Editor's key points

- Access to multidisciplinary management of chronic noncancer pain is limited in primary care, often contributing to excessive opioid prescribing.
- Led by a registered nurse, the program described was implemented in an outpatient clinic and integrated a self-management approach and multidisciplinary care.
- At the participants' final follow-up appointments, pain intensity and pain interference with daily living had improved to a clinically significant degree in 21.6% and 46.9% of participating patients, respectively. In this sample of patients with a moderate risk of future opioid abuse, 42.9% of opioid users reduced their daily intakes.
- Overall, the program was well received by participating patients, clinicians, and administrators.

Chronic noncancer pain management

Integration of a nurse-led program in primary care

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Abstract

Problem addressed Chronic noncancer pain is often excessively managed with medications (most notably opioids) instead of nonpharmacologic options or multidisciplinary care—the gold standards.

Objective of program To offer an effective alternative to pharmacologic management of chronic noncancer pain in primary care.

Program description Patients 18 years of age or older with chronic noncancer pain were referred by family physicians or nurse practitioners in a family health team (outpatient, multidisciplinary clinic) in Ottawa, Ont. A registered nurse used the Pain Explanation and Treatment Diagram with patients, taught self-management skills (related to habits [smoking, consumption of alcohol, diet], exercise, sleep, ergonomics, and psychosocial factors), and referred patients to relevant resources.

Conclusion A nurse-led chronic pain program, initiated without extra funding, was successfully integrated into a primary care setting. Among the participating patients in the pilot project, outcomes related to pain intensity, pain interference with daily living, and opioid use were encouraging. This program could serve as a model for improving chronic noncancer pain management in primary care.

Gestion de la douleur chronique non cancéreuse

Intégration en soins primaires d'un programme dirigé par une infirmière

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Résumé

Problème à l'étude La douleur chronique non cancéreuse est souvent gérée à l'excès au moyen de médicaments (surtout des opioïdes) plutôt qu'en ayant recours à des options non pharmacologiques ou à des soins multidisciplinaires, qui sont les normes d'excellence.

Objectif du programme Offrir une alternative efficace à la prise en charge pharmacologique de la douleur chronique non cancéreuse en soins primaires.

Description du programme Des patients de 18 ans et plus souffrant de douleur chronique non cancéreuse ont été aiguillés par des médecins de famille ou des infirmières praticiennes vers une équipe de santé familiale (clinique multidisciplinaire en consultation externe) à Ottawa (Ontario). Une infirmière autorisée a utilisé avec les patients le Pain Explanation and Treatment Diagram (diagramme d'explication et de traitement de la douleur), leur a transmis des compétences en autogestion (liées aux habitudes [tabagisme, consommation d'alcool, alimentation], à l'activité physique, à l'hygiène du sommeil, à l'ergonomie et aux facteurs psychosociaux) et a demandé pour eux des consultations auprès des ressources pertinentes.

Conclusion Un programme d'autogestion de la douleur chronique, dirigé par une infirmière et mis sur pied sans financement supplémentaire, a été intégré avec succès dans un milieu de soins primaires. Chez les participants au projet pilote, les résultats relatifs à l'intensité de la douleur, à l'interférence de la douleur avec les activités de la vie quotidienne et à l'usage d'opioïdes étaient encourageants. Ce programme pourrait servir de modèle pour améliorer la gestion de la douleur chronique non cancéreuse en soins primaires.

Points de repère du rédacteur

- L'accès à une prise en charge multidisciplinaire de la douleur chronique non cancéreuse est limité en soins primaires, ce qui contribue souvent à une prescription excessive d'opioïdes.
- Sous la direction d'une infirmière autorisée, le programme décrit a été mis en œuvre dans une clinique de consultation externe; il intégrait une approche d'autogestion et des soins multidisciplinaires.
- Lors du dernier rendez-vous de suivi des participants, l'intensité de la douleur et son interférence avec les activités de la vie quotidienne s'étaient améliorées de manière cliniquement significative chez, respectivement, 21,6 % et 46,9 % des patients participants. Dans l'échantillonnage des patients à risque modéré d'usage abusif futur d'opioïdes, 42,9 % des utilisateurs d'opioïdes avaient réduit leurs doses quotidiennes.
- Dans l'ensemble, le programme a été bien accueilli par les patients, les cliniciens et les administrateurs participants.

