MITIGATING THE OPIOID CRISIS: AN AUSTRALIAN PERSPECTIVE ON THE ROLE OF CHIROPRACTORS (PART 1)

Michael Shobbrook, BSc (Anatomy), MChiro, AM [(1)(2)(3)(4)]

Lyndon Amorin-Woods, B AppSci (Chiropractic), MPH[(1)(5)]

Gregory Parkin-Smith, MTech(Chiro), MBBS, MSc, DrHC[(1)(5)]

[(1)] *Private practice, Australia,*

[(2)] *Director, Councils on Chiropractic Education International (CCEI),*

[(3)] *Deputy Chair, Council on Chiropractic Education Australasia (CCEA),*

[(4)] *Deputy Chair Health Professions Accreditation Collaborative Forum,*

[(5)] *College of Science, Health, Engineering and Education (Chiropractic), Murdoch University, Perth, Western Australia*

Corresponding Author:

Lyndon Amorin-Woods

Murdoch University

4/90 South St, Murdoch, Western Australia

L.Woods@murdoch.edu.au

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ABSTRACT

The epidemic of opioid misuse and abuse is well documented, with the consequences of morbidity and mortality being similar in Australia when compared to other nations. Chiropractors have an important and emerging role in mitigating the overuse and harms caused by prescription opioids, especially for people with non-cancer spinal pain, by offering guideline-concordant management. This paper summarises the current opioid conundrum in Australia briefly compared with international data and describes some ways in which chiropractors may contribute positively to addressing the challenge both as individuals and corporately as a profession.

Keywords: Back Pain; Chiropractic; Opioid Epidemic; Pain Management

BACKGROUND

In 2018 the World Federation of Chiropractic (WFC) published a white paper that listed three topics within public health that call for a renewed professional focus, the second being the opioid epidemic. The WFC aims to enable chiropractors to proactively participate in health promotion and prevention activities in this area through information dissemination and coordinated partnerships (1). While the opioid crisis has not had the same impact in Australia as in other nations, most of the same issues still exist. We present a strategy for addressing the issue by the chiropractic profession in Australia which reiterates and expands on a previous ‘grey literature’ publication (2).

While the attention of health care systems around the world at the time of writing are understandably focused on the COVID-19 pandemic, in recent decades the world has also been shaken by the crushing impact of the opioid use and abuse epidemic. COVID-19 highlights a particularly grave risk to millions with opioid misuse and abuse, the epidemic undeniably created by humans (3). In the USA, the country most affected by opioids, there were 46,802 opioid overdose deaths in 2018 representing approximately 70% of all overdose deaths (4).

Some have argued that pharmaceutical opioids have relieved more human suffering than any other medication; thus their clinical use has become widespread. High-potency, slow-release,

and immediate-release opioid formulations have been shown to be effective for the treatment of a variety of chronic pain conditions in addition to known roles in the treatment of severe acute pain and cancer pain (5). However, the effectiveness of opioids can be unpredictable under real-world conditions. Specifically, the effectiveness of opioids is, at best, questionable for chronic non-cancer musculoskeletal pain, such as back pain and osteoarthritis (6, 7). Yet simply withholding opioid drugs for chronic musculoskeletal pain may be an oversimplification of the complex pain management process.

Unfortunately, excessive opioid use can disrupt the homeostatic regulation of emotional behaviour, compromising positive emotional (reward) states and augmenting negative emotional states (5). Also, the negative effects of opioids at the cellular level may underlie the mechanisms of unwelcome neuroplastic changes, such as tolerance, dependence, sensitisation, hyperalgesia, adaptation, and addiction (8). In other words, overexposure to opioids, among other things, can have a deleterious effect on mood, pain perception, concentration and cognition, physiological homoeostasis, hormone regulation, and can facilitate dependence/addiction.

Regrettably, opioids have been inappropriately and aggressively marketed in the past. In the 1990s, pharmaceutical companies reassured the medical community that patients would not become addicted to prescription opioids, and medical practitioners across the world began to prescribe them at rapidly increasing rates (9, 10). This subsequently led to widespread overexposure and misuse of these medications before it became clear that they are indeed addictive (11, 12). The reformulation of opioids into long-acting preparations, the idea of giving opioids round the clock, the titrate-to-effect principle with open-ended dose escalation, and the breakthrough pain concept have all contributed to overexposure (13). Paradoxically, most of the world's population lacks adequate availability of genuine opioids, with inequalities in accessibility between higher- and lower-income countries (14). Estimates suggest that 83% of the world's population live in countries with low to non-existent access, and only 7% have adequate access (15).

