

Role of Rehabilitation in Opioid Tapering: A Scoping Review

Miranda Wiens, MSc(PT); Devon Jarrett, MSc(PT); Alissa Settimi, MSc(PT);
Courtney White, MSc(PT); Zachary Hollingham, MSc(PT);
Tara Packham, PhD, OTReg. (Ont.)

ABSTRACT

Purpose: Among industrialized countries, Canada has the second-highest opioid prescribing rate for pain management. Physiotherapy and occupational therapy interventions are potential non-pharmacological alternatives. We undertook a scoping review to explore and summarize the current evidence describing the interventions included or used in physiotherapy and occupational therapy in opioid tapering for individuals with chronic pain. **Method:** A systematic search of the peer-reviewed health databases was conducted, with data synthesis guided by Arksey and O'Malley's scoping review methodology. Articles were included in the narrative synthesis if (1) interventions within the scope of practice for physiotherapists or occupational therapists were described or these professionals were part of interdisciplinary care and (2) opioid tapering or reduction was addressed. **Results:** The 39 articles identified included 2 systematic reviews, 9 narrative reviews or commentaries, 2 case reports, 11 uncontrolled cohort studies, 1 cross-sectional study, 5 randomized controlled trials, 4 programme evaluations, and 4 qualitative studies. Of the 28 studies reporting specific outcomes, 25 reported positive outcomes of rehabilitation interventions for opioid tapering. There was greater representation of interventions from physiotherapy than from occupational therapy: few articles contained substantive descriptions (e.g., dosage and duration). **Conclusions:** The evidence to guide therapists in supporting opioid tapering for people with chronic pain seems to be limited. Further research is needed to establish effectiveness for stand-alone interventions and as part of a comprehensive rehabilitation approach.

Key Words: analgesics; chronic pain; opioid; pain management.

RÉSUMÉ

Objectif : dans les pays industrialisés, le Canada présente le deuxième taux de prescriptions d'opioïdes en importance pour la gestion de la douleur. Les interventions en physiothérapie et en ergothérapie font partie des solutions non pharmacologiques possibles pour remplacer ces médicaments. Les chercheurs ont entrepris une étude exploratoire pour étudier et résumer les données probantes à jour qui décrivent les interventions incluses ou utilisées en physiothérapie et en ergothérapie pour mettre graduellement un terme à l'utilisation d'opioïdes chez les personnes souffrant de douleur chronique. **Méthodologie :** les chercheurs ont réalisé une recherche systématique des bases de données sur la santé dotées d'un comité d'évaluation et ont fait reposer la synthèse des données sur la méthodologie exploratoire d'Arksey et O'Malley. Les articles étaient intégrés à la synthèse narrative si 1) des interventions se situant dans le champ de pratique des physiothérapeutes et des ergothérapeutes y étaient décrites ou si ces professionnels faisaient partie des soins interdisciplinaires et 2) l'arrêt graduel ou la réduction des opioïdes y était abordé. **Résultats :** les 39 articles retenus incluaient deux analyses systématiques, neuf études ou commentaires narratifs, deux rapports de cas, 11 études de cohorte non contrôlées, une étude transversale, cinq essais aléatoires et contrôlés, quatre évaluations de programme et quatre études qualitatives. Des 28 études décrivant des résultats précis, 25 incluaient les résultats d'interventions de réadaptation qui contribuaient à l'arrêt graduel de la prise d'opioïdes. Il y avait plus d'interventions en physiothérapie qu'en ergothérapie : peu d'articles contenaient des descriptions plus détaillées (p. ex., dosage et durée). **Conclusion :** les données probantes semblent limitées pour orienter les thérapeutes afin qu'ils contribuent à l'arrêt graduel des opioïdes chez les personnes atteintes de maladie chronique. D'autres recherches s'imposent pour établir l'efficacité des interventions autonomes, dans le cadre d'une approche de réadaptation complète.

Mots-clés : analgésiques; douleur chronique; gestion de la douleur; opioïdes

Chronic pain most commonly refers to any condition with which individuals experience pain persisting for more than 3 months, or beyond normal tissue healing time.^{1,2} Disability secondary to chronic pain has a negative

impact on quality of life (QOL) and physical functioning and results in a significant amount of work time lost.^{3,4} Reports have indicated that 15%–20% of Canadian adults experienced chronic pain between 1994 and 2008,^{5,6} and

From the School of Rehabilitation Sciences, McMaster University, Hamilton, Ontario, Canada.

Correspondence to: Tara Packham, c/o School of Rehabilitation Science, Rm. 403, Institute for Applied Health Sciences, 1400 Main St. W., Hamilton, ON L8S 1C7, Canada; packhamt@mcmaster.ca.