Chronic noncancer pain affects approximately 1 in 5 Canadians and leads to substantial social and economic costs.[1-5] In 2019 it was estimated that 7.6 million Canadians were affected, with an estimated sum of direct and indirect costs related to chronic pain of $38.2 billion to $40.3 billion.[1] By 2030 these numbers are expected to increase to 9 million people affected and $52 billion to $55 billion in associated costs.[1] For chronic pain management, nonpharmacologic options and multidisciplinary care are recommended as gold standards.[6-8] Self-management is central to such programs, as it empowers patients to adopt behaviour, strategies, and skills to improve their quality of life.[9-11] In Canada most multidisciplinary clinics for chronic pain are located in hospitals, and access can be limited by long wait times.[12] Family physicians or nurse practitioners are at the front lines of managing chronic pain, yet they often lack either the time or resources they need to access a multidisciplinary team with expertise in chronic pain.[13-15]

As an unfortunate result, care of patients with chronic pain often relies on prescription drugs, most notably opioids.[16] Indeed, Canada has the second-highest rate of opioid prescribing per capita worldwide (after the United States) when measured as defined daily doses and the highest rate when reported as morphine equivalent (MEQ) dispensed,[17,18] and opioid abuse and overdose have become serious public health concerns.[19] While initiatives have aimed to address existing shortcomings in chronic pain management,[17] there is still a clear need and opportunities to develop better approaches in primary care to serve these patients.

Program objective

The objective of this pilot project was to examine the implementation of a registered nurse (RN)–led chronic noncancer pain self-management program in Ontario. The program was developed within a family health team (FHT) in an outpatient, multidisciplinary primary care clinic. We report quantitative measures of chronic pain outcomes (pain intensity, pain interference with daily living, confidence in attaining self-management goals, opioid dosage) among participating patients, and we provide thematic qualitative analysis based on anonymous surveys of different groups (patients, clinicians, clinic administrators) involved with the program.

Program description

This RN-led chronic pain self-management program was conducted at the Bruyère Academic FHT in Ottawa, Ont. Staff members of this outpatient clinic included family physicians, nurse practitioners, a pharmacist, social workers, a kinesiologist, and a dietitian.

Patient enrolment and data collection occurred between January 2016 and August 2018. Eligible patients were 18 years or older with chronic noncancer pain. Potential participants were each referred by their family physician or nurse practitioner. Chronic pain experienced by a participant was often complex, and the various conditions and diagnoses obtained from electronic medical records were grouped into arthritis; back and neck pain; fibromyalgia; headache or migraine; other musculoskeletal disorders; other neurological disorders; or trauma.[20,21]

Chronic pain program. The chronic pain program was developed by an RN (I.L.) and family physicians in the clinic using principles of chronic disease self-management (additional program details are provided in Appendix 1, available from **CFPlus***).[10] The RN was responsible for delivering the program and tracking patient outcomes.

The RN held an extensive intake appointment with each participant. The RN recorded patient demographic characteristics and assessed the following outcomes: pain intensity, measured using a numerical rating scale (from 0 to 10, with higher scores indicating more intense pain)[22]; pain interference, measured using the 7 pain interference sub-items from the Brief Pain Inventory (from 0 to 70, with higher scores indicating more interference with daily living due to pain)[23]; confidence, using a confidence scale (from 0 to 10, with higher scores indicating greater confidence related to achieving a specific goal selected by the patient)[24]; and opioid daily dosage, expressed as dose in milligrams of MEQ. The risk of future opioid abuse by a patient was also assessed with the Opioid Risk Tool[25]; this risk was considered low (score of 3 or lower), moderate (score of 4 to 7), or high (score of 8 or higher).The RN then used motivational interview principles and the Pain Explanation and Treatment Diagram (PETD) tool[26,27] (Appendix 2, available from **CFPlus***) to educate patients on modifiable pain-related risk factors. Habits (diet, smoking, alcohol consumption), sleep, exercise, ergonomics, and psychosocial factors were discussed. Counseling on cannabis use was performed as needed on an individual basis, following published guidelines.[28]