Illicit practices have also added to the problem - a 2018 systematic review of a variety of pharmaceutical drugs reported that opioids are sourced for non-medicinal use from friends and family (37% of cases), drug dealers (47%), and, less commonly, through doctor shopping (7%) (16). So the opioid crisis is a complex interplay between misinformation, overprescribing, overexposure, and non-medical use - these being the areas in need of attention to alleviate the opioid crisis. The clinical message is that pharmaceutical opioids need to be avoided where possible and, when used, appropriately and judiciously prescribed and used by patients in a responsible manner to maximise their benefits and lessen the risks of harm. Therein, chiropractors, who are consulted frequently by patients with non-cancer spinal pain, may play a crucial role in educating patients about evidence-based management of pain, contribute to the care of these people, and lessen the risk of overexposure to opioid medication.

An International Epidemic

Australia ranks 8th of 30 developed countries for the use of prescription opioids (17), behind USA, Canada, Germany, Denmark, Belgium, Austria and Switzerland. Opioid use and misuse

in Australia has been powerfully articulated by the National Centre for Education and Training on Addiction and by the Australian Institute of Health and Welfare for the 2016-2017 period (18, 19), the most salient and striking data being:

1. 3.1 million people had 1 or more prescriptions dispensed for opioids (most commonly for Oxycodone), and about 715,000 people have used pharmaceutical opioids for illicit or non-medical purposes;
2. Pharmaceutical opioids are responsible for far more deaths and poisoning hospitalisations than illegal opioids, such as heroin. Every day in Australia, nearly 150 hospitalisations and 3 people die from drug-induced deaths involving opioid use;
3. The rate of poisoning, hospitalisation and deaths from opioids from 2007-2017 increased by 25%, 36% and 63%, respectively; and
4. Of people who reported non-medical use of pharmaceutical opioids, 75% had used over-the-counter (OTC) codeine-containing products, 40% had used prescription codeine-containing products, and 17% had used Oxycodone.

Across developed countries, opioid misuse accounts for an estimated 70% of the adverse health consequences associated with drug misuse disorders (20, 21), making them the most harmful of all narcotics (22). World Health Organisation (WHO) data shows that 69,000 people worldwide die from opioid overdose each year, most of these in the United States and Canada (21). Some of these prescriptions were for palliative care or acute pain, but many more were for patients with chronic non-cancer pain, such as backache, headaches and fibromyalgia. This is noteworthy, since opioid use for back pain, among other musculoskeletal disorders, is not recommended in clinical guidelines (23).

Although the number of deaths related to prescription opioids in Europe is not known precisely, it appears much lower than in the United States but rapidly increasing in several European countries (24). Some analysts suggest that a similar trend of prescription drug overdoses is under way in the United Kingdom, but better adherence to clinical guidelines prevents more overdoses and deaths than in the USA (25).

Data provided by Cleary et al. (2018) capture the alarming escalation in opioid consumption. The morphine equivalent for the consumption of opioids per capita in the United States was about 70 mg in 1990, 245 mg in 2000, and 701 mg in 2014. In Canada, this was 50 mg, 210 mg, and 967 mg, respectively. The equivalent numbers in the United Kingdom are lower but increasing: 33 mg, 78 mg, and 424 mg. Germany, France, Spain and the Netherlands are experiencing similar trends in the increased consumption of opioids: between 6 mg to 34 mg (1990), 77 mg to 184 mg (2000) and 214 mg to 485 mg (2014), respectively (26).

Expressed succinctly; there has been a significant escalation in prescribing and use of pharmaceutical opioids over the past two decades across western nations; overuse and misuse of pharmaceutical opioids are associated with considerable morbidity, hospitalisations and overdoses--including problems with toxicity, addiction, falls (with injury) and traffic accidents (27-29). Prescriptions for pharmaceutical opioids are often not concordant with clinical guidelines, where the risks of use often outweigh the benefits; and opioids are relatively easy to access with- or without a prescription, including black-market access.

