BMJ Open

Identifying provider, patient and practice factors that shape long-term opioid prescribing for cancer pain: a qualitative study of American and Australian providers

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ABSTRACT

Introduction Prescribing long-term opioid therapy is a nuanced clinical decision requiring careful consideration of risks versus benefits. Our goal is to understand patient, provider and context factors that impact the decision to prescribe opioids in patients with cancer.

Methods We conducted a secondary analysis of the raw semistructured interview data gathered from 42 prescribers who participated in one of two aligned concurrent qualitative studies in the USA and Australia. We conducted a two-part analysis of the interview: first identifying all factors influencing long-term prescribing and second open coding-related content for themes.

Results Factors that influence long-term opioid prescribing for cancer-related pain clustered under three key domains (patient-related, provider-related and practice-related factors) each with several themes. Domain 1: Patient factors related to provider–patient continuity, patient personality, the patient's social context and patient characteristics including racial/ethnic identity, housing and socioeconomic status. Domain 2: Provider-related factors centred around provider 'personal experience and expertise', training and time availability. Domain 3: Practice-related factors included healthcare interventions to promote safer opioid practices and accessibility of quality alternative pain therapies.

Conclusion Despite the differences in the contexts of the two countries, providers consider similar patient, provider and practice-related factors when long-term prescribing opioids for patients with cancer. Some of these factors may be categorised as cognitive biases that may intersect in an already disadvantaged patient and exacerbate disparities in the treatment of their pain. A more systematic understanding of these factors and how they impact the quality of care can inform appropriate interventions.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This study investigates multiple stakeholder types in multiple settings.
⇒ The qualitative nature of the study allowed the open-ended exploration of various factors that could impact a provider's decision to prescribe opioids.
⇒ This was a secondary analysis of the data collected for two parent studies and the samples do not exactly parallel each other (eg, The Australian sample includes general practitioner (GPs) only and the US samples include GPs and oncology providers).
⇒ The interviews did not specifically probe into the non-disease-related factors that influence clinical decisions; however, they all investigated how prescribers generally weigh the risks versus benefits of opioid prescribing.

INTRODUCTION

Cancer pain is prevalent and long-term opioid therapy (LTOT) is commonly required.[1] The global prevalence of cancer pain is 44.5%.[2] Though therapeutically appropriate, when treating cancer pain that is unresponsive to simple analgesics with opioids, there are still risks of side effects, opioid tolerance and opioid misuse.[3] These issues are particularly prevalent in the growing population of disease-free cancer survivors and patients living with chronic cancer, a risk that at times may be underestimated.[4]

This makes LTOT a challenging clinical decision requiring careful consideration of risks versus benefits.[5] Providers consider multiple factors before prescribing opioids including pain severity, the underlying cause (eg, cancer or comorbidities), prognosis, history of substance use or mental illness and alternative treatment modalities.[5] Since guidance and screening tools unique to patients with cancer have only recently been developed and are not routinely employed in the clinic, providers express a lack of confidence in the management of these patients.[6–8] Moreover, these

guidelines do not necessarily encompass many other non-disease-related sources of 'non-clinical factors' in decision-making.[9]

These non-clinical factors can be categorised into three categories: (1) Patient-related factors such as patient socio-economic status (SES), race, age, attitude/behaviour, etc. (2) Provider-related factors such as personal characteristics, age, gender, culture, etc. (3) Practice-related factors such as availability of healthcare resources, practice type, size of practice, etc. Considering the significant, yet challenging decision of LTOT in patients with cancer, it is important to understand how patient, provider and practice-related factors influence this decision. In this secondary analysis of qualitative interviews with prescribers from the USA and Australia, we aim to identify these factors and understand their impact.

MATERIALS AND METHODS
Approach overview
We undertook a secondary qualitative analysis of two research studies in the USA and Australia aiming to understand providers' decision-making process when weighing the risks versus benefits of LTOT for patients with cancer. A more detailed explanation of data collection and interview guide are available in previous publications.[5 10] Reporting adheres to the Consolidated Criteria for Reporting Qualitative Research.[11]

Setting
The US-based interviews were conducted in two Veterans Health Administration (VHA) healthcare systems (California and Connecticut) among both primary care and oncology providers. The interviews in Australia occurred mostly in New South Wales in primary care settings with general practitioners (GPs) involved in cancer pain management. This was due to the primary care providers' large role in opioid prescribing.[12]

Data collection
In each setting, the interviews were conducted by PhD-trained social scientists (KG and TL). The data collection happened concurrently. A semistructured interview guide was designed by the US-based team including KG, KL and WB.[10] The interview guide was developed iteratively by a panel of experts in pain management, ethics, oncology, palliative medicine and qualitative methodology. The US guide was shared with the Australia-based team and questions were adapted for that context. The Australian interview guide was drafted with the help of members of the Consumer Advisory Panel of the Improving Palliative, Aged and Chronic Care through Clinical Research and Translation Centre at the University of Technology, Sydney. KL and KG were members of both research groups and were included in the protocol and IRB of both studies.

