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Sexual and reproductive health services provided by community pharmacists: a scoping review

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ABSTRACT

Objectives Pharmacists are increasingly providing patient-focused services in community pharmacies, including in the area of sexual and reproductive health (SRH). Specific SRH areas have been the focus of research, but a broader perspective is needed to position pharmacists as SRH providers. This review explored research that described and evaluated professional pharmacy services across a broad range of SRH areas.

Design Scoping review

Data sources Medline, EMBASE, CINAHL, Web of Science, Scopus and Cochrane Library (January 2007–July 2020).

Study selection Studies reporting on the description and evaluation of professional pharmacy SRH services provided by community pharmacists.

Data extraction Two investigators screened studies for eligibility, and one investigator extracted the data. Data were analysed to primarily describe professional pharmacy services and intervention outcomes.

Results Forty-one studies were included. The main SRH areas and professional pharmacy services reported were sexually transmitted and bloodborne infections (63%) and screening (39%), respectively. Findings showed that pharmacists' delivery of SRH services was feasible, able to reach vulnerable and high-risk groups, and interventions were highly accepted and valued by users. However, integration into daily workflow, pharmacist remuneration, cost and reimbursement for patients, and policy regulations were some of the barriers identified to implementing SRH services. Studies were primarily in specific areas such as chlamydia screening or hormonal contraception prescribing, while studies in other areas (ie, medical abortion provision, long-acting reversible contraception prescribing and vaccine delivery in pregnant women) were lacking.

Conclusion This scoping review highlights the expansion of pharmacists' roles beyond traditional product-focused services in a number of SRH areas. Given the potential feasibility, users' acceptability and reach, pharmacists are ideally situated to enhance SRH care access. Future research describing implementation and evaluation of professional pharmacy services in all SRH areas is needed to promote access to these services through community pharmacies and position pharmacists as SRH providers worldwide.

Strengths and limitations of this study

- This is the first scoping review to systematically identify and synthesise research that described and evaluated professional pharmacy services across a broad range of sexual and reproductive health (SRH) areas.
- A broad and comprehensive search strategy was conducted in six peer-reviewed databases.
- This review may help to guide the implementation of SRH services and inform new policies in high-income countries where pharmacists' scope of practice is expanding.
- We summarised challenges and barriers associated with provision of professional pharmacy services in SRH for studies that met our inclusion criteria; however, this review may not include all the barriers reported in the literature.
- A critical appraisal of the literature was undertaken to highlight gaps and potential future research areas, but no quality assessment was performed in this scoping review.

INTRODUCTION

Sexual and reproductive health (SRH) is recognised as essential to a person's overall health and well-being.[1] Over the past two decades, considerable progress has been made in advancing the global agenda focused on ensuring access to high-quality SRH services.[2] However, accessibility remains inadequate in many countries due to limited resources, infrastructure, education, awareness of services or environmental barriers.[2] The far-reaching impact of unsafe abortions, unintended pregnancies, reproductive cancers and sexually transmitted and bloodborne infections (STBBI) on countries' health and socioeconomic development cannot be overemphasised.

Globally, pharmacists' roles have become more patient-focused and service-based in recent years, as compared to traditional roles that were more product focused.[3 4] The convenient location of community pharmacies

allows pharmacists to engage directly with several communities and promote access to healthcare services.[5–7] Legislative, policy and educational changes have enabled pharmacists to expand their scope of practice to address different and new health challenges.[8–10] However, pharmacy practice and pharmacy education, as well as legal and regulatory frameworks guiding pharmacy practice differ considerably worldwide.[11 12] Traditional pharmacy services are those typically provided in all pharmacies and include compounding and dispensing of prescription medications, providing drug information and supporting patient self-care with over-the-counter medications and products.[11] Various terms have been used in the literature to describe patient-focused pharmacy services, making international comparisons challenging. Professional pharmacy services is a broad term that refers to applying specialised health knowledge 'to optimise the process of care with the aim to improve health outcomes and the value of healthcare'.[13] Examples of professional pharmacy services include administering vaccines and other injectable medications, prescribing or renewing medications, smoking cessation, medication therapy management and disease screening or testing.[11–13]

While the model and scope of pharmacy practice differ between countries, the shift towards delivery of patient-focused services provides the opportunity to address the burden on primary healthcare systems and poor accessibility, especially in SRH. As one of the most accessible and trusted health professionals,[14 15] pharmacists are well positioned to take on a more significant role in delivering SRH services by removing practical barriers and connecting with other care providers.[15]