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the Canadian Pain Task Force estimates that direct and indirect annual expenses related to managing individuals with chronic pain are approaching \$43 billion.⁷

Opioid prescriptions for treating chronic pain have increased markedly over the past two decades.^{1,8,9} As of 2013, Canada had the second highest per capita rate of opioid prescription in the world.¹⁰ In 2017, the National Pain Centre published updated Canadian guidelines for prescribing opioids for people with chronic non-cancer pain.¹ Concordant with other prescription guidelines,^{11,12} this document emphasized the value of considering safer alternative treatment options such as rehabilitation, to promote a reduction in the number of new opioid prescriptions, and approaching patients who have been prescribed high dosages (defined in the Canadian guidelines as a daily dose > 90 mg morphine equivalents) to consider a trial of voluntary tapering.¹ Tapering may include a systematic reduction in opioid use,¹³ and it may include drug rotation to a different opioid.¹ Recent tapering advice for pharmacists also advocates that they collaborate with other health professionals such as physiotherapists to assist in the tapering process.¹⁴

The movement to reduce opioid use in managing chronic pain is rooted in evidence indicating the nominal benefit of opioids and the potential for considerable side effects,^{15,16} especially when the drugs are used over the long term.² Short-term side effects include constipation, nausea, vomiting, and dizziness, and long-term use increases the risk of accelerated loss of bone mineral density, hypogonadism, myocardial infarction, opioid abuse or misuse disorders, opioid addiction, depression, anxiety, and sudden death with comorbid use of alcohol or benzodiazepines.^{2,17,18} The potential harm of short-term and long-term use emphasizes the need for tapering strategies to reduce the burden that the current opioid crisis has placed on people with chronic pain and on the health care system.⁸

Canadian physicians, medical regulators, and pharmacists have identified an increasing need for guidance in prescribing and tapering opioids for patients with chronic or persistent pain.^{1,14} Recently published qualitative studies have highlighted the challenges physicians experience initiating and overseeing the tapering process,^{13,19} including lack of supports for tapering, gaps in both individuals' and physicians' knowledge about alternatives, and insufficient time both within individual visits and across the health care relationship to develop mutual insights into the multi-factorial challenges encountered during tapering.

Current initiatives have focused on decreasing the prescription of opioids and providing harm reduction services,^{7,8} including access to methadone and buprenorphine therapy, distribution of naloxone, delisting high-strength opioids from the formulary, and supervised consumption sites.^{8,14} Evaluations of these medically

focused programmes consistently demonstrate reduced prescribing but no change in opioid harms.⁸ These seemingly conflicting findings reflect the complexities of the risk of opioid use, including (1) addiction and other mental health concerns, (2) polypharmacy and concomitant alcohol use, (3) multiple formulations and potencies, and (4) use of both prescription and illicit forms.¹⁷

Multi-modal care from a multidisciplinary team (MDT) that includes physiotherapists and occupational therapists is considered current best practice in managing chronic pain for a spectrum of pain conditions.²⁰⁻²³ Interventions for chronic pain provided by these two professions result in improved mobility, increased independence, decreased pain, and prevention of other comorbidities.²⁴⁻²⁶ Although physiotherapists and occupational therapists also provide care for people with chronic pain who take opioids, to date no scoping or systematic review has been performed to describe the intervention activities of these professionals to support opioid tapering or to guide them in choosing an appropriate intervention to support the process.²⁷

The need for information synthesis is further justified by guidelines recommending MDT support for the tapering process and qualitative evidence from persons undergoing tapering who report the need for support yet have a hard time asking for it from health care professionals.²⁸ Therefore, a summary of (1) the current intervention activities of physiotherapists and occupational therapists in opioid tapering and (2) the effectiveness of these interventions would help to fill these knowledge gaps and identify areas for future research.

Thus, the primary objectives of this scoping review were to create a narrative summary of the nature and extent of the literature addressing (1) the activities of physiotherapists and occupational therapists in opioid tapering and (2) the evidence for interventions falling within the scope of these professions to support opioid tapering for adults (including older adults) with chronic non-cancer pain. We synthesize the existing literature to describe practice, identify gaps in the evidence, and propose recommendations for future research by answering the question "What is the scope of the peer-reviewed literature to inform rehabilitation interventions to support opioid tapering in adults with chronic non-cancer pain?"

METHODS

Study design and ethics

Because of the broad nature of our research question, we chose a design for our scoping review that followed an iterative framework.²⁹ Research ethics committee approval was not required.

