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Review Article

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Factors influencing pharmacists' roles in preventing prescription and over-the-counter opioid misuse: a systematic review and narrative synthesis

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Abstract

Background: The prescribing rate of opioids is increasing and is a main contributor to opioid misuse. Community pharmacists can help reduce opioid misuse rates by carrying out prescription and over-the-counter (OTC) opioid misuse prevention services. Understanding the barriers and facilitators to community pharmacists' involvement has the potential to improve these services.

Objective: To review the literature on the barriers and facilitators of community pharmacists' involvement in prescription and OTC opioid misuse prevention.

Methods: A systematic review of primary research was carried out in MEDLINE, Embase, Scopus, Web of Science, CINAHL, and APA PsycINFO from January 2022 to March 2022. Narrative synthesis underpinned by the COM-B model was used to analyse findings from the included articles. Studies were included if they used qualitative or mixed methods; published in English and focussed on OTC or prescription opioids.

Results: Ten studies were included in the review. Barriers and facilitators were grouped into individual, environmental, and system-level factors. Based on the COM-B model, these factors were classified as capabilities (knowledge and skill), opportunities (e.g. relationship with prescribers, time), and motivation (pharmacists' attitude).

Conclusion: Improving pharmacists' capabilities and opportunities might improve pharmacists' motivation to offer opioid misuse services. This could improve pharmacists' behaviour, that is, their role in preventing prescription and OTC opioid misuse. The findings of this review were based on information obtained from primary evidence from qualitative studies; However. further empirical work is needed to identify how pharmacists can be supported.

Keywords: Systematic Review; Community Pharmacy; Needle Exchange; Drug Misuse

Introduction

Drug misuse is defined as the use of drugs for nonmedical or illegal purposes [1]. Globally, the number of people who misuse drugs is about 275 million, estimated to be 5.5% of people aged 15–64 years [2]. There are approximately 500 000 deaths worldwide annually due to drug misuse. More than 70% of mortalities are connected to opioid use, with opioid overdose being the leading cause of death [2].

Opioid misuse refers to illicit opioids, which are obtained illegally, such as heroin and also includes licit opioids which are obtained legally, such as morphine [3]. Legally obtainable opioids (licit opioids) include prescription analgesics beyond morphine, for example, fentanyl, pentazocine, codeine, hydrocodone, oxycodone, tramadol, and pethidine and over-the-counter (OTC) medications too, such as cough syrups containing codeine and paracetamol tablets with codeine [4]. Prescription and OTC opioids are medically used as analgesics and cough suppressants. Long-term use or overdose of opioids can cause dependence, addiction, respiratory depression, withdrawal symptoms, coma, and death [5]. Regardless of the adverse effects of opioid use and high mortality rates, the rate at which opioids are prescribed is increasing [6–8]. About 21%–29% of chronic pain patients are reported to misuse prescription opioids and 8%–12% develop opioid use disorder, while 4%–6% become heroin addicts [9]. This literature therefore demonstrates a wide-spread problem with opioid misuse, which extends beyond illegal substances and includes prescriptions and OTC medications.

Pharmacists have a pivotal role to play in supplying prescription and OTC opioids and may have a role in preventing misuse. Pharmacists assess prescriptions, offer education, and advise patients and other healthcare professionals on the safe use of medications [10]. Pharmacists can potentially identify patients at risk of misusing opioids and offer interventions that aim to prevent drug misuse [11]. Interventions that could be offered by pharmacists based in retail or community settings include proper storage and disposal of prescription opioids and harm reduction services (such as needle and syringe exchange programmes, opioid substitution therapy, naloxone dispensing, hepatitis testing and hepatitis B & C vaccination) [12–19]. However, there is a significant shortage

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of community pharmacists which has increased pharmacy workloads, leading to burnout, and stress [20–23], which may limit how well pharmacists can engage with opioid misuse prevention. Proactive involvement of community pharmacists in prescription and OTC opioid misuse activities could reduce the number of patients who misuse drugs and ultimately reduce the number of deaths due to licit opioid misuse. Researchers must identify factors that could motivate and enable pharmacists to carry out opioid misuse services. Since no review has been carried out on this topic, existing evidence on the barriers and facilitators to community pharmacists' role in the prevention of prescription and OTC opioid misuse has not been evaluated or synthesised. Understanding factors that influence pharmacists' involvement in opioid misuse prevention will help in the successful design, development, and implementation of activities in community pharmacies.

Objective

The aim of this review is to explore existing evidence of the barriers and facilitators to community pharmacists' role in the prevention of prescription and OTC opioid misuse.

Methods

Literature exploring community pharmacists' roles in prescription and OTC opioid misuse was identified and reviewed. Preferred Reporting Item for Systematic Reviews and Meta-Analysis (PRISMA) guideline [24] was used in carrying out this review and the protocol had been registered in the International Prospective Register of Systematic Reviews (PROSPERO) with registration number CRD42021260590 [25].

Information sources

Articles were searched from six databases: Ovid MEDLINE, Embase, Scopus, Web of Science, CINAHL, and APA PsycINFO and searches began in January 2022 and were completed in March 2022. Searches were also carried out on Google and Google Scholar. The reference lists of included articles were searched and forward traced for articles that met inclusion criteria.

Inclusion criteria

The inclusion criteria were

i. primary literature of qualitative and mixed methods studies that reported findings of barriers and facilitators of community pharmacists' role in prescription and OTC opioid misuse;
ii. studies that were carried out in community pharmacy;
iii. studies in English language;
iv. studies that were focussed on either prescription or OTC opioids.

The only exclusion criterion was that the inclusion criteria were not met.

