An Exploratory Study of Pharmacist Perceptions of Opioid Interventions for Acute Pain

Katie Webb, PharmD¹ , Alina Cernasev, PhD, PharmD, MSc²,
Minghui Sam Li, PhD², Justin Gatwood, PhD, MPH²,
Gerald Cochran, PhD³, and Kenneth C. Hohmeier, PharmD²

Abstract

Background: As the last health care provider encountered before an opioid is dispensed, pharmacists have a vital role in reducing unnecessary opioid exposure while facilitating access to non-opioid alternatives. **Objective:** To characterize pharmacist perceptions in providing interventions for patients with an opioid prescription for acute pain. **Methods:** This cross-sectional survey was administered over 3 months to pharmacy preceptors affiliated with the University of Tennessee Health Science Center College of Pharmacy. The electronic survey utilized 7 demographical and baseline questions, 1 open-ended question, and 5 Likert-type scales to assess the following domains: responsibility in making decisions, willingness to provide information, comfort in speaking to patients, willingness to use a standing order, and importance of following up with patients. **Results:** Of the 380 participants invited to participate, 126 responded to at least one question and 90 completed all survey questions. Most participants were PharmD graduates practicing in hospital and community settings. Participants felt that opioids are frequently overprescribed and pharmacist interventions are often necessary. Most participants reported that pharmacists and physicians share similar responsibilities in making opioid-related decisions. Participants were willing to provide information about opioid alternatives but were only somewhat comfortable speaking to patients. Responses to the open-ended question revealed the following themes: *Significance of educating the patient; Importance of alternatives to opioid medications; Impacts of pharmacist interventions; and Need for enhanced collaboration with physicians.* **Conclusions:** Pharmacists face complex issues with limited clinical guidance when providing opioid-related interventions. Future research is needed to develop evidence-based clinical support tools and collaborative practice models.

Keywords

opioids, pain management, community practice, pharmacist/physician issues

Introduction

As the United States moves into the third decade of the opioid epidemic, the crisis continues to affect an alarming number of individuals, families, and communities. According to the Centers for Disease Control and Prevention, 128 Americans die every day from an opioid overdose.¹ In fact, there were nearly half a million opioid-related overdose deaths in the United States between 1999 and 2018.^{1,2} Like many other states, Tennessee has been critically affected by the opioid crisis. Although widespread efforts to combat the opioid epidemic have certainly made progress, Tennessee remains above the national average in the rate of opioid-related overdose deaths per 100 000 residents (19.9 vs 14.6), the number of opioid prescriptions per 100 residents (81.8 vs 51.4), and the number of high-dose prescriptions (greater

than 90 morphine milligram equivalents per day) per 100 residents (5.5 vs 3.9).² In 2018, the state of Tennessee had the third highest rate of opioid prescribing in the United States.^{1,2}

As the current crisis has evolved, there has been a shift from an epidemic driven predominately by prescription opioids to one that is driven largely by illicit substances, including heroin and illicitly manufactured

¹Tennessee Department of Mental Health & Substance Abuse Services, Nashville, TN, USA

²University of Tennessee Health Science Center, Nashville, TN, USA

³University of Utah, Salt Lake City, UT, USA

Corresponding Author:

Alina Cernasev, 301 S. Perimeter Park Dr, Suite 220, Nashville, TN 37211, USA.

Email: acernasev@uthsc.edu

fentanyl.¹ As the number of overdose deaths involving prescription opioids begins to decline, it is important to recognize the impact they have on the risk for developing an opioid use disorder and the potential progression to heroin use.³ Approximately 21% to 29% of patients prescribed opioids for chronic pain misuse them and around 8% to 12% will develop an opioid use disorder.^{3,4} Furthermore, an estimated 4% to 6% of individuals who misuse prescription opioids eventually transition to heroin use.⁵ While these statistics regarding chronic opioid use are concerning, even short-term opioid prescriptions for acute indications are not without risk. A study by Brummett and colleagues⁶ suggested that roughly 6% of opioid-naïve individuals will develop new persistent opioid use following major or minor surgery. The results from a recent Medicare claims analysis are even more concerning, with nearly 10% of opioid-naïve beneficiaries continuing to fill opioid prescriptions more than 3 months after surgery.⁷ Studies among individuals with nonsurgical acute pain show similarly alarming rates of long-term opioid use.⁸ The risk for previously opioid-naïve individuals progressing to chronic opioid use following an acute prescription reinforces the importance of weighing potential risks and benefits prior to prescribing an opioid medication.