The RN then scheduled follow-up appointments, approximately 3 months apart, with meeting frequency based on patients' needs and their progress in understanding and managing pain risk factors as discussed. Appointments could also take place by telephone. However, to be considered as having participated in the full program and to be included in our quantitative analysis, each patient needed to have had an initial in-person visit that included use of the PETD (**Box 1**).[26] At each appointment appropriate referrals were made to other health care professionals available in the FHT (eg, kinesiologist, social worker). A physiatrist (H.M.F.) was available for case discussions and referrals. A psychiatrist was also available for consultation with participating patients. Referrals to regionally sponsored chronic pain workshops were made as needed.

*__Appendices 1, 2, 3, 4,__ and __5__ are available from **https://www.cfp.ca/**. Go to the full text of the article online and click on the **CFPlus** tab.

Box 1. Chronic pain program description summary

Chronic pain program
- Initial visit with RN to discuss lifestyle and psychosocial factors using the PETD assessment tool[26]
- Follow-up visits approximately 3 months apart
- Not all patients require follow-up visits

Modified program
- At least 1 aspect of the program is modified owing to patient's condition
- Examples of a modified program: telephone appointments, no PETD use

PETD—Pain Explanation and Treatment Diagram, RN—registered nurse.

Quantitative analysis. Key demographic information and outcome variables for each participant were tracked in a confidential, securely stored database maintained by the RN. For each outcome, values recorded initially and at the last appointment were compared using a 2-sided Wilcoxon signed rank test (SPSS, version 23). A *P* value of less than .05 was considered statistically significant. Whenever an opioid dosage range was recorded, the highest value was used for analysis. Data are reported using medians (interquartile range [IQR] presented as 25th to 75th percentiles, as well as minimum and maximum values or greatest changes) since the data did not conform to a normal distribution and therefore could not be expressed using means and standard deviations.

For clinical relevance, we determined the proportion of patients who achieved a clinically important reduction in pain intensity, which was defined as an absolute reduction on an individual basis of at least 2 points.[29,30] Clinical relevance for pain interference was defined as a decrease of at least 7 points (representing an average decrease of 1 point for each of the 7 items evaluated).[29] We considered a reduction of at least 10 mg in daily MEQ to be clinically significant.

Qualitative analysis. Surveys were sent to 3 key stakeholder groups: patients, clinicians, and clinic administrators. Questions were developed using assessment tools designed to measure self-management support: Patient Assessment of Chronic Illness Care,[31] Assessment of Chronic Illness Care,[32] and Assessment of Primary Care Resources and Supports for Chronic Disease Self-Management.[33]

To recruit survey respondents, the RN contacted patients; those interested in sharing their feedback could reply to her to receive a link to the online survey or a paper copy by mail. Patients were asked questions about their expectations of and experiences with the program (Appendix 3, available from **CFPlus***). Clinicians and administrative staff received information about the surveys through the hospital's weekly newsletter, reminder e-mails, and announcements at staff meetings. Clinicians were asked about the quality of the program (Appendix 4, available from **CFPlus***) and clinic administrators were asked to comment on administrative advantages and disadvantages (Appendix 5, available from **CFPlus***). All surveys were completed anonymously. Responses were analyzed using the strengths, weaknesses, opportunities, and threats (SWOT) framework.

Results

Program overview. A total of 111 patients with chronic noncancer pain were referred to the program. The median age of these patients was 56.0 years (IQR=47.0 to 69.0; minimum 19, maximum 90) and 74.8% were female. Fifty of 107 patients (46.7%) had been prescribed opioids; information was not available for 4 individuals.