Examples of policy and regulatory changes to support improved access to SRH through community pharmacies can be seen around the globe. In many cases, pharmacists' roles in SRH have evolved from primarily dispensing to include professional pharmacy services such as patient education programmes, preventive, screening and referral services, according to regulations in each jurisdiction.[15–21] As an example, non-prescription progestin-only emergency contraception (EC) has been available at community pharmacies for more than 15 years in various European countries, Canada, the USA, Australia and New Zealand[22 23]; and ulipristal acetate (EC approved in 2009) was switched from prescription to non-prescription status in 2015 by the European Commission.[24] Further changes in several Canadian provinces and jurisdictions in the USA granted authority for pharmacists to prescribe hormonal contraception.[25 26] Pharmacists are also authorised to administer injections, such as injectable contraceptives and vaccines, in many parts of the world, including Canada, the USA, UK, Australia and New Zealand.[27]

Previous literature reviews on pharmacists' roles in SRH are focused on specific SRH areas or experiences related to SRH services. These include reviews of pharmacists' role in the supply of EC,[22] medical abortion provision,[28] HIV prevention[29] and STBBI screening.[30] Other reviews have also focused on pharmacists' and users' knowledge, attitudes, experiences and perspectives related to contraception as well as a broader spectrum of SRH services.[31–36] Overall, the available literature highlights positive users' experiences, implementation is feasible, and also some challenges for pharmacy staff and users. However, these reviews have not addressed the topic from the service organisation, implementation and delivery perspective.

Although interest in SRH has increased in recent years, there is little research synthesising professional pharmacy services across a broad spectrum of SRH areas.[33–36] Clarity is needed with respect to pharmacists' roles in SRH as well as the types of professional pharmacy services that may be delivered in community pharmacies to better serve the needs of the community. Addressing this gap in the literature is critical to position pharmacists as SRH providers, especially now that access issues have been exacerbated during the COVID-19 pandemic, and pharmacists are perceived as crucial in emergency response.[37] Therefore, this review aimed to identify research that described and evaluated professional pharmacy services provided by pharmacists across a broad range of SRH areas.

METHODS

Study design

Scoping review's framework and methodology are an excellent option for exploring SRH services offered at community pharmacies, pharmacists' roles in providing these services, and identifying knowledge gaps within the existing literature. The outcomes of this scoping review were to (1) identify the professional pharmacy services in SRH provided by pharmacists in community practice and (2) report on service description and evaluation.

The work was structured around the five stages of the framework recommended by Arksey and O'Malley[38] and enhanced by Levac *et al*[39]: (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data and (5) collecting, summarising, and reporting the results. The review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocol extension for Scoping Reviews (PRISMA-ScR) guidelines.[40] The PRISMA-ScR checklist can be found in online supplemental file 1.

Search strategy

The search strategy was developed in consultation with a research librarian. Six health-science databases were searched for relevant peer-reviewed literature: Medline (Ovid), EMBASE (Ovid), CINAHL (Ebsco), Web of Science Core Collection (Clarivate), Scopus (Elsevier) and Cochrane Library (Wiley). We searched ProQuest Dissertations & Abstracts for grey literature, and hand-searched the reference lists of selected papers to identify any additional studies. There were no limits on language of publication. The search included studies published from 1 January 2007 to 22 July 2020. The time frame for inclusion was determined based on the publication dates

of previous reviews in this field, and the scope of pharmacist practice and policy changes in high-income countries worldwide that have impacted current practice. The articles were retrieved from each database and imported into EndNote (V.9, Clarivate Analytics) for management and screening.

Keywords included: pharmacists, sexual health, reproductive health, pregnancy, sexually transmitted disease* or sexually transmitted infection* or STD* or STI or STIs, prescriptions, screening, patient education, service (online supplemental file 2).

Screening and study selection

Study selection focused on peer-reviewed literature that described and evaluated delivery of professional pharmacy services in SRH. To be included, studies had to describe and evaluate (eg, assessed feasibility, uptake, or acceptability from users' perspective) an intervention. Articles were excluded if they did not describe how the intervention was organised, implemented or delivered, the setting was not a community pharmacy, a community pharmacist was not part of the intervention, outcomes reported were only about experiences, knowledge or attitudes of pharmacists, or if the research was incomplete or yet to be published (eg, conference abstracts). Studies conducted in low-income and middle-income countries were also excluded due to differences in health systems and regulation of community pharmacies and pharmacy professionals as compared with high-income countries (table 1).[41]

Articles were screened in two phases. Two investigators (JN and CAH) independently screened titles and abstracts of studies for eligibility. Both investigators (JN and CAH) reviewed the full text of articles identified as potentially relevant. Discrepancies were discussed until consensus was reached.