Response

The opioid crisis has catalysed some action. Governments including Australia have initiated plans to reduce the prescribing and misuse of opioids (30-32).

The key strategies have been;

1) Rescheduling of opioid products, including codeine-containing products previously available over-the-counter (OTC);
2) Prescription drug monitoring programmes (PDMPs) - programs designed to track prescribing and dispensing of prescription drugs of potential extra-medical use; and
3) Access to multi-disciplinary teams - greater availability of multidisciplinary pain services for people with chronic pain, and education and advocacy for consumers and health care providers - by increasing awareness about opioid-related problems.

Although these strategies seem quite comprehensive, some are still in their infancy. Others have limited funding or are inaccessible (such as long waiting periods), while still others continue to have unclear outcomes or characteristics. The reality is that chiropractors and the chiropractic profession are already commonly providing care for people with neuromusculoskeletal pain in our communities. However, they could better articulate and expand on their role in the management of non-cancer spinal pain to mitigate the risks and harms of opioid overexposure by supporting the government initiatives of education and advocacy, multi-disciplinary care and lessening the need for opioid medication by offering patients evidence-based, guideline concordant care (33).

Gaps in Healthcare Provision in Australia and the Role of Chiropractors

We note justification of chiropractic management of people with non-cancer spinal pain can be drawn from multiple sources, (34, 35), from which models of integration of chiropractic services may be developed. Best available evidence shows that manual care interventions are likely to reduce pain and improve function for patients with chronic low back pain, whereas medications are not (23).

As is extensively documented, back pain is the most common cause of pain and disability worldwide, yet remains a challenge to manage (36). Therefore, it is sensible that chiropractors continue to engage strongly in this space. We also know, as described in the previous section, that potent opioid medication, such as Oxycodone, is often overprescribed and overused for non-cancer spinal pain in Australia.

Access to knowledgeable healthcare providers and patient preferences confounds opioid prescribing and use. For example, Australian general practitioners (family physicians) feel

dissatisfied with and have low confidence in the management of chronic pain (37, 38), suggesting that the prescribing of opioid drugs is sub-optimal. Patients also put their medical practitioner under pressure to prescribe opioids, often leading to other evidence-based interventions being overlooked, including clinical guideline treatment recommendations for non-cancer pain (39) and non-pharmaceutical interventions. Also, waiting times for pain services and pain specialist appointments may run into many months, thereby missing the opportunity for timely intervention (40). The corollary is that opioids end up being the most common drug used to treat non-cancer pain, including back pain (41), with Oxycodone being the most prescribed drug for chronic non-cancer pain in Australia (42). The problem may not lie with access to opioids *per se*, but rather that the patient misses out on the personalised pain care approach and tailored use of opioids. For example, the SPACE trial (2018) demonstrated no advantage for opioid over nonopioid medications for back pain, but the study's qualitative findings suggested that pre-existing expectations and anticipated improvement in pain shaped experiences with, and responses to, medications (7). These findings indicate that a personalised pain care model contributes to positive outcomes, implying that tailored use of opioids may sometimes be useful for non-cancer musculoskeletal pain. Chiropractors in Australia could develop their role by bridging some of these gaps in spinal pain management by offering timely evidence-based treatment, patient education and advocacy around opioid medication and participating in multidisciplinary settings.

Using low back pain as an example, the Lancet Low Back Pain Series Working Group identified a global problem of mismanagement of back pain, documenting the phenomenon of unnecessary care whereby patients receive health services that are discordant with international clinical guidelines (43). There is abundant evidence of needless care or investigations, which includes inappropriate use of complex pain medications. Rather, healthcare providers and health systems should be following official clinical guideline recommendations for low back pain (23) which are;

1. Adoption of a stepped approach to care, guided by the patient's response;
2. Provision of advice on optimistic prognosis and to remain active, education on evidence-based interventions, and reassurance;
3. If pain medication is deemed to be needed, beginning with a nonsteroidal anti-inflammatory drugs and/or simple analgesia (either over-the-counter or prescribed by a medical practitioner), at the lowest effective dose for the shortest time;
4. Options for acute low back pain including physical therapies (massage, spinal manipulation, heat-wrap therapy), and psychological therapies;
5. Options for chronic low back pain comprising physical therapies (exercise, massage, spinal manipulation), psychological therapies (cognitive behavioural therapy), and other complementary therapies;
6. Multidisciplinary pain management to commence if initial treatment is ineffective (targeting physical, psychological and social aspects of low back pain and involving a team of clinicians); and
7. Avoidance of prescribing opioid drugs by medical practitioners for low back pain where possible.

