Access to mental health services for people living with chronic pain

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ABSTRACT

Introduction

Chronic pain is an important global health issue, and mental health conditions frequently co-occur together. Additionally, a significant proportion of people living with chronic pain (PLWCP) may develop opioid use problems from prescribed opioid medications. Psychological interventions can have a positive effect on pain, co-occurring mental health conditions, as well as on reducing opioid medication doses. Still, access to such services is generally considered to be problematic due to barriers such as costs, stigma, and service availability. PLWCP may encounter additional access barriers due to population-specific characteristics such as pain-related distress and disability, trauma, unemployment, and more. This thesis aims to evaluate the accessibility of mental health services for PLWCP.

Methods

Two studies were conducted in the context of this thesis. In the first study, a narrative review of the literature on the utilization of mental health services by PLWCP was completed. This review was based on 9 articles reporting the proportion of PLWCP that had used any type of mental health services (i.e. mental health services or consultations with mental health professionals). In the second study, an online survey to evaluate the perceived needs for mental health care (MHC) of a sample of PLWCP in Quebec was completed. The survey was distributed to members of the Quebec Chronic Pain Association, and on social media.

Results

In the first study, the narrative review helped identify 9 articles, where 15 reports of mental health service utilization by PLWCP were identified. Nine of these reports pertained to the utilization of mental health services for pain-related reasons, whereas the remaining 6 reports concerned service mental health service utilization for mental health-related reasons. On average, only a quarter of study samples had used mental health services for any of the two reasons (M = 24%; 95% CI [13%-35%]). The utilization of mental health services for mental health-related reasons represented a higher proportion of participants (M = 35.6%; 95% CI [11%-60%]), than their utilization for pain-related reasons (M = 16.1%; 95% CI [9%-23%]). In the second study, a total of 140 participants were recruited. Of these, 82 participants reported a need for MHC to

manage mental health problems in terms of information, medication, and counselling or psychotherapy. Results showed that only 16% of this sample indicated that all of their perceived MHC needs were met, and 40% indicated that none of their perceived MHC needs were met.

Conclusions

The two studies carried out in the context of this thesis indicate that the accessibility of MHC for the chronic pain population seems to be sub-optimal. Overall, findings from this thesis suggest that the chronic pain population is not currently using mental health services to the degree to which they could benefit from them and that they may have unmet perceived needs for MHC. It is important to address these gaps to improve the treatment of chronic pain and co-occurring mental health problems, as well as to contribute to reducing the reliance on opioid medications and their negative consequences.

RÉSUMÉ

Introduction

La douleur chronique représente un problème important de santé publique globale qui est souvent accompagné de problèmes de santé mentale. De plus, une proportion importante des personnes souffrant de douleur chronique risque de développer des problèmes d'usage des médicaments opioïdes prescrits. Les interventions psychosociales peuvent exercer un impact positif sur la douleur et les problèmes de santé mentale tout en permettant de réduire les doses de médicaments opioïdes. Pourtant, l'accessibilité à ces services est fréquemment limitée à cause des obstacles liés aux coûts, de la stigmatisation, de leur disponibilité, entre autres. Les personnes souffrant de douleur chronique pourraient aussi rencontrer d'autres obstacles liés à leurs caractéristiques telles que la détresse liée à la douleur, l'invalidité, le traumatisme, entre autres. Ce mémoire vise à évaluer l'accessibilité aux services en santé mentale pour les personnes souffrant de douleur chronique.

Méthode

Deux études ont été menées dans le cadre de ce mémoire. Dans la première étude, une révision des écrits scientifiques portant sur l'utilisation des services en santé mentale par les personnes souffrant de douleur chronique a été complétée. Elle est fondée sur 9 articles rapportant la proportion des personnes souffrant de douleur chronique ayant utilisé au moins un service en santé mentale (p.ex. services et consultations avec des professionnels de la santé). Dans la seconde étude, une enquête par questionnaire web a été menée afin d'évaluer les besoins perçus en termes des services en santé mentale des personnes souffrant de douleur chronique au Québec. L'enquête a été distribuée aux membres de l'Association québécoise de la douleur chronique et dans les réseaux sociaux.

Résultats

La recension des écrits a permis d'identifier neuf études où des taux d'utilisation des services en santé mentale ont été évoqués. Parmi ceux-ci, neuf taux portaient sur l'utilisation des services pour gérer la douleur et six sur l'utilisation des services pour des problèmes de santé mentale. Parmi les participants à ces études, seulement le quart ont rapporté avoir utilisé des services en

santé mentale pour des raisons liées à la douleur ou à la santé mentale (M = 24 % ; 95 % CI [13 % - 35 %]). Le recours aux services en santé mentale uniquement pour des problèmes de santé mentale représente une proportion plus élevée de participants (M = 35.6 % ; 95 % CI [11 % - 60 %]), que leur utilisation pour la gestion de la douleur (M = 16.1 %; 95% CI [9 % - 23 %]). Dans la seconde étude, 140 participants ont été recrutés. Parmi ceux-ci, 82 ont rapporté des besoins perçus pour des services en santé mentale en termes d'information, médication et counseling ou psychothérapie. Seulement 16 % de cet échantillon a indiqué que tous leurs besoins perçus concernant les services en santé mentale avaient été répondus.

Conclusion

Les deux études complétées dans le cadre de ce mémoire indiquent que l'accessibilité aux services en santé mentale pour la population de douleur chronique ne semble pas être optimale. En général, les études rapportées suggèrent que la population aux prises avec la douleur chronique n'utilise pas les services en santé mentale autant qu'elle pourrait en bénéficier et qu'elle éprouverait des besoins non comblés à l'égard de ces services. Il importe d'adresser cette lacune afin d'améliorer le traitement de la douleur et des problèmes de santé mentale, ainsi que de contribuer à la réduction de la consommation de médicaments opioïdes et de leurs conséquences négatives.