We followed the five stages recommended by Arksey and O'Malley: (1) identify the research question; (2) identify the relevant studies; (3) select the studies to include;

(4) extract the systematic data; and (5) compile, summarize, and report the results.²⁹

Stage 1: Defining the research question and sampling frame

After identifying our research question, we used the PICOT(S) method of research question components developed by Sackett to identify the key constructs for the inclusion and exclusion criteria to formulate a rigorous and systematic search strategy, as follows:³⁰

- P (population) – adults (aged > 18 y) with chronic non-cancer pain who were prescribed opioid medications
- I (intervention) – occupational therapy, physiotherapy, or rehabilitation interventions
- C (comparator) – any comparator; no comparator
- O (outcomes) – opioid tapering (decreasing use, decreasing morphine equivalents); reducing the negative sequelae of pain, such as decreased participation, decreased self-management, decreased self-efficacy, and catastrophizing or negative pain beliefs
- T (time) – consideration of all peer-reviewed published works, regardless of duration of follow-up reported
- S (study design) – consideration of any study design.

In addition, no limitations were placed on when the work was published: we searched databases from their inception to capture the breadth of the literature.

Stage 2: Literature search

Our literature search strategy was developed using keywords informed by a past literature review relevant to the topic,⁹ the experience of the team members; and the constructs in the population, intervention, and outcome sections of the PICOT(S) mapping. We searched the MEDLINE, EMBASE, PubMed, and CINAHL databases using the main keywords *chronic pain* and *prescription opioids* (to reflect population); *occupational therapy*, *physiotherapy*, and *rehabilitation* (to reflect intervention); and *tapering* (to reflect outcome). At least three synonyms for each of these preliminary keywords were developed to create a comprehensive list of terms to use while searching each database.

This initial search strategy was reviewed by a health librarian with experience conducting systematic reviews on pain-related topics. However, our initial search produced very limited results; therefore, the search strategy was broadened. We removed keywords related to rehabilitation, modified keywords and terms using Boolean search operators, and adjusted terms according to individual database constraints. (The full final search strategy is provided in online Appendix 1.) Our initial literature searches were conducted in March 2019 and updated in May 2020.

Stage 3: Screening and study selection

When we had completed the database searches, all articles were exported to Mendeley (Mendeley Ltd., London, UK) for de-duplication and data management.

The title and abstract screening were completed independently by paired reviewers (DJ and MW, CW and AS, or TP and ZH); consensus between reviewers was reached by discussing conflicting decisions. We screened articles on the basis of predetermined inclusion criteria: (1) articles identifying referral to physiotherapy or occupational therapy services; (2) articles identifying physiotherapists or occupational therapists as part of an interdisciplinary team providing a service or programme of interventions; (3) studies using interventions that could be provided by those professions (whether or not they were actually provided by an occupational therapist or physiotherapist); and (4) articles describing opioid use being tapered or people being weaned off opioids.

Articles were excluded if they (1) were not peer reviewed, (2) were not available in English, (3) did not describe human populations, (4) did not describe adult populations with pain lasting more than 3 months, or (5) did not describe non-cancer pain. We also excluded studies addressing only medical management strategies (e.g., medication substitutions for tapering) in their intervention from further full-text screening. Figure 1 illustrates this process using a PRISMA flow chart.³¹

We identified 188 publications eligible for full-text screening. After using online and local libraries and inter-library loan services and contacting the corresponding authors, we were able to obtain 184 full-text articles. These articles were also independently screened by paired reviewers (DJ and MW, CW and AS, or TP and ZH), who reached consensus for any disputes. After screening, 39 articles were included for data extraction. Because we were not performing a meta-analysis, in which bias would be introduced by “double counting,” we included both evidence synthesis articles and primary studies but made note of the overlap when it occurred.

Stage 4: Data extraction

We created a data extraction form (see online Appendix 2) informed by the Arksey and O'Malley framework for scoping reviews.²⁹ This was tested and refined using a piloting exercise before commencing the formal data extraction. Each reviewer was then assigned primary articles for extraction, and the results were verified by a secondary reviewer. After data extraction was completed and quality checked, the individual forms were compiled into a master database for analysis.

Stage 5: Data summary and reporting

Summaries were created for each section of the data extraction form, using frequency counts and percentages, with the addition of content subcategories as required (e.g., to categorize the interventions).³² Drawing on methods for qualitative description,^{33,34} we sought to recognize patterns and variability in populations, interventions, and outcomes by discussing the summaries in pairs, then as an overall research team. This process was used to produce the written report using narrative synthesis.³⁵