Despite their ubiquitous use, previous trials failed to demonstrate clear superiority of opioids to other nonopioid alternatives in treating acute pain.^{9,10} In many cases, optimizing nonopioid analgesics may eliminate the need for prescription opioids altogether.^{9,11} Having an individualized discussion regarding potential side effects, risks for opioid use disorder, overdose, and the efficacy of nonopioid alternatives may help identify patients for whom nonopioid alternatives may be preferred.¹²

Pharmacists are among the most easily accessible health care professionals. In fact, 93% of Americans live within 5 miles of a community pharmacy.¹³ In the age of the opioid epidemic, pharmacists have played a critical role in expanding access to naloxone and implementing other opioid safety initiatives.^{14,15} As the last health care provider encountered before an opioid prescription is dispensed, community pharmacists have a vital role in discussing opioid-related risks, benefits, and potential alternatives with patients before an opioid is used.^{14,16} A recent study demonstrated the feasibility of community pharmacists utilizing an opioid risk tool to screen all patients receiving an opioid prescription for risk of opioid misuse and opioid use disorder.¹⁷ However, some pharmacists have described a level of ambiguity regarding the degree of interventions they should make in promoting opioid safety.¹⁸ In recognizing the role pharmacists have in ensuring safe and appropriate opioid use, the objective of this study was to characterize pharmacist perceptions in providing interventions for patients with an opioid prescription for acute pain.

Methods

This study used cross-sectional survey administration as the primary means for data collection (see the appendix). Experiential education pharmacist preceptors affiliated with the University of Tennessee Health Science Center College of Pharmacy were surveyed electronically via QuestionPRO survey software. The preceptors received an email invitation to participate through an online experiential education learning management software (CORE ELMS). The survey consisted of 7 questions regarding demographics and baseline characteristics, five 5-point Likert-type scales, and 1 open-ended question.

The survey was developed by a team of College of Pharmacy faculty researchers. Questions were centered on 5 domains: (1) responsibility in making decisions (1 as solely the physician, 5 as solely the pharmacist); (2) willingness to provide information (1 as very unwilling, 5 as very willing); (3) comfort in speaking to patients (1 as very uncomfortable, 5 as very comfortable); (4) willingness to use a standing order (1 as very unwilling, 5 as very willing); and (5) importance of following up with patients (1 as not important, 5 as very important). The instrument contained 1 open-ended question to allow an opportunity to describe ways that pharmacists can help patients become aware of nonopioid alternatives. The study was approved by the institutional review board of the University of Tennessee Health Science Center.

Data Analysis

Quantitative Data. Descriptive statistics analyzed demographics and survey responses. Results from each of the 5 domains were used to calculate means and were compared by gender, degree, practice setting, and years of practice using a *t* test or an analysis of variance (ANOVA). Correlation coefficients were used to describe the relationships between the 5 domains. Quantitative data were analyzed using SAS (version 9.4, SAS Institute Inc).

Qualitative Data. Conventional Content Analysis was used for the qualitative analysis.¹⁹ Conventional Content Analysis uses inductive coding that enables categories and names for categories to arise from the data.¹⁹ In the initial step of coding, the participant's "exact words" that depict important concepts were selected for each line or paragraph.^{19,20} After all codes were extracted, similar codes were grouped into categories that resulted in the emergence of themes.

One researcher (AC) read all the comments and analyzed them inductively. A second researcher (KH) read all codes, and the team met once to arbitrate any differences. This inductive analysis was performed using a qualitative software Dedoose.

Table 1. Characteristics of Study Participants (n = 90).