Search strategy

Free text, keywords, and Medical Subject heading (MESH) terms were developed and used to carry out searches in databases. The main key words that were used to carry out our search are community pharmacy, opioid misuse intervention, and opioid misuse. Other search terms that were used in this study are displayed in Table 1. Boolean operators (AND, OR) were used to combine selected terms for the search. Truncation (*) was also used in searching for words that could have different endings. Filters and limits were not used in this search.

Table 1. Search terms used in database searches.

Keywords	Search terms
Community pharmacy	Retail pharmacy
Opioid misuse intervention	Education, information, screening, harm reduction, needle and syringe exchange, opioid substitution therapy, buprenorphine, methadone
Opioid misuse	Opioid addiction, opioid abuse, opioid related disorder, opioid epidemic, prescription opioid misuse, codeine misuse, tramadol misuse, cough syrup misuse, fentanyl misuse, pentazocine misuse, pethidine misuse, oxycodone misuse, morphine misuse, hydrocodone misuse and cocodamol misuse

Selection process

Titles and abstracts were screened for eligibility by two reviewers (OO, AR). Full-text screening of eligible articles was then carried out independently by three reviewers (OO, LL, and SV). Another reviewer (AR) assessed the eligibility of the selected articles when the three reviewers did not reach a consensus on the eligibility of the included articles.

Data extraction and quality assessment

A modified Joanna Briggs Institute (JBI) data extraction form was used to extract relevant characteristics of each included study [26]. Quality assessment was carried out with the JBI critical appraisal checklist. The JBI critical appraisal checklist was used to appraise the selected research articles [27]. Extraction of data and quality assessment were carried out by one reviewer (OO) and supervised by three reviewers (LL, SV, and AR).

Analysis

Narrative synthesis as outlined by Popay *et al*. was used for this analysis [28]. This narrative synthesis consisted of preliminary synthesis and mapping of themes to a model of behaviour. Preliminary synthesis was carried out using the thematic analysis method proposed by Thomas and Harden [29] for analysis of primary qualitative research data while the model of behaviour used was the COM-B model. Preliminary synthesis was carried out in three stages. These stages are coding of text (stage 1), identification of descriptive themes (stage 2), and identification of analytical themes (stage 3). Stage 1 entails line-by-line coding of findings from included studies, stage 2 consists of the description of the findings of the study while stage 3 entails identification of new findings (from outside individual studies). However, stages 1 and 2 often overlap each other.

On completion of stage 2 analysis, the descriptive themes were mapped to the COM-B model of behaviour to develop analytical themes. The descriptive themes were then classified into the 'Capability' 'Opportunity' and 'Motivation' groups which make up the COM-B model. Themes that were related to knowledge and skill were classified as 'Capability', themes that were associated with

environmental and system level factors were classified as 'Opportunity' while themes that related to pharmacists' attitude were grouped as 'Motivation'. This process was supervised by one of the authors who is a psychologist and also an expert in this area.

The COM-B model illustrates how an initiative works and why it works [30]. This is the basis of identifying the restraining and propelling factors in any organisation. These factors, which are also known as barriers and facilitators, determine how organisational changes can be implemented successfully [31, 32]. This model states that three factors must be present for behaviour to be affected. These three factors are capability, opportunity, and motivation. Capability is the ability of a person to carry out a desired behaviour, provided opportunities are present. Capability includes physical strength, knowledge, skills, etc. Opportunities are environmental factors that facilitate individuals to carry out this behaviour, if capability is present. Opportunities include resources, policies, laws, cultural or societal norms, location, etc. Motivation refers to a combination of mental processes that enable individuals to carry out a desired behaviour [31]. In addition, an individual's motivation for the desired behaviour, should be higher than their motivation for other activities [32]. Hence, capability, opportunity, and motivation could either act as a barrier or facilitator to producing a desired behaviour. In this review, the behaviour in focus is community pharmacists' role in prescription and OTC opioid misuse services.

Results

Study selection

Electronic database searches produced 1234 hits. After removing duplicates, 717 articles remained. The titles and abstracts of these articles were screened for eligibility and 603 articles were excluded. Full-text screening was carried out on the remaining 114 articles. The number of articles that were deemed eligible to be included in the study after full-text screening was 10 (see Fig. 1 for PRISMA diagram). Reasons for exclusion of articles after full-text screening were: (i) not qualitative or mixed methods study, (ii) not prescription or OTC opioids, (iii) not focussing on the role of community pharmacists, and (iv) not peer reviewed primary research articles.

Data extraction and quality assessment

All the included studies were qualitative studies (n = 10) [33–42]. Studies were carried out in the USA (n = 5), [35–38, 41] UK (n = 2) [33, 42], Australia (n = 2), [39, 40] and multi-country (South Africa, Ireland, and UK; n = 1) [34]. Participants were community pharmacists only (n = 6) [33, 34, 36, 39, 41, 42], community pharmacists and physicians (n = 2) [35, 38], community pharmacists and prescribers (n = 1), [37] and service users (n = 1) [40]. Eight studies focussed on prescription opioids (n = 8) [33, 35–39, 41, 42] and two on OTC opioids (n = 2) [34, 40]. The data collection methods included interviews (= 6) [33, 35, 38–40, 42], focus groups (n = 3), [34, 36, 37], and open-ended questions from a survey (n = 1) [41]. Study characteristics and some of the key findings are presented in Table 2.

All included articles met the majority (≥6 out of 10 criteria) of the criteria on the JBI checklist. Less than three articles met the criteria that relate to positionality of the researcher. These criteria are: 'Is there a statement locating the researcher culturally or theoretically?' (n = 1) and 'Is the influence of the researcher on the research, and vice-versa, addressed?' (n = 2). Results of the quality assessment are presented in Table 3.

