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Review Article

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Exploring community pharmacy services in Gulf Cooperation Council countries: a scoping review

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Abstract

Introduction: The role of community pharmacists (CPs) is evolving worldwide. However, evidence on the expanding role of CPs in the Gulf Cooperation Council (GCC) countries remains limited.

Objective: This study aimed to describe the type, nature, extent, and/or effectiveness of community pharmacy-based services in GCC countries.

Eligibility criteria: All primary studies involving existing, piloted community pharmacy services or services being explored for future implementation in the GCC countries were eligible for inclusion.

Methods: Ovid MEDLINE, EMBASE, CINAHL, and Scopus were searched from inception to 6 December 2024. Screening and data extraction were performed by two independent reviewers. Results were narratively synthesized.

Results: Overall, 116 studies were included. The majority were from KSA (*N* = 61, 52.6%) and UAE (*N* = 38, 32.8%), with none in Oman and Bahrain. Besides the nationally practised dispensing and counselling, tele-pharmacy/E-prescription was implemented nationwide in the UAE and KSA. In some countries, minor ailments management, pregnant and lactating women care, reporting adverse drug reactions, immunization, chronic conditions monitoring, independent prescribing, and health promotion were locally practised by some CPs and under-evaluated. Diabetic education, health screening, and medication therapy management were piloted in some countries and showed promising effectiveness. Humanistic effectiveness was the most assessed outcome (*N* = 16, 13.8%). The most reported barriers were lack of privacy, time, and training.

Conclusions: The review highlighted the expanding role of CPs in the GCC countries while identifying gaps in practice. Policymakers can utilize the findings to develop strategies for improving practice, ensuring national implementation, and maintaining the quality of services.

Keywords: community pharmacist-led intervention; extended community pharmacy services; GCC; health promotion; pharmaceutical care services

Introduction

Community pharmacy plays a vital role in the healthcare system due to its high accessibility, extended opening hours, and appointment-free services. This places community pharmacies as the primary point of contact for many healthcare needs, offering essential services such as retail sales, medication distribution, counselling, and other pharmaceutical services [1, 2]. The professional pharmaceutical care services offered in community pharmacies aim to optimize patient care, improve health outcomes, and enhance the value of healthcare [3, 4].

Accordingly, community pharmacy practice has evolved significantly, with community pharmacies worldwide having started to contribute to public health by offering patient-centred services. For instance, in countries like the United Kingdom (UK), United States of America (USA), Australia, and Canada, community pharmacists (CPs) collaborate with other healthcare providers in chronic diseases and minor ailments management through education, medication review, assessment, and adherence monitoring [5–8]. Additionally, CPs in the USA play an essential role in enhancing immunization rates through education and vaccination services, with similar initiatives spanning 26 countries [9, 10]. Furthermore, the introduction of minor ailment services in the UK over 18 years ago, alongside recent implementations of more clinical services such as the Pharmacy First scheme (which allows CPs to provide professional health care advice and treatments for common illnesses where the patients could seek CPs help at any time without the need for an appointment, and without the need to visit a GP) [11–15], demonstrates the expanding role of community pharmacies in alleviating pressure on GPs while providing accessible

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healthcare services. Significant outcomes have been identified as a result of community pharmacists-led interventions, such as improvement in medication adherence, better disease control, and improvement in quality of life [16–18]. Undoubtedly, CPs are qualified healthcare providers who could play a key role in providing patient-centred care services, and the above-mentioned international experience is clear evidence of the capability of CPs and their important roles within the healthcare system.

However, despite this expanding and evolving clinical role of CPs in health promotion and disease management worldwide, the provision of pharmaceutical care in community pharmacies in the Gulf Cooperation Council (GCC) countries (Kingdom of Saudi Arabia (KSA), United Arab Emirates (UAE), Kuwait, Qatar, Oman, Bahrain) are not universally established and are still in initial stages of planning and implementation [19–21].

In the GCC countries, community pharmacy practice primarily revolves around the traditional role of dispensing and counselling with limited involvement in enhanced or extended pharmacy services (EPS) [19, 22, 23]. EPS refers to a range of healthcare services beyond the routine provision of over-the-counter (OTC) and prescribed therapeutic agents, such as drug information, clinical intervention, medication management, preventive care, and involvement in therapeutic decision-making [24, 25]. Several GCC countries plan to expand the role and enhance the scope and responsibilities of CPs. In KSA, for instance, recent Ministry of Health (MOH) regulations in 2019 allow CPs to offer vaccinations, vital signs assessment, health education, medication therapy management (MTM), minor illness care, consultations, and compounding [26]. Similarly, the Health Authority Abu Dhabi (HAAD) has extended the range of services provided by CPs to include screening, point-of-care testing, vaccination, medicine use management, patient counselling, health promotion, and preventive care [21]. Qatar National Health Strategy (QNHS) 2018–2022 has prioritized the integrated model of care, supporting the role of CP as a key healthcare professional whose contribution is crucial to expanding access to primary care services and providing more services including management of minor ailments and health promotion [27, 28]. On the other hand, Kuwait, and Oman focus more broadly on enhancing pharmaceutical care services without specific measures tailored to community pharmacies [29, 30]. Unfortunately, Bahrain lacks a published regulatory framework for pharmaceutical care in this context.

Following these regulations and development plans, some GCC countries have recently established new community pharmacy services, such as e-prescription, tele-pharmacy, weight management, vaccination, and point-of-care testing [19, 21, 22, 31–33]. However, little is known about the range, scope, and impact of services currently being implemented and practised at the community pharmacies in the GCC countries, compared to what has been stated and defined in their regulations. Previous studies have primarily assessed individual services within single countries [19, 21, 33]. Moreover, prior reviews have focussed on exploring opportunities and challenges for extended community pharmacy services rather than describing the services that are actually delivered [20, 33]. Importantly, no comprehensive review has yet been conducted to collate the available evidence on the current state of community pharmacy practice across all GCC countries. This is particularly important because results from different countries can serve as benchmarks to assess performance and identify gaps, and areas for improvement and as a learning lesson to inform further expansion and implementation of services. Therefore, this study addresses this gap by undertaking a scoping review of the evidence of existing established services, piloted services, and services tested for future implementation in the region, and describes the type, nature, extent, and impact of these services, their quality, and the barriers and facilitators for their delivery.

Review question

What published evidence exists on the services provided or tested within the community pharmacy setting in the GCC countries in terms of their type, nature, extent, and/or effectiveness?

Methods

The scoping review was conducted following the Joanna Briggs Institute (JBI) methodology for scoping review [34] (JBI scoping review) and the preferred reporting Item for Systematic Review and Meta-Analysis extension for the scoping review checklist [35] (PRISMA-ScR). The study protocol was published in the University of Strathclyde's system [36] (Review protocol).

Eligibility criteria

The **P**articipants, **C**oncept, and **C**ontext (**PCC**) framework was used to determine the eligibility criteria for this review and to help develop an effective search strategy [34]. The detailed inclusion and exclusion criteria are presented in Table 1.