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I would like to thank the Quebec pain research network, especially Dr. Hélène Beaudry, who went above and beyond to facilitate participant recruitment through the Quebec Chronic pain association. Thank you to Dr. Manon Choinière for supporting recruitment as well as for providing thoughtful and relevant comments for the construction of the questionnaire. Thank you to Dr. Martel, for diligently facilitating these key collaborations.

Thank you to the Quebec chronic pain association for your assistance in participant recruitment for the online study, and to the members of the administrative committee for providing relevant feedback. Thank you to the 3 anonymous patient-partners who piloted the survey, and provided pertinent and critical feedback.

Thank you to all participants for being vulnerable enough to share your experiences, despite this not being an easy task, and for giving us the honor of amplifying your voices to contribute to the improvement of mental health services. Your lived experiences will not be taken for granted.

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Funding for the studies completed during my Master's program was granted by the Substance Use and Addictions Program (SUAP) to the principal investigator, Michel Perreault, Ph.D., for a larger project whose aim is to better adapt services to the needs of people who consume opioids. I would like to thank the Institut Universitaire sur les Dépendances for their award granted to draft this thesis, as well as the RISQ for their award to prepare my second MSc thesis article for submission.

Ethics approval

The research ethics board (REB) of the CIUSSS du-Centre-Sud-de-l'Île-de-Montréal approved the online study protocol (project number: DIS-2021-09-MP). Written informed consent was obtained from all participants at the beginning of the online survey.

CONTRIBUTION OF AUTHORS

This MSc thesis comprises five chapters and two manuscripts. I, **Jennifer L. Cohen Reyes**, was responsible for the conception and writing of all components of this thesis. I am the first author of both included manuscripts, and as such made significant contributions to the conception of both studies, questionnaire design, data analysis planning, and interpretation of results. Furthermore, I completed all research necessary for the narrative review, and the design of the questionnaire. I also created all participant recruitment content and carried out recruitment tasks including logistical coordination with key collaborators, drafting recruitment emails, and designing and executing the social media recruitment strategy (see Supplementary materials). Additionally, I extracted all data, translated the questionnaire from English to French, designed and programmed the conditional branching logic of the online survey, and performed all data analyses.

Dr. Michel Perreault, as supervisor (and principal investigator of the larger project from which the thesis studies were from), provided overall support and guidance, and facilitated key collaborations to make these studies possible. He also contributed significantly to the conception of both studies, questionnaire design, data analysis planning, interpretation of results, and the revisions of the thesis and manuscripts.

Dr. Marc O. Martel facilitated key collaborations for participant recruitment, and contributed to the design, piloting (alongside his research team members), and revisions of the online questionnaire, as well as to revisions of the first manuscript.

Dr. Manuela Ferrari contributed to the design, piloting, and revisions of the online questionnaire, as well as to revisions of the first manuscript.

Léonie Archambault, as the research coordinator of the research team, conducted the tasks related to receiving the REB approval for the larger project led by Dr. Michel Perreault, including the production of the informed consent form used in the online study. She also revised the translation of the online questionnaire from English to French, piloted the online survey, and recruited patient-partners to pilot it.

Diana Milton, as the administrative assistant of the research team, carried out all financial tasks related to this thesis. She also piloted the online questionnaire and assisted in formatting the first manuscript for submission.

Dr. Manon Choinière contributed to the revision of the questionnaire and supported participant recruitment to the online study through the Quebec chronic pain association.

Dr. Hélène Beaudry contributed significantly to the recruitment of participants for the online study through the Quebec pain research network and the Quebec chronic pain association.

The Quebec chronic pain association contributed to the recruitment of participants for the online survey and to piloting the online questionnaire. **Dr. Vincent Raymond,** and **Jocelyn Decoste,** from the administrative committee of the Quebec chronic pain association, provided feedback for the questionnaire.

The Quebec pain research network, and **the Quebec Network of Junior Pain Investigators,** contributed to the recruitment of participants for the online study.

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LIST OF ABBREVIATIONS

PLWCP: People living with chronic pain
MH: Mental health
MHC: Mental health care
NR: Not reported

CHAPTER 1 – INTRODUCTION

Chronic pain is an important global health issue. From 20% to 40% of adults in the world suffer from chronic pain (Dahlhamer et al., 2018; Enright & Goucke, 2016; Schopflocher et al., 2011). People living with chronic pain (PLWCP) often experience co-occurring mental health conditions. Such conditions can appear before or after the presentation of chronic pain (Bondesson et al., 2018; Hooten, 2016; Lerman et al., 2015). It is also known that negative cognitive factors can affect the development and persistence of chronic pain (Edwards et al., 2016; Gatchel et al., 2007; Turk et al., 2016). Additionally, a proportion of this population maintained on long-term opioid therapy may develop opioid medication misuse problems or an opioid use disorder and can be at risk of opioid overdoses (Cheatle, 2011; Vowles et al., 2015; Webster, 2017). Long-term opioid therapy is also known to contribute to the development of mental health problems such as depression (Scherrer et al., 2014, 2015, 2016). Psychological interventions have been shown to be effective at managing mental health problems, reducing opioid medication consumption, and improving pain outcomes.

Thesis rationale & Objectives

Despite the importance of mental health services for PLWCP, there is limited information available about their accessibility for this population. For this reason, the present thesis aims to evaluate the accessibility of such services for this population. To do this, this research poses two specific objectives:

1) To evaluate the utilization of mental health services by PLWCP.
2) To evaluate the perceived needs for mental health services of the chronic pain population based on the perspectives of a sample of PLWCP.