Data extraction and synthesis

A data extraction tool was developed in Excel (V.16.39, Microsoft) to record key information of included articles. Data were extracted by JN and reviewed by a second investigator for accuracy (NY, TJS or CAH).

A descriptive analysis including a numerical overview of the amount, type, and distribution of included articles, and a narrative synthesis were performed to fulfil the study objectives (JN, NY, TJS and CAH). Articles were grouped and synthesised by SRH areas and professional pharmacy services uncovered in the scoping review. Characteristics of studies and key findings were summarised, and studies were compared.

Patient and public involvement

No patient involved.

RESULTS

Figure 1 summarises study selection. The initial search yielded 6559 results after the removal of duplicates (figure 1). After screening titles and abstracts, 77 articles were retrieved for full-text review. From these, 41 articles were included in the review (online supplemental file 3).

Table 1 Eligibility criteria for studies included

Aspects of study design	Eligibility criteria
Population	People of all ages from high-income countries. Referred to as users, patients or individuals.
Intervention	Professional pharmacy services focused on SRH. Face-to-face interaction between provider and user.
Outcome	Description and evaluation of SRH services provided to real users of the services; mystery clients or simulated patients were excluded.
Setting	Community pharmacy; specialised pharmacy or pharmacy based in a hospital/clinic were excluded.
Provider	Community pharmacists had to participate in the intervention directly; services provided by clinical pharmacists or residents only were excluded.
Study design	Qualitative, mixed methods and quantitative. Descriptive studies (retrospective, cross-sectional or prospective), comparative and non-comparative studies were included; abstracts, protocols, reviews, letters, commentaries, editorials, opinions, meta-analysis and reviews were excluded.
Year	Articles published after 2007.
Language	No language restrictions.

SRH, sexual and reproductive health.

Study characteristics

In terms of research design, 27 studies were quantitative (non-randomised), 2 were cluster randomised and 2 were randomised controlled trials. Mixed methods were used in nine studies, and one study was qualitative. About 66% of studies reported additional training was provided to pharmacists in order to offer SRH services. Table 2 outlines characteristics of the studies included.

Most of the studies were conducted in the USA (n=20) or UK (n=13). Twenty-six (63%) studies focused on STBBI, 12 (29%) on contraception, 2 (5%) on pregnancy and 1 (2%) on sexual dysfunction. The most common professional pharmacy services provided by pharmacists were screening (39%), prescribing (17%), administration of injections (15%) and provision of medication by pharmacists (15%). Provision of medication was through specific protocol (eg, patient group directions or study protocol) or pharmacist only medications. Provision of medication through specific protocol included

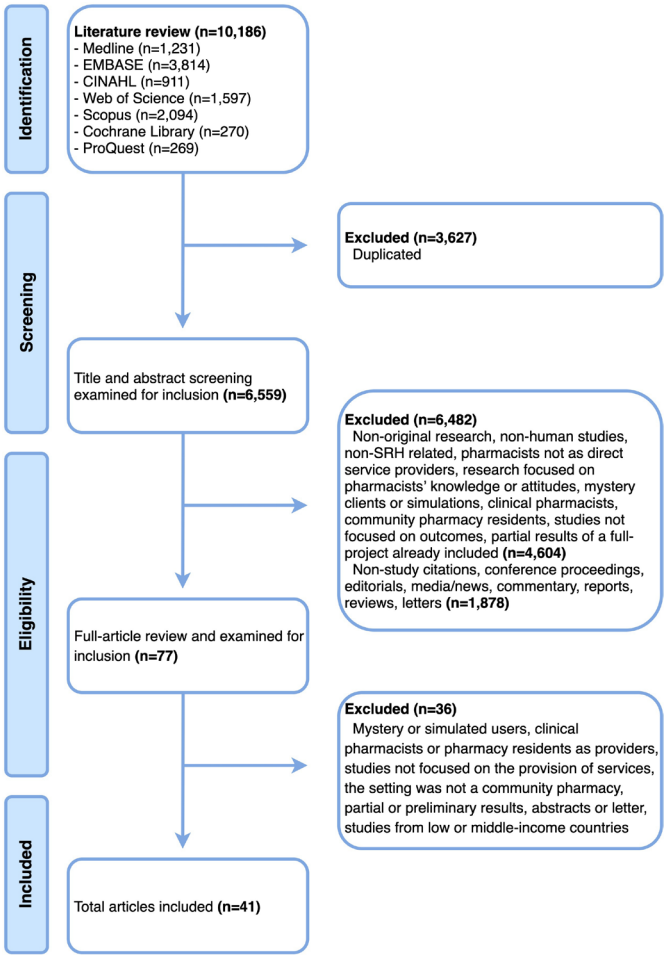

Figure 1 PRISMA flow chart and search results. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses; SRH, sexual and reproductive health.