Thematic analysis

On completion of line-by-line coding of findings of the included studies, descriptive themes identified factors that were linked to pharmacists' involvement in opioid misuse activities which were (i) individual factors relating to pharmacists' knowledge, skills, and attitude, (ii) environmental factors relating to pharmacists' relationships with prescribers, resources, and the availability of a private counselling room, and (iii) system level factors relating to remuneration of services, regulation of opioids, corporate pharmacy support, and electronic programmes.

Individual factors

These are factors that relate to the individual or professional delivering opioid misuse services.

Knowledge and skills

The level of community pharmacists' knowledge and skills influences their involvement in opioid misuse prevention activities. Many of the community pharmacists reported that they had poor knowledge and skill for counselling patients about opioids [33, 34, 36, 37, 39–42]. Those who had been qualified for a while, felt they would benefit from current training [33].

> *"……little or no formal training on how to review opioid prescriptions and identify misuse; only "one lecture or something" (Alenezi, 2022, p.187)*

In addition, community pharmacists reported that they had no routine training on how to communicate effectively with opioid users or their carers, especially when the discussion becomes emotional. Hence, they try to avoid interacting with patients who use opioids [42].

> *"., they (carers of opioid users) want to discuss the patient, they want to discuss how they are doing, and the prognosis, so yes, sometimes it is difficult, because I do get people who really get emotional about it." (Savage, 2013, p.156)*

Poor understanding about dose titration and opioid conversions was identified as an issue by some community pharmacists [42]. Furthermore, in a study that assessed the opinion of opioid users, it was reported that community pharmacists lacked objectivity in identifying inappropriate supply of opioids [34]. Community pharmacists' judgement of who was misusing opioids was based on the patient's appearance, whereby patients who 'looked responsible' could obtain opioids more readily than those who did not.

> *"I would always dress in my suit or tie to make sure that I looked professional,... and I looked responsible so they would sell me 48 tablets at a time, I was able to get my day's supply... When I wasn't in my business suit…[pharmacists] wanted to know my name, and wanted to write it down." (Nielsen, 2013, p.164)*

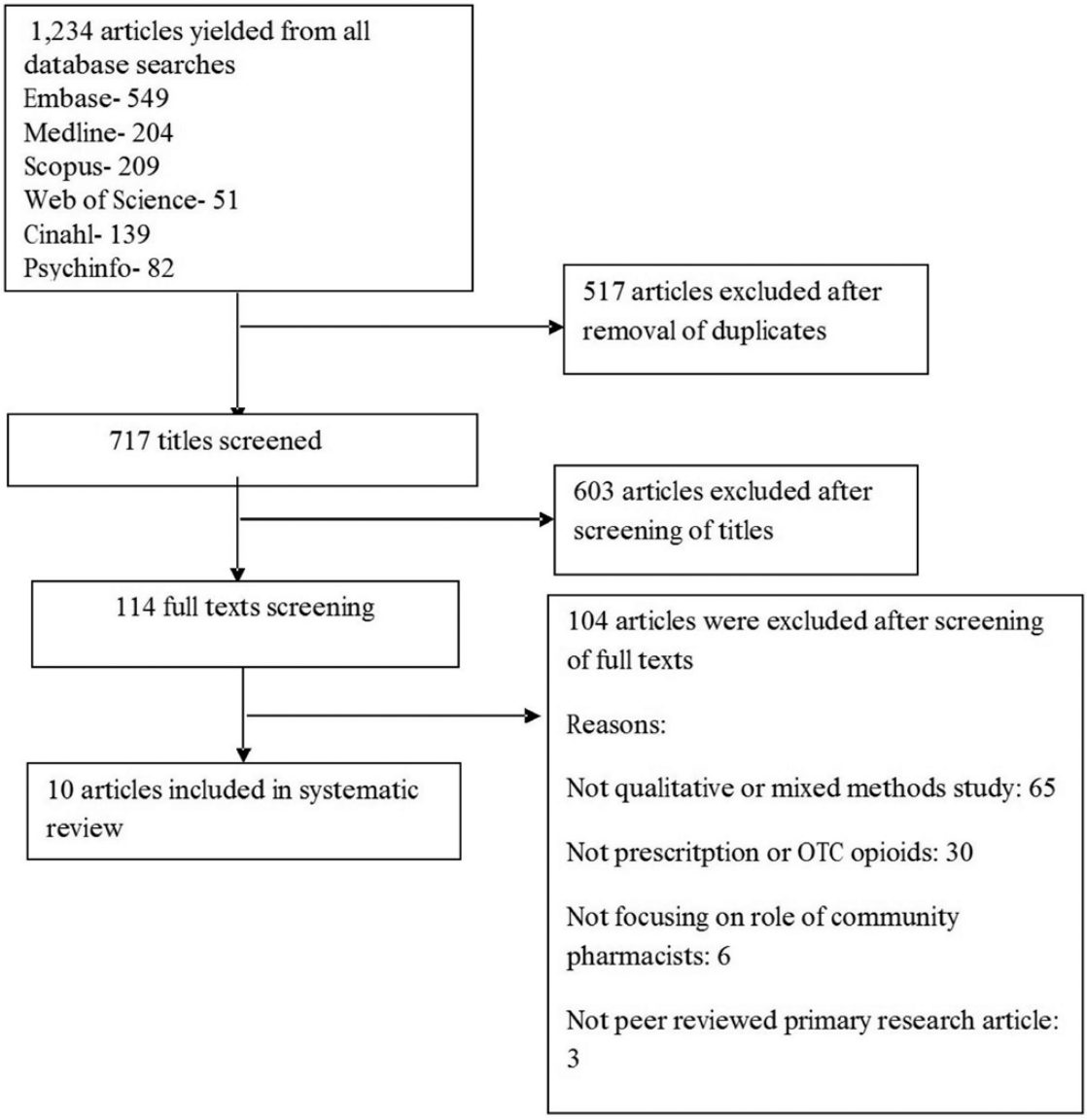

Figure 1: Prisma flow diagram

However, in some of the included studies, pharmacists acknowledged that they required education that would equip them to offer opioid misuse prevention services such as counselling and referral [33, 34, 36, 42].