This thesis contributes to knowledge dissemination through the preparations of 2 articles to be submitted for publication in peer-reviewed journals, as well as 7 presentations completed in seminars and scientific conferences. Results from the first study, a narrative review, were presented in the regional scientific conference “Convergence Recherche et Intervention (CRI)”, the student-led McGill Annual integrative psychiatry conference, as well as in the Douglas research center mental health and society division seminar series. Results from the second study, an online survey, were presented in the national annual meeting of the Canadian Pain Society as well as in the lunch talk series of the Quebec Pain Research Network and the Douglas research center research day. Please refer to the Appendices for a complete list of presentations.

Moreover, each specific objective of this thesis has become the main objective of a scientific article. The articles are presented in Chapters 3 and 4 of this thesis:

- The first article titled: *"Utilization of mental health services by people living with chronic pain: A narrative review*" has been prepared for submission.
- The second article titled: *"Unmet perceived mental health care needs for people living with chronic pain: Results from a Quebec online survey."* has also been prepared for submission.

Knowledge generated from this project will support recommendations to improve mental health services for people living with chronic pain in Quebec.

CHAPTER 2 – LITERATURE REVIEW

Epidemiology of chronic pain

In Canada, the prevalence of chronic pain has been continuously increasing. Shupler et al. (2019) note that those reporting not normally being free of pain increased from 16.3% in 2000 to 21% in 2014. Schopflocher et al. (2011) estimated that in the period of 2007 to 2008, 18.9% of Canadians suffered from chronic pain, and around half reported their chronic pain to be highly severe. The incidence and severity of chronic pain are said to increase during or following the COVID-19 pandemic due to either COVID-19 itself, pandemic-related health care shifts, or psychological stressors related to the pandemic (Clauw et al., 2020). Moreover, the already high prevalence of chronic pain is often accompanied by worsening mental health. In general, in the Canadian population, those reporting not being free of pain were significantly less likely to have flourishing mental health, which includes emotional well-being, and psychological and social functioning (Gilmour, 2015). Chronic pain is also highly associated with mental disorders.

Chronic pain and mental health

The experience of pain is intrinsically connected to mental health. Pain is defined to be "an aversive sensory and emotional experience typically caused by, or resembling that caused by, actual or potential tissue injury". This experience can be influenced by biological, psychological, and social factors. Pain is said to always be a personal experience that is learned through life experiences, and that may have adverse effects on function, and social and psychological well-being (Raja et al., 2020). The emotional or affective component of pain incorporates different types of emotions, but the consensus is that they are primarily negative (Gatchel et al., 2007).

The connection between pain and mental health grows deeper as pain persists to become chronic. Chronic pain is defined as pain that "persists or recurs for longer than 3 months and is associated with significant emotional distress or functional disability" (Nugraha et al., 2019; Treede et al., 2019). This associated emotional distress, which can be experienced in many forms, usually contributes to the persistence of chronic pain.

A form of emotional distress frequently experienced by PLWCP is anxiety. Individuals may be anxious about the meaning of their symptoms, fear of future pain, fear of disability, fear of not being believed, financial difficulties, among many other things. Anxiety in PLWCP has been found to predict pain and pain-related disability (Lerman et al., 2015).

Fear and pain-related anxiety are said to result from the negative appraisal of pain, which is in itself associated with pain-related beliefs learned through life (Gatchel et al., 2007). In this case, pain is believed to be a sign of damage, and therefore, activities that can have the potential to induce pain should be avoided. When this and other maladaptive beliefs are accentuated, individuals tend to become hypervigilant to their environment to prevent the occurrence of pain, and to have an exaggerated negative appraisal of actual or anticipated pain experiences, called pain catastrophizing (Gatchel et al., 2007; Quartana et al., 2009). The catastrophic interpretation of pain then leads to a physiological, behavioral, and cognitive fear response. This cognitive shift further feeds into pain catastrophizing, and the avoidance behaviour is reinforced in the short term through the absence of pain (Gatchel et al., 2007). Anxiety, fear, avoidance behaviour, and related maladaptive beliefs can contribute to disability and the chronicity of pain notoriously described as the fear-avoidance model of chronic pain (Hooten, 2016; Lethem et al., 1983; Vlaeyen & Linton, 2000).

Another notorious expression of emotional distress in PLWCP is depression. Depression is strongly linked with chronic pain such that 20 to 50% of people with chronic pain suffer from depression, and those with severe chronic pain have a higher probability of being depressed (Mills et al., 2019). Epidemiological studies also suggest that a reciprocal causal relationship exists between depression and pain, where some individuals develop depression after being diagnosed with a chronic pain condition, and others develop pain after being diagnosed with a mental illness (Bondesson et al., 2018; Goesling et al., 2018; Hooten, 2016). In some instances, depression has been identified as the strongest predictor of the occurrence of back pain (Jarvik et al., 2005). Depression can also negatively impact the rehabilitation process of PLWCP since individuals may not be as motivated to initiate and comply with treatment (Gatchel et al., 2007).

Moreover, elevated rates of substance use problems have also been consistently observed among patients with chronic pain (Jamison et al., 2011; Martel et al., 2018). Chronic pain is often managed using opioid medications, which can be accompanied by opioid misuse and may lead to opioid use disorder. It is estimated that 20-30% of patients who are prescribed long-term opioid therapy misuse opioids, and that roughly 8 to 12% of them present with an opioid use disorder (Vowles et al., 2015).