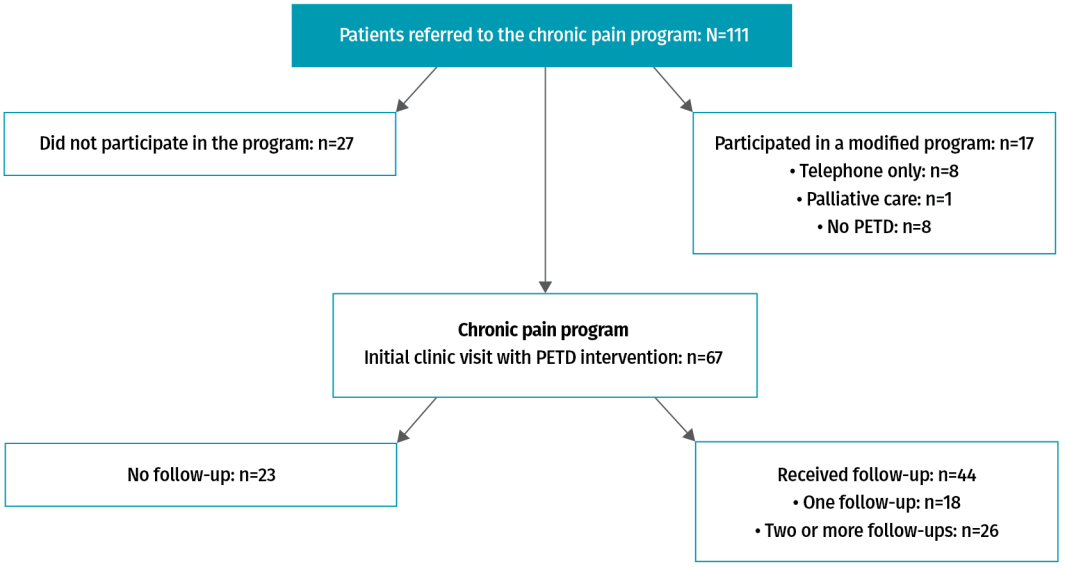
Among the 111 patients referred, 27 (24.3%) did not participate; they either cancelled or did not attend their appointments, did not call back, or declined participation (**Figure 1**).[26] Seventeen patients (15.3%) experienced a modified version of the program when their age or health conditions rendered in-person meetings too difficult; they were excluded from the analysis.

Participant characteristics and quantitative analysis. Sixty-seven of 111 referred patients (60.4%) received initial appointments with the RN (which included reviewing the PETD). Of these 67 participants, 44 (65.7%) received follow-up visits; 18 (26.9%) patients had 1 follow-up and 26 (38.8%) had 2 or more follow-ups (**Figure 1**).[26] Characteristics of participants and primary outcome measures at the first appointments are presented in **Table 1**.[22-25] Female participants predominated (76.1%). Arthritis, back and neck pain, and fibromyalgia were frequent diagnoses. The median pain intensity score was 6.0; the median Opioid Risk Tool score was 4.0; and the median MEQ of opioid users was 47.5 mg.

Among the participants with follow-up, outcome measures were compared between the first and last appointments (**Table 2**).[22-24] However, not all measures were assessed for every patient at each appointment, resulting in fluctuations in sample sizes. The median of differences was 0.0 for pain intensity (IQR=-1.0 to 1.0 points; greatest reduction -7, greatest increase 4; *P*=.79) but -5.0 points for pain interference (IQR=-11.75 to 6.75 points; greatest reduction -50, greatest increase 38; *P*=.08). Although the group variations in outcome measures did not reach statistical significance (*P*≥.05), individuals achieved clinically important reductions in 21.6% of cases (8 of 37 participants; a decrease of ≥2 points) for pain intensity and in 46.9% of cases (15 of 32 participants; a decrease of ≥7 points) for pain interference (**Figure 2**).[22,23,29,30]

Participants' level of confidence related to achieving a recovery goal had a median of differences of -0.5 points (IQR=-2.0 to 0.75 points; greatest reduction -5,

Figure 1. Participant inclusion and exclusion flowchart



PETD—Pain Explanation and Treatment Diagram.[26]