Characteristic	n	%	Characteristic	n	%
Gender			Time to conduct an intervention		
Female	45	50.0	10 minutes	23	25.6
Male	45	50.0	15 minutes	37	41.1
Degree			20 minutes	18	20.0
BPharm	11	12.2	30 minutes	10	11.1
PharmD	79	87.8	More than 30 minutes	2	2.2
Practice setting			Opioids are often overprescribed		
Community	32	35.6	Yes	54	60.7
Hospital/health-system	39	43.3	Maybe	26	29.2
Other	19	21.1	No	9	10.1
Years of practice			Need to alert patients to alternatives		
1 to 10 years	39	43.3	Yes	72	80.0
11 to 20 years	25	27.8	Maybe	16	17.8
21 years and more	26	28.9	No	2	2.2
Frequency of filling opioid prescriptions			Willing to use a scripted intervention		
Daily	47	52.2	Yes	64	71.1
Weekly	12	13.3	No	21	23.3
Monthly	3	3.3	Unsure	5	5.6
Most of the time	1	1.1			
Never	27	30.0			

Results

Quantitative Data

Out of 380 participants who were invited to participate in the survey, 126 participants responded to at least 1 question and 90 participants completed all questions on the survey. Of these 90 participants, an equal number of males (n = 45, 50.0%) and females (n = 45, 50.0%) completed the survey. Most participants were PharmD graduates (n = 79, 88.8%) with less than 10 years of experience (n = 39, 43.3%) practicing predominantly in the hospital (n = 39, 43.3%) and community (n = 32, 35.6%) settings. More than half of the participants reported filling opioid prescriptions daily (n = 47, 52.2%) and believed that opioids are often overprescribed (n = 54, 60.7%). Nearly all participants (n = 72, 80.0%) indicated there is a need to intervene with patients who are prescribed opioids to alert them to nonopioid alternatives, and a majority (n = 64, 71.1%) would be willing to use a scripted intervention if one was available. Most participants felt that either 10 minutes (n = 23, 25.6%) or 15 minutes (n = 37, 41.1%) would be an adequate amount of time to conduct an opioid-related intervention (Table 1).

Overall, participants reported that pharmacists and physicians share similar responsibilities in making decisions regarding opioid prescriptions (2.83 ± 0.57). Participants who practice in the community setting reported more physician responsibility than those who practice in the hospital or other settings (2.66 vs 2.79 vs 3.21 , $P = .002$). Participants were very willing to provide information about opioid alternatives (4.70 ± 0.53) but were only somewhat comfortable

with speaking to patients about opioid alternatives (4.33 ± 0.82). Participants were willing to use a standing order in a collaborative practice agreement with a physician to make changes to reduce opioid use (4.49 ± 0.82). After making medication changes, participants reported that it is important to follow-up with the patient (4.53 ± 0.71 ; Table 2).

The correlation matrix revealed a moderate positive relationship between willingness to provide information about opioid alternatives and comfort in speaking to patients about alternatives ($r_{(90)} = .517$, $P < .001$). Additionally, the importance of following up with patients following an intervention had a weak positive correlation with both willingness to provide information regarding opioid alternatives ($r_{(90)} = .253$, $P = .016$) and comfort in speaking to patients about alternatives ($r_{(90)} = .233$, $P = .027$; Table 3).

Qualitative Data

Of the 90 completed surveys, 37 participants answered the open-ended survey question and allowed for content analysis.

Theme 1: Significance of Educating the Patient. The written comments under this theme emphasized the importance of patient education, largely centered on 4 main education components: risks and side effects of opioids, proper medication use, nonopioid alternatives, and realistic expectations of pain relief. Many participants discussed supplying educational materials and handouts that describe the risks associated with opioids and provide pertinent information

Table 2. Average Scores Among Study Participants by Gender, Degree, Practice Setting, and Years of Practice.