Additionally, considerable evidence has accumulated indicating that long-term opioid therapy can lead to the development of mental health problems, including major depression

(Scherrer et al., 2014, 2016). Studies show that having the risk of a co-occurring mental health diagnosis is associated with a higher opioid medication dose in PLWCP, and having a high opioid medication dose also increases the likelihood of suffering from a mental health problem (Goesling et al., 2018; Scherrer et al., 2015). In a minority of chronic pain patients maintained on opioid therapy, the use of opioids can also lead to fatal or non-fatal overdoses (Cheatle, 2011; Webster, 2017). Opioid mortality, which has seen an increase since the start of the COVID-19 pandemic, is also associated with co-occurring substance use and mental health problems (Chiappini et al., 2020; Crabtree et al., 2020; Slavova et al., 2020; Webster, 2017). A complex therapeutic regimen including opioids to treat chronic pain as well as medication to treat mental disorders may increase the risk of unintentional overdoses as breathing could be suppressed (Webster, 2017). Rates of suicidal ideation are known to be high in the chronic pain population (Cheatle, 2011). In this case, however, it is difficult to determine the proportion of deaths attributed to unintentional opioid poisoning and suicidal intentions (Cheatle, 2011).

Psychological treatment and chronic pain

Clinical guidelines for the management of chronic non-cancer pain have recommended that nonpharmacologic therapy be considered a first-line-treatment (Busse, 2017). Nonpharmacologic therapy can include a wide range of options, one of them being mental health services or consultations with mental health providers delivering psychological interventions. Psychological therapy shifts the treatment goals from analgesia to pain management, reducing the adverse consequences of pharmacologic treatment options and pain-related mental health problems, improving disability outcomes, and improving the patient's quality of life (Williams et al., 2020).

In-person and internet-delivered psychological interventions such as brief interventions, cognitive behavioural therapy for chronic pain, mindfulness-based stress reduction, acceptance and commitment therapy, among others have been shown to be effective at managing chronic pain (Driscoll et al., 2021; Eccleston et al., 2014; Hoffman et al., 2007; Niknejad et al., 2018; Pike et al., 2016; Williams et al., 2020). In the case of the most supported therapy, cognitive behavioural therapy, the typical treatment protocol addresses a patient's cognitive appraisal processes, revises self-defeating beliefs and repetitive thoughts associated with pain, and introduces emotional coping strategies, behavioural activation, and problem-solving skills (Williams et al., 2020).

Nicholas et al. (2020) recently found that after following an intensive outpatient cognitive behavioural therapy-inspired interdisciplinary program for three weeks, the majority of PLWCP in the treatment were able to completely cease their opioid medications at the end of treatment, and it was maintained at the 12-month follow-up. Studies like this one and others support the sole use of psychological therapies for the management of chronic pain, without the added risks of opioid medication.

Substance use problems like most mental health problems, and as described in chronic pain models, are strongly associated with maladaptive cognitive beliefs (Hamonniere & Varescon, 2018). Maladaptive cognitive beliefs can be addressed with psychological therapies such as cognitive behavioural therapy, which have shown support for the treatment of mental disorders such as depression (Parikh et al., 2016), anxiety (Katzman et al., 2014), and opioid use disorder (Dugosh et al., 2016; Morin et al., 2019), in addition to the already mentioned evidence for the treatment of chronic pain. Interestingly, authors Jasmine Silva et al. (2021) recently suggested that anxiety, and fear avoidance beliefs and behaviour also play a role in the continuation of long-term opioid therapy in PLWCP. These findings open the way for yet another potential contribution of psychological interventions to target and reduce important maladaptive cognitive beliefs, specifically related to long-term opioid therapy.

For PLWCP, psychological therapies have the unique potential to improve pain-related outcomes and mental health co-morbidities, and to reduce opioid medication use, all while limiting overdose and addiction risks. However, access to psychological treatment is frequently limited (V. Patel & Saxena, 2019).

Access to psychological services for PLWCP

Multidisciplinary pain treatment facilities constitute the optimal treatment context for PLWCP since they provide integrated multimodal pain care including access to pain medicine specialists, physical therapy, and psychological therapies (Choinière et al., 2020). They are also an access point for those who might seek psychological treatment to treat co-occurring mental health conditions. Nonetheless, in a country such as Canada where public multidisciplinary pain treatment facilities are included in the public health care coverage, the estimated median waiting time for the first appointment to access is 6 months, and the wait can be up to 4 years (Choinière et al., 2020). This wait time has not improved since its previous review in 2006 (Peng et al., 2007). Individuals on such waitlists have been reported to suffer from severe pain that interferes with their lives, to have severe or extremely severe symptoms of depression and suicidal ideation (Choinière et al., 2010).

Other than accessing public multidisciplinary pain treatment facilities where and when available, in countries such as Canada, some public mental health services are offered but availability is also limited (Bartram & Stewart, 2019; Cavaliere, 2014; Lapalme et al., 2018). Private multidisciplinary pain treatment facilities or mental health services can also be accessed, but are most of the time costly and not readily covered by medical insurance (Bartram, 2019, 2019; CMHA, 2018; Hewlett & Moran, 2012; V. Patel & Saxena, 2019). Additionally, specific factors related to this population such as pain-related distress and disability, trauma, employment issues, changes to social support structures as well as reliance on biomedical beliefs may also affect the accessibility of mental health services (Darnall et al., 2016; Duenas et al., 2016; Mills et al., 2019; A. S. Patel et al., 2012; Tunks et al., 2008).