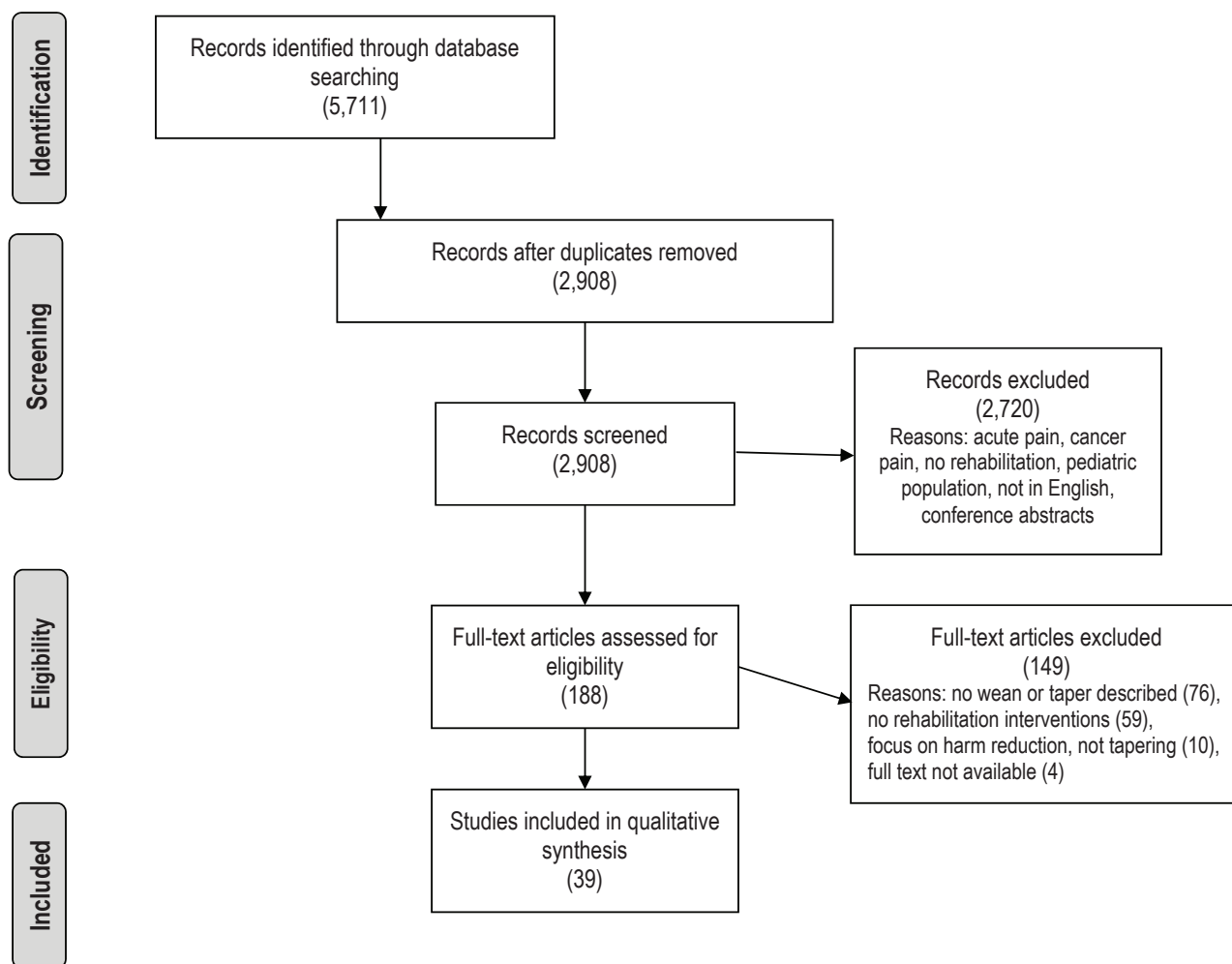


Figure 1 PRISMA diagram of review process.

Note: PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

RESULTS

Characteristics of the studies

After full-text screening, 39 articles were included in this scoping review: the study design, year of publication, and country of origin are summarized in online Table S1. Two systematic reviews were included,^{36,37} however, because of the differences in guiding research questions, there was overlap with only three of the primary studies from our search results.^{38–40} Our updated search included a secondary analysis of data from an article identified in the original search.^{41,42}

Moreover, 13 articles were published in pain journals,^{28,37–39,42–50} 4 were from physiotherapy and rehabilitation journals,^{51–54} and 22 appeared in medical, health service, or pharmacological journals.^{27,36,40,41,55–72} A total of 14 of the 39 included studies were conducted in, or operated out of, multidisciplinary pain programme clinics,^{38,40–43,45,49,50,54,59,62,66,68,70} and 4 studies were conducted at the health care system level.^{48,58,60,69}