	Gender			Practice setting				Years of practice			
	Overall, mean $\pm$ SD	Female, mean $\pm$ SD	Male, mean $\pm$ SD	P	Community, mean $\pm$ SD	Hospital, mean $\pm$ SD	Other, mean $\pm$ SD	P	1-10 years, mean $\pm$ SD	11-20 years, mean $\pm$ SD	21+ years, mean $\pm$ SD
Responsibility in making decisions ^a	2.83 $\pm$ 0.57	2.87 $\pm$ 0.46	2.80 $\pm$ 0.66	.579	2.66 $\pm$ 0.60	2.79 $\pm$ 0.47	3.21 $\pm$ 0.54	.002	2.72 $\pm$ 0.56	3.04 $\pm$ 0.61	2.81 $\pm$ 0.49
Willingness to provide information ^b	4.70 $\pm$ 0.53	4.73 $\pm$ 0.54	4.67 $\pm$ 0.52	.553	4.78 $\pm$ 0.42	4.64 $\pm$ 0.58	4.68 $\pm$ 0.58	.539	4.62 $\pm$ 0.59	4.68 $\pm$ 0.48	4.85 $\pm$ 0.46
Comfort in speaking to patients ^c	4.33 $\pm$ 0.82	4.38 $\pm$ 0.78	4.29 $\pm$ 0.87	.610	4.47 $\pm$ 0.80	4.15 $\pm$ 0.87	4.47 $\pm$ 0.70	.194	4.15 $\pm$ 0.93	4.36 $\pm$ 0.81	4.58 $\pm$ 0.58
Willingness to use a standing order ^d	4.49 $\pm$ 0.82	4.51 $\pm$ 0.90	4.47 $\pm$ 0.76	.800	4.47 $\pm$ 0.95	4.44 $\pm$ 0.79	4.63 $\pm$ 0.68	.692	4.44 $\pm$ 0.75	4.72 $\pm$ 0.46	4.35 $\pm$ 1.13
Importance of following up ^e	4.53 $\pm$ 0.71	4.62 $\pm$ 0.65	4.44 $\pm$ 0.76	.235	4.59 $\pm$ 0.67	4.46 $\pm$ 0.76	4.58 $\pm$ 0.69	.704	4.44 $\pm$ 0.79	4.46 $\pm$ 0.57	4.58 $\pm$ 0.70

^a | as solely the physician, 5 as solely the pharmacist.

^b | as very unwilling, 5 as very willing.

^c | as very uncomfortable, 5 as very comfortable.

^d | as very unwilling, 5 as very willing.

^e | as not important, 5 as very important.

Table 3. Correlation Matrix.

	Willingness to provide information	Comfort in speaking to patients	Willingness to use a standing order	Importance of following up
Willingness to provide information	I			
Comfort in speaking to patients	0.517 ($P < .001$)	I		
Willingness to use a standing order	0.134 ($P = .208$)	0.138 ($P = .194$)	I	
Importance of following up	0.253 ($P = .016$)	0.233 ($P = .027$)	0.145 ($P = .172$)	I

about non-opioid alternatives. Representative comments include the following:

Flyer, advertisement encouraging patients to inquire about non-opioid pain therapies at prescription drop-off counter. Provide patient handout with educational points about the dangers of opioids and potential alternative therapies for pain management.

Educate regarding the addictive potential of opioid-based medications and that these meds should be reserved for use only when needed. Remind the patient that for mild to moderate pain APAP (acetaminophen)/NSAIDs (nonsteroidal anti-inflammatory drugs) can be quite helpful. Finally, educate that some pain/discomfort is normal, and it is not a reasonable expectation to be 100% absent of pain.

Theme 2: Importance of Alternatives to Opioid Medications. The second theme focused on the participants' opinions on providing alternatives to opioid medications. Some participants merely indicated the importance of non-opioid treatment options, while other participants provided specific examples that could be recommended. A large degree of variability was found among the specific examples provided, including application of heat or ice, acetaminophen, over-the-counter or prescription NSAIDs, topical medications, and rehabilitative exercise. The following quotes illustrate participants' preference for alternative options:

I think informing the patient of their options and facilitating access to those medication options is the most important role for a pharmacist.

If lower back pain, encourage consultation with physical therapist (or look online) for exercises.

Recommend hot/cold compresses.

Theme 3: Impacts of Pharmacist Interventions. The third theme revealed participants' views regarding potential impacts of pharmacist interventions. Many participants highlighted the possibility of preventing unnecessary opioid exposure and minimizing overutilization of opioids. On the other hand, one participant expressed concern that some patients, particularly those with traumatic or postsurgical pain, are being denied effective pain relief by limiting the

appropriate use of opioid medications. Potential financial incentives were also mentioned, including cost savings for the patient and an opportunity for reimbursement for the pharmacy. Representative quotes include the following:

The process often requires prior authorizations to be completed, which could be a great time for a pharmacist to intervene and recommend an over-the-counter product that will alleviate their pain. In this scenario, if the patient achieves relief with the over-the-counter product while waiting for the prior authorization, there may be no need for the opioid medication to be dispensed (and it may be cheaper for the patient too).

