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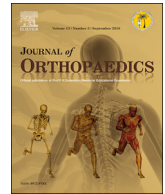
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Patient and clinician incentives and barriers for opioid use for musculoskeletal disorders a qualitative study on opioid use in musculoskeletal setting[☆]



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ABSTRACT

Introduction: Strategies for pain alleviation have relied heavily on opioids in the recent decades. One consequence is a crisis of opioid misuse, overdose, and overdose related death. This study sought patient and clinician incentives and barriers to the use of opioids in musculoskeletal illness.

Methods: In this qualitative study, twenty-eight patients and eight clinicians participated in a semi-structured interview seeking incentives and barriers for opioid use and prescription in musculoskeletal illness. Interviews were conducted by a trained qualitative interviewer. The interview data were transcribed and analyzed using a thematic analysis framework.

Results: Patient incentives for opioid use included doctor's orders, opioids being the only effective way to alleviate pain, alleviating symptoms of depression and anxiety, being able to keep a job, and lower cost of opioids relative to alternative treatment options. Patient barriers included associated risks (side effects, addiction) and wanting to control pain intensity. Clinician incentives for prescribing opioids included adequate pain alleviation, patient satisfaction, relatively inexpensive costs of opioids, convenience and doing what was taught by the clinician's superior. Lacking time and resources to adequately inform patients on appropriate opioid use and alternative treatments, likely results in more opioid prescribing than arguably necessary. Barriers for opioid prescribing included specific patient characteristics (psychiatric background, history of opioid misuse) and illness characteristics (nature of the injury, medical contra-indications).

Conclusion: Patients feel that opioids should be used with caution. Clinicians in this study reported a tendency to default to opioids out of habit and convenience. Both patients and clinicians were aware that opioids are often misused to treat emotional pain.

1. Introduction

Over the last few decades, strategies for alleviation of pain in the United States and Canada have relied heavily on opioids.^{1,2,21,25} One consequence is a crisis of opioid misuse, overdose, and overdose-related death. Diversion of unused prescription opioids was an important contributor to the current crisis.¹³ Another factor was the continuation of opioids long after injury healing was established. Continued use of opioids beyond the early healing period, is associated with symptoms of

depression and post-traumatic stress disorder.^{2,5,20} Consequently, continued prescription of opioids once healing is established might represent misdiagnosis and mistreatment of psychological distress, as well as less effective coping strategies such as catastrophic thinking.²² Patients may be variably aware of the opioid crisis. In the past, some patients complained they were given too few opioids; now patients often worry they receive too many. Although achieving safe and effective alleviation of pain with optimal opioid stewardship can be difficult, doctors increasingly understand they need to develop and utilize

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alternative pain treatment strategies.⁸ This includes the accurate diagnosis and treatment of psychological and social determinants of illness.

Quantitative analyses showed orthopedic surgeons were the third highest prescribers of opioids to patients²³ However, quantitative analyses on what drives patients and clinicians to use and prescribe opioids in orthopedic departments, are lacking. Using qualitative research methods, we studied patient and clinician perceptions on prescription and use of opioids. The primary research question was: What are patient perspectives on opioid use in an orthopedic setting? The secondary research questions was: What are clinician perspectives on opioid prescription in an orthopedic setting?

2. Materials and methods

The protocol was approved by the Institutional Review Board. Verbal informed consent was obtained from all patients and clinicians participating in the study. A document with study details and contact information for psychological help was given to all participants. Participants received no compensation.

2.1. Participants

2.1.1. Patients

This study included English speaking new or returning patients (N = 28) with an acute or chronic musculoskeletal illness, aged 18–89 years seeking care at an ambulatory orthopedic surgery office in Central Texas. Patients were included in this study between May and July 2018. There were no exclusion criteria for this study.

A pre-designed patient interview guide was pilot tested with study eligible patients. Trained qualitative interviewers conducted semi-structured interviews over a period of three months. Demographic information was collected using an online questionnaire. Patients filled out a VAS pain score, Pain Catastrophizing Scale (PCS), PROMIS Depression Score and PROMIS Physical Function Score.

2.1.2. Clinicians

Surgeons, physicians or physician assistants working in an orthopedic surgery office were eligible for inclusion. The pre-designed questionnaire was pilot tested with one study-eligible surgeon. Clinicians were recruited via email or phone between March and May 2018. Eight consecutive surgeons agreed to participate in the study. Semi-structured interviews were conducted over the phone (n = 2) or in person (n = 6) by a trained research assistant, followed by a demographics questionnaire.