Search strategy

A combination of medical subject headings (MeSH) and free-text terms and Keywords related to the three domains: Community pharmacists, community pharmacy services, and GCC countries were adopted and combined using the Boolean operators. The search strategy (Supplementary Material 1) was devised collaboratively with all authors and a faculty librarian was consulted. Published studies on this topic were identified from multiple databases; Ovid MEDLINE, EMBASE (Excerpta Medica database), CINAHL (Cumulative Index to Nursing and Allied Health Literature), and Scopus. Databases were initially searched on 25 July 2023 from inception and re-searched for an update on 6 December 2024. Studies published in English or Arabic language were included.

Source of evidence selection

Covidence software © [37] facilitated the screening process. After deduplication, titles, and abstracts for all remaining studies, as well as the full text, were screened by two independent reviewers: the primary reviewer (SN) and another independent reviewer (HA). If not available on the Internet, full text of studies were requested through the university library or by emailing the authors. Studies that could not be accessed or did not satisfy the inclusion criteria were excluded. Reasons for exclusion were recorded. Any disagreements in the selection process were resolved through discussion between the two reviewers. The goal was to achieve at least an 80% agreement, as recommended [38, 39]. The PRISMA-ScR

Table 1. Inclusion and exclusion criteria

	Inclusion	Exclusion
Participants (P)	CPs, community pharmacy consumers, and other stakeholders such as clinical practitioners.	Pharmacists work in settings other than community pharmacies such as hospital pharmacists, clinical pharmacists, or ambulatory care pharmacists. studies that include pharmacists from different settings without distinguishing the role of CPs.
Concept (C)	**All services provided within the community pharmacy setting (traditional or extended) including but not limited to** dispensing, medication prescribing, E-prescribing, medication refill, medication review and management, counselling, adverse drug reaction reporting, point of care testing, vaccination, vital signs assessment, health, and medical device education, pharmaceutical consultations, lifestyle modification.	Any service provided in a setting other than the community pharmacy setting such as hospitals, ambulatory care, or primary care settings.
Context (C)	Community pharmacies in the GCC countries (KSA, UAE, Kuwait, Qatar, Oman, and Bahrain).	Outpatient pharmacies in hospitals, primary care centres or community pharmacies in countries other than GCC countries.
Type of Study	-Studies that assess the existing services, piloted services, or studies that assess the readiness and willingness for future services implementation. -Studies that assess knowledge, attitude, or perception (barriers and facilitators) about community pharmacy services or CPs' role.	-Studies that assess knowledge, attitude, and perception, that are not related to the services or CPs' role. -Studies that explore barriers and facilitators without describing specific service.
Type of publication/ Methodology	Primary research methodologies: qualitative, quantitative, and mixed methods.	Reviews, case studies, reports, posters, conference abstracts, abstracts without full-text, and study protocols.
Language	Only Arabic and English language.	Any other languages.

flow diagram was used to represent the studies' screening and selection process (Fig. 1).

Data charting

The data charting form (Supplementary Material 2) was developed by the primary reviewer using Microsoft Excel 2021©. Some modifications were made following the piloting of the extraction form. The form was designed to collect comprehensive details about the study and the service characteristics. The data were extracted by the primary reviewer (SN). For validation, another independent reviewer (HA) performed the data extraction process independently for 10% of the included studies, aiming for at least 80% agreement. Any disagreements in this stage were also resolved through discussion between the two reviewers.

Data analysis and presentation

The data were narratively synthesized and accompanied by summary tables, summarizing the evidence that aligns with the review question and objectives. For the synthesis, each service was grouped according to the nature of service into two main groups and according to the extent of practice/stage of implementation into four categories (Table 2). Each service in each group was described in terms of the type of service, country of practice, and/or effectiveness. The identified barriers and facilitators, as well as attitudes and recommendations for future services, were described in a separate section.

Results

Source of evidence selection

The search yielded a total of 2,385 studies, of which 116 were included (Fig. 1). All the included studies were published in English, so no translation was required. The agreement rate at both title/abstract and full-text screening was 92%, and 96.7% during the data extraction process.

Characteristics of the included studies

Table 3 provides an overview of the study's characteristics. Slightly more than half of the included studies were conducted in KSA (n = 61, 52.6%) [19, 40–99], and nearly one-third of the studies were conducted in UAE (n = 38, 32.8%) [23, 100–136], with no studies found in Bahrain and Oman. Of the 116 included studies, 34 (29.3%) studies explored the traditional services [40–56, 88, 91, 94, 95, 97, 100–106, 130, 131, 137–140] (83.6%) explored the extended services [19, 23, 40, 46, 52, 54–87, 89–94, 96–101, 104–129, 132–136, 138, 140–153], and of them, 15 (12.9%) explored both traditional and extended services [19, 46, 52, 54–56, 60, 65, 100, 101, 105, 138, 140]. The majority of studies used quantitative methodology (n = 105, 90.5%) [23, 40–60, 62–73, 75–81, 100–108, 110–116, 118–124, 126–131, 137–152], most commonly using questionnaires (n=74/86, 70.5%) [23, 40–42, 44, 45, 49, 51–56, 59, 62–64, 66–73, 75, 77–81, 84–86, 89, 91, 92, 94–100, 103, 106, 112–115, 121–124, 126–129, 131–133, 136, 138, 139, 141–147, 149–152]. Most studies either described the practice and/or explored perceptions (n = 106, 91.4%) [19, 23, 40–59, 61–74, 77–84, 86, 89–96, 98–106, 108, 109, 111–117, 121–153], while a minority of studies evaluated effectiveness in terms of humanistic (n = 16, 13.8%) [45, 49, 54, 56, 60, 75, 85, 89, 90, 97, 98, 107, 108, 110, 120, 134], clinical (n = 10, 8.6%) [60, 90, 107, 108, 110, 118–120, 134, 135], and economic (n = 1, 0.9%) effectiveness [76]. A large number of studies evaluated the CPs' practice or explored the service from the perspective of CPs (n = 65, 68.4%) [23, 41, 43, 46–48, 50–53, 57–59, 62–69, 74, 77–81, 84–86, 91–96, 98–102, 104–106, 109, 111, 113–119, 121–124, 127, 130–133, 136–146, 148–153].