pharmacists who provided medications because the legal framework allowed them (eg, vouchers for chlamydia treatment) while pharmacists only medication refers to medications that can be provided by pharmacists without a prescription (eg, EC). Other activities included education programmes and screening and treatment (as one service) (table 2). More than two-thirds of studies (71%) were published between 2015 and 2020. Figure 2 shows the number of articles included for each SRH area by year of publication.

SRH areas and services

Studies were categorised into four main SRH areas: STBBI, contraception, pregnancy and sexual dysfunction (online supplemental file 3). An overview of these studies is described in further detail below.

Sexually transmitted and bloodborne infections

Twenty-six studies evaluated STBBI services provided by pharmacists; 9 (35%) were *Chlamydia trachomatis* related, 7 (27%) were focused on HIV, 5 (19%) on human papillomavirus (HPV) and 5 (19%) on hepatitis C virus (HCV).

Table 2 Summary characteristics of studies included (n=41)

Characteristics	Studies n (%)
Region	
USA	20 (48.8)
UK	13 (31.7)
Australia	3 (7.3)
Canada	1 (2.4)
Spain	1 (2.4)
Greece and Spain	1 (2.4)
Puerto Rico	1 (2.4)
Norway	1 (2.4)
Research design	
Quantitative (non-randomised)	27 (65.9)
Quantitative cluster randomised trial	2 (4.9)
Quantitative randomised controlled trial	2 (4.9)
Mixed methods	9 (22.0)
Qualitative	1 (2.4)
SRH area	
STBBI	26 (63.4)
Chlamydia	9 (34.6)
HIV	7 (26.9)
HPV	5 (19.2)
Hepatitis C	5 (19.2)
Contraception	12 (29.2)
Hormonal contraceptives	7 (58.3)
Injectable contraceptives	3 (25.0)
Emergency contraception	2 (16.7)
Pregnancy	2 (4.9)
Sexual dysfunction	1 (2.4)
Reported additional training for pharmacists	
Yes	27 (65.9)
No	14 (34.1)
Professional pharmacy service	
Screening	16 (39.0)
Prescribing	7 (17.0)
Injection administration	6 (14.6)
HPV vaccine	3 (50.0)
Injectable contraceptives	3 (50.0)
Provision of medication by pharmacist	6 (14.6)
Specific protocol	4 (66.7)
Pharmacists only medication	2 (33.3)
Education programmes	4 (9.8)
Screening and treatment	2 (4.9)

HPV, Human papillomavirus; SRH, sexual and reproductive health; STBBI, sexually transmitted and bloodborne infections.

Chlamydia

Four of the nine studies evaluated pharmacists' involvement in chlamydia screening,[42–45] two evaluated

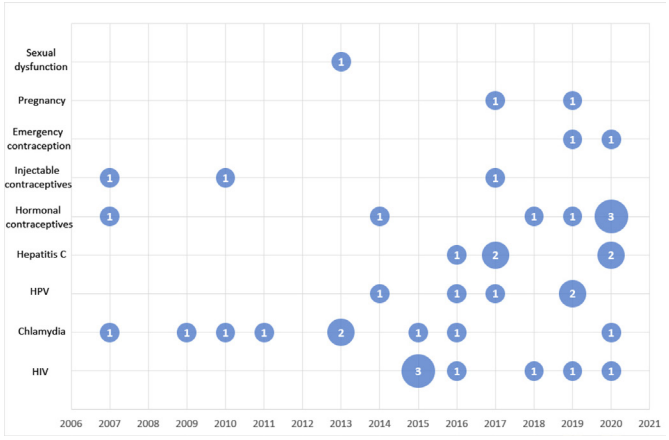

Figure 2 Systematic map—SRH topic and year of publication. Area of points are proportional to absolute values of number of studies. HPV, human papillomavirus; SRH, sexual and reproductive health.