CHAPTER 3 – MANUSCRIPT I

UTILIZATION OF MENTAL HEALTH SERVICES BY PEOPLE WITH CHRONIC PAIN: A NARRATIVE REVIEW

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Abstract

Chronic pain and mental health conditions commonly co-occur. Mental health services have shown benefits for both types of conditions. Nonetheless, the accessibility of such services is frequently limited. Given their potential benefits for people living with chronic pain (PLWCP), it is important to examine if this population is currently utilizing these services to assess any accessibility issues. **Objective:** A narrative review was conducted to document the existing research reporting the proportion of PLWCP that has used mental health services or consulted mental health providers, and to identify factors associated with service use. **Methods:** Databases Ovid APA PsycInfo, MEDLINE, and EMBASE were searched for peer-reviewed journals that included the proportion of PLWCP that had used mental health services at least once. **Results:** 944 unique articles were identified, from which 9 publications met the inclusion criteria. In most studies, approximately one-third or less of PLWCP reported having used mental health services or consulted providers at least once (*M* = 24%; 95% CI [13%-35%]). Poor mental health, higher education, and living in an urban area predicted mental health service use, whereas pain severity did not. **Conclusions**: Poor information about mental health services for chronic pain, limited service availability, and costs were some of the suggested access barriers. Findings highlight the need for care providers to understand and endorse the importance of mental health services in the context of chronic pain, as well as the need for mental health providers to be trained in pain psychology. Further research is needed to elucidate the different types of access barriers for mental health services in the context of chronic pain.

Introduction

Chronic pain is an important global health issue. In North America and Europe, an estimated 20% of adults suffer from chronic pain, and in low- and middle-income countries, it is estimated to be up to 40% (Dahlhamer et al., 2018; Enright & Goucke, 2016; Schopflocher et al., 2011). The incidence and severity of chronic pain are said to increase during or following the COVID-19 pandemic due to either COVID-19 itself, pandemic-related health care shifts, or psychological stressors related to the pandemic (Clauw et al., 2020).

Mental health conditions frequently co-occur with chronic pain. It is estimated that up to 50% of people living with chronic pain (PLWCP) may suffer from depression and up to 30% may suffer from anxiety (Asmundson & Katz, 2009; Lerman et al., 2015; Mills et al., 2019). Elevated rates of substance use problems have also been consistently observed among patients with chronic pain (Jamison et al., 2011; Martel et al., 2018). Furthermore, chronic pain is often managed using opioid medications, which can be accompanied by opioid misuse and may lead to opioid use disorder. It is estimated that 20% to 30% of patients who are prescribed long-term opioid therapy misuse opioids, and that roughly 8% to 12% of them present with an opioid use disorder (Vowles et al., 2015).

A bidirectional relationship between chronic pain and mental health has been repeatedly supported, whether mental health conditions such as depression and anxiety precede chronic pain or follow chronic pain (Bondesson et al., 2018; Hooten, 2016; Lerman et al., 2015). A wide range of psychosocial factors including negative emotions and beliefs are known to play an important role in the development and maintenance of chronic pain (for reviews, see Edwards et al., 2016; Gatchel et al., 2007; Keefe et al., 2005; Turk et al., 2016). Moreover, considerable evidence has accumulated indicating that long-term opioid therapy can lead to the development of mental health problems, including major depression (Scherrer et al., 2014, 2016). In a minority of chronic pain patients maintained on opioid therapy, the use of opioids can also lead to fatal or non-fatal overdoses (Cheatle, 2011; Webster, 2017). Opioid mortality is also associated with co-occurring substance use and mental health problems (Crabtree et al., 2020; Webster, 2017). A complex therapeutic regimen including opioids to treat chronic pain as well as medication to treat mental health conditions may increase the risk of unintentional overdoses as breathing could be suppressed (Webster, 2017). Rates of suicidal ideation are known to be high in the chronic pain population (Cheatle, 2011). In this case, however, it is difficult to determine the proportion of deaths attributed to unintentional opioid poisoning and suicidal intentions (Cheatle, 2011).

Clinical guidelines for the management of chronic non-cancer pain have recommended that nonpharmacologic therapy be considered the first-line treatment (Busse, 2017). Nonpharmacologic therapy can include a wide range of options, one of them being mental health services or consultations with mental health providers delivering psychological interventions. In-person and internet-delivered psychological interventions such as brief interventions, cognitive behavioural therapy for chronic pain, mindfulness-based stress reduction, acceptance and commitment therapy, among others have been shown to be effective at managing chronic pain (Driscoll et al., 2021; Eccleston et al., 2014; Hoffman et al., 2007; Niknejad et al., 2018; Pike et al., 2016; Williams et al., 2020). Nonetheless, matching patients with effective interventions appropriate for their characteristics is important to ensure their engagement and treatment completion (Darnall, 2021; Driscoll et al., 2021).

Still, access to mental health services is generally considered to be problematic (V. Patel & Saxena, 2019). Psychosocial and cultural factors such as costs, limited public or private coverage, stigma, and service availability are frequently reported to impact the "pathway to mental health care", which is the sequence of contacts made by the affected individual or close ones with mental health-related organizations and mental health providers to seek help as well as their responses to this help-seeking (Bartram & Stewart, 2019; Clement et al., 2015; Cohen & Peachey, 2014; Flora et al., 2017; Henderson et al., 2013; V. Patel & Saxena, 2019; Rogler & Dharma, 1993). Its duration depends on the time that it takes for the affected individual to initiate contact with pertinent organizations (i.e., help-seeking delay) as well as the time it takes for this individual to obtain the desired and pertinent treatment (i.e., treatment or referral delay) (Rogler & Dharma, 1993).