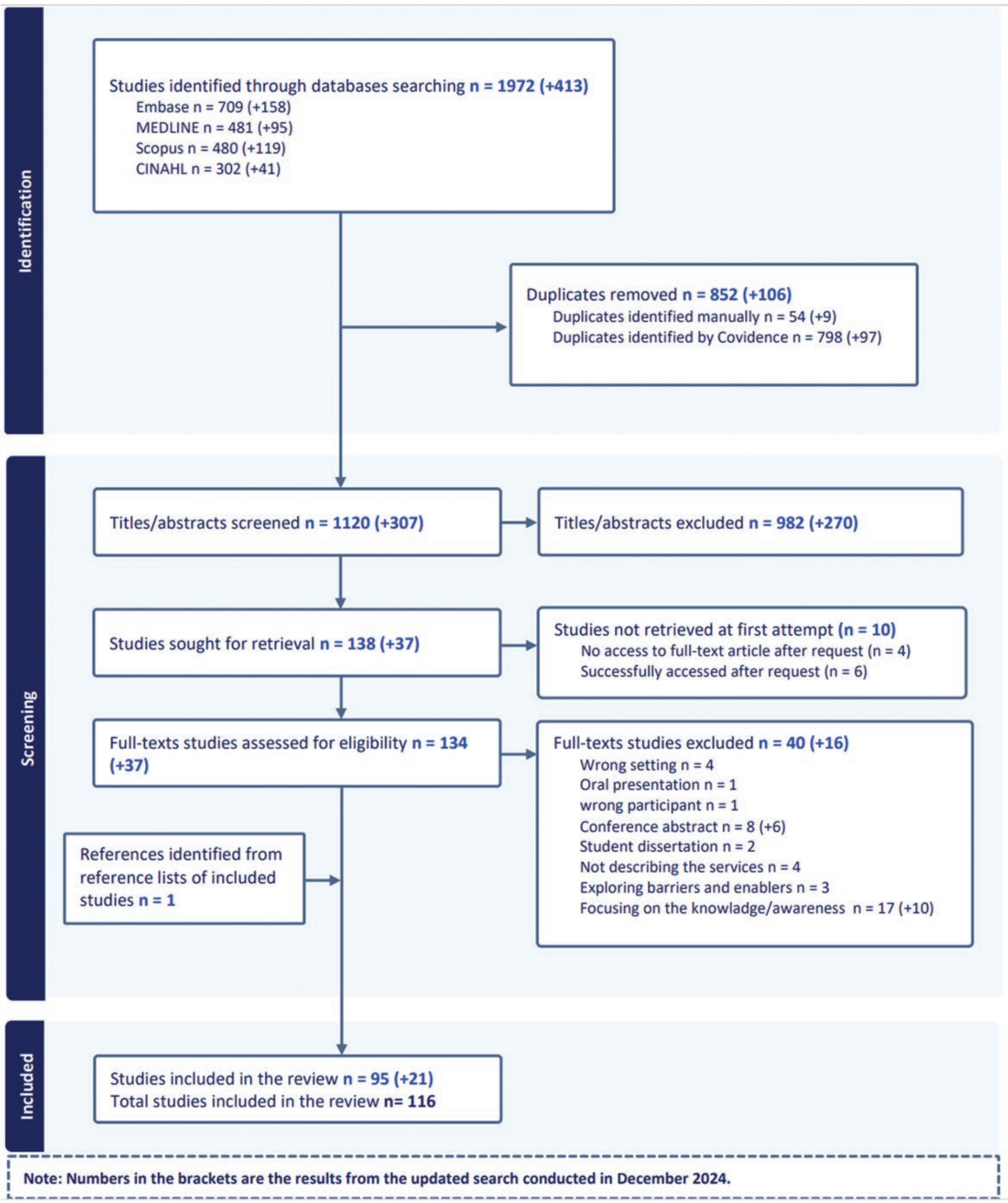

Figure 1. PRISMA-ScR flow diagram. The flow diagram outlines the study selection and screening process including identification, screening, and inclusion stages. Numbers in brackets indicate the number of additional studies identified during the updated search conducted in December 2024.

The majority of studies (n = 80, 68.9%) were published in the latest years (between 2019 and 2024) [19, 23, 48–56, 60, 61, 63–68, 70–77, 79–99, 101–105, 108–112, 114, 116–123, 128, 129, 132–136, 138, 141, 146, 148, 150, 153] (Supplementary Material 3: Detailed study characteristics).

Narrative synthesis

In this section, all the explored community pharmacy services, are described. See Table 4 for a summary of results or (Supplementary Material 4) for more detailed results.

Nationally implemented services

Traditional services

Dispensing and counselling:

Within the included studies, dispensing and counselling services were mostly combined and considered as one, despite being two quite distinct tasks. This is likely due to the fact they are interconnected, with counselling usually occurring at the end of the dispensing process. Overall, dispensing and counselling services appear to be nationally implemented in the included GCC countries, however, the quality of the practice is varied. Using the simulated patient observation method,

Table 2. Classification of services for synthesis of the results.

Classification	Definition
According to the nature of service:	
1) Traditional services	Dispensing of OTC, and prescription-only medicines, and counselling.
2) Extended services	Services other than the routine provision of OTC and prescribed therapeutic agents.
According to the extent of practice/stage of implementation:	
1) Nationally implemented	Fully developed, traditional or regulated services that are practised in all or a wide range of pharmacies, irrespective of the quality of practice.
2) Locally practised	Service that is not considered a core service but is practised by some pharmacists to varying degrees and quality, irrespective of the regulation status.
3) Piloted	Service that is in the developmental stage wherein the service is implemented within a limited number of pharmacies to evaluate its feasibility.
4) Explored for future implementation	Services that are not implemented or practised yet but are being explored for future implementation by exploring perceptions, knowledge, attitudes, readiness, willingness barriers and/or facilitators.

many studies explored various medicines and conditions including OTC, prescription-only medicine [43, 47, 50, 95], sedating antihistamines [48], hormonal contraceptives [101], isotretinoin [102], antidiabetic, antiasthma [130], cardiac conditions [46], gastrointestinal conditions [105, 137], and different minor ailment treatments [141]. These studies found that the dispensing and counselling practice was sub-optimal, where most of the information offered was about dose and duration with limited information provided about side effects, and interactions. Additionally, information on medical or medication history, pregnancy status, and drug allergies was often not requested [43, 46–48, 50, 95, 101, 102, 104, 105, 130, 137, 140]. Moreover, some studies revealed that CPs spend inadequate time in counselling [47, 50, 137]. For prescription- only medicines like antibiotics, while an old study in KSA has indicated that CPs dispense and prescribe antibiotics without a prescription [43], a more recent study has shown an improvement in practice where CPs request prescriptions for antibiotics and advise patients to consult a physician before using antibiotics [95]. A study in UAE assessed the dispensing practice for antidiabetic and antiasthma prescriptions with missing data (including patient age, duration, and instructions), and medication error (including contraindicated medication for diabetic patients) and found that most of the observed CPs prepared and dispensed the prescription without addressing the missing information or investigating the wrong medication [130].

The traditional services were also described from the perspective of CPs and patients using self-reported questionnaires. CPs in KSA and UAE described their traditional role as the following: dispensing medicines, compounding, identifying medication errors, solving drug-related problems, counselling, and answering other medical inquiries [41, 52, 100, 106, 131]. Furthermore, CPs in KSA and Kuwait reported good awareness and medical device-related counselling practice [51, 139]. CPs in KSA and Qatar reported that they always provide patients with information regarding the frequency, dose, route of administration, and duration, whereas information about contraindications, side effects and interactions is provided less frequently [43, 53, 88, 141]. Comparably, patients have reported that CPs were willing to answer their queries [49, 54, 55] provide clear and full instructions [42, 54, 55, 131] solve medication-related problems [54], counsel about the disease, side effects, and drug interactions, maintain their privacy [55] and spend enough time with them [49, 54, 55]. Overall, patients were satisfied with the dispensing and counselling services [45, 49, 54–56, 131]. However, there was evidence that medicines were sometimes dispensed without prescriptions, without the necessary information, and with some errors [44, 45].