Table 1. Participant characteristics and initial outcome measures

	VALUE			
CHARACTERISTIC	MEDIAN (IQR)	MINIMUM	MAXIMUM	n (%)
Age, y, n=67	54.0 (47.0-62.0)	24	83	NA
Sex				
• Female	NA	NA	NA	51 (76.1)
Diagnoses or conditions,* n=66				
• Arthritis	NA	NA	NA	31 (47.0)
• Back and neck pain	NA	NA	NA	31 (47.0)
• Other musculoskeletal disorders	NA	NA	NA	19 (28.8)
• Fibromyalgia	NA	NA	NA	17 (25.8)
• Trauma	NA	NA	NA	14 (21.2)
• Other neurological disorders	NA	NA	NA	12 (18.2)
• Headache or migraine	NA	NA	NA	8 (12.1)
Opioid Risk Tool score,† n=61	4.0 (1.0-9.0)	0	17	NA
Outcome measures				
• Pain intensity,‡ n=67	6.0 (4.0-7.0)	2	10	NA
• Pain interference,§ n=65	47.0 (33.0-56.5)	11	66	NA
• Confidence,‖ n=58	7.0 (5.75-10.0)	1	10	NA
• MEQ (mg), n=24¶	47.5 (18.0-90.0)	7.2	780	NA

IQR—interquartile range, MEQ—morphine equivalent, NA—not applicable.
*Participants could have received more than 1 diagnosis or could have had more than 1 condition.
†Scores 0 to 3 indicate low risk of aberrant behaviour, 4 to 7 indicate a moderate risk, and 8 or higher indicate a high risk.[25]
‡Rated on a scale of 0 to 10, with higher scores indicating more intense pain.[22]
§Based on the 7 pain interference sub-items of the Brief Pain Inventory (scale of 0 to 70, with higher scores indicating more interference with daily living owing to pain).[23]
‖Rated on a scale of 0 to 10, with higher scores indicating greater confidence related to achieving a specific goal selected by the patient.[24]
¶Values could not be calculated for 2 additional opioid users.

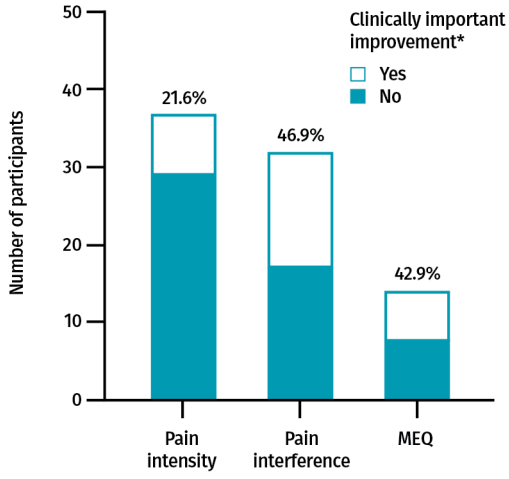
greatest increase 5; *P*=.23). Among opioid users, the median of differences in MEQ value was 0.0 mg (IQR=-70.25 mg to 0.0 mg; greatest reduction -270 mg, greatest increase 30 mg; *P*=.07). Importantly, 6 of 14 participants (42.9%; **Figure 2**)[22,23,29,30] reduced their opioid dosages by a median MEQ of 73.5 mg (IQR=-32.5 mg to -157.5 mg, smallest reduction -10 mg, greatest reduction -270 mg). One participant completely eliminated opioid use despite an initial MEQ value of 270 mg. Opioid dosage did not vary for another 6 participants, and relatively

Table 2. Outcome measures at first and last appointments

OUTCOME MEASURE	MEASUREMENT AT FIRST APPOINTMENT			MEASUREMENT AT LAST APPOINTMENT		
	MEDIAN (IQR)	MINIMUM	MAXIMUM	MEDIAN (IQR)	MINIMUM	MAXIMUM
Pain intensity,* n=37	6.0 (4.0-7.5)	2	10	6.0 (3.5-8.0)	0	10
Pain interference,† n=32	45.0 (31.0-54.75)	14	65	39.5 (25.0-53.0)	3	69
Confidence,‡ n=24	8.25 (6.25-10.0)	5	10	8.0 (6.0-9.75)	4	10
MEQ (mg), n=14	60.0 (29.25-141.75)	10	780	46.5 (29.25-67.5)	0	700

IQR—interquartile range, MEQ—morphine equivalent.
*Rated on a scale of 0 to 10, with higher scores indicating more intense pain.[22]
†Based on the 7 pain interference sub-items of the Brief Pain Inventory (scale of 0 to 70, with higher scores indicating more interference with daily living owing to pain).[23]
‡Rated on a scale of 0 to 10, with higher scores indicating greater confidence related to achieving a specific goal selected by the patient.[24]

Figure 2. Numbers and proportions of participants experiencing clinically important improvements



MEQ—morphine equivalent.