2.2. Data analysis

Patients were stratified based on acute or chronic diagnoses, aiming for an equal patient representation in each group. Interviews were audio-recorded and transcribed verbatim. A facilitator completed debriefs and data summaries after each interview, and cleaned identifying information from the transcripts. The interview data were analyzed using an applied thematic analysis framework.⁴ A codebook was developed as themes emerged. Four coders individually coded the transcripts and discussed discrepancies until consensus was reached.

Quantitative data are described as means with standard deviation (continuous variables) and proportions (discrete variables).

3. Results

3.1. Sample characteristics

Twenty-eight patients with a mean age of 51 years were interviewed (Table 1). Most patients (n = 27) had previously been prescribed opioids; four were current daily opioid users. One patient was prescribed daily opioids, while additionally reporting heavy drinking and

Table 1
Demographic overview.

Patient (N = 28)		51 ± 15 (18-77)
Age		
Gender, n (%)		
Men		15 (52)
Women		14 (48)
Race/gender, n (%)		
White/Caucasian		21 (72)
Black/Afro-American		2 (6.9)
Latino/Hispanic		5 (3)
Other		1 (3.5)
Marital status, n (%)		
Married/unmarried couple		18 (62)
Divorced/separated		3 (10)
Single		6 (21)
Widowed		2 (7)
Highest education, n (%)		
High school		6 (21)
2-year college		8 (28)
4-year college		6 (21)
Post-college graduate degree		9 (31)
Employment status, n (%)		
Employed		19 (6)
Unemployed		1 (3.5)
Unable to work		1 (3.5)
Retired		7 (24)
Other (student, home maker, etc.)		1 (3.5)
Insurance status, n (%)		
Medicare		5 (17)
Medicaid		3 (10)
Private		19 (66)
Worker's compensation		2 (6.9)
Comorbidities*		
Cardiovascular		3 (10)
Diabetes		1 (3.5)
Joint and muscle disease		10 (34)
Mental disease		2 (6.9)
Other		3 (10)
Current tobacco user		5 (17)
Current opioid user		4 (14)
Current or previous addiction**		3 (10)
BMI		34 ± 8 (20-52)
NRS pain		3.2 ± 2.3 (0-8)
Pain Catastrophizing Scale		7.4 ± 3.5 (4-16)
Depression Score		49 ± 8.1 (34-68)
Physical Function Score		45 ± 9.9 (30-72)
Physician (N = 8)		
Age		43 ± 8 (33-52)
Gender, n (%)		
Male		7 (88)
Female		1 (12)
Years in practice, n (%)		
0–5 years		2 (25)
6–10 years		2 (25)
11–15 years		1 (13)
> 15 years		3 (37)
Clinical role		
Surgeon		3 (37)
Surgery fellow		2 (25)
Clinician		2 (25)
Physician assistant		1 (13)

Continuous variables as mean ± standard deviation (range); discrete variables as number (percentage). * Comorbidities as they appeared in the questionnaire: cardiovascular (hypertension, high blood pressure, congestive heart disease, etc.); diabetes; joint or muscle disease (arthritis, rheumatoid arthritis, chronic back or neck pain, etc.); mental illness (depression, anxiety, post-traumatic stress syndrome, etc); other (bowel disorder, cancer, migraine, etc).** Current or previous addiction to: alcohol (n = 1), opioids (n = 3), cocaine (n = 0) or other (n = 0).

daily marijuana use. Three patients had prior opioid use disorders. Twenty-four (86%) patients explored non-medicinal options prior to using pain medication, including meditation (n = 13), distraction (n = 5), heat or ice application (n = 6), elevation (n = 2), physiotherapy (n = 6), resting (n = 8), believe in God (n = 1), use of recreational drugs (n = 5), drinking alcohol (n = 1), acupuncture (n = 1), virtual

Table 2
Patient quotes on opioid use.