screening along with treatment services,[46 47] and three evaluated treatment services only.[48–50] Screening for chlamydia was offered through distribution of chlamydia test kits,[42 44 46] or by collection of urine samples that were stored at the pharmacy and shipped to a pathology provider for analysis.[43 45] In one study, it was not clear how screening was performed.[47] Of the studies which evaluated treatment services only, two focused on treatment of partners,[48 50] and one focused on the treatment of index cases.[49]

In terms of studies that assessed chlamydia screening, the target population and sample size varied (online supplemental file 3). Studies using home test kits reported 18% and 28% of samples returned for testing.[42 44] In comparison, one study offered on-site screening (collection of samples) with an incentive for participants and pharmacists.[43] In this study, 75% of unique samples were returned to the pharmacy.[43] Positivity rates reported for chlamydia ranged from 0% to 9.8%.[42–44 46 47] Studies focused on treatment services used redeemable vouchers for free chlamydia treatment at participating community pharmacies. Cameron *et al* found 40% of the treatment vouchers were redeemed by partners of index cases.[48] Slutsker *et al* reported similar results; 41% of vouchers were redeemed even when the medication was free of charge.[50] Another study used the same methodology but for index cases with uncomplicated chlamydia and found that 87% of vouchers were redeemed.[49]

Overall, users reported a high level of satisfaction with the services provided.[44 45 47 48] Convenience,[44 45 47] location,[45] short waiting times and no appointments needed[44 45 47 48] and a non-judgemental approach[47] were reported as benefits. Barriers or challenges were also noted, including users' low awareness of service,[42 44] concerns regarding confidentiality and privacy,[44 45 47] and in some cases, inconvenience of returning specimens to designated pharmacies or laboratories.[42 44]

HIV

Among the seven studies focused on HIV, one evaluated pharmacist-led pre-exposure prophylaxis (PrEP),[51] and the remainder focused on HIV screening at the community pharmacy.[52–57]

Havens *et al* implemented a pilot whereby individuals started on HIV PrEP could choose to be followed by a pharmacist for ongoing sexually transmitted infections (STI)/HIV screening, follow-up, and PrEP prescribing.[51] Although the authors described logistical challenges related to STI screening, results indicated that implementing a pharmacist-led PrEP programme was feasible and achieved high satisfaction rates among participants.[51] The studies reporting HIV screening in community pharmacies varied in terms of duration, tests performed, and whether screening was offered as part of a pilot or an established programme. Most studies used rapid point-of-care testing (POCT) with finger-prick blood samples for screening,[52 54 55 57] and one used oral fluid samples.[56] Five studies reported referral and confirmatory testing for individuals with reactive results.[52 54–57] The authors reported 0.8%,[52 57] 0.9%[55], 1.5%[54] and 1.6%[56] of HIV rapid tests performed were reactive. Fernández-Balbuena *et al* reported findings from three programmes in Spain involving 110 pharmacies and found that pharmacy testing contributed to identifying 10% of new HIV cases in the region; a high percentage of heterosexual men were tested.[55]

Studies that focused on HIV screening demonstrated pharmacists are capable of reaching high-risk groups and individuals not previously tested.[52–57] Crawford *et al* evaluated uptake of HIV testing when part of comprehensive disease screening implementation in low access and minority communities.[53] Kelly *et al* and Fernández-Balbuena *et al* found as low as 27% and as high as 52% of individuals reported they were not previously tested for HIV (or were unsure).[55 57]

Some studies reported positive experiences with HIV screening at community pharmacies.[54 57] However, challenges were also reported, including recruitment and advertising,[54 56 57] obtaining the sample,[54 57] integration into the daily workflow,[57] pharmacists' remuneration,[54 57] costs[56] and referral and linkage to care.[52] Havens *et al* also described similar challenges for HIV PrEP services, such as integration into the daily workflow, pharmacist compensation, and cost for users and reimbursement policies.[51]

Human papillomavirus

Five studies explored professional pharmacy services focused on HPV vaccination. Two studies evaluated the implementation of HPV vaccination services at community pharmacies,[58 59] two focused on educational strategies and impact on vaccination rates,[60 61] and one focused on a patient assistance programme for university students and vaccination uptake.[62] Three studies targeted adolescents and/or younger adults,[58 61 62] one targeted individuals between 9 and 26 years old filling

acne or birth control prescriptions at the pharmacy,[60] and one did not specify the target group (online supplemental file 3).[59]

HPV vaccination service was offered directly through the pharmacy,[58 60–62] or by a health clinic that promoted a community pharmacy as an alternate setting to complete the vaccination series.[59] Regarding service promotion, different strategies were described. Calo *et al* included direct mailing to families with eligible children, radio and newspaper advertisements, posting fliers and promotion in the pharmacy using posters, bag stuffers, handouts, roadside signs and direct patient approach.[58] Other authors described similar strategies, with direct patient approach most commonly used.[59–62]

There were, however, important barriers reported in these studies. In some states in the USA, community pharmacies are not included as qualified vaccine provider sites for vaccinating age-eligible adolescents.[58] As a consequence, this limits the reach to young people and the integration of the service into primary care systems.[58] Parental beliefs about vaccination,[59 61 62] awareness of pharmacists' immunisation training[58] and information about available services[58 62] were also challenges reported.