Population

A total of 28 (72%) of the included studies described populations, and the remaining 11 were review or opinion articles without a specific diagnostic focus.^{27,36,37,46,47,51,56,57,64,65,67} Patients classified as having general non-specific chronic pain were the focus in 10 (26%) articles,^{41,43,45,48–50,53,59,60,69} including 2 that targeted older adults.^{41,60} Veterans with chronic pain were the focus of 2 articles:^{44,58} one compared participants with and without post-traumatic stress disorder.⁴⁴ Three articles investigated individuals with pain associated with HIV.^{40,54,63} Five specific chronic pain populations were addressed in single studies: persons with neuropathic pain after spinal cord injury,⁵² facial pain,⁶⁶ fibromyalgia,⁶² axial (neck or back) pain,²⁸ and musculoskeletal (MSK) pain,³⁹ respectively. In addition, 6 studies involved patients of undeclared populations who were currently taking opioid medications.^{38,42,55,70–72} Of these, 1 study compared patients who were currently taking opioid medications with individuals who were not.⁴² One

study used a population of persons who had a history of opioid therapy.⁶⁸ Finally, 1 study targeted health care professionals with experience or interest in de-prescribing opioids.⁶¹

A total of 30 (77%) studies did not specifically describe the definition of chronic pain they had applied.^{27,28,38–40,43–45,47–50,52–58,60–63,64,66–72} One study defined chronic pain as lasting longer than the expected healing time.⁵¹ One article considered chronic pain as lasting more than 3 months;³⁶ 2 others used this time specification but also specified that it needed to have bio-psychosocial consequences or have an intensity of at least 4 out of 10.^{59, 65} Two studies defined chronic pain as existing more than 3–6 months.^{42,46} Two other studies did not use temporal indicators but defined chronic pain as a complex condition resulting in distress and functional impairment.^{37,41}

Outcomes

All included articles discussed the influence of rehabilitation treatments on reducing opioid use; however, not all had opioid reduction as a quantitative outcome. Qualitative studies, opinion articles, and reviews typically did not report or recommend any outcome measures;^{27,28,46,47,55–57,61,64,65,67, 72} several others did not quantify the outcomes.^{66,68} A total of 15 articles (38%) observed or advocated for opioid use, morphine equivalents, or both as a way to track opioid reduction.^{36,38–41,44,45,48,51,53,54,58,63,70,71} Two articles looked at patients' charts and tracked prescription dosages and rates.^{60,69} One study examined persistent opioid use measured by number of days per week used, prescriptions filled subjectively within 90 days, or both as a way to track opioid consumption,⁴² and 5 others simply looked at whether opioids were being prescribed or not.^{37,50,52,62,66}

Pain intensity measured by the Numeric Pain Rating Scale or visual analogue scale was an outcome in nine studies,^{38–42,45,49,54,66} with an additional five measuring pain using a pain inventory or Patient Reported Outcomes Measurement Information System pain severity items.^{43,44,50,53,59} Eight studies looked at patients' physical function using functional scales and physical performance measures.^{38,41,42,45,50,53,54,68} Eight articles considered psychological variables using a variety of instruments including the Beck Depression Inventory, Pain Catastrophizing Scale, Center for Epidemiologic Studies Depression Scale, or Depression Anxiety Scale.^{38,39,41,42,44,49,50,53} The SF-36 was used to measure QOL in four studies.^{39,41,42,66}

Interventions

We report the articles identified by this review by category on the basis of the primary interventions described: (1) MDTs using multi-modal approaches; (2) individual or uni-modal interventions within the scope of practice for occupational therapists, physiotherapists, or both; (3) physiotherapy as an intervention; (4) rehabilitation professionals or services sought to complement a medical

tapering programme; and (5) the dosage, duration, and follow-up details for interventions.

Multidisciplinary multi-modal teams

A total of 19 (49%) of the included articles discussed reducing or discontinuing opioid use by applying an MDT approach.^{27,36,38,41,42,44,45,47,50,52,55,58,63,66–71} All 19 listed the specific professions that were represented on the team; however, 1 article identified only some of the professions because it involved several models of care.⁵⁸ An average of five professionals were included on each team described (see Table 1). The articles identified 12 core professions as being a part of the MDT. Rehabilitation was represented by physiotherapy, occupational therapy, chiropractic, massage therapy, acupuncture, and kinesiology; physiotherapists were the most commonly identified rehabilitation professionals. One article described the team as the physician and physical therapist but also described a tailored multi-modality approach to rehabilitation.⁶³ Table 1 gives a complete description of the type of professionals included in the medical and psychology fields. Five articles also listed other professions that were not explicitly health care professions (e.g., Tai Chi instructors).^{38,42,47,48,71}

Of the 19 articles, 14 studied the effectiveness of MDT approaches and reported in favour of this approach for opioid tapering.^{38,41,42,44,45,47,50,52,55,58,66,68,70,71} A systematic review (which included only 1 of these articles) found MDT care to be a common attribute in opioid tapering programmes described by fair- to good-quality studies,^{36,38} and it concluded that pain and function outcomes improved after an opioid taper. In contrast, 1 article found that MDT care did not result in decreased opioid use,⁶⁹ and 2 articles reported unclear findings as to whether MDT was beneficial.^{27,67}