Extended service

Tele-pharmacy/E-prescription

Of all explored extended services in this review, only the tele-pharmacy/ e-prescription services were identified as nationally implemented in the UAE [118–121, 128] and KSA [74–76, 85, 89, 97]. In the UAE, CPs became more involved in tele-pharmacy services after the pandemic (COVID-19) [121]. Tele-pharmacy services in the UAE include remote video consultation, medication review, prescription refills, and home delivery [118, 119, 121]. Tele-pharmacies (virtual pharmacies) have shown several advantages compared to traditional pharmacies. Virtual pharmacies as a convenient environment, offering more time for CPs to check and prepare and hence effectively empowering them to identify and intervene in the abuse and misuse of OTC [118], and prevent drug-related problems [120] and dispensing errors [119]. Additionally, interventions provided in virtual pharmacies were significantly higher than those in traditional pharmacies [118]. The interventions provided for patients with hypertension through virtual pharmacies have resulted in significant reductions in the mean blood pressure, increases in medication adherence, and improvements in patients' knowledge and lifestyle during the follow-up periods [120].

In KSA, the e-prescription service (Wasfaty system) has enabled CPs to provide pharmaceutical care services and played an essential role in reducing medication errors, offering more time for CPs to provide medication instructions and education and facilitating the refill process [74]. Patients and CPs have reported varying satisfaction levels. Patients expressed high satisfaction with the service in terms of the CPs' competency and expertise, the easy accessibility of pharmacies, medication availability, convenient prescription renewals and refills, short waiting time, ease of use, and clarity of instruction [75, 89, 97]. However, when compared to patient satisfaction with pharmacies in primary healthcare centres, some patients reported lower satisfaction in terms of the availability of medication, waiting time, and prescription explanation [85]. Similarly, CPs were mostly unsatisfied with

Table 3. Summary of study characteristics (*n* = 116 studies)

Characteristics	Studies *n* (%)
Location	
KSA	61 (52.6%)
UAE	38 (32.8%)
Qatar	12 (10.3%)
Kuwait	5 (4.3%)
Bahrain	0 (0.0%)
Oman	0 (0.0%)
Nature and type of service[a]	
Traditional	34 (29.3%)[a]
Extended **Total: 97 (83.6%)**[a]	
Minor Ailment	12/97 (12.37%)
Health promotion:	**11/97 (11.3%)**
-smoking cessation	3/11 (27.3%)
-weight management	2/11 (18.2%)
-breast cancer health promotion	2/11 (18.2%)
-reproductive health services	2/11 (18.2%)
-Multiple Health promotion activities	2/11 (18.2%)
Mental health care	3/97 (3.1%)
Services targeting chronic conditions:	**21/97 (21.6%)**
-Asthma education and management	4/21 (19%)
-Diabetes education	2/21 (9.5%)
-Point of care testing, chronic condition monitoring and management	8/21 (38.1%)
-Disease risk screening	7/21 (33.3%)
Immunization	4/97 (4.1%)
Medication review	6/97 (6.2%)
Tele-pharmacy/ E-prescription	11/97(11.3%)
Service for pregnant and lactating women	3/97 (3.1%)
Independent prescribing	4/97 (4.1%)
Adverse drug reactions (ADR) reporting	5/97 (5.2%)
Multiple extended services	17/97 (17.5%)
Both Traditional and Extended	15/116 (12.9%)
Methodology	
Qualitative:	**8/116 (6.89%)**
-Semi-structured in-depth one-to-one interviews	6/8 (75%)
-Semi-structured in-depth one-to-one interviews + focus group discussion	2/8 (25%)
Quantitative:	**105/116 (90.5%)**
-Questionnaire-based study	74/105 (70.5%)
Observational simulated patients-based study	15/105 (14.3%)
Both observational simulated patients and questionnaire-based study	7/105 (6.7%)
Before and after comparative study	2/105 (1.9%)
- Prospective observational comparative study	2/105 (2.3%)
-Interventional feasibility study	3/105 (2.9%)
-Randomized control trial (RCT)	1/105 (0.95%)
-Cost-analysis economic study	1/105 (0.95%)
Mixed methods	**3/116 (2.6%)**
Exploratory sequential design; semi-structured interviews + a quantitative cross-sectional survey.	1/3 (33.3%)
-Explanatory sequential design; a quantitative cross-sectional survey + semi-structured individual and focus group interviews.	1/3 (33.3%)
A randomized controlled study embedded with qualitative interviews	1/3 (33.3%)
Outcomes[a]	
Describing practice and/or exploring perceptions	106/116 (91.4%)
Humanistic (e.g. satisfaction and behavioural change)	16/116 (13.8%)

Table 3. Continued

Characteristics	Studies *n* (%)
Clinical	10/116 (8.6%)
Economic	1/116 (0.9%)
Type of participants	
Community pharmacists	80/116 (68.9%)
Community pharmacists and hospital pharmacists or ambulatory pharmacists	7/116 (6.03%)
Patients/consumers	24/116 (20.7%)
Both Community Pharmacists and patients	1/116 (0.9%)
Physicians	2/116 (1.7%)
Multiple stakeholders and policymakers	2/116 (1.7%)
Publication	
2004–2012	13/116 (11.2%)
2013–2018	23/116 (19.8%)
2019–2024	80/116 (68.9%)

[a]Given that several studies assessed multiple services and outcomes, the final percentages will add up to greater than 100%.

Wasfaty [74, 98]. Although they acknowledged the benefits of the service in improving patients' safety and reducing medication errors, their dissatisfaction primarily resulted from medication unavailability, inaccurate or incomplete information entered into the system, lack of communication with prescribers, increased workload, and other technical issues in the system [74, 98].

Besides the humanistic impact of Wasfaty, an economic study found that Wasfaty has led to a tremendous reduction in healthcare expenditure in which the cost of medications per visit, the costs per patient, the cost of human resources, and the cost of medication errors are all substantially dropped post-Wasfaty [76].

Locally practised services

Most of the explored extended services were found to be locally practised by some CPs in some pharmacies rather than being standardized at a national level.

Minor ailments management

A minor ailments service was found to be practised by some CPs in Qatar [137, 138, 140, 141], UAE [105, 113, 114], and KSA [62–65, 91, 94]. In Qatar, CPs were involved in managing ailments such as the common cold, allergic rhinitis, constipation, cold and catarrh, sore throat, headache, skin conditions [138, 140, 141], and gastroenteritis [137]. CPs in UAE were involved in managing ailments such as Gastroesophageal Reflux Disease (GERD) [105], pain in children [114] and minor wounds [113]. In KSA, CPs were involved in managing acute childhood diarrhoea [65, 91, 94], oral health-related problems [62, 63], and anaemia [64].