Patient incentives	
Quote 1	“I think a lot of people that have severe injuries just want to be pain-free. And a lot of times, that is just not going to be possible. But still the people think they should be pain-free. And so, in my opinion, it leads to overmedication to try and make the patient happy” (Patient # 15).
Quote 2	“I am going to tell you something that is so personal ... I understand why people want to commit suicide when they are in pain. Because you want to scream at the top of your lungs that something is wrong! And nobody is listening [...] and that is scary. I am a single parent, I have always been very dependent. So, when that happens [...] you are in a lot of pain, Hell Yeah, you are going to take whatever, give me morphine, give me anything, I am desperate!” (Patient #13).
Quote 3	“But also, I just went through a divorce and with everything else that is going on they'll want to put me on some anti-depressant or anti-anxiety or something ... but I am just tired and in pain [...] I could not get through the day without the opioids, there is just too much damn pain” (Patient #33, daily opioid user).
Quote 4	“It made me a little bummed that it was getting to that point for me. But you know, trying to maintain a job to keep insurance, to keep insurance for my family ... I took pain medicine so I could work and earn money for my family” (Patient #41).
Quote 5	“There are physicians now that believe quality of life is advanced by opioids. They completely disregard the mental side-effects of opioid addiction. Quality of life in chronic pain patients is an issue [...] I know chronic arthritic patients that take opioids three times a day and function fine in their work and at home. But it really isn't just fine. The real effect of chronic opioid use involves personality changes, reactivity, things that are only seen in families, not in the professional work environment. I have seen it first-hand, chronic opioid use changes you, in relationships with people, sensitivity, insight, the ability to listen. There is a certain loss of the creative spirit in people that are on opioids” (Patient #45, pediatrician).
Quote 6	“If you have good insurance, doctors should try to give other alternatives beside giving prescription for pills. But if you have Medicare and Medicaid or MAP, it is easier to get the pill. Because if [charity care] would pay for physical therapy, I would be there every day! Instead, they would rather pay for the medication, and that is how you get hooked on it. Because you don't have another choice” (Patient #13).
Patient barriers	
Quote 7	“In certain cultures, they bear through things. It is not about comfort, it is about getting back to function. And they are more motivated to do that and more willing to ignore the uncomfortable [...] There is a difference between being hurt and being injured ... other cultures seem to grasp that a little better. We tend to put a big band aid on it immediately; ‘Oh, you have a boo-boo, let's make it completely go away!’” (Patient #22, Native American).

reality ($n = 1$) and bee sting therapy ($n = 1$). Nineteen patients had experience with opioids, including tramadol ($n = 7$), hydrocodone ($n = 17$), oxycodone ($n = 8$), and morphine ($n = 4$). One patient reported using hydrocodone, oxycontin and tramadol recreationally without a prescription, both for treating pain and as a way to get high.

Eight clinicians participated, with a mean age of 43 years (Table 1). There were three surgeons, two surgery fellows, two clinicians and one physician assistant.

Table 3
Clinician quotes on opioids prescription.