Uni-modal interventions

A multi-centre randomized controlled trial by Zheng and colleagues examined the effectiveness of electroacupuncture (EA) compared with sham EA or education in reducing opioid consumption in persons with chronic MSK pain.³⁹ All groups experienced a reduction in opioid dosage; the largest decrease, 20.5% (216 fewer morphine equivalents were used per week), occurred in the EA group. The authors concluded that EA appeared to be a beneficial and promising adjunct to opioid tapering.³⁹

A narrative review conducted by Lin and Jamison described articles examining integrative medical therapies for chronic pain.⁴⁶ They reported strong evidence (statistically significant findings from a randomized design, > 100 individuals followed for > 3 mo) for the use of acupuncture, whereas there was only low-quality evidence for yoga, relaxation, Tai Chi, massage, and spinal manipulation as adjunct treatments in decreasing opioid dosage.⁴⁶

Two articles described online pain management programmes drawing on cognitive-behavioural approaches but with different targeted outcomes.^{53,59} Gardiner and

Table 1 Description of Professions Included on Multidisciplinary Teams

Study	Rehabilitation specialist						Medical				Psychology			Other	Not specified
	PT	OT	RKin	DC	RMT	Acu	RN or NP	Rx	MD	RD	Psych	Add special			
Berna et al. ⁶⁷	X	X							X		X				
Brose et al. ⁵²	X	X							X		X			X	
Bruns et al. ⁵⁵					X	X		X			X	X			
Chandwani et al. ⁶⁶									X		X				
Craner et al. ⁵⁰	X	X							X		X				
Frank et al. ³⁶	X	X				X			X		X			X	
Gilliam et al. ⁴²	X	X					X	X	X	X	X			X	
Hanna et al. ⁶⁸	X	X					X		X		X	X			
Huffman et al. ³⁸	X	X							X		X	X		X	
Huffman et al. ⁴⁵	X	X					X		X		X				
Kwok et al. ⁶⁹															X
Losby et al. ⁷⁰	X	X		X				X	X		X				
Lovejoy et al. ⁷¹	X	X			X	X			X		X			X	
Pullen et al. ⁶³	X								X						
Rosenberg et al. ⁴⁷	X								X		X			X	
Sandhu et al. ²⁷	X	X	X	X			X	X	X		X	X			
Schumann et al. ⁴¹	X	X					X	X	X		X			X	
Van Der Merwe et al. ⁴⁴	X						X		X		X				
Vaughn et al. ⁵⁸							X	X	X		X	X			X

PT = physiotherapy; OT = occupational therapy; RKin = registered kinesiologist; DC = Doctor of Chiropractic; RMT = registered massage therapist; Acu = acupuncturist; RN = registered nurse; NP = nurse practitioner; Rx = pharmacist; MD = medical doctor; RD = registered dietitian; Psych = psychological care; add special = addiction specialist.

colleagues added an online psychoeducation programme to integrative medical group in-person care and reported statistically significant reductions in pain impact and pain interference among the participants who completed the online modules,⁵⁹ as well as a 13% reduction in the number of participants who had reported using opioid in the previous week. In contrast, Nielssen and colleagues reported a statistically significant reduction in both total morphine equivalents and number of persons using opioids occasionally,⁵³ but they also noted that the participants who had entered the programme using opioids regularly were less likely to show improvements in pain and function at 3-month follow-up.

Physiotherapy multi-modal approaches

Three articles focused exclusively on the role of physiotherapy in opioid tapering. An evidence-based perspective article by Wenger and colleagues identified clinical decision considerations in treating persons with chronic pain undergoing opioid tapering.⁵¹ They suggested that the roles of physiotherapists in the opioid tapering process were to (1) monitor adherence, (2) assist with pain management, (3) increase activity tolerance, and (4) provide education and support to patients; they further asserted that physiotherapy was an essential profession in interdisciplinary chronic pain teams supporting an opioid tapering process.⁵¹

In a case report by Pullen,⁵⁴ a 24-session physiotherapy intervention was carried out as part of MDT care for a person with HIV experiencing chronic pain. The author reported that the client experienced an 83.3% decrease (from 15 morphine equivalents to 2.5) in opioid dosage after the intervention period.⁵⁴ Finally, a retrospective observational chart review by the same author considered whether physiotherapy was a viable primary alternative to opioid pain therapy in individuals with HIV-related chronic pain.⁴⁰ It reported that the dosage of opioids used remained the same after physiotherapy interventions; however, clinically meaningful reductions in pain intensity occurred among 65.2% of patients.⁴⁰