Health promotion

CPs in UAE [100, 116], KSA [67, 68, 86] and Qatar [142] were involved in providing smoking cessation services. In UAE, poor smoking cessation practice by CPs was reported [100, 116]. Some CPs in Qatar and KSA offer smoking cessation services for interested patients [67, 68, 142]. A weight management service was found to be practised in Qatar [153], Kuwait [144, 145], and KSA [54, 67]. Additional health promotion activities that were found to be practised by some CPs to a lesser extent include breast cancer health promotion in the UAE [115] and Qatar [143], sexual and reproductive health promotion [66, 67, 86] and dental health promotion [67] in KSA, stress reduction-related promotion in Kuwait [144].

Mental health care

In KSA [69], UAE [117], and Qatar [146], the involvement of CPs in mental health care was limited. CPs in Qatar and UAE were mainly involved in counselling and dispensing the prescribed medications, explaining the purpose, and encouraging adherence [117, 146]. CPs in KSA and UAE reported that they felt uncomfortable counselling or solving drug-related problems for patients with mental illness [69] and they usually adopt precautionary practices when dispensing and counselling these patients [117].

Services targeting chronic conditions

Asthma management and education were found to be practised by some CPs in KSA [57–59] and UAE [111]. Simulated patient-observation studies in KSA [57, 58] and UAE [111] showed that CPs' practice in educating patients on inhaler use was suboptimal. As was their ability to assess and manage patients with uncontrolled asthma. Most of the CPs did not evaluate the severity of symptoms and the adherence to the inhaler or other medications used for asthma and did not ask about any side effects [111]. In self-reported data, CPs claimed that they educated patients about their condition and the proper use of inhalers and other medications [59].

Various services to monitor diabetes and other metabolic syndromes were found to be practised by some CPs in Kuwait [149], KSA [19, 54, 55, 87] and UAE [23, 100, 112, 133]. CPs in Kuwait reported that they provide services such as measuring height and weight, measuring blood pressure, counselling patients on healthy diet and exercise, encouraging patients' adherence, and advising on self-monitoring [149]. CPs in the UAE were mainly involved in dispensing and counselling about the prescribed medication while extended activities like educating patients on the disease risk factors and complications, screening, blood pressure management, point of care testing and monitoring, or making appropriate

Table 4. Summary of community pharmacy services in the included GCC countries.

Service	Extent of practice/ implementation				Description of practice	Effectiveness
	KSA	UAE	Qatar	Kuwait		
Traditional services [40–56,100-106, 130,131,137-140]	****	****	****	****	-Dispensing of medicines and non-pharmacological products, compounding, counselling, identifying medication errors, and solving drug-related problems [41, 42, 49, 52, 54, 55,100,106,131. -Device-related counselling [51,139. -Counselling about dose and duration but not about side effects and interactions. Dispensing without assessing medical or medication history, and drug allergies [43, 46–48, 50, 53,101,102,104,105,130,137,140,141. - Dispensing prescription-only medicines without prescription, and dispensing errors [44, 45,130.	(+) Humanistic (n=6) [45, 49, 54–56,131]
Tele-pharmacy/ E-prescription [74–76, 85, 89, 97, 98, 118–121, 128]	****	****			- Tele-pharmacy: remote video consultation, medication review, prescription refills, and home delivery [118–121, 128] - E-prescription: prescription refills, patient education and counselling [74–76].	(±) Humanistic (n=7) [74, 75, 85, 89, 97, 98, 120] (+) Clinical (*n* = 3) [118–120] (+) Economic (*n* = 1) [76]
Minor ailments management [62–65, 105, 113, 114, 137, 138, 140, 141]	***	***	***		- Managing common cold, allergic rhinitis, constipation, cold and catarrh, sore throat, headache, skin conditions, gastroenteritis, GERD, pain in children, minor wounds, acute childhood diarrhoea, oral health-related problems, and anaemia [62–65, 91, 94, 105, 113, 114, 137, 140, 141]. - Assessing patients' symptoms, medical and medication history, and allergies and recommending treatments [91, 94, 138, 65]. -Counselling patients on drugs that might interact with anaemia treatment and advising on diets for anaemia management [64]. -Providing advice about oral hygiene, counselling about dental products and referring patients to dentists [62, 63]. - Unable to differentiate between minor ailments and other medical conditions with similar signs and symptoms [140, 141]. - Inappropriately prescribing of antibiotics for some cases [94, 137, 140].	Not evaluated
Health promotion:						
-Weight management [54,67,144,145,153]	***		***	***	- Educating patients and advising on lifestyle modifications [54,67,144,145,153. - Recommending treatment for weight loss [153].	Not evaluated
-Smoking cessation [67, 68, 100, 116, 142]	***	***	***		-Poor assessment, therapeutic planning, follow-up, and communication [100, 116]. - Providing advice on how to quit, developing a cessation plan, recommending OTC treatment, and providing educational materials [67, 68, 142].	
-Breast cancer health promotion [115, 143]		***	***		Poor involvement, counselling [115, 143].	
-Sexual and reproductive health promotion [66, 67, 86]	***				Counselling [66, 67], educating patients on the use of pregnancy and ovulation tests, and contraceptive methods [86].	
-Dental health promotion [67]	***				Counselling [67].	
-Stress reduction health promotion [144]				***	Counselling [144].	
Immunization [19,70,93,132,150	***	*	***		COVID-19 vaccine and other types of vaccine [19,70,93,132,150.	Not evaluated

Table 4. Continued

Service	Extent of practice/ implementation				Description of practice	Effectiveness
	KSA	UAE	Qatar	Kuwait		
Service for pregnant and lactating women [104, 122, 152]		***		***	- Providing advice and treating minor ailments in pregnant and lactating women [104, 122, 152]. - Treating headache, fever, cough and colds, constipation, nausea, vomiting, and indigestion during pregnancy [122, 152]. - Treating headache, fever, and sore nipples in lactating women [122, 152]. - Referring patients to a physician in complicated cases, such as haemorrhoids, varicose veins, swelling of feet and legs, and vaginal itching [122, 152]. - Recommending vitamins, food supplements, and medications to boost breast milk production, advising on lifestyle and physical activity, educating on contraception and weight control [152]. - Educating on family planning and oral contraceptives, and offering pregnancy testing [23].	(+) Humanistic (n = 1) [104]
ADRs reporting [78–80, 100, 124]	***	***			-Identify and report ADRs [78–80, 100, 124].	Not evaluated
Mental health care [69, 117, 146]	***	***	***		-Dispensing and counselling about the prescribed medications, explaining the purpose of medications and encouraging adherence [117, 146]. - Precautionary practices [69, 117].	Not evaluated
Independent prescribing [46,77,101,123]	***	***			-Prescribing of oral contraceptives [77, 101] and other prescribed-only medicines [46]. - Prescribing treatment for minor ailments [123].	Not evaluated
Services targeting chronic conditions:						
-Asthma education [57–59, 111]	***	***			- Educating patients on the proper use of inhalers (incomplete counselling) [57, 58,111]. - Suboptimal practice of assessing uncontrolled asthma [111] - Educating patients about their condition and the proper use of medications [59].	Not evaluated
-Diabetic education [60,107]	**	**			-One-to-one diabetic education sessions: about medications, lab tests, BG, and doctor visits [60]. - Reminders packages: standardized information about body weight, physical activity, healthy diet, self-testing, foot care, smoking habits, BP and dyslipidaemia, sent periodically as a reminder for all patients with diabetes [107].	(+) Humanistic (n = 2) [60,107 (+) Clinical (n = 2) [60,107]
-Point of care testing, chronic disease monitoring and management [19, 23, 54, 55,61,100,112,134,147-149]	***	***	***	***	-Measuring height and weight and performing diagnostic testing [134, 149]. -Counselling on healthy diet and exercise and lifestyle modification [61, 134, 147–149]. - Counselling and dispensing of prescribed medications [23,61,100,112,134,147-149. -Encouraging patients' adherence and advising on self-monitoring [61, 147–149]. -Educating patients on the disease risk factors and complications [23, 87, 100, 112]. -Disease monitoring [19, 23, 54, 55, 61, 100, 112, 134, 149].	(+) Humanistic (n = 1) [134] (+) Clinical (n = 1) [134]
-Risk screening [61, 82, 83, 108–110, 135]	*	**			-Diabetes and CVD risk screening services: point of care testing, CVD risk calculation, diabetes risk assessment, and patients' history assessment ** [108–110]. CKD risk screening: point of care testing, on-site blood analysis to estimate Glomerular filtration rate, medication review, lifestyle modification, and referrals** [135]. -Identifying and referring at-risk individuals ** [108–110, 135]. -CPs showed a high willingness to provide the service* [61]. -Consumers showed a high willingness to use the service* [83]. -Policymakers were supportive of CVD risk screening* [82].	(+) Humanistic** (n = 2) [108, 110] (+) Clinical** (n = 3) [108, 110, 135]