For traumatic injury, post-surgical scenarios, etc. I believe the pendulum has swung too far the other direction, and legitimate pain patients are being denied effective pain control via withholding of opiate medication options. I am very reluctant to recommend limiting or denying access to appropriate opiate prescribing for acute pain.

Theme 4: Need for Enhanced Collaboration With Physicians. Some comments highlighted the need for enhanced collaboration with physicians, which could modify the way prescriptions are written and potentially lead to a reduction in opioid prescribing. These comments are represented in the following excerpts:

Ensure that patients (and providers!) are aware of different levels of pain requiring different levels of pain relief (eg, mild, moderate, and severe pain or an analogue scale approach). Rather than the common outpatient Rx of 1 to 2 pills every 4 to 6 hours as needed for pain, the approach such as is used in the acute care arena might be acetaminophen or NSAID for mild pain, 1 pill of an opiate for moderate pain, and 2 pills for severe pain. In other words, one size does not fit all in pain approach . . .

Pharmacist can have conversations with the physician to educate about the concerns with opioids and alternative treatment options.

Discussion

Among this sample of Tennessee pharmacists, nearly all participants believed opioids are often overprescribed and felt there is a need for pharmacists to intervene to alert patients to nonopioid alternatives. Published research suggests that roughly 6% of opioid-naïve individuals will

develop persistent opioid use following surgery, with this number increasing as high as 10% in the elderly.^{6,7} Among individuals with acute low back pain, a recent systematic review and meta-analysis found that individuals who received an opioid for acute low back pain were 57% more likely to have recurrent opioid use than those who did not receive an opioid.⁸ In light of these and other opioid-related risks, clinical guidelines recommend reserving opioids to treat severe pain that is uncontrolled by alternative agents.^{9,10,12,21,22}

Participants in this study felt that pharmacists share responsibility with physicians in ensuring appropriate and safe opioid use. Interestingly, the pharmacists in this study who practice in the community were significantly more likely to attribute greater responsibility to the prescribing physician than were pharmacists who practice in other settings. The limited clinical information available to community pharmacists prior to dispensing opioid medications may contribute to this finding.¹⁸ This could also be reflective of the sense of ambiguity surrounding the roles of pharmacists in decision making, as previously described by Hartung and colleagues.¹⁸ Furthermore, it may suggest that the uncertainty in pharmacists' roles could be most significant among community pharmacists. While this would be consistent with the aforementioned study, where 84% of participants practiced in the community, additional research is needed.¹⁸

Although the pharmacists in this sample were very willing to provide information about nonopioid alternatives, they were only somewhat comfortable speaking to patients about these alternatives. This disconnect between their desire and comfort in providing information deserves greater exploration. One potential factor is the ethical dilemma pharmacists often face in weighing adequate pain relief against exposure to addictive opioid medications.²³ One participant in this study felt that "the pendulum has swung too far the other direction," and expressed a reluctance to limit appropriate opioid access. This finding may also highlight a need for improved opioid- and pain-related education for pharmacists.^{17,18} Furthermore, the lack of access to clinical information and the ambiguity surrounding the role of pharmacists in providing such interventions may also contribute to a hesitancy in recommending alternative treatment options.¹⁸

These findings reiterate the need for enhanced pharmacist-physician communication and collaboration, particularly with regard to opioid prescribing.²⁴ Previous studies examining physician and community pharmacist communication have identified a perceived hierarchical relationship from the perspectives of both pharmacists and physicians.²⁵ As a result, physicians may be somewhat apprehensive of pharmacists questioning clinical decisions, while pharmacists are often uncomfortable making such interventions and recommendations.²⁵ This, along with other barriers,

frequently leads to impaired communication regarding important patient care issues.²⁵

The clinical and economic benefits of pharmacist-based collaborative care models have been well documented in the literature.^{26,27} However, studies of collaborative care models involving controlled substances have focused primarily on integrating clinical pharmacists into the clinic or inpatient settings.²⁸ Participants in this study indicated they would be willing to use a collaborative practice agreement to reduce opioid use. Findings from other studies including both pharmacists and physicians have found similarly positive attitudes regarding collaboration.^{25,28} Future research should seek to design effective models of collaborative care between community pharmacists and physicians who prescribe opioids. Perhaps barriers to communication and ambiguity in roles could be reduced by designing collaborative care models involving community pharmacists as co-managers of patients with acute and chronic pain. Although the literature regarding opioid-related partnerships in the community setting is limited, future research could be informed by studies of collaborative practice models for other disease states (eg, hypertension, diabetes, HIV).²⁹