> *"Formal training. Like we have an MTM (Medication Therapy Management)certificate, we would need one for controlled substance. "(Fleming, 2019, p.995)*

Pharmacists' attitudes

Attitude is a determining factor in their role in opioid misuse prevention. Community pharmacists in some of the included studies reported poor attitudes to providing opioid misuse prevention services [33, 36, 39, 41]. This was partly because they felt questioning prescribing decisions was not their role [36]. Part of the hesitancy was linked to the perception that the use of naloxone and buprenorphine in the treatment of opioid misuse will keep patients dependent on opioids for life. Community pharmacists also felt that dosage regimens were not reviewed regularly and that it was not safe to dispense naloxone and buprenorphine regardless of standing orders [41].

> *"In my opinion, opioid antagonists appears to be a failed attempt to fix a problem but isn't effective at getting patients to be opioid free since they end up becoming depend [dependent] on that therapy." (Rao, 2021, p.2101)*

In addition, opioid users felt that community pharmacists exhibited stigmatising attitudes towards them. This inhibits effective communication between the opioid user and the community pharmacist.

> *"If the pharmacist starts to think that [the patient is] abusing their opioids, it's very easy to treat them almost like a criminal and as a result of that, patients become very defensive and almost standoffish" (Makdessi, 2018, p.969)*

However, other community pharmacists reported that they felt that they were responsible for ensuring that clients

Table 2. Characteristics of included studies.

Author/ year	Country/ setting	Participants	Type of opioid	Data collection method	Key findings	Quality
Savage (2013)	UK	25 community pharmacists	Prescription	Interviews	Pharmacists' training on how to communicate effectively with chronic pain patients, who were being treated with opioids was limited	10
Kang (2019)	USA	15 physicians & 25 pharmacists	Prescription	Semi-structured Interviews	Collaborative efforts between pharmacists and prescribers were inhibited by lack of payment	9
Alenezi (2022)	UK	20 community pharmacists	Prescription	Semi-structured interviews	Poor knowledge and skill were identified; training was needed.	8
Carney (2016)	UK Ireland South Africa	45 community pharmacists, 6 focus groups	OTC	Focus groups	Improved surveillance, integration of pharmacist-prescriber data is important to prevent patients from accessing multiple pharmacies.	8
Makdessi (2018)	Australia	25 community pharmacists	Prescription	Interviews	Education is key to improving community pharmacists' confidence and perception of their role	8
Nielsen (2013)	Australia	20 OTC codeine users	OTC	Interviews	Increasing pharmacists' involvement in OTC opioids sale will create more opportunity for opioid users to be counselled	8
Curran (2019)	USA	60 community pharmacists 48 physicians	Prescription	Semi-structured interviews	Co-location of community pharmacists and prescribers will enhance teamwork	7
Fleming (2019)	USA	31 community pharmacists	Prescription	Focus group	Workflow support (e.g. technicians) enables pharmacists to counsel patients for longer periods.	7
Hagemeier (2018)	USA	Six nurses, 13 physicians & 16 community pharmacists	Prescription	Focus group	Identifying methods of improving prescription monitoring programmes is necessary for enhanced physician-pharmacist communication	7
Rao (2021)	USA	134 community pharmacists	Prescription	Open ended questions (in survey questionnaire)	Strategies that aim at improving community pharmacists' attitude towards opioid users might help to reduce opioid misuse rates.	6

opioid use is safe. They also reported that they felt motivated to report opioid misuse to doctors whenever they noticed one [33].

> *"…. As a pharmacist, you would intervene by highlighting it to the doctor because the doctor is going to take the decision at the end of the day" (Alenezi, 2022, p.185)*

Environmental factors

These factors relate to the overall environment of community pharmacies, where pharmacists worked.

Relationships with prescribers

Community pharmacists' roles in opioid misuse prevention were influenced by their relationship with prescribers. This was reported as a barrier in the majority of the studies that we reviewed [33–39, 41, 42]. Most community pharmacists reported that physicians were unfriendly whenever they were contacted to discuss a patient's opioid prescription [35, 39, 42] while some reported that they had poor perceptions of certain physicians because they consistently received prescriptions that needed dosage adjustments from them [37]. Pharmacists also reported that it was difficult to communicate directly with the physicians [33, 35, 37, 39, 42], which made them adopt indirect means of communication, such as leaving voice messages, passing messages through the physician's secretary and sending the patient back to the physician. Community pharmacists believed physicians felt that it was not the duty of the community pharmacist to question the accuracy of a prescription they had written [35, 36, 39].

> *"…when you ask them, 'What is the diagnosis for this? Why are you prescribing all these pain meds?' And they're just taken aback, 'In my 25 years of practice, nobody's ever asked me, what the ICD-9 code for this OxyContin is. I mean, I'm just writing it – fill it." (Fleming, 2019, p.996)*

However, community pharmacists and nurse prescribers were reported to enjoy a good professional relationship [42].

> *"If a nurse prescribed, then the nature of professional communication developed, with nurses asking the pharmacist for prescribing advice on dose equivalents, or asking them to monitor a patient." (Savage, 2013, p.154)*

Some community pharmacists reported that the implementation of collaborative care models improved the relationships between community pharmacists and prescribers [34, 35, 37, 42].