Sample
In the USA, we employed a quota sampling approach capturing the perspectives of 20 providers (10 primary care providers and 10 oncology-based personnel). In Australia, we employed a purposive sampling approach recruiting 22 GPs across the country. Interviews lasted between 20 and 60 min.

US providers were recruited via electronic email. Providers were based in two VHA centres on each US coast. Australian providers were recruited via email list-servs, conferences/forums, phone, email and direct interaction.[5 10] Using a quasi-randomised approach, we sampled from various regions with the aid of Google Maps.[10] Australian participants were paid for their time at a standard GP rate.

The interviewers had no relationship with any of the participants before the interviews. We informed participants about the purpose of the study beforehand. The interviewer and interviewees were the only participants. All participation was voluntary with written informed consent. All interviews were audiorecorded and professionally transcribed and no interview was repeated.

Data analysis
Qualitative analyst SF and PhD-trained social scientist KG analysed the data analysis with input from clinician researchers: KL and AZ. We first extracted factors impacting provider decisions on LTOT in patients with cancer using Atlas.ti.[13] There were 81 examples (51 from the USA and 30 from Australia). Next, we did an open and axial coding of the data set with a dual review to identify themes presented in both the USA and Australia (online supplemental table 1), ultimately collapsing codes into themes that represented all examples in the data set (online supplemental table 2).[14]

Patient and public involvement
Although patients were interviewed as a part of the Service Directed Research (SDR) project, they were not involved with the study design. We have informed patients who there will be a publication, however, we will not be contacting participants individually after publication.

RESULTS
Two domains, each with several themes emerged from the data analysis.

Domain 1: patient-related factors that can influence LTOT for cancer-related pain
Theme 1.1: patient continuous care with a provider
Providers felt more comfortable prescribing opioids to patients whom they had an existing therapeutic relationship with:

> … because I feel like I know who they are, I know their routine a little bit better, feel a bit more comfortable and through their charts and through CURES [Controlled Substance Utilization Review

and Evaluation System] and they've been clean and very good, so I think I feel more comfortable. [US]

An Australian provider mentioned there was particularly more trust between the patient and providers in rural settings due to 'the continuity of care and the lack of risk for doctor shopping.' [AUS] However, due to lack of context for the patients, they were not viewed as favourably by providers in urban settings:

Particularly Aboriginal people who might have lot of family out in Western New South Wales they will be visiting family in Sydney and they will come in and say. 'I've had to urgently come to say X is very unwell and did not bring blah blah blah.' There's kinds of, 'I need to see you here. That's why I'm not seeing my regular GP. [AUS]

When treating new patients, providers identified drug-seeking behaviours using databases such as 'doctor shopping line' or 'real-time prescribing' in Australia and 'CURES' at the VA in the USA. However, not all providers were in favour of their utility and some even cautioned against their use:

…but, then what that real-time prescribing will be used to say to people, 'Well, you've already had this once this week. I'm not gonna' see you anymore.' So, it will be something that actually stigmatizes people more. [AUS]

Theme 1.2: patient personality and history of mental illness

Providers discussed the patient psyche as one of the tenets of assessing pain severity. Patient life experiences can impact pain reports with 'some people who are very stoic and they really don't want narcotics and other people are like well, who cares, I'm going to die soon, so go ahead.' [USA] Providers particularly noted older patients or those with negative experiences involving opioids being conservative in their use:

A lot of these cases where they're like, they're 85, they can't move because they're in so much pain and they say, 'No, but I don't want narcotics, because my little brother died of an overdose.' Or, 'my son was addicted' or 'I don't want to get addicted.' [US]

On the other hand, a history of mental illness was notable for when the provider's 'radar goes up' for risk of misuse leading providers to 'be a little more careful' when prescribing. [USA] Providers discussed concerns about patients with a history of post-traumatic stress disorder, sexual abuse (especially in US female veterans), anxiety disorder, depression and family or patient history of hazardous substance use. Risk assessment and treatment plans were discussed in more depth for such patients.