In the case of PLWCP, psychosocial, cultural but also biological factors specific to this population and associated care providers might also impact their pathway to care (Darnall, 2021; Duenas et al., 2016). Pain-related distress and disability, trauma, employment, and income issues, changes to social support structures as well as reliance on biomedical beliefs are among some of the factors that may impact the pathway to mental health care of PLWCP (Darnall, Carr, et al., 2016; Duenas et al., 2016; Mills et al., 2019; A. S. Patel et al., 2012; Tunks et al., 2008).

Some results already indicate that this population encounters barriers at the start of their pathway to mental health care, which could lead to help-seeking delays (Rogler & Dharma, 1993). PLWCP have indicated to have limited information regarding pain psychologists, which may impact their perceived need to use mental health services and prolong the pathway to care (Bonabi et al., 2016; Darnall, Scheman, et al., 2016). Care providers also appear to have knowledge gaps with regards to the role of psychological treatment in the management of chronic pain, which then would affect the evaluated needs of patients with chronic pain and result in referral delays (Darnall, Scheman, et al., 2016; Rogler & Dharma, 1993).

Examining and summarizing the proportion of PLWCP who use mental health services may inform about the degree of accessibility and adaptability of such services for the chronic pain population. For this reason, the primary objective of this study is to review the existing research on the utilization of mental health services by PLWCP. A secondary objective is to identify factors associated with mental health service use within the mapped research.

Methods

A narrative review was conducted given the exploratory nature of the study, as well as the expected heterogeneity of results because of the different contextual factors that affect mental health services.

Eligibility criteria

To be included in this review articles needed to report the proportion of the study sample to have used mental health services during the study reference period. Articles needed to be peer-reviewed journal papers published from the year 2000 to provide a comprehensive review of the literature all the while remaining current. Moreover, articles had to be written in either English or French, reflecting the research team's spoken and written languages. Articles also had to include human adult participants over the age of 18 with chronic non-cancer pain.

Due to the exploratory nature of this review, and the limited results found in preliminary database searches, articles did not need to primarily focus on the use of mental health services by PLWCP but could include previous use reports as secondary results. Articles could include any mental health service (i.e., visits to mental health clinic, use of mental health phone line, support groups) or consultation with any mental health provider (i.e., psychologists, social workers, mental health-related consultations with general practitioners) delivering any type of psychological intervention for any mental or pain-related reasons. Studies were excluded if the sample included children or animals, focused on treatment efficacy or variable association results.

Information sources and search

To identify relevant articles, the bibliographic databases Scopus, OVID: APA PsycInfo, MEDLINE, and EMBASE were searched from 2011 to 2021. The search strategy was drafted by an experienced librarian specializing in psychiatry and adapted for each database. This strategy was later validated by the research team. All results were exported and imported into the web application *Ryyan* (Ouzzani et al., 2016), which employs artificial intelligence to detect article duplicates from different database searches. After the automatic detection of duplicates, a manual validation was carried out by the first author. The search strategy can be found in the supplementary material.

Selection of sources of evidence

One reviewer (the first author) screened database results using inclusion and exclusion keyword tags on the Ryyan web application to optimize and increase the accuracy of the screening process. Full texts of the resulting articles were then inspected. Finally, the reference lists of retained articles were also screened for possible papers not indexed in the searched databases.

Data charting process & Data items

Data from eligible articles were also extracted by the first author using a data-charting template on Microsoft Excel developed by the research team, which included study characteristics (e.g., study design, data collection methods, etc.)., the type of mental health service described, and the proportion of the sample who had used such mental health services at least once during the study's reference period. In the case where more than one mental health service utilization proportion was reported in a study, they were extracted and described separately.

Synthesis of results

Studies were grouped by type of population included in the study (e.g., general population, patients, veterans) and study designs were summarized including, source country, data collection period, data collection and analysis methods, type of mental health services, reference period to measure utilization of mental health services. Moreover, reports of each type of mental health service or consultation included in studies were extracted.

Results

The electronic search identified 1,443 articles for review. After duplicates were removed, a total of 936 unique articles remained. After title and abstract screening using inclusion and exclusion keywords on the Ryyan web application, 44 articles were retained for full-text evaluation. Of these, 33 were excluded because the studies' healthcare definition did not include mental health services (n=26), they were dissertations (n=2), PLWCP were not the target population (n=2), only healthcare costs were reported (n=1), or because they only reported mean utilization rates, which did not allow to differentiate participants who did not access mental health services from those who had accessed these services at least once (n=4). Three articles were added following a hand search of articles' references. Finally, a total of 9 articles were included in the quantitative analysis (Azevedo et al., 2013; Baron et al., 2013; Darnall, Scheman, et al., 2016; Gleicher et al., 2011; Görge et al., 2017; King et al., 2014; Nielsen et al., 2016; Outcalt et al., 2014; Peacock et al., 2016). The search flowchart is shown in Figure 1.

Utilization of mental health services

A description of the included studies is provided in Table 1. Nine publications resulting from 8 studies reported the proportion of PLWCP that had gained access to mental health services (Azevedo et al., 2013; Baron et al., 2013; Darnall, Scheman, et al., 2016; Gleicher et al., 2011; Görge et al., 2017; King et al., 2014; Nielsen et al., 2016; Outcalt et al., 2014; Peacock et al., 2016). Identified studies were carried out in the United States (n=4) (Baron et al., 2013; Darnall, Scheman, et al., 2016; King et al., 2014; Outcalt et al., 2014), Australia (n=2) (Nielsen et al., 2016; Peacock et al., 2016), Canada (n=1) (Gleicher et al., 2011), Portugal (n=1) (Azevedo et al., 2013) and Germany (n=1) (Görge et al., 2017). Participants included veterans, patients, adults, and older adults living with chronic pain from the general population. One study included people living with chronic pain in secondary analyses as sub-samples (King et al., 2014). Study reference periods ranged from 1 month to lifetime.