Rehabilitation professionals or services actively sought out by patients

Hundley and colleagues conducted a retrospective chart review of American veterans to determine the average number of complementary and alternative modalities that they had sought out during the tapering process and after discontinuing the use of opioids.⁴⁸ The relevant therapies recorded included physiotherapy, transcutaneous electrical nerve stimulation, and acupuncture. Changes in the usage of complementary therapies were not statistically significant over the course of a year after starting to taper or discontinuing opioid treatment.⁴⁸ Karmali and colleagues reviewed opioid use 1 year after a new MSK

injury for which opioids had been initially prescribed and noted an unexpected finding:⁶⁰ those who had continued to take opioids and those on high daily dosages of opioids were more likely to have had early contact with physiotherapy. However, the authors also identified lack of mental health services as an important covariate.

An interesting experiment was conducted by Ashton-James and colleagues with persons taking opioids for pain.⁴⁹ They showed people a case vignette that described another person taking opioids for chronic MSK pain and provided three scenarios for the advice to be given. The authors reported that maintaining opioid therapy was the least desirable option for persons with pain, whereas opioid rotation or opioid tapering in conjunction with cognitive-behavioural interventions were seen more positively.⁴⁹

In addition, a qualitative study conducted with persons who had tapered opioids in the previous year highlighted multidisciplinary care as an option both recommended by physicians and requested by the persons themselves.²⁸ Moreover, many of the positive self-management strategies reported by the participants who had been successful in tapering fell within the scope of practice of occupational therapists and physiotherapists:^{73,74} for example, maintaining social and family interactions, pursuing meaningful activities, planning physical exercise and activity, and engaging in meditation and spiritual self-care strategies.

Dosage, duration, and follow-up

A total of 16 articles gave specific information about the dosage or duration of the interventions carried out.^{38–45, 50,53–55,59,62,63,66} Total intervention ranged from 3 weeks to 7 months. One article did not specify the length of treatment, only the frequency;³⁸ individuals were seen for as little as four sessions spread over 2 months to up to 8 hours per day for 4 weeks. Although most programmes were offered on an outpatient basis, one programme combined a short admission for intensive therapy with subsequent outpatient services.⁴⁴ Follow-up time after the intervention period ranged from 12 to 72 weeks.^{38–40,42,54,66}

DISCUSSION

In this scoping review, we sought to describe the state of the literature regarding physiotherapy and occupational therapy activities and interventions in opioid tapering for chronic pain. The results highlight gaps in the literature, including (1) limited use of opioid reduction as an outcome measure; (2) a paucity of information on the efficacy, dosage, and duration of specific physiotherapy and occupational therapy interventions as well as their contributions to opioid tapering; and (3) the lack of Canadian research on this topic. Of note is the fact that the literature was relatively recent, indicating a surging interest in research on this crucial topic.

Our initial literature search revealed a plethora of evidence^{2,9,24,75–80} examining physiotherapy and occupational therapy interventions for improving functional and pain-related outcomes for chronic pain. Unfortunately, many studies did not include the opioid dosage, prescription, or usage as an outcome. As a result, the body of literature addressing our research question and meeting our inclusion criteria was small ($n = 17$ in the initial search). However, the updated search conducted 14 months later added another 21 articles, demonstrating the increasing focus on this area of practice.

Nonetheless, the limited literature reporting both opioid consumption and intervention detail is a potential barrier to evidence-informed practice in this area. Moreover, it is difficult to argue for the funding of care pathways for opioid tapering that include physiotherapy or occupational therapy care without strong evidence to support the effectiveness of these services. Given the current work to develop a national pain strategy in Canada,⁷ it is imperative to document how rehabilitation contributes to the opioid tapering process in both empirical and experiential outcomes.

Our scoping review demonstrates a gap in the literature specifically examining the use of physiotherapy and occupational therapy professionals in the support of prescription opioid tapering. It is important to note that some articles referred to physiotherapy and occupational therapy as interventions rather than as regulated health care professions.^{38,42,67} This may reflect the “black box” metaphor used to describe a lack of mechanistic understanding of the factors driving the effectiveness of rehabilitation interventions,⁸¹ as well as the lack of literature exploring the contributions of individual elements within interdisciplinary care programmes for chronic pain, as shown by our review. However, this failure to elucidate the valued components again weakens the argument for inclusion in practice guidelines and funding pathways.

In our review, 4 of the 39 included articles addressed multi-modal physiotherapy services as an intervention:^{40,51,54,63} none directly explored the use of occupational therapy. Other studies examining a multi-professional team-based approach to opioid tapering often lacked detail about the specific members who made up the MDTs and their activities within a team. Fewer than half the articles reported (widely varying) parameters for the dosage and duration of interventions provided,^{38–45,50,53–55,59,62,63,66} often without any detail of the actual interventions used. This further demonstrates that the evidence to guide intervention choices and parameters to assist with opioid tapering, and it highlights the need for improved reporting in future studies.