When prescribing opioids for patients with depression, providers were particularly concerned with intentional overdose in patients with limited life expectancy such as 'elderly patients who know that their days are numbered.'

[AUS] How providers mentally categorise depression and pain further impacted care. While some perceived pain and mood as interdependent entities others saw them as separate:

antidepressants may make the patient feel a bit better, as far as their mood goes, but I find as far as their pain goes, it actually doesn't do much. [AUS]

In the case of patients with a history of substance use, providers varied in their approaches to risk assessment of misuse. Factors considered included substance type and legality, duration of use, number of relapses, date of the last relapse, and patients' life expectancy. Providers further commented on how stigma impacts pain treatment for this patient population:

the stigma that happens to people who have a history of drug dependency or addiction either in the past or current that they tend not to give them the medications [opioids] they need… And these are pain specialists that understand it better, but other generalists and people who are not experienced in that area are quite often well undertrained. [AUS]

Theme 1.3: patient social context and their risk of opioid diversion

'It's a very common story that we hear about people obtaining opioids from family members,' for personal use or selling them on the street'. [AUS] In these situations it was challenging to 'come up with a plan on how to make sure that this patient got the medicine that was for them and it wasn't diverted to where it wasn't supposed to go.' [US] Some providers perceived higher diversion risk in families who are from 'very disadvantaged social backgrounds,' as 'it's very valuable on the black market.' [AUS]

There is added complexity when a family member is a current or past opioid user. An Australian provider shared his concerns when he found out that a patient's caregiver was 'on a methadone program at another service'. Another discussed the complexity of managing care for two patients in the same family due to the 'potential for people to try their partners' medicines.' [AUS]

Theme 1.4: patient social determinants of health including racial/ethnic identity, housing and SES

Patients from racial/ethnic minority backgrounds were noted at risk of implicit bias when seeking therapeutically appropriate opioids for cancer-related pain. Examples included patients who are Black or Hispanic in the USA or Aboriginal and/or Torres Strait Islander patients (Indigenous Australian) in Australia. The knowledge that patients belonged to a minority group was perceived as 'a Double Whammy', a factor that could be used to both protect and discriminate against patients:

…GPs who understand this [bias against Indigenous people] are actually more likely to be very proactive about protecting the rights of the patient in that

situation… it might work in that way…having said that, it might not. [AUS]

Those from low socioeconomic backgrounds were assumed to have particularly bad pain experiences due to their work in labor-intensive jobs, low health literacy to communicate needs and inconsistent healthcare access. These patients were also seen as having a higher risk of diversion:

> … it's an area where the economy is—the lower bracket. So they end up selling it in the streets… it actually is a syndicate. I learned from one of my patients that, he even told me that, 'Doc, if you want anything, you know, benzos, opioids, anything, spend a little, just let me know. I know where to get it.' [AUS]

There were further concerns about the 'public health risk if it (opioids) gets lost or stolen' (USA) in patients without homes. For example, a provider described the challenges of pain management for a mentally ill and housing-insecure patient who 'for periods set places on fire and does bizarre things:'

> The tricky thing for him was just the risk of him overdosing but giving him adequate pain relief. That was really, really tricky and because his behavior was so challenging, finding him accommodation was really hard…and some staff members would go, 'Look, why don't we just, you know, he would be better off dead. Let's just give him as much opioid as he wants.' [AUS]

Domain 2: provider-related factors that influence prescribing LTOT: provider 'personal experience and expertise,' training, and time availability

Providers in both settings provided examples of how a negative experience with one patient can impact future decision-making. One American provider described this as: 'if you've been burned 100 times you're going to react differently than if you've been burned five times.' Exposure to patients who would 'sell their mom and dad to get their fix', may encourage the provider to 'swing to the other direction' of being 'too stiff or too strict.' [AUS] Providers mentioned having experience with these patients in jails, low-income settings, or places with a high burden of the opioid epidemic.

