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Pharmacists' attitudes toward dispensing naloxone and medications for opioid use disorder: A scoping review of the literature

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ABSTRACT

Background: Pharmacists are on the frontline caring for patients at risk of an opioid overdose and for patients with an opioid use disorder (OUD). Dispensing naloxone and medications for OUD and counseling patients about these medications are ways pharmacists can provide care. Key to pharmacists' involvement is their willingness to take on these practice responsibilities. **Methods:** The purpose of this scoping review is to identify, evaluate, and summarize published literature describing pharmacists' attitudes toward naloxone and medications for OUD, i.e., methadone, buprenorphine, and naltrexone. All searches were performed on December 7, 2018, in 5 databases: Embase.com, PubMed.gov, Cumulative Index to Nursing and Allied Health Literature (CINAHL) via EBSCOhost, Cochrane Central Register of Controlled Trials via Wiley, and Clarivate Web of Science. Articles included original research conducted in the United States, described attitude-related language toward naloxone and medications for OUD, and pharmacists. **Results:** A total of 1323 articles were retrieved, 7 were included. Five studies reported on pharmacists' attitudes toward naloxone dispensing, 1 study reported on attitudes toward naloxone, buprenorphine, and buprenorphine/naloxone, and 1 reported on attitudes toward buprenorphine/naloxone. Respondents were diverse, including pharmacists from different practice specialties. Studies found that pharmacists agreed with a naloxone standing order, believed that naloxone should be dispensed to individuals at risk of an opioid overdose, and were supportive of dispensing buprenorphine. A minority of pharmacists expressed negative attitudes. Barriers cited to implementation included education and training, workflow, and management support. **Conclusions:** Pharmacists were positive in their attitudes toward increased practice responsibilities for patients at risk of an opioid overdose or with an OUD. Pharmacists must receive education and training to be current in their understanding of OUD medications, and they must be supported in order to provide effective care to this patient population.

KEYWORDS

Attitudes; buprenorphine; naloxone; opioid; pharmacists; substance use



Introduction

In the United States, an estimated 20.1 million people aged 12 or older had a substance use disorder (SUD) in the past 12 months and there were approximately 42,000 opioid related deaths in 2016.^{1,2} One hundred and fifteen Americans die each day from an opioid overdose,² and overdoses are highest among individuals between 25 and 54 years old.³ Pharmacists are trusted health care providers on the frontline working with patients with SUDs, which gives them an important role in educating and caring for this patient population.⁴ Pharmacy organizations have advocated for pharmacists to have an increased involvement in


providing care for patients at risk of an opioid overdose and with an opioid use disorder (OUD).^{5,6}

There are many ways pharmacists can have increased practice responsibilities, including (1) educate patients about proper storage and disposal of opioids and side effects;⁷ (2) use of prescription drug monitoring data systems;⁸ (3) alert prescribers about patients' prescriptions, misuse, and complex medication interactions increasing overdose risk;⁹ and (4) dispense naloxone to patients and caregivers and educate them about opioid overdose and naloxone use.^{10,11}

Several novel approaches have been proposed that would expand pharmacists' abilities to prescribe and dispense medications for OUD, including buprenorphine and

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methadone.^{12,13} Pharmacy organizations have campaigned for pharmacists to be waived to prescribe buprenorphine.¹² The deputy director of the National Institute on Drug Abuse, at the 2017 American Associations of Colleges of Pharmacy meeting, highlighted several innovative practice areas for pharmacists that included pharmacies as methadone dispensing sites.¹³ Pharmacists already can dispense and counsel patients with OUD about naltrexone, an opioid antagonist medication,¹⁴ and buprenorphine, a partial opioid receptor agonist.¹⁵

However, key to successful involvement of pharmacists is their willingness to take on these initiatives. In a survey, Lafferty et al. found that the majority of pharmacists (67.5%) received 2 hours or less of addiction or substance use education in pharmacy school, with nearly one third receiving none.¹⁶ Less than half of the respondents reported “much” or “very much” knowledge about interventions or counseling with potentially addictive medications. Pharmacists surveyed by Wenthur et al. showed a strong interest in learning more about SUDs and stated a need for increased education, since they spend a good portion of their day working with patients with SUDs.¹⁷ Wenthur et al. concluded that there was incongruence between the minimal SUD education pharmacists received and the substantial time they dedicated to this issue in their practice.¹⁷

As pharmacy organizations emphasize a greater role for pharmacists in turning the tide of the opioid crisis, an examination of pharmacists’ attitudes toward OUD-related medications is needed. The purpose of this scoping review is to identify, evaluate, and summarize published literature describing pharmacists’ attitudes toward naloxone, methadone, buprenorphine, and naltrexone.