Hepatitis C

All five studies focused on HCV screening services in community pharmacies.[63–67] In one study, pharmacists performed HCV-antibody rapid POCT,[65] and in four studies dried blood spot testing (DBST) was used.[63 64 66 67] One study reported DBST samples were tested for hepatitis B virus (HBV), HIV, and syphilis in addition to HCV, although results for these infections were not reported.[64] Two other studies reported testing samples for HCV, HBV and HIV.[66 67]

The screening services in these studies aimed to reach primarily high-risk groups, including individuals attending for needle exchange,[64] opiate substitution therapy[64 66 67] and those with limited access to care.[65] The percentage of tests completed that were reactive was reported to be 1.2%,[65] 7%[63 64] and 28%.[66] As part of the service, pharmacists consulted or referred patients with reactive tests to specialist care.[63–67] In two articles, Buchanan *et al* reported implementation in more than 20 community pharmacies a 'point-of-diagnosis' consultation with the pharmacist and a hepatologist for individuals with confirmed HCV infection.[63 64] Pharmacist services extended beyond screening to support patients' care following diagnosis. Buchanan *et al* reported that most patients remained actively engaged in care, and some of them started HCV treatment.[63 64] Radley *et al* reported that more patients in the pharmacist-led pathway for HCV initiated treatment and achieved HCV cure as compared with the conventional care pathway.[67]

Reported challenges implementing HCV screening services included motivating people to get tested,[65] careful time management by pharmacists to balance workload[63 65 66] and pharmacist remuneration.[65]

Contraception

Of the 12 studies focused on contraception, six studies assessed prescribing hormonal contraception,[68–73] three focused on injectable contraceptive administration[74–76] and two on EC provision.[77 78] One study compared two interventions, pharmacist-provision of 1 month of a bridging method of contraception or pharmacist referral to a family planning clinic, to standard care in women seeking EC.[79]

Five studies focused on the implementation of policies which support direct pharmacy access in some US states, and enable pharmacists to independently prescribe contraceptives for Medicaid-insured women.[68 70–73] Anderson *et al* found that community pharmacists in Oregon issued 10% of new contraceptive prescriptions (oral or transdermal methods) during 2016–2017.[68] In addition, Lu *et al* reported that pharmacists in Oregon and California prescribed different contraceptive methods, including oral (95.7%), patch (1.6%), vaginal ring (2.6%) and injectable (0.1%).[70] However, Gibbs and Harvey assessed the impact of this type of policy in Oregon during the first 2 years following implementation and concluded there was no significant increase in contraceptive use.[73] Still, they noted that women's satisfaction, convenience, cost, equity and impact on access and unintended pregnancy rates should be studied in the future when the demand for these services increases.[73]

Effective and consistent use of contraception is strongly related to access and supply. Rodriguez *et al* showed that pharmacists' prescription service was associated with improved contraception continuation rates as pharmacists were significantly more likely to prescribe a 6-month supply than other prescribers.[72] Pharmacists may also enhance access to contraceptive and SRH services through referral to other healthcare professionals and clinics for further care.[69 75 77 79] Mantzourani *et al* noted that 31% of EC consultations included a referral to a sexual health clinic or a general practitioner.[77] Monastersky Maderas and Landau found that pharmacy and clinic partnerships to expand access to injectable contraception resulted in reciprocal referrals.[75] Michie *et al* concluded that referral by pharmacists to a family planning clinic and pharmacists' provision of progestogen-only contraceptive pill were valuable and could increase the uptake of effective contraception after EC.[79]