Clinician incentives	
Quote 1	“It was explained to me as a resident: your goal is to set the patient up for success and for them to need the least amount of post-discharge interventions as possible. The most common early intervention after surgery is needing to call to the office about: ‘I am having pain [...]’ I interpreted that as: if I give more pills, they will have less pain and less phone calls. And that will somehow reflect better on me as a provider” (Clinician #1, Surgical fellow).
Quote 2	“I think on the patient's side the same problem exists. They have been ignored for years from medicine. They haven't had access to medical care or insurance [...] We have such a high population that is impoverished that they can't afford to take time off and do treatments, physical therapy, or see the doctor even. They suffer and all they really want is something to stop the pain. And it is easier and cheaper for them to take a pill than to do physical therapy. On both sides, the easiest solution is taking a pill. It's not actually the best solution (Clinician #3, Physician).
Quote 3	“For example, there was one patient with his wife, and well, they equated hydrocodone to compassion and not giving hydrocodone to not having compassion. They said, you are not listening to us. They flatly said, you know you don't care about us [...] The exact same relief can be accomplished with ibuprofen and Tylenol, but he was not hearing that. So, I gave him 20 hydrocodone and they left feeling like I cared for them” (Clinician #6, Physician Assistant).
Quote 4	“It's hard for some doctors to put their foot down. If the patient is sitting and texting on their phone and talking and laughing and joking, in your head you think they have no pain, but if they say their pain is a 10, we have to take the patient's word for it. That is what we, as nurses, are told [...] It is frustrating and so hard for doctors to deal with. They don't have a whole lot of time to deal with it, look at their patient load, they are coming in and out, in and out. And sometimes, sadly, I do think it is easier to say, Okay here is a script” (Patient #41, nurse practitioner).
Quote 5	“Sometimes, it is just easier to prescribe until the 90-day limit and then cut off, than to try and have a big conversation and talk them out of something they want [...] I don't feel good about it. It's interesting, as I work more with multidisciplinary teams with providers who don't have the ability to prescribe narcotics, I have discovered that they often have a system to manage people in different ways. I do think we have something to learn from people who don't have the ability to prescribe narcotics” (Clinician #5, Surgeon).
Quote 6	“It's much harder to spend the time figuring out why they need it or feel like they need it. As a physician, we are also paid less and less from insurance now. So, we have to see more patients to be able to pay the same amount of money to our staff. I own a business, so I have that perspective as well. We get paid less, we have to see more people, how do you manage these complex things when you have a very short period of time with someone? It's very easy just to want to prescribe them the medicine and they are gone. Instead of spending the time to figure out the real problem and treat that” (Clinician #3, Physician).
Quote 7	“...as a resident you rotated through to multiple services. I had just come off joint replacement service and I had joined the hand service. I almost prescribed someone that was getting a carpal tunnel surgery 100 oxycodone and my colleague said: are you sure you want to prescribe 100? I mean, this is something that some people do not need narcotics for at all. That was when I realized, I might have a problem with prescribing” (Clinician #1, Surgical Fellow).
Clinician barriers	
Quote 8	“There is still a very bad stigma associated with having a mental health problem in the United States. It's considered, you know people look down on me, they treat me differently. And even when you find that [depression] problem, you totally agree, you and the patient totally agrees that they're depressed, they rather sometimes take a pain medicine because that's thought of as an illness. For them it is more socially accepted to be treated for pain, than it is to be treated for depression” (Clinician #3, Physician).
Quote 9	“People come to us with problems that maybe need to be corrected. For example, let's say they have a severely arthritic knee and need a knee replacement, but they smoke, are heavy drinkers or they are morbidly obese, so not good candidates for surgery. Those people feel like we have justified their pain and they need narcotics. But in reality, if we are feeding them narcotics they may be less likely to change the things they need to change to have surgery. So, we don't prescribe opioids prior to surgery in general, which helps them hit whatever goals they need to hit in order to get the surgery and actually solve the problem instead of just relying on medications” (Clinician #2, Physician Assistant).
Quote 10	“We are trying to set boundaries upfront to restrict the people who are going to push those boundaries wanting to get opioids. But maybe it should be a more open and encouraging conversation for people who are not going to push boundaries [...] I think I discuss pain management quite paternalistic. We're passionate about trying to control patient pain. I think that has drastically improved outcome and we have people up and moving. I experience an evolution from patients being in the hospital 3–5 days, first 2 days on a PCA pump not doing anything, to patients up and walking within an hour after the surgery and people going home that day [...] I am very open to changing, but I think my conversations about post-operative pain management are a little more paternalistic” (Clinician #5, Surgeon).

3.2. Patient perspectives on opioid use (Table 2; representative quotes)

3.2.1. Incentives

Fifteen patients (54%) wanted to use opioids as a premier pain reliever, whereas thirteen (46%) rather explored alternative options for alleviation of pain. Almost all patients (89%) indicated post-operative doctor's order were a strong reason to use prescribed opioids. Half of the sample noted opioids were the most effective, convenient and quick method for pain relief. Fourteen (50%) patients could imagine using opioids for psychological rather than physiological problems. For eight (29%) patients, opioids helped escape from a source of stress and helped cope with emotional pain in addition to physical pain. For these patients, opioids specifically helped with symptoms of depression and anxiety ($n = 2$), were the only effective way to get through the day ($n = 1$), or were the only way to keep a job ($n = 1$). For three patients, opioids were cheaper than alternatives including physical therapy or multiple doctor visits.

3.2.2. Barriers

All but one participant indicated a fear of addiction ($n = 27$) was a deterrent. About half of these ($n = 13$) did not think this risk of addiction would apply to them personally. Several additional themes emerged as barriers to opioid use including a fear of side-effects such as sleepiness ($n = 10$), hyperactivity ($n = 4$) and bowel problems ($n = 9$); a fear of deleterious effects to the body in general ($n = 10$); a fear of withdrawal symptoms ($n = 4$, these were current or past daily opioid users); and a fear of psychogenic effects like nightmares and changes in personality ($n = 13$). Almost half of the sample ($n = 13$) thought opioid use was a relatively powerful, risky or unnecessary treatment for alleviation of pain. Almost 40% ($n = 11$) of patients did not want to numb the pain with opioids thereby reducing their level of control over the pain. One patient experienced financial problems including bankruptcy because of opioid addiction ($n = 1$).