Most reported mental health services were used for pain-related reasons (n=6), while the remaining were used for mental health-related reasons (n=3). The type of mental health services described in studies varied. They included visits to psychologists or counsellors, psychotherapy sessions, visits to specialty mental health clinics, visits to a primary care physician for mental health-related reasons, visits to psychiatrists, mental health-related overnight hospital stays, attendance to support groups, and use of mental health hotline.

Aside from one study (King et al., 2014), no more than one-third of study participants reported using mental health services at least once during the study reference periods, ranging from 2% to 34% of samples primarily consisting of PLWCP (*M* = 24%; 95% CI [13%-35%]). Mental health services were used for mental health reasons by 4.6% to 38% of study samples (Gleicher et al., 2011; King et al., 2014; Outcalt et al., 2014), with the exclusion of one report where 92% of study participants had used specialty mental health services (King et al., 2014). Mental health services were used for pain-related reasons by 2% to 32.7% of study samples (Azevedo et al., 2013; Baron et al., 2013; Darnall, Scheman, et al., 2016; Görge et al., 2017; Nielsen et al., 2016; Peacock et al., 2016). On average, a higher proportion of study samples used mental health services for mental health-related reasons (*M* = 35.6%; 95% CI [11%-60%]), when compared to pain-related reasons (*M* = 16.1%; 95% CI [9%-23%]).

In general, pain-related mental health service use increased with longer study reference periods, whereas mental health-related service use was greater in veterans' clinics and primary care settings. Across most studies (Azevedo et al., 2013; Baron et al., 2013; Gleicher et al., 2011; Görge et al., 2017; King et al., 2014; Nielsen et al., 2016; Outcalt et al., 2014), poorer perceived or evaluated mental health was found to be a significant determinant of mental health service use. In studies that also analyzed the frequency of service use, poorer mental health in PLWCP was associated with a higher mental health service use (King et al., 2014; Outcalt et al., 2014), compared to those with better mental health status. In turn, when evaluated, pain severity did not predict mental health service use (Azevedo et al., 2013; Baron et al., 2013), but lower pain self-efficacy did in one instance (Nielsen et al., 2016). Higher education level was associated with mental health service use in two studies (Azevedo et al., 2013; Gleicher et al., 2011), as well as living in an urban area (Gleicher et al., 2011; Peacock et al., 2016).

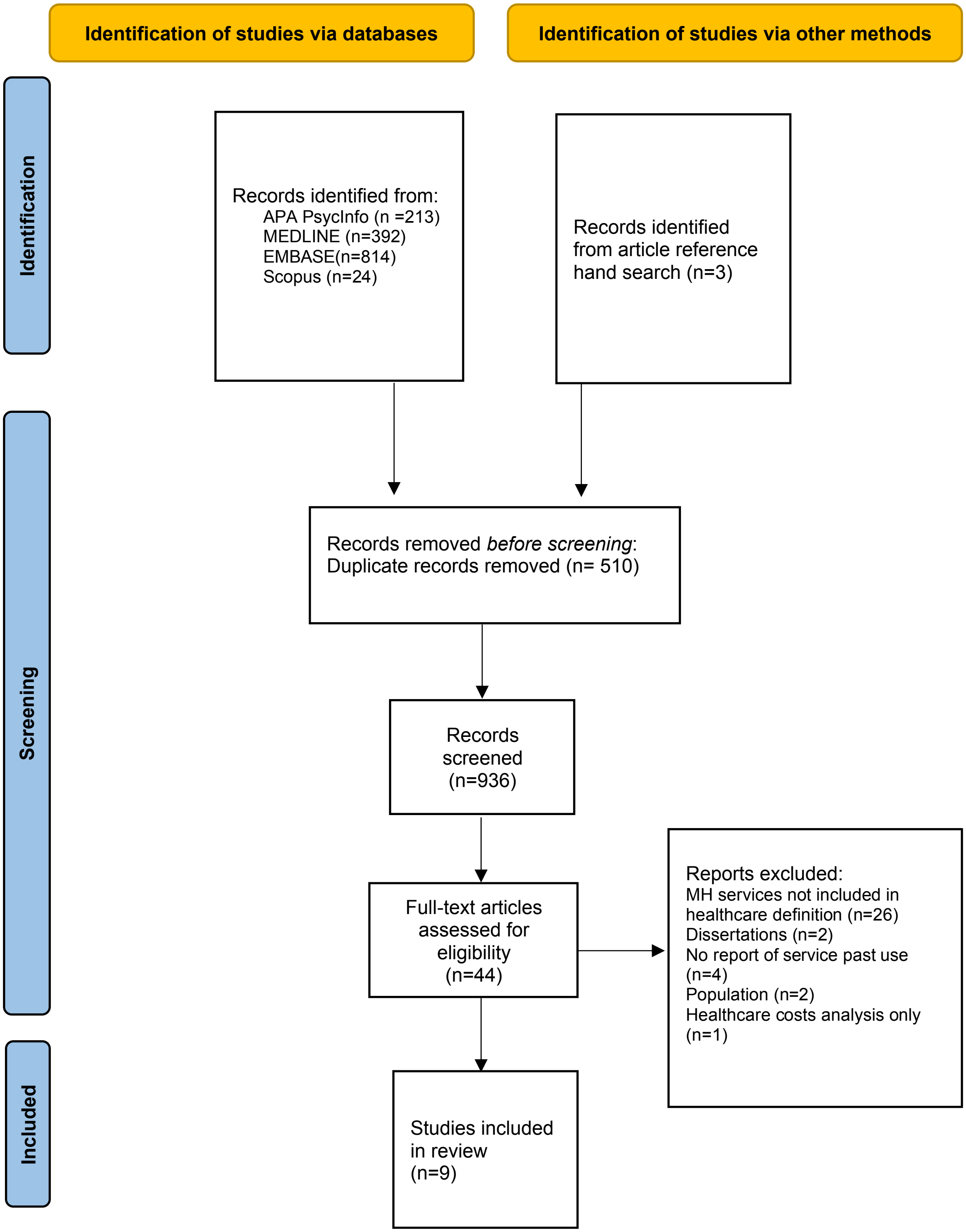

Figure 1. Flowchart of the selection process of the narrative review articles.