A novel finding of this study is related to the lack of consensus among pharmacists regarding appropriate opioid alternatives for acute pain. Although many participants commented on the importance of nonopioid treatment options, there was a large degree of variability among the responses. This finding is reflective of the paucity of literature providing evidence-based guidance in safely and effectively managing acute pain, particularly in the outpatient setting.^{9,10,21} As a result, practice guidelines and clinical decisions must rely on practice experience and expert consensus.¹⁰ Strikingly, there is very limited guidance available for pharmacists in making evidence-based recommendations for managing acute pain in the outpatient setting.¹² Most participants in this study indicated that they would be willing to use a scripted opioid intervention if one were made available. Furthermore, the development of such a tool could serve as a blueprint for future collaborative practice models. An intervention of this type could incorporate opioid misuse risk screening, evaluation of appropriate alternative therapies, providing medication counseling, and scheduling follow-up.³⁰ Community pharmacists remain a largely untapped resource and future research should aim to find new ways of leveraging these widely accessible and highly trained health care professionals in fighting the current opioid crisis.

Limitations

The current study should be interpreted in light of its limitations. Notably, the convenience samples used in this study may limit generalization of the findings to pharmacist preceptors affiliated with the College of Pharmacy. Additionally,

the baseline level of opioid- and pain-related training and practice experience was not captured, so subgroup analyses by expertise were not performed. With these limitations in mind, the researchers believe that these results have important implications for pharmacy practice.

Future Research

Findings from this study illuminate the need for future research that would focus on developing clinical support for outpatient pharmacists in making patient-centered, evidence-based interventions. Future studies are necessary to evaluate analgesic protocols in the outpatient setting and to identify optimum follow-up strategies for differing

acute pain syndromes.^{9,10,21} Finally, further research could inform the design of care models that would leverage the accessibility and training of community pharmacists while facilitating collaboration between physicians, pharmacists, and their patients in ensuring safe and effective pain management.

Conclusion

Pharmacists face complex issues with limited clinical guidance when providing opioid-related interventions for acute pain. Future research is needed to develop evidence-based clinical support tools and collaborative practice models to promote safe and appropriate pain management.

Appendix

Pharmacist Preceptor Survey

Think about your practice **in the past 4 weeks**. Please indicate how often you have filled opioid prescriptions for **patients with acute pain**.

1. Daily
2. Weekly
3. Monthly
4. Most of the time
5. Never

Do you think that opioids are overprescribed, particularly for acute pain?

1. Yes
2. Maybe
3. No

Do you think there is a need for providers to intervene with patients who are prescribed opioids to alert them to nonopioid analgesics?

1. Yes
2. Maybe
3. No

Suppose that you receive a prescription for an opioid medication. You notice that the patient is opioid naïve and has an acute onset of pain. During your assessment, you determine that the patient could benefit from a switch to an over-the-counter, nonopioid pain killer (eg, ibuprofen or acetaminophen). Whose responsibility is it to make these kinds of decisions?

1. Solely the physician
2. Mostly the physician
3. Both the pharmacist and the physician
4. Mostly the pharmacist
5. Solely the pharmacist

How willing are you to provide information about opioid alternatives (ie., non-narcotic analgesics) to patients with acute pain?

1. Very unwilling
2. Somewhat unwilling
3. Neutral
4. Somewhat willing
5. Very willing

How comfortable are you with speaking to patients who are filling opioid prescriptions for acute pain about non-narcotic alternatives to the opioid medication for pain relief?

1. Very uncomfortable
 2. Somewhat uncomfortable
 3. Neutral
 4. Somewhat comfortable
 5. Very comfortable
-

(continued)

Appendix (continued)

Suppose you have a collaborative practice agreement with a physician and there is a standing order to make changes for patients with acute pain from opioid prescriptions to over-the-counter medications. How willing are you to use to this standing order to help them achieve reductions in opioid use?