The decision to prescribe opioids was also impacted by provider training and context. For instance, an American with psychiatry training mentioned considering 'not only their [patient] physical needs but their social and psychological needs', while providers with less pain management training were described to have other tendencies:

> When I see the people who come to the general practice and especially to the rural areas…they have very limited knowledge to this [pain management] unless they have done a palliative-care rotation. So they're very reluctant to use a higher dose of opiates if a patient needs that. [AUS]

Moreover, due to limitations in provider time and energy, it may not be possible to offer every patient individualised care that fully accounts for risks and benefits and considers a wider array of treatment options. In these cases 'it is so much easier just to write a script for Oxycontin and that is it.' [AUS]

Domain 3: practice-related factors that influence prescribing LTOT

Theme 3.1: healthcare interventions to promote safe opioid practices

The workload required to prescribe opioids and continually monitor patients (eg, urine drug testing) and document every step were mentioned to deter American providers from initiating opioid therapy. This 'whole new set of hassles for people' (USA) did not just burden the provider but also obliged patients to come in person, which proved challenging for patients living in rural areas.

In Australia, feedback mechanisms such as letters informing a provider of being a high-volume prescriber were mentioned to influence provider decisions even in appropriate therapeutic contexts:

> Recently we've had this letter from Medicare to saying you're in the top 20 percent…It definitely has an effect on my prescribing… If anything before the letter I might have been more ready to make sure that someone else has less suffering from pain and now I'm more ready to suffer pain and prescribe less. [AUS]

The perception of these interventions is mixed. Some Australian providers called the letter 'disgraceful' or an 'insult' to the provider because 'the patient population has not been taken into account at all,' [AUS] referring to doctors with more terminally ill patients. However, others viewed it as an opportunity to 'try to consider the professional, ethical standards expected of them.' [AUS]

Theme 3.2: affordability and accessibility of therapeutic alternatives to opioids

While some providers endorsed referral to services such as pain clinics when needing guidance on LTOT, others mentioned the quality and accessibility of the services limited this choice:

> There are resources, the pain clinic is sort of multidisciplinary and they'll have some psychologists, and you can refer to acupuncture, and they'll have a social worker and they'll have some other resources there, but they're not really readily available, to tell you the truth. So I rarely refer to them. [US]

Particularly in rural areas 'they [GPs] have limited access to other therapies which can help with the pain. Even say psychotherapy or physiotherapy it is not as readily available.' [AUS] Providers also mentioned that 'a lot of patients are very low-income earners, and if they're going to have to pay $100 for a session with a physiotherapist

every couple of weeks, that's unworkable'. [AUS] As such, it's 'much simpler to write doses, you know, 20 mg Oxycontin BID. for chronic back pain than it is to get people involved in a multi-disciplinary tech.' [AUS]

DISCUSSION

Our study illustrates the non-disease-related factors that influence the process of weighing the risks versus benefits of LTOT for cancer-related pain. Providers in our study enumerated patient personality type, mental health history, diversion risk via family, race/ethnicity, housing, SES and therapeutic relationship length factored into their decision-making. They further mentioned their personal experience, training type, and appointment time, and practice-related factors such as prescribing policies and availability of alternatives to pain management as other influencers.

When these factors predictably deviate from rationality in judgement or decision-making, they can be seen as 'cognitive bias'.[15] Provider bias is associated with inaccurate diagnosis and suboptimal medical management.[16–18] Age, gender, years of practice and specialty of the providers are known factors that impact analgesic prescription.[19–22] In the context of pain, patient race/ethnicity, SES, gender and English proficiency have been identified as risk factors for pain management disparities.[23–25] There are two dynamics at play in a clinical interaction that could be impacted by bias. First is the clinician's perception of the patient as a person, which is influenced by implicit and social biases based on the patient-related factors mentioned in the study. Second, the clinician heuristics and cognitive process of interpreting clinical data which are influenced by the provider-related factors mentioned by the interviewees.[26]

Provider cognitive biases can disproportionally impact the care of patients from disadvantaged backgrounds. Intersectionality describes the distinctive issues that arise when multiple identities of disadvantage (such as gender, class, ethnicity) intersect in the same person.[27] Patient categories of identity such as race, SES, education, English fluency and mental illness can put patients at risk of discrimination in healthcare or pain management.[23–25 28–30] For instance, providers in our study mentioned time availability as a factor that would impact their approach to pain management. When an individual is under time pressure, they are most likely to default to system 1 thinking because it is rapid, less taxing and relies heavily on heuristics or cognitive 'short-cuts'.[26 31] Indeed, during hectic clinical schedules providers spend less time understanding patient context and can have higher implicit bias and an increased tendency to stereotype minority patients.[32–34] Providers in our study further cited negative past experiences with patients who misused opioids and existing therapeutic relationships with a patient as other impacting factors. In disadvantaged settings where providers do not know their patients well due to limited care continuity care and are faced with a higher burden of opioid misuse, it is unsurprising that these biases could intersect and impact the quality of pain management.