The main reasons for non-adherence to clinical guidelines at a healthcare system level in Australia are described by Traeger et al. (2019), followed by recommendations on how to encourage adherence (23).

Reasons for non-adherence –

1. Limited access to suitable therapies - inadequate access to the recommended treatments or a multidisciplinary approach to pain management;
2. Lack of time and training of healthcare professionals - the guidelines may require longer, more complex consultations;
3. Funding arrangements - health systems and their funding mechanisms have not kept up, leading to persistence of guideline-discordant care; and
4. Misconceptions about management of low back pain remain common among both healthcare practitioners and patients. For example, the misunderstanding that imaging, excessive opioid use or spinal surgery are needed or will lead to better outcomes.

Ways to improve adherence –

1. Change ideas about back pain – healthcare practitioners require more training and educational support if they are to use guideline-concordant approaches to back pain care.
2. Incentivise guideline-concordant care - aligning funding models with evidence-based care. Funding is unlikely to shift from established care practices unless there is clear evidence for the superior safety, effectiveness and cost–effectiveness of the alternatives.
3. Regulate vested interests - governments will have a key role to play in supporting new approaches to managing low back pain. Any attempt to restrict public access to opioids should be accompanied by adequate access to alternative services and evidence-based non-pharmacological alternatives.

Australian chiropractors as spinal care providers will inevitably be in primary contact with patients taking pharmaceutical opioids for back and neck pain, since these are the most common disorders seen in chiropractic practice (44-48). Moreover, many patients choose to see their chiropractor regularly as part of their health maintenance routine, presenting the opportunity for chiropractors to undertake health promotion and to facilitate guideline-concordant evidence-based care, such as manual care, lifestyle modifications, keeping active, exercise prescription, and smoking cessation. Chiropractors have the opportunity to manage and educate individual patients during clinical encounters, thereby promoting health and wellness (49). We thus draw the attention of readers to numerous recent studies that have found that the implementation of chiropractic care greatly reduces the use of opioid painkillers:

1. Whedon et al found that patients with spinal pain who saw a chiropractor had half the risk of filling an opioid prescription. Among those who saw a chiropractor within 30 days of diagnosis, the reduction in risk was greater as compared with those with their first visit after the acute phase had passed (50).

2. Weeks and Goertz noted that a higher per-capita supply of chiropractors and Medicare spending on CMT was inversely associated with younger, disabled Medicare beneficiaries obtaining an opioid prescription (51).

3. Herman found in the military health system that, where chiropractic is offered, 59% reported a reduction in narcotic painkillers use (52).

4. Vannerman showed that for those patients with pain scores by modality, the largest portion (between 32-100%) had unchanged pain scores, with the exceptions of chiropractic, massage, recreational therapy, superficial heat, and ultrasonography, in which veterans experienced a decrease in pain scores. (53).

5. Lisi et al found that nearly one-third of veterans receiving chiropractic services also received an opioid prescription, yet the frequency of opioid prescriptions was lower after the index chiropractic visit than before (54).

6. Kaziz concluded that initial visits to chiropractors or physical therapists is associated with substantially decreased early and long-term use of opioids (55).

7. Finally, a recent systematic review/meta-analysis by Corcoran et al found in a random-effects analysis that chiropractic users had 64% lower odds of receiving an opioid prescription than nonusers (56).

ACTION STEPS

So what should the Australian chiropractic profession be doing now?

