, adherence to treatment, and development of the client's autonomy for self-care[9].

The fact that many of the evaluations focus on customer satisfaction and opinion is an important point that directs managers to the most critical aspects and contributes assertively to the necessary improvements[54]. The literature shows that factors related to dispensing, such as providing guidance on use, side effects and drug interactions, passing on information in writing, asking about comorbidities, providing more accessible therapeutic alternatives[10,46,48,58,62,64,65,70,75], as well as factors related to "infrastructure and ambience", such as the design of the pharmacy, organization, cleanliness, lighting[42], privacy[10,28,38,42,49,65,75], the comfort of the waiting room[10,49], the availability of parking[62], access during the night, weekends and holidays[42], and waiting time[30,52,62] , influence customer satisfaction.

The studies also revealed that there are still improvements to be made in the context of CFs, such as: having a pharmacist available for counseling and a private area for the development of the activity[61], addressing questions about comorbidities[58], reducing waiting times, improving the quality and availability of medicines[62]. On the other hand, there are studies that show a more encouraging outlook, such as the one carried out in Thailand in 2022, where CF customers were very satisfied with the facilities and services offered, stating that they strongly intend to seek pharmaceutical services as their first choice in the case of common and non-serious illnesses[53].

Evaluating PSC in CF is still very recent and there are few studies on the subject. However, institutions with a strengthened PSC tend to incorporate safer practices, which is fundamental for providing quality services. Alsaleh et al.[11] report that the highest standards of PS were observed in the dimensions of "teamwork", "continuous improvement", and "client counseling", and the lowest rates were for "staff characteristics", "pressure and pace of work", and the frequent interruptions or distractions in the pharmacy and the rush when processing prescriptions and inadequate breaks during shifts were decisive for the negative repercussions on the perception of PS in this context. Thus, evaluating the "management and planning" and "people management" components can certainly help to minimize the problems reported, improving processes and services, impacting on PS,

customer satisfaction, service quality, and the performance of the CF as a whole.

Hincapie et al.[12] point out that the least common elements of continuous quality improvement (CQI) programs include documenting quality improvements made to prevent errors in the future and providing training to pharmacy staff on best practices in error management. Clabaugh et al.[24] reported that most pharmacists in their survey feared being disciplined for raising PS issues with management and Sepp et al.[49] pointed out that the most worrying result of their survey was insufficient risk communication to customers about medication use (adverse reactions, interactions, and contraindications). These findings reinforce the importance of evaluating PSC, as these assessments point out weaknesses and potentials in the organizational culture of CFs and can function as an important management tool, enabling more assertive improvement plans.

Below are some limitations of the study. In order to reduce the possibility of important issues being left out of the research, the results of each category and subcategory identified were presented with most of the themes present in the questions asked in the questionnaires. The assessment of the methodological quality of each article was not included, despite being indicated in the protocol. The authors felt that this would not pose any problems for the review as it was not one of the research objectives and would not add much theoretical value to the reader, since the aim of the SR is to present what has been produced and not its quality.

CONCLUSIONS

This SR mapped the scientific production related to quality assessment in CF between 2012 and 2022 and identified that they are mainly focused on evaluating the pharmacist's performance, the services offered, and the application of GPP, both from the perspective of the patient and that of the pharmaceutical professional, through the use of heterogeneous questionnaires developed or adapted by the researchers themselves, in various countries.

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Authors' Contribution

Laurentino EM, Passos ACB - Conception, planning (study design), acquisition, analysis, data interpretation, and writing of the paper. Arrais PSD - Conception, planning (study design), analysis, data interpretation, and writing of the paper. Ferreira RFC - Acquisition, analysis, data interpretation, and writing of the paper. Monteiro MP - Analysis, data interpretation, and writing of the work. All the authors approved the final version of the paper.

Conflict of Interest

The authors inform that there is no potential conflict of interest with peers and institutions, political or financial, in this study.