Table 4. Continued

Service	Extent of practice/ implementation				Description of practice	Effectiveness
	KSA	UAE	Qatar	Kuwait		
Medication review [71–73, 90, 151]	*/ **		*		-CPs had a high willingness to provide the service in the future * [72, 73]. - CPs had good knowledge about medication review and identifying potentially inappropriate medications * [71]. - Consumers showed a high willingness to register for the service in the future * [73]. -Face-to-face MTM visits, reviewing medication and home monitoring data (e.g. BP and BG), ensuring patients' understanding of their medication, identifying and resolving drug-related problems, patient education, referrals, and follow-ups ** [90].	(+) Humanistic** (*n* = 1) [90] (+) Clinical ** (*n* = 1) [90]

*Explored for future implementation (services that are not implemented or practised yet but are explored for future implementation by exploring perceptions, knowledge, attitudes, readiness, willingness barriers, and/or facilitators).
**Piloted (service in the developmental stage wherein the service is implemented within a limited number of pharmacies to evaluate its feasibility)
***Locally practised (service that is not considered a core service but is practised by some pharmacists to varying degrees and quality, irrespective of the regulation status)
****Nationally implemented (the fully developed, traditional or regulated services that are practised in all or a wide range of pharmacies, irrespective of the quality of practice)
CPs: Community Pharmacists., OTC: Over the counter., GERD: Gastroesophageal Reflux Disease., CVD: Cardiovascular Disease., CKD: Chronic Kidney Disease., ADRs: Adverse drug reactions., BP: blood pressure., BG: Blood Glucose., MTM: medication therapy management.
(+): positive results, (±): varied results.

recommendations were only practised by a few CPs [23, 100, 112, 133]. In KSA, some community pharmacies have started to offer some extended services targeting chronic conditions including diabetic clinics, and disease monitoring services [19, 54, 55], offering counselling on disease and risk factors, promoting lifestyle modification, educating on the importance of regular screenings, and guiding the use of screening devices [87].

CPs in Qatar [147, 148], UAE [134, 136], and KSA [61] were found to be involved in some cardiovascular disease (CVD) -related health promotion activities such as counselling on the use of medication, educating patients on lifestyle modification and self-monitoring [61, 136, 147, 148], referring patients to physicians when needed [147, 148] and offering blood pressure monitoring [61, 136]. A study in UAE evaluated the effectiveness of a hypertension clinic within a community pharmacy, which provided monthly blood pressure monitoring, physician referral, lifestyle modification counselling, and medication counselling [134]. The study reported high patient satisfaction with the service and reductions in both systolic and diastolic blood pressure attributed to the continued care provided by CPs [134].

Immunization

Some community pharmacies in KSA have started to provide immunization services [19, 93]. CPs in KSA played a key role in providing COVID-19 vaccines [93]. The Saudi public was willing to take the vaccine by CPs and supportive of the provision of vaccination by CPs [70]. In Qatar, CPs had minimal involvement in vaccination services, with only a minority having previous experience in administrating vaccines [150].

Service for pregnant and lactating women

Services for pregnant and lactating women were found to be practised by some CPs in Kuwait [152], and the UAE [104, 122]. CPs in Kuwait and UAE reported confidence in providing advice and treating minor ailments in pregnant and lactating women [122, 152]. However, they prefer to refer patients to a physician in more complicated cases [122, 152]. In an observation study by Al Kubaisi, Hasan, Hassan, and Elnour [104] CPs effectively manage migraine headaches in simulated pregnant women with appropriate treatment. The simulated patients expressed their satisfaction with the provided service [104]. Other services offered included recommending vitamins, food supplements, and medications to boost breast milk production, advising on lifestyle modifications, discussing contraception and weight control options [152], pregnancy testing, and education on family planning and oral contraceptives [23].

Independent prescribing

Independent prescribing of oral contraceptives and other prescribed-only medicines was found to be practised by some CPs in KSA [46, 77] and UAE [101, 123]. CPs in KSA reported that they regularly prescribe oral contraceptives independently [77]. In UAE, a simulated patient observation study found that CPs failed to completely assess the simulated patient's medical and medication history for the safe use of contraceptives which led to an inappropriate selection of contraceptives [101]. Besides prescribing oral contraceptives, CPs in the UAE perceived themselves as highly competent to prescribe appropriate treatment for minor ailments, independently, but not for chronic condition management [123]. In a simulated patient observation study, CPs in KSA failed to assess and manage the simulated patients with heart failure and acute coronary syndrome, and they misdiagnosed the simulated patients and prescribed incorrect treatment [46].

Adverse drug reactions (ADRs) reporting

Reporting ADRs was found to be practised by some CPs in KSA [78–80, 96] and UAE [100, 124]. Some CPs in KSA reported that they always report ADRs when they identify them as a part of their professional role [78–80, 96]. In UAE, ADRs reporting practice was poor [124], and only a few pharmacies provided this service [100].

Piloted service

Three different services were being delivered on a pilot basis: chronic diseases risk screening services in UAE [108–110, 135], diabetic education services in UAE [107] and KSA [60], and medication therapy management service in KSA [90].