1. Very unwilling
2. Somewhat unwilling
3. Neutral
4. Somewhat willing
5. Very willing

What would you consider a practical amount of time to conduct an intervention (switching from the opioid prescription to an over-the-counter, nonopioid pain killer for an opioid-naïve patient with acute pain) including time for potential questions a patient may have?

1. 10 minutes
2. 15 minutes
3. 20 minutes
4. 30 minutes
5. More than 30 minutes

If a scripted intervention were available for pharmacists to use that helped patients become aware of nonopioid analgesics, would you be willing to use it (if you had the time and resources)?

1. Yes
2. Maybe
3. No

How important is it for you to follow-up with the patient after making changes in patients' medication regimens?

1. Not important
2. Somewhat unimportant
3. Neutral
4. Somewhat important
5. Very important

What else could a pharmacist do to help patients become aware of nonopioid analgesic alternatives when they present with a short-term opioid prescription?

How long have you been a licensed pharmacist? (# Years)

Are you currently practicing? (Yes/No)

What type of pharmacy practice best describes your work experience?

1. Community
2. Hospital/health-system
3. Long-term facility
4. Mail order
5. Academia
6. Other

Which of the following best describes your degree?

1. Bachelor of Pharmacy
2. PharmD

Are you:

1. Male
2. Female

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Katie Webb <https://orcid.org/0000-0002-2759-8677>

References

1. Centers for Disease Control and Prevention. Opioid overdose. Understanding the epidemic. Accessed April 30, 2020. <https://www.cdc.gov/drugoverdose/epidemic/index.html>
2. Centers for Disease Control and Prevention. Annual surveillance report of drug-related risks and outcomes—United States 2019. Published November 1, 2019. Accessed October 9, 2020. <https://www.cdc.gov/drugoverdose/pdf/pubs/2019-cdc-drug-surveillance-report.pdf>
3. National Institutes of Health, National Institute on Drug Abuse. Opioid overdose crisis. Published May 27, 2020.