Compared with other contraceptive methods, injectable contraceptives require more visits to clinics, which may be inconvenient for some individuals.[74 75] Pharmacists can assist women by administering injectable contraceptives at the time of picking up their refill.[74 75] Heller *et al* suggested that a pharmacy-based injection service for users of injectable contraceptives may be feasible, but the public viewed pharmacist availability as a barrier for access.[74] Some authors explored the potential of this service in partnership with a clinic. Picardo and Ferreri randomised women to receive the injection

at a community pharmacy or clinic,[76] and Monastersky Maderas and Landau gave women the option to continue receiving the injections at the clinic or a community pharmacy.[75] Convenient access to community pharmacies made this service feasible with high acceptance rates by women.[74–76]

Community pharmacies provide an important option for women to access EC.[77 78] According to 5-year trends, Mantzourani *et al* described consistent provision of a free pharmacy-based EC service in the UK to women of a wide age range.[77] Turnbull *et al* showed that users of over the counter EC preferred community pharmacies for the ease and speed of access and convenience.[78] Disadvantages included less personalised service by the pharmacist and subsequent need for EC.[78] Women in this study suggested enhancements including increased privacy and consultation to expand pharmacists' role in the provision of contraception.[78]

Pregnancy

Two studies addressed pregnancy and preconception care.[80 81] One of these tested the feasibility of a pharmacist consultation in early pregnancy.[81] The women reported high satisfaction rates, emphasising the importance of a telephone consultation, and the majority would recommend the service to other pregnant women.[81] DiPietro Mager *et al* demonstrated that pharmacists could offer targeted medication reviews to provide preconception education including folic acid use, medications that may cause fetal harm, and recommended vaccines in pregnancy.[80] This study found that community pharmacists rapidly integrated the service process and that a sustainable reimbursement model was feasible.[80]

Sexual dysfunction

One study assessed pharmacists' ability to detect erectile dysfunction (ED) and encourage individuals to seek medical advice.[82] Pharmacists used a questionnaire to gather clinical and behavioural questions and patients completed the validated Sexual Health Inventory for Men (SHIM) to identify those who might have ED (SHIM score ≤21). The results showed that 77% of men included in the study had a SHIM score ≤21 indicating ED, however only a minority of these men were able to be contacted by phone to determine if they visited a physician.[82] The authors concluded that pharmacists' roles in detecting, evaluating and motivating individuals to follow up with a physician need to be evaluated further.[82]

DISCUSSION

This scoping review aimed to identify and synthesise research that described and evaluated professional pharmacy services provided by pharmacists in SRH. Our results reveal pharmacists are engaged in a wide range of activities beyond traditional pharmacy services, signalling that pharmacists play a more significant role in delivering services in a number of SRH areas.

Generally, studies included in this review found the provision of SRH services by pharmacists enhanced access to care, users' experiences and the uptake of services. Our results are consistent with previous SRH research addressing users' experiences with pharmacy services, which have similarly reported the location of the pharmacy, extended opening hours, and no necessary appointments, as some of the pharmacies' advantages.[32 35 36] In a systematic review, Chirewa and Wakhisi found that young women considered obtaining EC through community pharmacies in the UK as convenient and easy to access.[32] In addition, a non-judgemental approach, receiving services from helpful pharmacists and free and confidential services, were considerations when choosing community pharmacies over other settings.[32] Similarly, Gauly *et al* reported in a systematic review that pharmacy users appreciated the convenience and easy access of pharmacies for SRH services and felt comfortable discussing sexual health with the pharmacist.[36] However, Gauly *et al* noted conflicting results about individuals' views on privacy. Some patients appreciated the privacy level provided in pharmacies while others expressed concerns about being overheard by other clients when talking to the pharmacist.[36]

SRH services provided by pharmacists at community pharmacies reached vulnerable and high-risk groups. The analysis of studies reporting interventions highlighted variable findings. Since positivity rates of STBBI vary depending on study and intervention designs, testing technology, jurisdictions, risk behaviours, population groups and year of implementation,[83] the variability in findings reported by the studies included in this review is not surprising. However, the advantages of reaching a significant proportion of first-time testers and high-risk populations increases STBBI awareness. Community pharmacies have been described as a healthcare 'hub',[84] and opportunities exist to promote and integrate SRH services to enhance access for underserved populations.[35] This is particularly relevant to emphasise now, as the COVID-19 pandemic has dramatically impacted public health, and SRH and rights are no exception. The pandemic has had repercussions on access to routine and preventive services, shortage of products and supplies and service delivery capacity.[85–87] This situation is likely to impact the most vulnerable populations disproportionately.[85 88 89] Positioning pharmacists as SRH providers could translate into the development of strategies using community pharmacies as an access point for patient-focused SRH care.