Review

Our review adheres to the Preferred Reporting Items for Systemic Reviews and Meta-analyses (PRISMA) guidelines.¹⁸ We used a modified PRISMA checklist appropriate for a scoping review (Supplemental Appendix 2). We registered our review with PROSPERO (registration number: CRD42018102163).¹⁹

Literature search

One author (M.M.) performed comprehensive searches in Embase.com, PubMed.gov, Cumulative Index to Nursing and Allied Health Literature (CINAHL) via EBSCOhost, Cochrane Central Register of Controlled Trials via Wiley, and Clarivate Web of Science on December 7, 2018. Each search consisted of a combination of naloxone, medications for OUD (buprenorphine, methadone, naltrexone), pharmacist, and attitude- and perspective-related language, with appropriate controlled vocabulary, subject terms, and title and abstract keywords. The MEDLINE searches relied on the MeSH (Medical Subject Headings) and keyword terms that were identified during the initial search. The search terms were translated and optimized for each of the databases. Micromedex was used to identify the commonly used

names of drugs for the literature search.²⁰ Supplemental Appendix 1 contains the reproducible search strategy for each electronic search.

Article screening

The inclusion criteria were (1) original research conducted in the United States; (2) described attitude-related language (including perspectives, perceptions, feelings, confidence, comfort, or beliefs) toward naloxone and medications for OUD (buprenorphine, methadone, naltrexone); and (3) included pharmacists. Exclusion criteria were (1) population unrelated to pharmacists; (2) qualitative research; (3) meta-analysis, systematic, or narrative review; (4) letters, editorials, commentaries, posters, and conference proceedings; (5) consensus or “white” papers; (6) reports of interventions without any evaluation; and (7) papers not published in English language.

The authors used Rayyan, an online application created specifically to perform a literature review, to efficiently review articles in an organized manner.²¹ Two authors (K.D. and Z.S.) independently reviewed the title and abstract of all retrieved articles to determine those that met our inclusion criteria. Articles selected from this initial screen received a full paper review to ensure that they met the inclusion criteria. A third author (A.M.) resolved any disagreements in order to remove selection bias. The references from all included papers were reviewed for any additional articles not identified in the literature database search.

A modified data extraction sheet from the Best Evidence in Medical Education (BEME) coding sheet was created for this review (Table 1).²² Only findings about study setting and pertaining to pharmacists’ attitudes toward naloxone and medications for OUD are included in Table 1. Findings on nonattitudinal data, such as knowledge and demographics, are discussed in our review when they provided additional understanding of attitudinal findings. Figure 1 contains the CONSORT flow diagram detailing the steps taken to identify and select articles for inclusion.

Results

After removing duplicates, a total of 1323 articles were retrieved from the literature search. From this total, 7 articles met the inclusion criteria with direct relevance to pharmacists’ attitudes, perspectives, perceptions, feelings, confidence, comfort, or beliefs toward naloxone and/or medications for OUD.^{23–29} Data (author, year, sample size, location, focus of attitudes, study aim, survey distribution methods, survey instrument, and main findings regarding pharmacists’ attitudes) were extracted from the included articles and displayed in Table 1.