Chronic diseases risk screening services

Three studies in UAE evaluated pilots of screening services for diabetes and CVD [108–110] and one a screening service for chronic kidney disease (CKD) [135]. The feasibility study of a CP-delivered diabetes and CVD risk screening service (including point-of-care testing, CVD risk calculation, diabetes risk assessment, and patients' history assessment), found that the service was feasible and successful in identifying and referring patients at risk for diabetes and CVD [110]. A high rate of referral uptake was observed during the follow-up period [110]. Additionally, patients reported some lifestyle changes such as adopting healthier diet habits and engaging in regular physical activity [110]. Furthermore, patients expressed their satisfaction with the screening service and indicated their willingness to pay for it should it be implemented [108]. Similarly, CPs had positive experiences with providing the screening services and expressed their professional satisfaction [109]. Similar to diabetes and CVD risk screening, the CKD risk screening (including point of care testing, on-site blood analysis to estimate glomerular filtration rate, medication review, lifestyle modification counselling, and referrals) demonstrated effectiveness in early identification of at-risk undiagnosed patients [135].

Diabetic education services

Pilot studies evaluating the effectiveness of two different interventions for diabetes education were reported from KSA [60] and the UAE [107]. In KSA, one-to-one diabetic education sessions provided by CPs resulted in significant improvements in patients' attitudes and behaviours, and the disease biomarkers (e.g., HbA1C) at the follow-up period compared to the baseline [60]. Similarly, the "Reminders packages" intervention piloted in UAE resulted in significant improvements in patients' self-care activities including medication adherence, diet habits, exercise, and self-testing [107]. Moreover, a significant reduction in the average patient's body mass index (BMI) was observed 24 months following the intervention [107].

Medication therapy management (MTM)

A MTM service was evaluated in the community pharmacy setting in KSA for patients with uncontrolled diabetes [90]. The service included face-to-face visits where pharmacists conducted comprehensive reviews of patients' medication and home monitoring data (including blood pressure and blood glucose), ensured patients' understanding of their medication, identified and resolved any drug-related problems, provided patient education, referred patients when necessary, and followed up patients. In comparison to standard care (educating on the prescribed medication, answering patient's questions, and advising on healthy lifestyle), the MTM service led to significant clinical benefits, including reductions in disease biomarkers such as HbA1C, and blood pressure, fewer drug-related problems, decreased healthcare centre utilization, improved medication adherence, and reduced diabetes-related distress. Furthermore, patients were satisfied with the provided services [90].

Explored for future implementation

Three types of services had been explored for future implementation from stakeholders' perspectives.

Medication use review/medication therapy management (MUR/MTM)

Studies found that MUR/MTM is not yet implemented but it has been explored for future implementation in KSA [71–73] and Qatar [151]. In KSA and Qatar, CPs showed good knowledge, a positive attitude, and a high willingness to provide MUR services in the future [71, 72, 151]. Additionally, patients perceived MTM service as an important service, and CPs as qualified providers and showed a high willingness to register for this service if implemented [73].

CVD risk screening

Three studies in KSA explored the perspectives of multiple stakeholders on developing a novel CVD risk screening programme in community pharmacy settings [61, 82, 83]. CPs showed a high willingness to provide CVD risk screening and prevention services, and perceived community pharmacies as a suitable venue for providing such services [61]. Health consumers were willing to use screening services if they were provided free of charge by qualified and trained pharmacists and monitored by the health authorities [83]. Similarly, policymakers were supportive of CVD risk screening and prevention services, though, they highlighted the need for a structured and evidence-based model to implement such services [82].

Immunization

An immunization service was explored for future implementation in the UAE [132]. CPs showed high willingness and preparedness to provide the service, highlighting the community pharmacy as a safe place for vaccination [132].

Barriers and facilitators for community pharmacy services

Barriers and facilitators were reported in 50/116 (43.1%) studies for both traditional (n = 6/50) [44, 52, 54, 56,88,131 and extended (n = 44/50) community pharmacy services [19, 23, 52, 56,61-64,66,68,69,74,77,79-81,83,84,87,92,93,96,99,109,112,115,117,121,123,126,127,132,133,136,142-148,150,151. Lack of privacy (n = 3/5) [52, 54, 56] was the most frequently reported barrier to traditional services. The most frequently reported barriers for all extended services included lack of time/workload (n = 28/44), lack of privacy (n = 19/44), and lack of training (n = 18/44). Additional specific barriers and facilitators were reported for some extended services (see Table 5).

Table 5. Barriers and facilitators for community pharmacy services.

Services	Barriers and facilitators	Reference
Traditional services (dispensing and counselling)	Barriers: -Lack of privacy (n = 3). -Lack of communication between the CPs and other healthcare providers (n = 1), educational and training programmes for CPs (n = 2), and staff (n = 1). -The busyness of the pharmacists (n = 1) and lack of trust (n = 1). -Lack of time (n = 1). Facilitators: -Private room or designated counselling area (n = 1). - Training programmes and increasing the staff (n = 1).	- [52, 54, 56] - [52,131 - [56] - [88] - [44] - [131]
All extended services	Barriers: -Lack of time/workload (n = 28), privacy (n = 19), knowledge, skills and training (n = 18), patients' awareness/patients' perceptions of the pharmacist role/ patient trust (n = 15), educational material, tools and other resources (n = 13), staff (n = 11), access to patient's medical records (n = 8), pharmacists-other healthcare providers collaborations (n = 9), patients' interest /demand (n = 6), reimbursement/ financial support (n = 8), implementation support (organization/governmental/ external) (n = 6), physicians' resistance (n = 4), lack of motivation (n = 3), and documentation (n = 1), consumer financial situation (n = 1), and cultural barriers (n = 1). Facilitators: -Educational and training programmes for CPs (n = 14), private treatment area (n = 7), pharmacist–physician collaboration and integration of pharmacy with other healthcare systems (n = 7), increasing the number of staff (n = 5), availability of educational materials and other resources (n = 5), raising public awareness about pharmacists' role (n = 5), governmental/health authority support (n = 4) financial support and incentive (n = 7).	[19, 23, 52, 56, 61,62,64,66,68,69,74,77,80,81,84,87,92, 93,96,99,109, 112,115,117, 121,123,127, 133,136,142-148,150,151] [19,61,63,69,79,83,84,96,117,126,127,132, 144,145,151]
ADRs reporting service	Barriers: -Unavailability of reporting forms (n = 1), unknown reporting address (n = 1), lack of clear processes and regulations for ADR reporting (n = 2), lack of patients' awareness about their medication (n = 1), and confidentiality-related reasons (n = 1). Facilitators: -Feedback on previously submitted report (n = 1), and surveillance system (n = 1).	- [78, 80] - [96]
Screening service	Barriers: -Unclear referral mechanisms (n = 1), lack of professional frameworks and standards (n = 1), safety issues (n = 1), length of screening and assessment (n = 1), and legislation restrictions (n = 1). Facilitators: -Following clear guidelines and an evidence-based and structured model for the development, implementation, and evaluation of the service (n = 2), collaboration between CPs and physicians in primary care to facilitate the screening, referral, and follow-up process (n = 3), avoiding any marketing influence (n = 1), providing the service in selected pharmacies for better control (n = 1), free of charge (n = 3).	- [61, 109] - [61, 82, 109, 125, 127]
Mental health care service	Barriers: - Emotional discomfort and negative attitude of CPs (n = 2).	- [69, 117]
Independent prescribing	Barriers: -Patient safety (n = 1).	- [77]

Attitudes and recommendations for future services

CPs had a positive attitude towards extending their professional role [23, 52,61,106,127 84,86,92,96,99,132]. Similarly, the public and patients showed positive perceptions and a high willingness to use several extended services if implemented [40, 56,83,126,134]. Various extended services have been recommended for future implementation. These include health screening, chronic disease management and monitoring, point-of-care testing, medication review, dental health promotion, smoking cessation, weight management, lifestyle modification education, disease counselling, preventive services [19, 23, 40, 56,83,125-127], device-related counselling, self-care education [126], vaccination [56], minor ailments care, and specialized education, such as education about anticoagulant monitoring, antihypertensive, contraceptive, and medication during pregnancy [19].