A total of 14 studies,^{38,41,42,44,45,47,50,52,55,58,66,68,70,71} and 1 systematic review,³⁶ suggested that MDTs may be effective. This corresponds to clinical practice guidelines for populations with chronic pain that advocate for the use of

a multidisciplinary approach to improving patient outcomes.^{20,82-84} One retrospective study examining HIV care found no difference in opioid use.⁴⁰ However, patients reported decreases in all other pain medication categories except opioids during and after the physiotherapy intervention period.⁴⁰

Although our review identified four qualitative studies that addressed the experience of opioid tapering,^{28,55,61,72} actually participating in rehabilitation to assist in opioid tapering has not been comprehensively explored. There is an opportunity to use qualitative methods to explore such experiences to (1) determine what factors participants both valued and attributed to influencing positive change, (2) identify potential barriers to participation to inform implementation efforts, and (3) understand the perspectives of rehabilitation professionals offering interventions intended to support opioid tapering.

Opioid tapering for patients living with chronic non-cancer pain suggests 90 milligrams or more morphine-equivalent units per day; it is a weak recommendation in the current Canadian prescription guidelines,¹ but it continues to be an important concern in Canada's health care system.⁷ However, this scoping review highlights the lack of rehabilitation evidence published in a Canadian context: the sole Canadian study was a qualitative examination of the impact of opioid-related policy changes on persons using opioids to manage pain. Although this gap is noticeable, efforts are being made in Canada to address the opioid crisis and discussion of pain management.^{7,85} For example, a recent coalition was created to provide evidence-based recommendations on how to reduce the prevalence of opioid prescriptions by optimizing non-pharmacological care pathways.⁸⁵ Psychology, physiotherapy, occupational therapy, and chiropractic medicine were recommended as non-pharmacological alternatives for managing pain.⁸⁵

The predominance of study designs generating only low-level evidence found by this review shows that more rigorous studies are needed to examine the effects of rehabilitation-based interventions on opioid tapering in patients with chronic pain. Reducing the dose of opioids in morphine equivalents should be reported as an outcome measure alongside outcomes such as function and QOL to provide opportunities for comparison and evidence synthesis across interventions for opioid tapering. Articles that include physiotherapy and occupational therapy as part of MDTs should also clarify the specific interventions used by each profession to help better guide other teams to develop best practices.

More information is required about specific dosage, duration, and follow-up periods for interventions because this information may help clinicians to incorporate these findings into their practice. Finally, more research published in Canada on this topic is needed to

help advance the discussion of non-pharmacological methods of addressing the opioid crisis in the Canadian health care system.

This review had several limitations that might have introduced bias into our review process. First, our chosen framework did not include feedback from key stakeholders,^{29,86} and this could have added important contextual details. Second, we were not able to obtain full-text copies of all the studies identified, so we may have missed important contributions. Third, our keyword search focused on tapering relative to pain management, excluding addictions; thus, we may have missed articles in which these topics overlapped. Also, we included only English-language articles; this may have limited Canadian perspectives in Canada's other official language, French. In addition, we did not perform hand searches of the reference lists of included studies to identify other relevant articles. Finally, although we were interested in the role of rehabilitation, we did not name specific role descriptions in our data extraction process but extrapolated roles from the descriptions of the interventions.

CONCLUSION

The aim of this study was to describe the state of the literature on the activities of physiotherapists and occupational therapists in opioid tapering and on the evidence for interventions falling within the scope of these professions to support tapering opioid use in persons with chronic non-cancer pain. We found a limited number of articles addressing this topic in the health literature, and even fewer using robust study designs with explanatory power to elucidate the strength of intervention relationships to opioid reduction outcomes. Future research is needed to determine the specific roles that physiotherapy and occupational therapy play in supporting the opioid tapering process.

In the literature summarized here, the primary focus of the studies was to evaluate the effectiveness of an MDT approach. More research is needed to inform detailed treatment planning at a programme or individual level. We also need to know more about supporting advocacy efforts to improve access to rehabilitation services as a non-pharmacological strategy for opioid tapering for persons with persistent pain.

KEY MESSAGES

What is already known on this topic

Multidisciplinary team care, including physiotherapists and occupational therapists and the interventions they provide, has been recommended to assist persons wanting to undertake opioid tapering. However, the scope and nature of effective rehabilitation interventions for opioid tapering have not previously been documented.

What this study adds

This review synthesizes the evidence to document the current state of the literature on physiotherapy and occupational therapy roles and interventions for supporting persons in the opioid tapering process. It highlights the need for more robust and detailed research to inform care in this population.

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