Studies were conducted in numerous states throughout the United States and were completed between 2002 and 2017. Pharmacist respondents came from varied practice settings, including hospital and independent practices, but the majority were from community practice. Overall, respondents were evenly split between males and females

Table 1. Characteristics of 7 included studies reporting on pharmacists' attitudes toward naloxone and medications for opioid use disorder on a modified Best Evidence in Medical Education (BEME) table.²²

Author	Study year	Study sample size (response rate (n, % response))	Pharmacy practice setting	Focus of attitudes	Study aim	Survey distribution methods	Survey instrument	Main finding regarding pharmacists' attitudes
Do et al. ²³	2013-2015	73 (58, 79.4%)	San Francisco, California, USA Multiple pharmacist specialties (community and hospital)	Naloxone dispensing	To evaluate pharmacists' acceptability of naloxone dispensing to patients prescribed opioids	Mailed	Author-developed survey	Majority of respondents believed that naloxone should be prescribed to patients on long-term opioids and felt comfortable providing naloxone education.
Meyerson et al. ²⁴	2016	850 (284, 33%)	Indiana, USA Community pharmacists	Naloxone dispensing	To understand perceived impact of the Indiana naloxone standing order	Online	Author-developed survey	Majority of respondents believed that the Indiana standing order would increase likelihood of pharmacy stocking and dispensing of naloxone. Less than half of respondents felt comfortable dispensing naloxone to people who inject drugs.
Raisch et al. ²⁵	2002	32 pharmacies (1 respondent from 27 pharmacies, 84%)	Seven states (New York, Virginia, Illinois, Florida, Texas, California, Washington), USA Multiple pharmacist specialties (community, outpatient hospital, clinic)	Use of buprenorphine/naloxone for treatment of opioid dependence	To assess the perception and attitudes toward use of buprenorphine/naloxone for treatment of opioid dependence	Written and telephone surveys, interviews	Author-developed survey	Majority of respondents expressed positive attitudes and perceptions toward use of buprenorphine/naloxone for opioid-dependent patients.
Rudolph et al. ²⁶	Not listed	5696 (423, 7.4%)	North Carolina, USA Community pharmacists	Naloxone dispensing	To identify barriers to dispensing naloxone and to identify pharmacists' training needs	Online	Author-developed survey	Majority of respondents were very uncomfortable dispensing naloxone given 11 different scenarios.
Stewart et al. ²⁷	2016	2757 (211, 8%)	Michigan, USA Multiple pharmacist specialties (community, health system)	Naloxone dispensing	To identify knowledge gaps about naloxone, assess attitudes toward naloxone standing order, and determine perceived roles when providing naloxone	Online	Online	Majority of respondents were supportive of naloxone standing order and providing it to persons at risk of overdose. Respondents were approximately evenly split in comfort level counseling, educating, and following-up on patients dispensed naloxone.
Thompson et al. ²⁸	2017	7819 (170, 2.2%)	Ohio, USA Multiple pharmacist specialties (community and hospital)	Naloxone dispensing	To discover pharmacists' knowledge of naloxone and Ohio law, perceived barriers that may prohibit naloxone dispensing, and Ohio	Online	Author-developed survey	Majority of respondents felt that pharmacists should dispense naloxone under a physician's protocol and felt comfortable supplying naloxone to all patient groups, except patients purchasing syringes.

(continued)

Table 1. Continued.

Author	Study year	Study sample size (response rate (n, % response))	Pharmacy practice setting	Focus of attitudes	Study aim	Survey distribution methods	Survey instrument	Main finding regarding pharmacists' attitudes
Thornton et al. ²⁹	2016	266 (157, 59%)	West Virginia, USA Community pharmacists	Naloxone and other opioid-related medications	pharmacists' general confidence, comfort, perception, and experience dispensing naloxone per physician protocol To identify the educational needs relating to providing naloxone in community pharmacies and to assess West Virginia pharmacists' stocking and dispensing practices of opioid-related medications	In-person	Author-developed survey	Younger pharmacists were more concerned with clientele and moral or ethical issues as barriers to dispensing naloxone. Majority of respondents were uncomfortable selling naloxone without a prescription despite majority of respondents stating belief that naloxone is effective for an opioid overdose. Respondents believed that 1 out of 5 patients filling a prescription for a buprenorphine prescription misused or abused it.

and in terminal pharmacy degree, but mixed in age and years of practice.

Study sample sizes and response rates were varied; 3 studies had response rates below 10%.^{26–28} Five studies measured pharmacists' attitudes toward naloxone dispensing.^{23,24,26–28} 1 study investigated attitudes toward naloxone, buprenorphine, and buprenorphine/naloxone,²⁹ and 1 study examined attitudes toward buprenorphine/naloxone only.²⁵ No studies were found reporting of pharmacists' attitudes toward methadone or naltrexone dispensing.