Legislative changes, availability of technology for screening and sample collection and partnerships, were found to be important enablers for pharmacists to deliver professional pharmacy services. For example, the availability of hormonal contraceptives and progestin-only EC pill in community pharmacies is due to approved

legislation in some states in the USA and Canada.[90–93] For STBBI, a community pharmacy is usually more conveniently located than a clinical testing site,[94 95] and advances in POCT, DBST and home test kits technologies enabled pharmacists to offer screening services for HIV, HCV and chlamydia outside traditional settings.[96] Similarly, care delivery models, including partnerships with sexual health clinics as well as physicians (eg, collaborative practice agreements), were also crucial for service establishment in some cases.

Our results also indicate several barriers to implementing SRH services at community pharmacies. Integration of services into the daily workflow,[57 59 66] pharmacists' remuneration,[51 57 63–65] cost and reimbursement for patients[51 55 56 62] and policy regulations[61] are commonly reported challenges. Introducing new policy approaches to boost and enhance community pharmacists' roles in SRH is still needed. For example, pharmacists are authorised to administer injections in every state in the US. However, state laws may limit pharmacists' ability to administer HPV vaccines based on the age of individuals and conditions under which they can administer HPV vaccines, such as independent authority, collaborative practice agreement, or another health professional prescription.[58 61] Additionally, parents' and patients' awareness of pharmacists' training and services,[42 44 50 54 56 57 62] concerns about pharmacists providing safe and high-quality services,[69] and motivation to opt into the services (eg, voluntarily ask for any STBBI screening service)[42 44 65] are some of the other challenges to overcome. In order for SRH services through community pharmacies to be sustainable and affordable, these barriers are paramount to address.

The findings from this review could help pharmacists visualise and understand their role in SRH and promote the value of professional pharmacy services. This review may also help support the implementation of SRH services in the community and the development of new policies in countries to expand pharmacists' roles in providing professional pharmacy services. The evidence supports the evolution of pharmacists' roles in SRH, from traditional product-focused to offering different professional pharmacy services. Given the potential feasibility, users' acceptability and reach, pharmacists are ideally situated to enhance access to SRH services now and in the future to better meet the needs of the public in areas such as contraception,[97 98] medical abortion[99] and STBBI treatment and prevention.[100]

As previously described, most studies focused on specific SRH areas. None of the studies evaluated the delivery of SRH services addressing patient needs in the areas of medical abortion provision, prescribing or referral for intrauterine contraceptive devices and subdermal implants, vaccine education and delivery in pregnant women (eg, tetanus, diphtheria and pertussis vaccine), nutritional advice in pregnant women and screening and treatment for other STI, such as gonorrhoea and syphilis. Studies on community pharmacy delivery of SRH services to lesbian, gay, bisexual, transgender, queer/questioning individuals in the community, who may face health disparities mainly related to SRH,[101] were not found. These gaps identified may be due in part to our search dates and inclusion criteria. However, these gaps highlight future research opportunities to examine pharmacists' roles in the delivery of comprehensive SRH services tailored to diverse populations which may better position pharmacists as SRH providers.

We developed the search strategy and set the eligibility criteria to capture evidence from real-life scenarios, which effectively represented what pharmacists may offer to the public. However, this approach may have limited the identification of contributory articles evaluating professional pharmacy SRH services since some studies may have explored this topic using mystery clients or simulated patients. Based on the studies included, we reported challenges and barriers that were highlighted. We considered it relevant to summarise similar reports across different SRH areas. Since we did not include articles focused on attitudes or experiences, the barriers acknowledged in this review may not represent all the barriers reported in the literature. Lastly, deciding to conduct a scoping review was based on the analytical approach which aims to map the data, the broad research question we identified, and the less restrictive inclusion of studies in terms of design and quality. A quality assessment of articles, as typically performed in a systematic review, was not completed. Future work might conduct a quality assessment of studies in this research area by taking the findings from this scoping review as a precursor of a systematic review.

CONCLUSIONS

Given that accessibility to SRH services remains an issue in many countries, it is relevant to recognise pharmacists as SRH providers. This scoping review has identified that pharmacists' roles have expanded beyond traditional product-focused services and the delivery of professional pharmacy services in a number of SRH areas is feasible and highly accepted by users. Still, the available evidence suggests several challenges need to be addressed to position pharmacists as sustainable and affordable providers of SRH services in high-income countries worldwide. Based on identified gaps, studies describing the implementation and evaluating the impact of a full spectrum of professional pharmacy services may promote access to SRH care through community pharmacies and position pharmacists as SRH providers.

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