Table 3. Quality analysis of included studies

	Savage *et al.* (2013)	Kang *et al.* (2019)	Alenezi *et al.* (2021)	Carney *et al.* (2016)	Makdessi *et al.* (2019)	Nielsen and Olsen (2021)	Curran *et al.* (2019)	Fleming *et al.* (2019)	Hagemeir *et al.* 2017	Rao *et al.* (2021)
Is there congruity between the stated philosophical perspective and the research methodology?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Is there congruity between the stated philosophical perspective and the research methodology?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Is there congruity between the research methodology and the methods used to collect data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Is there congruity between the research methodology and the representation and analysis of data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Is there congruity between the research methodology and the interpretation of results?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Is there a statement locating the researcher culturally or theoretically?	✓	×	×	×	×	×	×	×	×	×
Is the influence of the researcher on the research, and vice- versa, addressed?	✓	✓	×	×	×	×	×	×	×	×
Are participants, and their voices, adequately represented?	✓	✓	✓	✓	✓	✓	✓	✓	✓	×
Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	✓	✓	✓	✓	✓	✓	×	×	×	×
Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Score (out of 10)	10	9	8	8	8	8	7	7	7	6

This model is a system whereby community pharmacists collaborate with other health professionals (physicians, nurses, physiotherapists, and others), in the same health system to offer care to prescription and OTC opioid misuse patients. This results in improved familiarity and enhances professional relationship between community pharmacists and other health professionals.

> *"So, you'd say you have more confidence when you're dealing with or communicating with prescribers that you're more familiar with in your town?" (Hagemeier, 2018, p.92)*

Resources

Community pharmacists reported that reviewing patients' prescriptions and counselling opioid users about their drugs was time consuming [33–36, 38, 39, 41]. Community pharmacists who work in pharmacies with few support staff have reported that they do not offer opioid misuse interventions because it takes up the time that would have been used to attend to other patients or clients who visit the pharmacy.

> *"Staffing. If you're the only pharmacist, then that goes with time, too. When there's nobody else keeping up." (Fleming, 2019, p.996)*

Pharmacists also reported that the presence of adequate support staff in the community pharmacy will give them enough time to review patients' prescriptions and counsel them about their opioid use [36, 41]. In addition, experienced support staff could recognise suspicious patients' behaviours and report them to the community pharmacists for further investigation and intervention.

> *"I have a tech that likes doing detective work like that… she's been there for years, and so she knows most of the customers. So, if something's off, she's the one that goes in and looks."(Fleming, 2019, p.996)*

Private counselling room

One study reported patients preferred to receive opioid misuse prevention services from community pharmacies that have a private consultation area. Community pharmacists also reported that discussing with patients in a private consultation room will enable these patients to interact freely with the community pharmacist [36].

> *"Where I work, we actually have a private area. It is sensitive information. If you have a private area, where you can pull them into, you can actually talk to them and they can interact with you." (Fleming, 2019, p.997)*

Other community pharmacists expressed worry about the safety of community pharmacists when alone in a private room with the opioid user and advocated for a semi-private counselling room instead [36].

> *"Well, the room, like she was saying, poses another risk, because you're alone with them in a room.' 'Private, but not too private." (Fleming,2019, p.997)*

System level factors

These factors relate to the system within which pharmacists practiced.

Remuneration

Remunerating community pharmacists for offering opioid misuse prevention services was reported to be an important factor in this role. In some of the included studies, community pharmacists reported no payment for offering prescription and OTC opioid misuse services which limited their involvement [33, 38].

> *"Cost is the biggest issue. Who will pay for things? Insurance? Will there be a co-pay? It's hard to get our patients to see the costs versus benefits" (Kang, 2019, p.1029)*

Some community pharmacists also reported that they often dispense opioids without offering any intervention because they were afraid that they might lose patronage of their clients and that they also needed the money to pay bills [34].

> *"Poverty walks through the front door and ethics usually goes out the back door!! I should not really sell to the patient but you need to pay the rent at the month." (Carney, 2016)*

Regulation of opioids

Community pharmacists reported that opioids that are available as OTC medications are easily purchased by patients because they do not require a prescription to obtain them. Decisions to supply OTC opioids require pharmacists' assessment of the patients' responses to questions, however literature suggests patients are aware of how to respond to pharmacists' questions and checks [34].

> *"It can be difficult though at this stage because people have gone through the questions so many times. They know that if you say have you tried something else?^ they know to say yes. And if you say what are you using it for?^ they immediately jump to I was in a car crash/ I was on morphine^ They immediately go for something really extreme because the more dramatic it is you know…" (Carney, 2016)*

However, community pharmacists also reported that up-scheduling of opioids (from OTC category to the prescription-only category) will prevent disagreements about the suitability of the product between pharmacists and the patients. It will also dissuade the patients from patronising multiple pharmacies [34].

> *"[One they become prescription only] then at least you've, sort of, a blame mechanism saying I'm not allowed to sell anymore^. Then it's not your fault, it's removed from you." (Carney, 2016)*

System resources

The theme 'system resources' relates to the provision of resources by the government and pharmacy managers that enabled pharmacists to provide opioid misuse prevention activities, such as- providing enabling policy and materials to support referral of patients [36, 41]. Community pharmacists reported that they needed to be empowered to refer patients to appropriate opioid misuse specialists [36].

> *"I put having resources for referrals, because we are not trained mental health professionals……we would need to know who to turn them to with that expert care in that field. A company approved resource…Yeah, a pamphlet.'"(Fleming, 2019, p.997)*

Community pharmacists also stated that they need supporting policy that will enable them to carry out counselling, educational activities and rehabilitative services that are effective against opioid misuse [41].