Included articles all used an author-developed survey. Five of the 7 articles included a statement regarding the validity evidence for their survey questions.^{24–26,28,29} In addition to measuring pharmacists' attitudes toward naloxone and/or buprenorphine as one of their main stated study aims, studies also measured pharmacists' knowledge and collected demographic and practice setting information.

Pharmacists' attitudes toward naloxone dispensing

Across studies, pharmacist respondents supported a naloxone standing order, felt that a standing order would increase stocking and dispensing of naloxone, and believed that naloxone should be prescribed to patients at risk of an opioid overdose. When explored, pharmacists reported feeling uncomfortable supplying naloxone without a prescription or not as part of a physician protocol. No significant correlations between beliefs about naloxone and pharmacist age, practice years, degree type, or practice setting were found. Rudolph et al. found a significant correlation between gender and comfort dispensing naloxone, with men being more comfortable.²⁶ Thompson et al. reported that younger pharmacists were more likely than older pharmacists to cite concerns about clientele seeking naloxone and moral and ethical issues as barriers to dispensing naloxone.²⁸ Pharmacists cited barriers to naloxone dispensing, including education and training, workflow, and management support.

Do et al. reported that 82% of respondents have dispensed naloxone in the past 12 months, and 52% reported educating a patient about naloxone.²³ Approximately 60% of respondents felt comfortable counseling patients about naloxone. Of those respondents endorsing not being comfortable providing naloxone education, their main reason was lack of training. A significant association was found between the 12% of pharmacists reporting more than one problem dispensing naloxone and these respondents not being comfortable educating patients about naloxone.

Meyerson et al. exploring pharmacists' comfort level dispensing naloxone found that less than half of respondents (47.9%) were comfortable in any of the presented scenarios in their study.²⁴ Pharmacists were most comfortable dispensing naloxone to a family member or to a friend, but less so dispensing it to a person unknown to them who injects opiates. Over 75% of respondents felt that pharmacists can be an important resource for injection drug users; however, 30% or less of respondents were comfortable dispensing naloxone to someone with injection drug use. Pharmacies were 1.3 times more likely to stock naloxone if

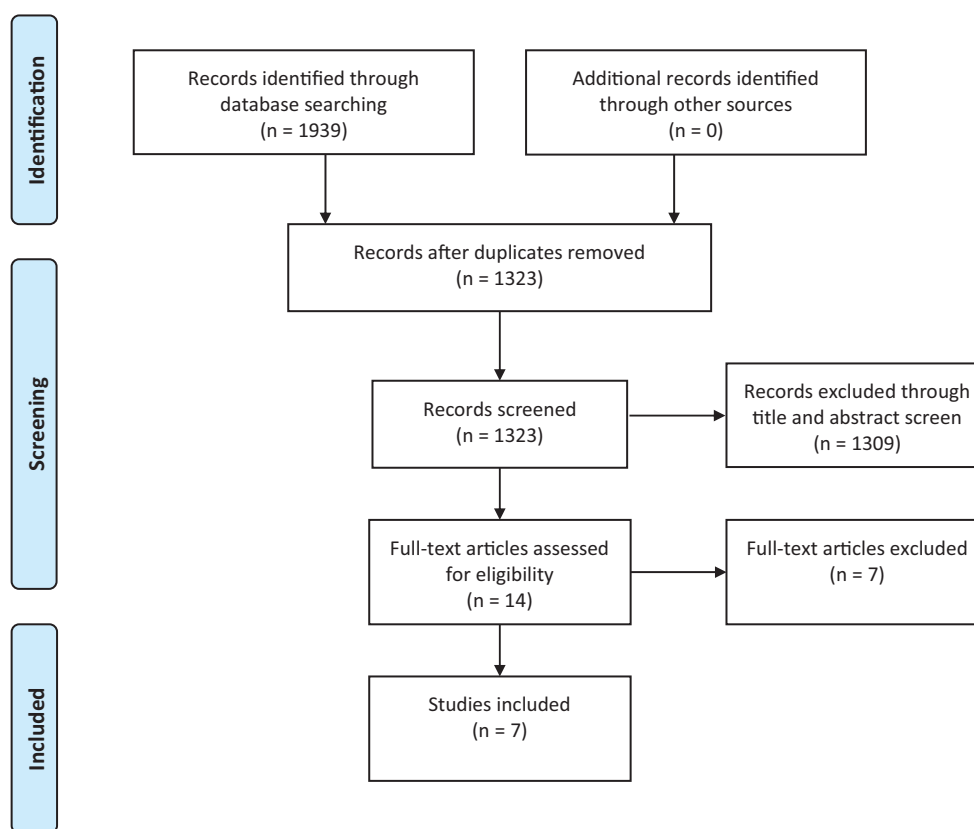


Figure 1. Literature search and article selection.