*Clinically important improvements were defined as a decrease of at least 2 points on a numerical rating scale (0 to 10) for pain intensity,[22,30] a decrease of at least 7 points on the interference sub-items of the Brief Pain Inventory (0 to 70) for pain interference,[23,29] and a reduction of at least 10 mg in daily MEQ use.

limited increases were observed with 2 patients (20 mg and 30 mg MEQ).

Qualitative (SWOT) analysis. Thirty-six individuals (9 patients, 13 clinicians, and 14 administrators) responded to the SWOT survey (**Table 3**). The findings of the SWOT analysis were positive across all participant groups. Patients said they felt listened to, and some indicated that they understood opioids were not the answer to their pain. Clinicians said they appreciated the multidisciplinary approach, and administrators said they valued the program's support of continuity of care.

Discussion

The natural history of chronic pain has been documented by studies involving patients on wait lists for first appointments with multidisciplinary pain clinics. In these studies, pain interference and quality of life remained unchanged during the first few months of waiting or deteriorated by 6 months of waiting.[34-38] Deterioration was especially notable for quality of life and mental health measures (distress, anxiety, and depression).[35,36]

In contrast, our family practice–embedded program led to declines in pain-related measures and opioid usage. Indeed, among participants in this program who had follow-up visits, pain interference with daily living was improved to a clinically significant degree in nearly half of patients (46.9%). More than 1 in 5 patients (21.6%) reported a clinically important reduction in pain intensity. Finally, in a sample with a moderate risk of future opioid abuse at program outset, 42.9% of participating opioid users reduced their daily use.

Chronic pain has a substantial impact on patients' function, work, and quality of life, in addition to being a burden on the health care system.[17,39] A model of chronic musculoskeletal pain has described biochemical and physiologic processes that mediate links between physical, psychological, and social factors and recovery.[40] To enhance the success of treating chronic painful conditions, treatment must focus simultaneously on these factors. However, there is a lack of patient and provider access to multidisciplinary resources (eg, kinesiology, social work) in primary care. Physicians might then refer patients to other medical or surgical specialists, to whom access is also limited, often with extensive waiting lists. As a last resort, family physicians might prescribe opioids, despite current evidence or even opinion against prescribing.[8,16] Finding effective and cost-efficient alternative ways to manage chronic pain in an outpatient setting is therefore crucial.[41,42] Our program demonstrates that an RN-led chronic noncancer pain intervention program within a family medicine practice is feasible and shows promise for improving pain-related outcomes and, importantly, reducing opioid use.

In a report published in 2021, the Canadian Pain Task Force recommended actions to be taken to provide access to evidence-informed, person-centred pain care (including clinician-supported self-management programs) and to

Table 3. Summary of SWOT survey responses

SURVEY RESPONDENTS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Patients, n=9	• Feel listened to • Patient held accountable • Adequate time with RN • Prefer RN lead over physician • Appointments were convenient, fast • Appointments involved patient education and participation	• Too few appointments • Not all team members familiar with history • Need more help navigating services	• Understanding that opioids are not the answer	• Negative experiences with care providers other than the RN
Clinicians, n=13	• Multidisciplinary approach • Patient engagement • Focus on patient engagement and empowerment • Registered nurse has more time • More administrative efficiency overall • Since RN cannot refill prescriptions, less demand on pharmacy services	• Lack of general awareness of the program • Lack of integration of program with other services • Lack of specific guidelines	• Cost-effectiveness of RN compared with physician, allows for scalability of program	• Possible negative perception of RN by patient, owing to fact that RN cannot refill prescriptions
Administrators, n=14	• Continuity of care • Holistic approach • Team collaboration • Focus on patient empowerment and education • Registered nurse has more time and availability than physician	• Increased burden on RN • Challenge of disseminating research results • Challenge of dividing workload	• Cost-effectiveness of RN becoming expert in chronic noncancer pain management • Program has accountability	• Challenge of program cost

RN—registered nurse, SWOT—strengths, weaknesses, opportunities, threats.

offer incentives for the provision of team-based care at the primary care level.[1] Benefits of self-management programs and effectiveness of program components—such as lifestyle interventions, pain education, and exercise—have been reported.[43-45] Our program integrates many key elements currently promoted for the management of chronic pain into a convenient format for clinicians and patients alike.