> *"I think that we need support from our government to invest in effective youth education programs and effective rehabilitation services and counselling." (Rao, 2021, p.2100)*

This theme also related to national digital programmes to monitor the quantity of opioids dispensed or supplied OTC to support appropriate therapeutic decision making [33, 36–39].

> *"…….. an electronic prescription drug monitoring program such as the Prescription Drug Monitoring Programs (PDMPs) would be useful in the detection of opioid abuse/misuse." (Alenezi, 2022, p.188)*

They also reported that implementation of these programmes is limited by cost [38] while their effectiveness are minimised by time and patients' patronage of multiple pharmacies [37].

> *"I get there would be an electronic program, it would be good if it's regular patients, but what if someone goes from another pharmacy or place?" (Alenezi, 2022, p.188).*

Analytical themes

The descriptive themes formed the analytical themes- 'capabilities,' 'opportunities' and 'motivation' (based on the COM-B model). Capabilities were mapped to knowledge and skills (Individual factors); the opportunities were mapped to relationship with prescribers, resources, private counselling room, remuneration of services, regulation of opioids, and system resources (environmental and system level factors); while motivation was mapped to pharmacists' attitude (individual factor). These results are displayed in Table 4. The COM-B model of behaviour for the improvement of community pharmacists' role in the prevention of prescription and OTC opioid misuse is presented in Fig. 2. The model illustrates how identified facilitators improve community pharmacists' involvement in opioid misuse roles.

Discussion

A key finding of this study, based on the COM-B model, is that improvement in the capabilities and opportunities of community pharmacists might lead to enhanced motivation of community pharmacists. This could potentially give rise to increased community pharmacists' involvement in opioid misuse prevention services.

A key strength of this study is that the articles retrieved from all databases passed through a rigorous selection process. Careful consideration was taken prior to exclusion of articles

Table 4. Factors that influence community pharmacists' role in the prevention of prescription and OTC opioid misuse.

Analytical themes	Descriptive themes		Articles (author, year)	Quotes
(1) Capabilities	Individual factors	Knowledge and skill	Savage (2013)	"Avoiding the potential for emotional issues to be raised was cited by some pharmacists as a factor preventing them offering a MUR (Medicines Use Review) and a small minority felt their role was only to discuss medicines."
			Alenezi (2021)	"..majority reported having little or no formal training ….; only "one lecture or something" (participant 17) but "no sort of course" (participant 15)
			Carney (2016)	"Once you have seen a patient that has been addicted you'll realise why it is important to learn the steps of constructive confrontation." (South African Focus Group 2)
			Makdessi (2019)	"Education was another suggestion, which focussed on education of prescribers, regarding overprescribing and pain management; and pharmacists, regarding empathy and identifying the warning signs of misuse. Regular reviewing of patients' PO usage was also suggested."
			Nielsen (2013)	"… everybody's a bit cautious in that area and it's probably because of lack of knowledge I think or confidence." (Female, 40–49 years, Metropolitan Queensland)
			Fleming (2019)	"Formal training. Like we have an MTM certificate, we would need one for controlled substance."- (Participant 8D, Focus Group 4-Houston, TX)
			Hagemeier (2018)	"Proper communication skills training, especially training related to conflict management and rapport building, should be examined and tested as a potential intervention strategy."
			Rao (2021)	""I think it can directly be related to both… lack of SUD education for prescribers+a lack of focus on mental healthcare (particular in veterans). We need to be moving resources in pharmacies over to making SUD a focus in our patients' health…not an afterthought."
(2) Motivation	Individual factors	Pharmacists' attitude	Alenezi (2021)	"…It's currently, it's impossible to monitor and optimise opioid, opioid treatments" (participant18)
			Makdessi (2019)	"I don't think it's my place really. To call and say 'I think you're prescribing him too many of these', so I don't" (ID 5)
			Fleming (2019)	"…they may not accept what you say. You may lose their business. Some just don't want to accept what's going on. I've lost two customers that way."- (Participant 3C, Focus Group 3-Houston, TX)
			Rao (2021)	"I also think that pharmacists' attitudes towards many of these patients is because of the deceptive nature of many of them. I dropped my pills down the sink, someone stole them but I have a police report, I had to take extra because blah, blah."
(3) Opportunities	Environmental factors	Relationship with prescribers	Savage (2013)	"Pharmacists described very little contact with other health professionals and most communication originated within the pharmacy to deal with a problem with a prescription. The pharmacists often found it hard to contact GPs."
			Kang (2019)	"Communication is a problem. Conversations between providers and others, including law enforcement, need to be improved. Any of our patients could come in, saying whatever. Who knows who is at risk of an overdose? Then, there are those who are bad actors."
			Alenezi (2021)	"Sometimes you have to call back two or three times and you can't get on answer. There's a huge barrier between pharmacists and prescribers". (Participant 11)
			Carney (2016)	"There is a program that's starting up now that a multiple treatment regime they get doctors, psychologists and pharmacists involved, you will have spoken to them, so that's starting off now but you need to have all those people relatively close to each other for it to be effective……." (South African Focus Group #2)
			Makdessi (2019)	"The doctor can be a bit tricky to deal with sometimes…You have to choose your words…You have to put it in a way that he thinks he's in charge" (ID 22)
			Curran (2019)	""Well, it's extremely rare that we actually get to talk to the physician, and sometimes it's an hour later that they call us back and sometimes it's 2 days later." (KY Pharmacist 05)

Table 4. Continued.