the managing pharmacist received continuing education on naloxone.

Rudolph et al. found that 50.8% of respondents were “somewhat comfortable” to “very uncomfortable” dispensing naloxone in several different scenarios, including dispensing naloxone to known opioid abusers, to prevent a fatal opioid overdose, and to patients who may benefit from it.²⁶ The authors found a significant positive correlation between pharmacists’ knowledge and comfort dispensing naloxone. Ninety-five percent of respondents endorsed that additional training regarding naloxone would be helpful, including knowledge about naloxone and opioid overdose, strategies for initiating patient discussions, and identifying eligible candidates for naloxone. Fifteen percent of pharmacists cited either ethical or moral concerns as a barrier to naloxone dispensing.

Stewart et al. reported that approximately 50% of respondents had supportive attitudes to providing naloxone counseling, and 56% believed that they had a responsibility to follow up with patients receiving naloxone.²⁷ However, only 2% of respondents have provided naloxone to patients without a prescription. Significant predictors of pharmacists’ follow-up with patients were pharmacists practicing in a rural setting, agreement to naloxone availability without a prescription, and having prior naloxone education.

Thompson et al. investigated pharmacists’ naloxone dispensing and found that 74% of respondents supported naloxone dispensing with a physician protocol, but only 25% of them had dispensed naloxone.²⁸ A negative

correlation existed between pharmacists’ lack of training as a barrier to naloxone dispensing and all questions exploring pharmacists’ confidence. However, positive correlations existed between pharmacists’ confidence in their ability to identify individuals at risk of an opioid overdose and (1) a lower likelihood to perceive concern over clientele seeking naloxone and (2) the need for a physician partner to authorize naloxone dispensing. Respondents were evenly split in their agreement on whether naloxone dispensing should be a pharmacy policy or a personal choice. The majority of pharmacists reported being comfortable dispensing naloxone to all patient groups, except those patients purchasing syringes. Only a minority of pharmacists indicated that dispensing naloxone put them in an unsafe situation or that it provided a “free pass.”

Thornton et al. reported that 72.5% felt that naloxone was effective but nearly 72% agreed that letting patients purchase naloxone without a prescription will increase opioid overdosing.²⁹ The majority of respondents either “strongly disagreed” or “disagreed” or were “neutral” regarding their comfort selling naloxone over the counter, whereas respondents either strongly agreed or agreed or were neutral in their response to not being adequately trained in the use of naloxone.

Pharmacists’ attitudes toward buprenorphine dispensing

Raisch et al. explored pharmacists’ and pharmacy technicians’ perceptions and attitudes toward dispensing buprenorphine/naloxone at their pharmacies to patients enrolled

in a clinical trial.²⁵ Eighty percent (80%) had no negative complaints about patients filling a prescription for buprenorphine/naloxone, whereas 12.5% of respondents stated not wanting opiate-dependent patients in their pharmacies. The majority of pharmacy staff, 75%, were not concerned with buprenorphine/naloxone prescription forgery, and 80% did not believe that diversion was an issue. Respondents stated that their attitudes became more positive as they encountered patients filling prescriptions for buprenorphine/naloxone more often; some comments included noticing improvements in patients, patients provided hope to pharmacy staff about treatment, and seeing how pharmacy changed lives. Respondents expressed that these patients had special needs that required extra pharmacist time, additional counseling, and increased need for privacy. Training was viewed as a pivotal piece to pharmacists being comfortable dispensing buprenorphine/naloxone, and they believed that a Web-based training would be useful to other pharmacy personal. Teamwork between pharmacists and physicians was felt to be important in treating patients with buprenorphine/naloxone.