Nurses are well suited to facilitating patient education, monitoring disease outcomes, and coordinating a multidisciplinary team, and many disease management programs involve nurses as case managers or program leaders (eg, the Chronic Pain Self-Management Program).[46-48] As highlighted in our survey results (**Table 3**), including an RN as part of the multidisciplinary team was clearly a positive element, confirming previous findings.[41,42,49] Self-management programs led by other health professionals (eg, occupational therapists, physiotherapists) have also been studied, but they did not necessarily include a multidisciplinary approach at the primary care level.[50,51] Alternatively, various nurse-led interventions for chronic pain management have previously been investigated but were usually performed in hospitals or specialized pain clinics.[52,53] A distinctive characteristic of our program is that it was successfully led by an RN in a family practice offering multidisciplinary care.

In the SWOT exercise, clinicians and administrators mentioned that patients might negatively perceive the fact that RNs cannot refill prescriptions. We consider this a strength of the program, shifting the focus away from medication and promoting nonpharmacologic and self-management objectives. Accordingly, patients consistently reported improving their understanding of chronic pain and of medications they were being prescribed. We suggest this improved understanding contributed to the observed reductions in opioid use. Patients saw the PETD as a useful educational tool that provided a straightforward and actionable plan of care.

Another characteristic of the program's success was that it was integrated within the clinic and did not require any additional resources. These features of collaborative care are fundamental for optimal management of chronic conditions.[54,55] However, as clinic administrators pointed out, any substantial expansion of the program would require additional resources. We

recognize that this intervention could not currently be realized in most family medicine offices in Canada, as most family physicians do not work in multidisciplinary settings.[56] Nevertheless, our program demonstrates how investment in access to integrated team-based care with family physicians or nurse practitioners is worthwhile because it can lead to better management of chronic pain and reduced opioid use.

As self-management is at the core of this program, ideal patients are motivated and willing to be involved in their therapy. Also, the full program might not be suitable to all chronic noncancer pain patients. On the other hand, this program is flexible and has been adapted to a virtual care context since the completion of the pilot study described here, such as during the COVID-19 pandemic.

Limitations

While the decrease in opioid use and clinically important differences related to pain intensity and interference are encouraging, further studies should confirm these results in larger samples. This would allow a more robust analysis and help define more precisely the impact of the program on pain-related outcomes. For instance, additional investigations could delineate the most effective elements of the program or profiles of patients who might benefit most from participation. Future research should also cover topics such as return to work and other aspects of quality of life. Improvement in self-management capability can be expected to decrease health care use and thus reduce costs associated with chronic pain.[57,58] However, a formal cost-effectiveness analysis of the program, compared with usual care, could be performed to determine potential benefits.

In this study the confidence scores did not show any clear variation with program participation. Considering the initial median score, a ceiling effect might have limited improvement possibilities. Future investigations might instead include more comprehensive assessment of participants' knowledge, skills, and confidence in self-managing chronic pain.[57,58] Researchers could also examine actions taken to achieve selected goals and their impact on chronic pain. In addition, the relatively limited initial recruitment rate and variability of outcomes among the sample studied are consistent with previous reports.[42,53] Although the natural history of chronic pain, as demonstrated by studies of treatment wait times, points to a lack of improvement or worsening with time,[34-38] future studies should include a concurrent control group.

Conclusion

This RN-led chronic pain program located in a primary care practice offers a model for managing chronic pain. It was easy to implement and well accepted, and the specific role the RN played was beneficial. Clinically relevant reductions in pain interference with daily living, pain intensity, and opioid use were noted among participants with follow-up visits. This approach has the potential to contribute to addressing the multifaceted consequences of chronic noncancer pain for participating patients. It might also help alleviate both the current opioid crisis and structural or economic burdens of chronic pain management. Investment in primary care to support access to multidisciplinary resources is needed to address these critical issues.

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Contributors

All authors of this paper have directly participated in the planning, execution, or analysis of the study; all have read and approved the final submitted version.

Competing interests

None declared

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