- Accessed July 16, 2020. <https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-crisis>
4. Vowles KE, McEntee ML, Junes PS, Frohe T, Ney JP, van der Goes DN. Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis. *Pain*. 2015;156:569-576. doi:10.1097/01.j.pain.0000460357.01998.fl
 5. Muhuri PK, Gfroerer JC, Davies MC. Associations of non-medical pain reliever use and initiation of heroin use in the United States. *CBHSQ Data Review*. Published August 2013. Accessed October 9, 2020. <https://www.samhsa.gov/data/sites/default/files/DR006/DR006/nonmedical-pain-reliever-use-2013.htm>
 6. Brummett CM, Waljee JF, Goesling J, et al. New persistent opioid use after minor and major surgical procedures in US adults. *JAMA Surg*. 2017;152:e170504. doi:10.1001/jama-surg.2017.0504
 7. Santosa KB, Hu HM, Brummett CM, et al. New persistent opioid use among older patients following surgery: a Medicare claims analysis. *Surgery*. 2020;167:732-742. doi:10.1016/j.surg.2019.04.016
 8. Sanger N, Bhatt M, Singhal N, et al. Adverse outcomes associated with prescription opioids for acute low back pain: a systematic review and meta-analysis. *Pain Physician*. 2019; 22:119-138.
 9. Hegmann KT, Weiss MS, Bowden K, et al; American College of Occupational and Environmental Medicine. ACOEM practice guidelines: opioids for treatment of acute, subacute, chronic, and postoperative pain. *J Occup Environ Med*. 2014;56:e143-e159. doi:10.1097/JOM.0000000000000352
 10. Cantrill SV, Brown MD, Carlisle RJ, et al; American College of Emergency Physicians Opioid Guideline Writing Panel. Clinical policy: critical issues in the prescribing of opioids for adult patients in the emergency department. *Ann Emerg Med*. 2012;60:499-525. doi:10.1016/j.annemergmed.2012.06.013
 11. Overton HN, Hanna MN, Bruhn WE, Hutfless S, Bicket MC, Makary MA; Opioids After Surgery Workgroup Collaborators. Opioid-prescribing guidelines for common surgical procedures: an expert panel consensus. *J Am Coll Surg*. 2018;227:411-418. doi:10.1016/j.jamcollsurg.2018.07.659
 12. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA*. 2016;315:1624-1645. doi:10.1001/jama.2016.1464
 13. Ford C. Patient-facing pharmacies: technology for enhanced engagement. *Drug Store News*. Published January 4, 2019. Accessed October 9, 2020. <https://www.drugstorenews.com/insights/patient-facing-pharmacies-technology-for-enhanced-engagement/>
 14. ASHP statement on the pharmacist's role in substance abuse prevention, education, and assistance. *Am J Health Syst Pharm*. 2016;73:e267-e270. doi:10.2146/ajhp150542
 15. Pharmacists' role in addressing opioid abuse, addiction, and diversion. *J Am Pharm Assoc (2003)*. 2014;54:e5-e15. doi:10.1331/JAPhA.2014.13101
 16. Bach P, Hartung D. Leveraging the role of community pharmacists in the prevention, surveillance, and treatment of opioid use disorders. *Addict Sci Clin Pract*. 2019;14:30. doi:10.1186/s13722-019-0158-0
 17. Strand MA, Eukel H, Burck S. Moving opioid misuse prevention upstream: a pilot study of community pharmacists screening for opioid misuse risk. *Res Social Adm Pharm*. 2019;15:1032-1036. doi:10.1016/j.sapharm.2018.07.011
 18. Hartung DM, Hall J, Haverly SN, et al. Pharmacists' role in opioid safety: a focus group investigation. *Pain Med*. 2018;19:1799-1806. doi:10.1093/pm/pnx139
 19. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15:1277-1288. doi:10.1177/1049732305276687
 20. Miles MB, Huberman AM, Saldaña J. *Qualitative Data Analysis: A Methods Sourcebook*. SAGE; 2013.
 21. Chou R, Gordon DB, de Leon-Casasola OA, et al. Management of postoperative pain: a clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain*. 2016;17:131-157. doi:10.1016/j.jpain.2015.12.008
 22. Chou R, Qaseem A, Snow V, et al. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med*. 2007;147:478-491. doi:10.7326/0003-4819-147-7-200710020-00006
 23. Stratton TP, Palombi L, Blue H, Schneiderhan ME. Ethical dimensions of the prescription opioid abuse crisis. *Am J Health Syst Pharm*. 2018;75:1145-1150. doi:10.2146/ajhp170704
 24. Chui MA, Stone JA, Odukoya OK, Maxwell L. Facilitating collaboration between pharmacists and physicians using an iterative interview process. *J Am Pharm Assoc (2003)*. 2014;54:35-41. doi:10.1331/JAPhA.2014.13104
 25. Curran GM, Freeman PR, Martin BC, et al. Communication between pharmacists and primary care physicians in the midst of a US opioid crisis. *Res Social Adm Pharm*. 2019;15:974-985. doi:10.1016/j.sapharm.2018.08.006
 26. Bennett MI, Bagnall AM, Raine G, et al. Educational interventions by pharmacists to patients with chronic pain: systematic review and meta-analysis. *Clin J Pain*. 2011;27:623-630. doi:10.1097/AJP.0b013e31821b6be4
 27. Ourth H, Nelson J, Spoutz P, Morreale AP. Development of a pharmacoeconomic model to demonstrate the effect of clinical pharmacist involvement in diabetes management. *J Manag Care Spec Pharm*. 2018;24:449-457. doi:10.18553/jmcp.2018.24.5.449
 28. Lagisetty P, Smith A, Antoku D, et al. A physician-pharmacist collaborative care model to prevent opioid misuse. *Am J Health Syst Pharm*. 2020;77:771-780. doi:10.1093/ajhp/zxaa060
 29. Luli AJ, Bounthavong M, Watanabe JH. Pharmacists on the front-line of solving a public health crisis: increasing access to medications for opioid use disorder. *J Am Pharm Assoc (2003)*. 2020;60:297-303. doi:10.1016/j.japh.2019.10.014
 30. Chisholm-Burns MA, Spivey CA, Sherwin E, Wheeler J, Hohmeier K. The opioid crisis: origins, trends, policies, and the roles of pharmacists. *Am J Health Syst Pharm*. 2019;76:424-435. doi:10.1093/ajhp/zxy089