Analytical themes	Descriptive themes		Articles (author, year)	Quotes
			Fleming (2019)	"…when you ask them, 'What is the diagnosis for this? Why are you prescribing all these pain meds?' And they're just taken aback, 'In my 25 years of practice, nobody's ever asked me, what the ICD-9 code for this OxyContin is. I mean, I'm just writing it—fill it.'"- (Participant 1C, Focus Group 3-Houston, TX)
			Hagemeier (2018)	"RPh1: I mean, with most of the providers, you talk to a receptionist or nurse maybe and you leave a message and you might get it back. If you can get through the phone system to even get to a human."
			Rao (2021)	"Declining to fill a prescription based on clinical judgment (in absence of obvious red flags like early fills) is an uncomfortable concept for many pharmacists, I feel, because there is concern that it will damage patient and physician relationships by making you the "difficult" or "intrusive" pharmacist.
		Resources	Kang (2019)	"I would be absolutely happy to help with piloting a new intervention. Though this may require a lot of resources and be time intensive, this could be a valuable learning opportunity. Regardless of outcome, there will always be pieces that we can take away to help our patients."
			Alenezi (2021)	"Without access to medical records …. that'd probably be a barrier." (Participant 19)
			Carney (2016)	"I think there's no clear structure in place. I wouldn't know if somebody came to me in the morning and said BI have a codeine addiction^ so unaware would you be that himself or herself probably wouldn't know what… That's my personal opinion…" (Ireland Focus Group #1)
			Curran (2019)	"I don't really feel like you have adequate resources at all. You [pharmacist] can never be certain what's going on." (KY Pharmacist 04)
			Fleming (2019)	"I put having resources for referrals, because we are not trained mental health professionals. We know how to identify something that's going on, but we don't have the specialised training, so we would need to know who to turn them to with that expert care in that field. A company approved resource.' 'Yeah, a pamphlet.'"- (Participant 4A, 6A, Focus Group 1-Austin, TX)
			Makdessi (2019)	"You need time to talk to those customers…It's not [going to] work in just one day…You try to talk to them and most likely they're just [going to] ignore it, so repetition is important" (ID 14)
			Rao (2021)	"I think it can directly be related to both… lack of SUD education for prescribers+a lack of focus on mental healthcare (particular in veterans). We need to be moving resources in pharmacies over to making SUD a focus in our patients' health…not an afterthought."
		Private counselling room	Fleming (2019)	"Where I work, we actually have a private area. It is sensitive information. If you have a private area, where you can pull them into, you can actually talk to them and they can interact with you." - (Participant 1A, Focus Group 1-Austin, TX)
	System level factors	Remuneration of services	Kang (2019)	"Cost is the biggest issue. Who will pay for things? Insurance? Will there be a copay? It's hard to get our patients to see the cost, versus the benefits."
			Alenezi (2021)	"The, erm, funding, I think that it's one of the things that they probably might need to kind of fund to sort of, as a service…. "(Participant 3)
			Carney (2016)	"Poverty walks through the front door and ethics usually goes out the back door!! I should not really sell to the patient but you need to pay the rent at the month." (South African Focus Group #2
		Regulation of opioids	Carney (2016)	"Then at least you've, sort of, a blame mechanism saying I'm not allowed to sell anymore^. Then it's not your fault, it's remover from you." (Ireland Focus Group #1)
		System resources	Kang (2019)	"Our health system has an opioid safety committee that develops recommendations applicable for treatment of pain in adults in the ambulatory setting, across the health system. This includes a number of physicians from different specialties."
			Alenezi (2021)	"I get there would be an electronic program, it would be good if it's regular patients, but what if someone goes from another pharmacy or place?" (Participant 10).
			Makdessi (2019)	"sending the prescription [electronically] directly from the doctor's office to the pharmacy" (ID 1).

Table 4. Continued.

Analytical themes	Descriptive themes	Articles (author, year)	Quotes
		Fleming (2019)	"Corporate or buyer management support, because in some small pharmacies or private, no, they want you to fill it, to make more money. They don't care. I would say if it's a corporate or someone with an ethical heart, they will help you not to fill it and support you, even if the patient complains or whatever." - (Participant 7D, Focus Group 4-Houston, TX)
		Hagemeier (2018)	"MD: In a small town, you know, pharmacist X here, or pharmacist Y can call me up and say, 'I am really worried about this.' That's a big difference from some random pharmacist on the phone calling me up."
		Rao (2021)	"I think that we need support from our government to invest in effective youth education programs and effective rehabilitation services and counselling."