Discussion

This study aimed to consolidate existing evidence on community pharmacy services in the GCC countries, identify the gaps, and provide a comprehensive overview of the current practice. This study found a variation in the type, nature, and extent of community pharmacy services across GCC countries. Traditional dispensing and counselling services were nationally implemented but varied in quality. In contrast, the extended services were either nationally implemented and evaluated, locally practised and under-evaluated in most countries, piloted and showed promising effectiveness in some countries, or not implemented yet but showed supportive results for future implementation. This review revealed that privacy, time, and lack of training were the most frequently reported barriers to community pharmacy services.

Strengths and limitations

To the best of our knowledge, this is the first review to comprehensively summarize evidence on the type, nature, extent, and effectiveness of community pharmacy services in the GCC countries, including quantitative and qualitative studies that consider multiple perspectives, offering a broad understanding of the practice. Additionally, the pre-registration of the study protocol and the adherence to PRISMA-ScR guidelines strengthen confidence in the study's integrity, credibility, transparency, and reproducibility. Furthermore, having an independent reviewer to validate the work reduces the bias. Moreover, including papers without date restriction provided a holistic understanding of the practice and its evolution.

While this study has notable strengths, its limitations must also be acknowledged. First, the exclusion of grey literature; however, the plentiful primary studies offer insight into real-world practices from different viewpoints, which regulatory statements, for instance, may not always reflect. Second, as most of the included studies were self-reported questionnaires, the validity, and reliability of the data might be influenced by social desirability and response bias. Nevertheless, when additional methods were used besides the self-reported questionnaires, the results from those methods validated the results of the self-reported questionnaire. Third, the results cannot be generalized to all GCC countries as most studies were conducted in KSA and UAE with few in Qatar and Kuwait and none in Bahrain and Oman, limiting the external validity and generalizability. Given the varying geographic sizes of GCC countries, the dominance of data from larger countries may not accurately reflect the practice in smaller countries. Fourth, although some prominent cities were included in the search strategy, not all cities within the GCC countries were included in the search strategy, which may have introduced bias.

Comparison with the literature

Similar to the findings among GCC countries identified in this review, a previous review in UK and other comparable countries; van Eikenhorst *et al*. [154] found a variation and inconsistencies in the quality of counselling in community pharmacies. Another international review [155] revealed that CPs are less likely to counsel on side effects, contraindications, precaution, interaction, and storage. A possible explanation for this practice might be that counselling is a complex process influenced by several factors, including patient and pharmacist-related factors [156], which were reported as barriers in this review. The identified key barrier in this review is consistent with that reported in a study in the Netherlands, which showed that lack of privacy was the most frequently reported reason for patients having difficulties asking questions [157].

The range, extent, and variation in the practice of extended services reported in this review were expected as the role of CPs in the GCC countries is still evolving [21, 26–28]. Another explanation of the variation and non-national implementation of extended services is the reported barriers, which might influenced the implementation. A systematic review conducted at an international level by Weir and Newham [158] found that the national implementation of innovations in community pharmacy could be influenced by several factors, including aspects related to pharmacy staff engagement, operationalization of innovation, and external engagement [158], which all reported in this review as barriers to extended services.

On the other hand, the national adoption of tele-pharmacy can be attributed to the technological advancements driven by the COVID-19 pandemic which significantly accelerated its evolution [121, 159, 160]. Consistent with our findings, previous literature reported that both tele-pharmacy and e-prescription showed potential in improving the quality of and access to pharmaceutical care [161–163].

The effectiveness of most extended services has been evaluated in many other countries globally for various outcomes [164–169], unlike in the GCC countries.

The promising effectiveness of the piloted services presented in this review aligns with results from other countries. A systematic review found that community pharmacy-based screening interventions have effectively identified patients at high risk of CVD or diabetes [170]. Similarly, the community pharmacists-led diabetic education programmes have resulted in improvements in the health outcomes of patients with diabetes [171]. Moreover, the beneficial impact of MTM has been reported in several previous reviews across various countries [172–174]. Given that chronic conditions such as CVD and diabetes are prevalent in all GCC countries, effective strategies to tackle and prevent these conditions are needed [175, 176]. Thus, based on the results from this review and previous literature, implementing these promising services in community settings in GCC countries would be beneficial.

Implications

This review highlights gaps and opportunities for policymakers and researchers. The high willingness of CPs to extend their role, the recommended services, as well as the promising results from the evaluated services, would encourage policymakers to support future implementation and evaluation of those services. The identified barriers and facilitators would help policymakers develop appropriate strategies to address those barriers, ensure successful implementation, and facilitate the changes. The results from different countries could be used as a benchmark to assess the performance of specific countries. Researchers might use the findings to decide on the type of study that needs to be conducted or service that needs to be evaluated.

Recommendations

1) Future research should focus on evaluating the effectiveness of community pharmacy services, not only the humanistic but also the clinical and economic effectiveness,
2) Evidence-based development, pre-evaluation, and piloting of new services must be considered,
3) Appropriate strategies to enhance the role of CPs and facilitate the implementation of services must be developed, for instance, improving the infrastructures of community pharmacies, offering specialized training programmes for CPs, establishing integrated healthcare systems, and promoting public awareness about the role of CPs.

Conclusions

This review provided valuable insight into the type, nature, extent, and impact of community pharmacy services among GCC countries, including key challenges and opportunities. This knowledge is essential for advancing the pharmacy profession, addressing the needs, and improving the practice in this rapidly evolving region. Although this review revealed that CPs in some GCC countries offer a wide range of services beyond traditional dispensing and counselling and are willing to extend their role, several barriers have been identified. The results of this review should be utilized to develop appropriate and structured implementation and evaluation frameworks to overcome the obstacles, facilitate national implementation, and ensure service quality. This framework should comprehensively evaluate the service from different perspectives and for its effectiveness, including humanistic, clinical, and economic effectiveness, ensuring consistent health delivery and optimal patient outcomes.

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Supplementary Material

Supplementary data are available at *International Journal of Pharmacy Practice* online.

Author contributions

Solafa MW. Noorsaeed: Writing – original draft, Project administration, Methodology, Data curation, Formal analysis. Hisham Alshammari: Validation. Amanj Kurdi: Supervision, Methodology, Writing – review & editing. Natalie Weir: Supervision, Methodology, Writing – review & editing.

Conflict of interest

The authors have no competing interests to declare.

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