3.3. Clinician perspectives on opioid prescription (Table 3; representative quotes)

3.3.1. Incentives

All clinicians reported prescribing opioids for adequate alleviation of pain ($N = 8$). Clinicians noted that patient comfort and satisfaction ($n = 7$) was a primary reason for prescribing. One clinician indicated monetary incentives for the patient and/or society as a reason to prescribe opioids. For one clinician, the patient insisting on being prescribed opioids was an incentive. Almost 63% ($n = 5$) of clinicians thought that lacking time and resources to talk to patients about alternatives to opioids and how to use opioids safely, resulted in prescribing more opioids than arguably necessary. Of these, 38% noted that prescribing opioids was more convenient for the healthcare provider than evaluating alternatives for pain alleviation. Two clinicians (32 and 52 years old) mentioned doing what was taught by their mentor as a reason to prescribe opioids.

3.3.2. Barriers

All clinicians noted being wary to prescribe opioids to people with current or a history of opioid or other substance use disorders. A slight majority (62%) reported a concern for prescribing to patients with mental health disorders including depression and anxiety. A quarter (25%) of the clinicians indicated that patients specifically asking for opioids would discourage opioid prescribing. Most clinicians ($n = 6$) noted that having specific personality traits (e.g., low self-efficacy) and behaviors (e.g., like not adhering to treatment in the past) were barriers to prescribing. One out of eight physicians expressed concern for doctor shopping; other physicians acknowledged the risk of doctor shopping and did not welcome patients with drug seeking behavior in their practice. Finally, all participants reported that medical contra-indications, such as constipation, risk of falling (especially in older patients

with osteoporosis) and risk of delirium in patients with cognitive decline, were barriers.

4. Discussion

Safe and effective alleviation of pain is an important part of caring for people recovering from (musculoskeletal) injury or surgery. In the United States and Canada, excess focus and reliance on opioids has contributed to a crisis of opioid misuse, overdose, and overdose related death. The United States far outpaces all other nations with regards to opioid use for alleviation of pain, with estimated prescription levels of 27,400,000 grams of hydrocodone annually reported in 2012, compared to 3237 grams for Great Britain, France, Germany and Italy combined.¹⁶ Orthopedic surgeons are estimated to be the third highest opioid prescribers among clinicians (after primary care and internal medicine physicians).²³ Achieving safe and effective alleviation of pain with optimal opioid stewardship can be difficult after musculoskeletal injury and surgery. In this study, we sought patient and clinician themes regarding incentives and barriers of the use of opioids for recovery from musculoskeletal injury and surgery.

Several limitations to this study are acknowledged. First, conversations on pain, mental health and substance use occasionally had to be truncated in the office setting to limit interruption of patient flow. The data might have been richer in a non-clinical setting. Second, we reached saturation of key themes for the patient participants, not for clinician participant key themes. This study was designed to evaluate patient perspectives. Throughout the course of the patient interviews, we explored clinician perspectives on the same research questions. Data presented in this manuscript for clinicians are exploratory and future studies should explore these themes among clinicians using a larger sample size. Third, some clinician interviews were conducted over the phone. While this made participation for clinicians more convenient, we were unable to assess nonverbal cues during the phone-interviews.

Patient incentives for opioid use reflect substantial deference to clinicians. For instance, patients reported feeling they had to strictly adhere to their doctor's instructions concerning pain medication. This might be explained by the fact that clinicians in our sample discussed pain management in a paternalistic manner. One clinician mentioned: "we are trying to set boundaries upfront to restrict people who are going to push those boundaries wanting to get more opioids. But maybe it should be a more open and encouraging conversation for people who are not going to push those boundaries". This highlights the challenge that clinicians face in determining which patient will respond most effectively to opioids during post-operative care. Almost half of the patients in our sample indicated that opioids were perceived as the premier pain reliever. However, studies show that the number of opioids used by patients does not have a positive effect on perceived pain.^{10,14,17,27} A prospective study of 97 patients with fracture repair, found that patients who used more opioids post-operatively still reported greater pain intensity.¹ In addition, evidence shows that pain relief taking opioids after ankle and femur fracture surgery is comparable to taking acetaminophen alone.¹⁵ The observation that many patients think opioids are the only effective way to alleviate pain may reflect pharmaceutical marketing and clinician misguidance. A notable number of patients in our sample articulated that opioids effectively treated their emotional pain in addition to physical pain. Although addiction literature shows that opioids effectively numb emotional pain, it seems very ineffective for treating underlying emotional pathology and emotional pain. For example, both symptoms of depression, anxiety and less effective coping strategies are linked to persistent pain and opioid use.^{2,5,9,24} It can be hypothesized that continued prescription of opioids once healing is well established represents misdiagnosis and mistreatment of psychological distress and less effective coping strategies. As one patient in our sample put it: "But also, I just went through a divorce and with everything else that is going on, they'll want to put me on some anti-depressant or anti-anxiety or something ... but I am just tired and in pain [...] I could not get through the day without