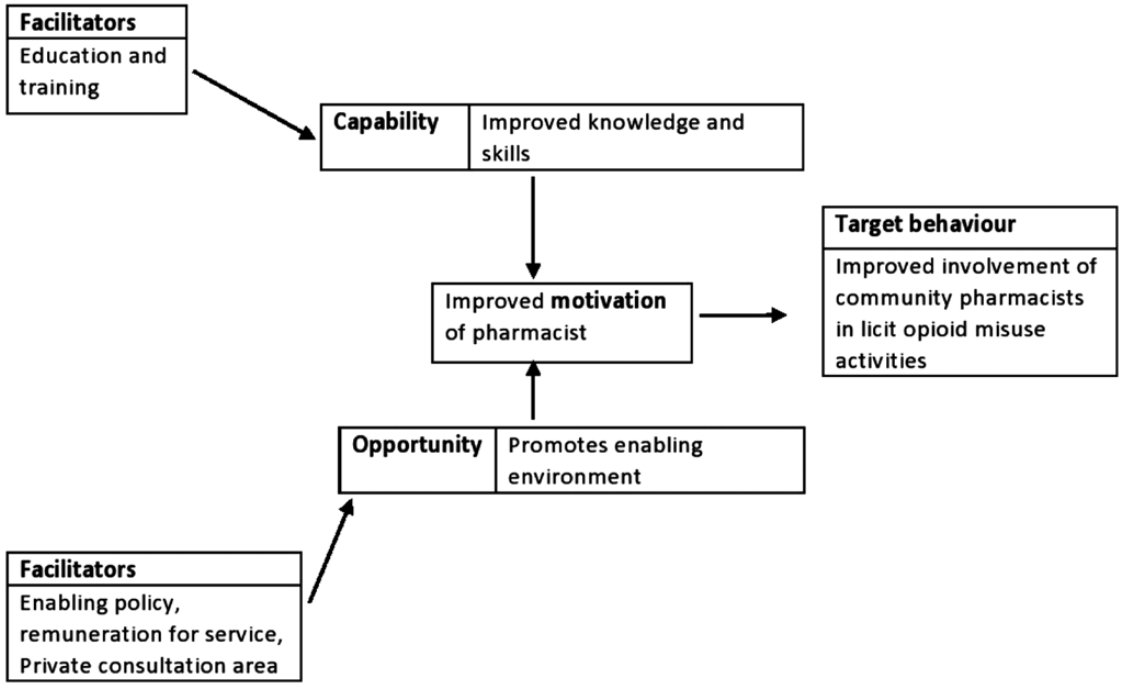

Figure 2: COM-B model for improvement of community pharmacists' role in the prevention of opioid misuse

at every stage of the systematic review process. Moreso, two or more researchers were involved in critical steps of the systematic review process (screening of titles and abstracts, full-text screening, and data extraction) [43, 44].

On completion of quality assessment, the majority of included studies did not meet inclusion criteria related to positionality. The authors of only one study positioned themselves culturally or theoretically, while the authors' influence on their research was addressed in two studies. This is a limitation of this review because acknowledging the influence of researchers' positionality in qualitative studies helps the reader to understand how the researcher's culture, belief, status, gender, and age might have influenced the research process, results, and study findings [45–47]. Without this, the rich and detailed nature of qualitative studies may be lost. Findings may not be applicable to all settings, especially to middle and low-income countries, since most of the included studies were carried out in high-income countries. This is because there are substantial differences in the sociodemographic factors and policies guiding pharmacy practice in low-, middle- and high-income countries.

Addressing the knowledge and skills (capabilities) of community pharmacists through education, training, and retraining might equip community pharmacists with the required knowledge and skills to deliver opioid misuse prevention [33, 34, 36, 42]. This is in line with existing evidence on the usefulness of education and training in increasing pharmacists' involvement in opioid misuse [48–65]. A collaborative care model would enable community pharmacists to engage with other health professionals, which may improve pharmacist–physician relationships due to enhanced familiarity between these two health professionals since they would be working in a collaborative health system [34, 35, 37, 42]. These findings are supported by existing work which shows that collaboration between pharmacists and physicians could help improve pharmacist–physician relationship [52,

55, 56, 66–68]. Working together may also enable knowledge and skill transfer between healthcare professional groups, to build capacity in the system for service delivery.

Employment of a sufficient number of support staff (by pharmacy managers) could help provide the time required for community pharmacists to offer care to opioid users [36, 41, 50, 69, 70], especially with the current shortage of community pharmacists and increased pharmacy workload [20–23]. Previous studies have also shown that the presence of a sufficient number of pharmacy support staff [71–76] and remuneration [49, 70, 76–81] could help improve pharmacists' involvement in specialised health services such as cognitive pharmaceutical services, medicines use review, anticoagulation management services, and mental health services. The findings from this study clearly demonstrate that there is a role for community pharmacy in opioid misuse prevention services. This review adds to the literature by providing a clear model to support pharmacists in developing their services.

Recommendation for practice and research

This study provides a clear model for practitioners, policy makers and commissioners to understand factors which influence community pharmacists' involvement in the prevention of prescription and OTC opioid misuse. By exploring issues such as remuneration, employment of pharmacy support staff, and training, there is an opportunity to boost involvement and reduce opioid misuse. Within these factors, there are 'quick wins' such as training and utilising existing collaborative care systems for other conditions (such as sexual health). Additionally, digital systems could be adopted to improve communication between physicians and pharmacists, which might contribute to reducing the rising prescribing rates of opioids. Other strategies may take longer to design, develop and implement, such as increasing personnel and the availability of efficient electronic systems that can track sales of prescription and OTC opioid medications across multiple pharmacies. The findings of this study could be used as a road map for others, who can target intervention development to reduce opioid misuse through community pharmacies.

Our study has identified that there is an emerging field of research exploring pharmacists' roles in opioid misuse. However, further empirical work is needed to explore different types of evidence of community pharmacists' involvement in opioid misuse prevention. This is particularly the case for findings related to OTC opioid misuse, as the literature included in this study was largely qualitative, without evidence using quantitative methods. Although there is a need for further empirical qualitative data collection (e.g. interviews and focus groups), further work should also explore the pharmacoeconomic and population-level impact of pharmacists' involvement in opioid misuse services. Reporting barriers and their corresponding facilitators will provide evidence for the effective implementation of licit opioid misuse prevention services that could be carried out by community pharmacists.

Conclusion

This study has identified factors that influence community pharmacists' role in the prevention of prescription and OTC opioids. Improvement of identified capability and opportunity might boost community pharmacists' motivation to offer prescription and OTC opioid misuse prevention services. Adoption and implementation of these findings by policymakers might contribute to improving community pharmacists' involvement in this role. This is important given the rising prevalence of opioid misuse and the current enormous workload of pharmacists due to worker shortages.

Author contributions

All authors contributed to the design, development and drafting of this manuscript equally.

Conflict of interest

The authors declare no conflict of interest.

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Data Availability

All data used in this study can be accessed from the journal websites or through its DOI which is available in the reference list.

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