Chiropractic organisations around the world have also begun to respond, offering recommendations to address the opioid crisis. The World Federation of Chiropractic (WFC) recently released a position paper, stating that the opioid crisis needs a fresh perspective (1). The Foundation for Chiropractic Progress (2016) published 'Chiropractic a Safer Strategy Than Opioids'(57), and The Canadian Chiropractic Association's (CCA) paper (58), 'Better Approach to Pain Management – Responding to Canada's Opioid Crisis' articulates their recommendations. We have amalgamated the in-common proposals here:

1. Promote a non-drug, non-surgical approach to back pain, neck pain and other musculoskeletal disorders; manual therapies, including chiropractic, should be first-line options for the management of musculoskeletal conditions.
2. Reduce the reliance on opioids and facilitate access to conservative care options.
3. Advocate an integrated approach where chiropractors provide adjunctive or alternative care options for musculoskeletal disorders for which opioids are often prescribed.
4. Develop an evidence-based, pragmatic strategy and approach to the involvement and participation of the chiropractic profession that promote multi-modal, multidisciplinary care.
5. Support partnerships between chiropractors and other health care professions, funders, governments, and other stakeholders in a collaborative and evidence-based manner.
6. Develop a better partnership with third-party payers on how to best maximise health outcomes using currently available funding.
7. Collaborate with governments and other stakeholders to support and facilitate innovative practices to improve the delivery of alternatives in primary care.

8. Invest in research that focuses on clinical and economic outcomes for the management of chronic spinal pain by chiropractors to offer a convincing case that chiropractic care warrants inclusion, funding and resources.

Thus, we suggest a co-ordinated profession-wide response to the crisis, given that the positions of the two largest Australian professional associations are congruent. On a political and professional level, the "opioid crisis" offers chiropractic an existential opportunity to engage with the chronic pain debate and display the benefits of chiropractic services to both policymakers and healthcare payers.

We propose the following as themes with which the Australian chiropractic profession should engage:

1. Continue professional development to enhance the knowledge and skills of chiropractors related to (complex) pain management.
2. Promote evidence-based chiropractic care for non-cancer musculoskeletal spinal pain as the first-choice.
3. Educate and inform other healthcare practitioners and patients about opioids and alternatives.
4. Support multi-disciplinary care involving chiropractors.
5. Lobby for funding, rebates and health system collaboration.
6. Invest in targeted relevant research.

We summarise insights from various papers already cited to inform the following recommendations (1, 23, 31, 32, 49, 58):

Individual practitioner level:

1. Expand on knowledge and management skills of acute and chronic pain, and be aware of current evidence-based clinical guideline recommendations.
2. Be proactive in health promotion and patient education.
3. Offer patients with non-cancer spinal pain evidence-based care and management strategies.
4. Develop further knowledge and skills in working in multi-disciplinary settings.
5. Be open to inter-disciplinary and multi-disciplinary communication.
6. Support professional initiatives that promote better management of acute and chronic non-cancer pain.
7. Support research through participation and/or donations.

Professional and organisational level:

1. Offer continued professional development, through training and learning opportunities to enhance the knowledge and skills of chiropractors related to pain, pain management, and multi-disciplinary work.

2. Lobby and promote evidence-based chiropractic management with relevant third-party payers and national health services to fund and incentivise evidence-based care.
3. Promote chiropractic participation in multi-disciplinary settings for non-cancer spinal pain.
4. Support and invest in relevant research activities.

With these recommendations, Australian chiropractors and professional organisations can plan and engage with this sector of healthcare with greater knowledge, confidence and influence. A concise summary is offered in an accompanying paper (Part 2).

CONCLUSION

The opioid crisis is an existential problem across the developed world. Adverse consequences of opioid overuse are associated with inappropriate use and misuse in non-cancer pain. In particular, back pain and non-adherence to clinical guideline recommendations by healthcare providers and health systems have compounded the problem. Strong evidence indicates that people who consult chiropractors are less likely to use opioids, such that Australian chiropractors, on both an individual and professional level, have the capacity to participate in the management of spinal pain and mitigate the morbidity and mortality associated with opioid overuse. We recommend continued professional development (CPD), promotion of evidence-based chiropractic care, health promotion and patient education, and investment in research, as areas in need of ongoing priority for the Australian chiropractic profession.

DECLARATIONS

Competing Interests

The authors declare that they have no competing interests.

Funding

This study received no external funding, with the project completed at the authors' expense.

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