opioids, there is just too much damn pain". Postoperative orthopedic trauma patients who continue to use opioids one to two months beyond the time of surgery are shown to have more psychological distress, less effective coping strategies, more symptoms and more disability than do patients who do not use opioids, irrespective of type of injury, surgery or surgeon.^{6,7,18} The premier barrier to opioid use for patients in our study was risk of addiction. However, half of them did not think that addiction risk would apply to them personally, adding that this risk would probably be most relevant for patients with stress or mental health issues. Lastly, some Medicaid insured patients in our study mentioned that opioids were cheaper than alternatives including physical therapy or multiple doctor visits. For these patients, opioids were a more attractive option than alternatives, as only opioids were included in their insurance package. It seems that injured Medicaid patients still experience increased difficulty to obtain access to expert care of pain compared to trauma patients carrying other types of insurance.²⁶ However, a prospective study on opioid consumption among patients recovering from upper extremity procedures found that Medicaid patients consumed the most opioids.¹¹ Of note, unemployed and lower-income patients seem significantly more likely to believe their surgeon does not prescribe adequate pain medication.³ In our sample, one patient admitted: "it made me a little bummed that it was getting to that point for me. But you know, trying to maintain a job to keep insurance, to keep insurance for my family ... I took pain medicine so I could work and earn money for my family". Clinicians may not be aware of financial factors determining patient interest in opioid use.

Clinician perceptions of what is needed for adequate alleviation of pain seem to differ between cultures and countries. A study described the differences in opioid use following hip and ankle fractures in the United States compared to the Netherlands.¹⁵ Eighty-five percent of the patients with hip fractures treated in the US were prescribed opioids after discharge compared with none of the Dutch patients. Similarly, 82% of the patients with ankle fractures treated in the US were prescribed opioids after discharge compared with 6% of Dutch patients.¹⁵ Another study analyzed questionnaires on opioid prescribing habits that were completed by 461 Japanese and 198 US physicians in 2017.¹⁹ The study found that Japanese physicians prescribed far fewer opioids than US respondents. To control acute pain, 49% of Japanese respondents self-reported to prescribe opioids occasionally to all the time, versus 99% of US respondents. US data from 2016 suggest that patients only consume as many as a third of their prescription after an upper extremity procedure; in a study with 1416 patients undergoing outpatient upper extremity procedures, surgeons prescribed a mean total of 24 pills, and patients reported consuming a mean total of 8.1 pills.¹¹ Further, clinicians reported concerns related to "doctor-shopping", or obtaining separate opioid prescriptions from multiple prescribers. Indeed, more than 20% of orthopedic trauma patients obtained opioid prescriptions from providers other than their treating surgeon postoperatively.¹⁸ A lack of resources was mentioned by five clinicians in our sample as a facilitator for prescription of opioids. It appears that certain factors, including the drive to see more patients in less time and a lack of mental health workers available in the office, play a role in opioid prescribing behavior. Although most clinicians in our study worked in the same hospital, perspectives on opioid prescription seemed to differ significantly in specific situations. It seems important that every practice or department considers developing a collective strategy for safe and effective alleviation of pain and optimal opioid stewardship. Clinicians may benefit from interventions designed to improve clinical decision making concerning opioid prescription, particularly for patients with a history of substance misuse or mental health conditions. Training in effective communication related to this topic may prove beneficial as well.

5. Conclusion

Pharmaceutical marketing and clinician misguidance may have led

some patients to believe opioids are the only effective method of pain alleviation. Many patients now believe that opioids should be used with caution, and want their physicians to adequately inform them on opioid use and alternatives for pain management. Clinicians want their patients to be comfortable and pain free, but likely overprescribe opioids for most musculoskeletal illnesses. Mood disorders including depression and anxiety may additionally influence opioid prescription and usage patterns. Interventions targeting musculoskeletal patients and clinicians are needed to improve knowledge related to opioids and non-pharmacological treatment options for pain.

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None declared.

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Appendix A. Supplementary data

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