Thornton et al. found that 53.3% of respondents stocked buprenorphine and 74.8% stocked buprenorphine/naloxone in their pharmacies.²⁹ Nearly 60% of respondents refused to fill a buprenorphine or a buprenorphine/naloxone prescription greater than 1 to 2 times per week. Pharmacists were more likely to fill an opioid analgesic prescription compared with a buprenorphine or a buprenorphine/naloxone prescription for a patient who does not live within the pharmacy's local area or with a prescription from an out-of-state practitioner. Respondents estimated that a mean of 23.6 (26.8) out of 100 patients filling prescriptions for buprenorphine and buprenorphine/naloxone misused or abused these medications.

Conclusions

The opioid crisis remains a major public health concern in the United States. Pharmacists are frontline health care providers with an ability to reach patients at risk of an opioid overdose and patients with OUD. They have a unique and important role in turning the tide of the opioid crisis through involvement in numerous patient care responsibilities, including dispensing naloxone and medications for OUD treatment as well as educating and counseling patients about these treatments. To our knowledge, this is the first scoping review to examine literature on pharmacists' attitudes toward dispensing naloxone and medications for OUD.

Studies included in our review demonstrated pharmacists' support for dispensing naloxone and buprenorphine and also revealed pharmacists' perceived barriers to caring for patients at risk of opioid overdose or with an OUD. Pharmacists' stated needs included additional education and training, increased time to interact with patients, support from management, and integration of dispensing naloxone and buprenorphine and patient counseling into existing workflow. Ways to increase stocking and dispensing of

naloxone include reducing the number of barriers to pharmacists in dispensing and counseling patients on naloxone, educating pharmacy managers about naloxone, and building a collaboration with prescribers. These steps would also increase pharmacists' comfort and confidence in dispensing naloxone and medications for OUD and in counseling patients about these treatments.

There was variability in the percentage of pharmacists in these studies who have dispensed naloxone, even though the majority of the states in the United States have a standing order (or non-patient-specific naloxone dispensing protocol).³⁰ Pharmacists need better awareness about standing order laws (and their specifics), and pharmacists need to feel confident and supported in dispensing naloxone without an actual prescription. Negative attitudes still exist regarding the benefits of naloxone and buprenorphine, misuse and abuse of these medications, and individuals who inject drugs. Therefore, continuing education opportunities could include the chronic disease model of addiction³¹ as well as the psychosocial and spiritual aspects of SUDs.³² Education on public health initiatives and infectious diseases associated with intravenous drug use would also be useful. The Substance Abuse Mental Health Service Administration (SAMHSA) Treatment Improvement Protocol (Tip 63)³³ could be used to teach pharmacists about the benefits of OUD medications on treatment and public health outcomes. Studies included in our review revealed that education and training was associated with increased comfort, confidence, and willingness of pharmacists to work with patients filling prescriptions for naloxone or buprenorphine.

Several limitations to this scoping review are that we included papers involving only studies conducted in the United States and written in English. The majority of included articles described interventions and assessments that lacked strong validity evidence, which limits the study rigor, generalizability, and reproducibility of interventions and findings. The studies reported on subjective data from the respondents. The majority of the studies lacked a comparison group, and response rates were low in several studies. No studies included in our review examined pharmacists' attitudes toward methadone or naltrexone. Our scoping review was intended to analyze published literature; we recognize that there could be existing studies exploring pharmacists' attitudes toward working with patients with OUD, but not actually publishing their results.

Future research should (1) be intentional in conducting interventions aimed at pharmacists' attitudes, (2) be rigorous in study design, (3) use interventions with content validity and assessments with validity evidence, (4) measure pharmacists' behaviors and patient outcomes as end points, and (5) explore pharmacists' attitudes toward methadone and naltrexone.

Disclosures

Dr. Li-Tzy Wu has received research funding from Alkermes Inc. Dr. Muzyk has served on advisory boards for Alkermes Inc.

Author contributions

Drs. Muzyk and Wu developed the scoping review question and design. Mr. MacEachern performed the literature searches and Mr. Smothers and Ms. Collins reviewed the articles and extracted the data from them. Dr. Muzyk wrote the first draft of the manuscript, and all authors provided critical revisions. All authors contributed to and approved the final manuscript.

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