Providers may treat patients who live in low SES communities and have a high burden of opioid misuse, with a risk aversion bias. Sharing prescription medication is a common phenomenon in some communities.[35–38] However, with opioids, there is an important risk of family members overdosing or developing substance use disorder.[39 40] There is simultaneously a high rate of hazardous substance use and psychiatric illness in low-SES communities.[41 42] As such, providers in our study may have been justified in their hesitation to prescribe opioids to patients who are low SES and have families that had an ongoing or history of opioid use. However, there is the danger of risk aversion bias and undertreatment of pain in low SES patients who may have these risk factors but are also capable of opioid safekeeping.[17]

Race is another well-established factor in implicit bias,[26] though its intersection with other demographic factors such as SES and geographical location is less discussed. For instance, when providers considered both ethnicity and SES of patients, African Americans were less likely to be prescribed opioids compared with whites from the same SES.[43] Similarly, an Australian provider in our study discussed Aboriginals may be at a higher risk of misuse in an urban setting compared with rural areas as there is greater continuity of care and a lower risk of doctor shopping in rural areas.

Regulator interventions may impact opioid prescription further exacerbating biases that impact the quality of care. For instance, being identified as the top 20% of opioid prescribers sometimes deterred Australian providers from prescribing in appropriate contexts. Although drug monitoring programmes potentially decrease the number of opioid prescriptions, it is unclear how they impact appropriate versus inappropriate prescribing.[44] In fact, these initiatives may negatively impact the quality of care for patients from a minority background.[45–47] For instance, in one US study, providers were more likely to discuss drug monitoring reports with Hispanic patients and discontinue opioid therapy for a black patient with a positive urine test compared with a white patient.[45 47] Additionally, as compliance with these programmes is time-consuming, it limits available clinical time further fueling system 1 thinking.[26 32–34]

Practice-related factors are a part of this intersectionality. The providers in disadvantaged areas mentioned heavily relying on pain management with opioids due to the poor quality and inaccessibility of complementary and integrative health modalities. These therapies, based on the interdisciplinary biopsychosocial approach to pain management, are particularly important in patients from disadvantaged backgrounds due to their multimorbidity and complex psychosocial needs.[48 49] These patients have worse pain outcomes due to healthcare inaccessibility, social support deficit, stressful and unsafe environments, and mental illness.[43 50–52] Despite significant need and interest, complementary and integrative health modalities remain inaccessible.[53 54]

The patient-related factor, poor prognosis is often cited as the delineating factor between chronic pain in patients with and without cancer.[55] However, with 18.1 million cancer

survivors and a 69% chance of 5+ years survival, LTOT for cancer survivors carries the same risks as for patients with pain from non-cancer aetiologies.[56] In non-cancer aetiologies, tools such as the pain medication questionnaire and the screener and opioid assessment have been developed to circumvent some of the mentioned biases and predict misuse.[57] Building on this work with information theory and proper probability models, we can design clinical decision support tools that assess the risk of LTOT in all patients regardless of their cancer status.[58] With the help of informatics, we can identify more accurate clinimetries to predict opioid risks, perhaps replacing broad categories such as race or cancer.[59] These decision support tools can lower provider cognitive load, decrease bias and improve consistent, safe LTOT for both patients with pain from cancer and non-cancer aetiologies.[60 61]

This study can be considered in light of the following limitations. This was a secondary analysis of the data collected for two parent studies in Australia and the USA. Since the study was designed after data collection, the parent studies do not have exactly parallel samples (eg, the Australian sample includes GPs only and the US sample includes GPs and oncology-based personnel). The interviews did not specifically probe into the non-disease-related factors that influence clinical decisions; however, they all investigated how prescribers generally weigh the risks versus benefits of opioid prescribing. Reflection on non-disease-related factors and potential biases and consequent disparities emerged in the majority of interviews. All of the indicated themes were covered with various granularity in both datasets. A primary future quantitative survey study can help us confirm the factors mentioned by the provider. A supplementary qualitative study may help us uncover other factors not mentioned by our providers.

CONCLUSIONS

In both contexts, the provider's decision to prescribe opioids for patients with cancer was influenced by similar patient, provider and practice-related factors. These factors may lead to biased decisions that intersect in vulnerable populations leading to poor treatment of their pain. To ensure equitable pain management, we need to systematically assess the effect of these factors on quality care provision. We further need to design and test interventions that appropriately assess the risk of misuse without exacerbating existing disparities.

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