Table 1. Description of included studies and proportion of samples reporting mental health service use.

Reference	Country, National or Regional	Design, collection period, n	Population and age (years)	Data collection method	Reference period	Type of MH service	Reason for MH service use	Proportion sample with use	Factors associated with MH services use
†Peacock et al., (2016)	Australia, National	Cohort study, August 2012 to April 2014, n=1514	Patients with chronic pain prescribed opioids, 18+	Structured telephone interviews	Past month	Psychiatrist, psychologist & counsellor for pain management	Pain	11.0%	Living in an inner regional community associated with a lower relative risk of accessing MH services compared to those living in a major city.
Azevedo et al., (2013)	Portugal, National	Cross-sectional study, January 2007 and March 2008, n=1757	Adults with chronic pain from general population, 18+	Structured telephone interviews	6 months	Clinical psychologist for pain management	Pain	2.0%	Higher education, previous diagnosis of depression but not pain severity associated with use of nonpharmacologic treatment modalities.
Görge et al., (2017)	Germany, Regional	Prospective longitudinal cohort study, NR, n=440	Patients with chronic back pain from pain rehabilitation center, 18+	In-person survey	6 months	Psychotherapy	Pain	16.3%	Helplessness and presence of depression associated to psychotherapy use.
Gleicher et al., (2011)	Canada, Regional	Cohort study, 1996-1998, n=2005	Older adults with painful osteoarthritis from general population, 55+	Structured telephone interviews	2 years	Mental health-related visit to primary care physician	MH	28.9%	Poor MH, living in an urban area, higher education, older age, and being a female predicted greater likelihood of MH service use. General health status mediated relationship between MH and MH-seeking behaviour.
						Psychiatrist		4.6%	

Baron et al., (2013)	United States, Regional	Prospective longitudinal cohort study, Jul 2008-Dec 2008, n=328 (T1), n=192 (T2)	Patients with chronic pain from primary care clinic, 18+	Mailed survey	12 months	Pain management counselling	Pain	6.8%	Poor MH (i.e., stress, depression, or anxiety) but not pain severity predicted MH service use.
††Outcalt et al., (2014)	United States, Regional	Cohort study, January 2002 to January 2007, n=40716	Veterans with either chronic pain or PTSD, or both from veterans' health facilities, 18+	Patients charts from clinical and administrative data	5 years	General mental health & substance use disorder clinics	MH	33.8%	Poor MH (i.e., stress, depression, or anxiety) but not pain severity predicted MH service use.
King et al., (2014)	United States, Regional	Case-control study, October 2001 to September 2011, n=283	Veterans with persistent PPCS, PTSD and pain from veterans' health facilities, 18+	Retrospective chart review	10 years	Mental health-related visit to primary care physician.	MH	38.0%	Presence of co-occurring mental health conditions associated with higher MH service use when compared to pain-only group.
						Specialty mental health outpatient clinics		92.0%	
						Substance use disorder		16.0%	
Darnall, Scheman, et al., (2016)	United States, National	Cross-sectional study, October 2015 to December 2015, n=1086	Adults with chronic pain from general population, 18+	Online survey	Lifetime	Pain psychologist	Pain	32.7%	NR
†Nielsen et al., (2016)	Australia, National	Cohort study, August 2012 to April 2014, n=1514	Patients with chronic pain prescribed opioids, 18+	Structured telephone interviews	Lifetime	Psychiatrist	Pain	23.4%	Younger age, being female, poorer mental health, lower pain self-efficacy and having private health insurance associated with past use of MH services for pain.
						Psychologist		29.6%	
						Counsellor or social worker		12.1%	
						Support groups		10.7%	

† Articles based on the same study sample.
†† 96% of the sample reported suffering from chronic pain.
Note: Mental health (MH), Not reported (NR).

Discussion

In this narrative review, 9 publications reported the proportion of PLWCP that had used mental health services at least once. Greater mental health service use was reported for mental health-related reasons and increased with longer study reference. Poorer mental health, lower pain self-efficacy, higher education levels, and living in an urban area were found to be determinants of mental health use while pain severity was not.

Service use for mental health reasons was low, relative to the proportion of the samples with mental health conditions. Likewise, mental health services for pain-related reasons were only minimally used by study samples. Some of the suggested potential access barriers for PLWCP included information barriers, service availability, and costs. Lack of information about the purpose of psychological consultations for pain-related reasons and about how to locate pain psychologists was rated as a top barrier to access pain psychologist consultations by PLWCP (Darnall, Scheman, et al., 2016). This barrier may be linked to the reliance of medical providers to treat chronic pain according to the biomedical model (Loeser & Schatman, 2017), but also to the probable low amount of mental health providers trained in pain psychology (Darnall, 2021; Darnall, Scheman, et al., 2016).

Living in urban centers was found to be associated with mental health service use, which was believed by authors to be related to service availability (Gleicher et al., 2011). Contextual factors such as this one have previously been found to impact the pathway to mental health care since the concentration of services normally varies according to differently populated areas (Flora et al., 2017). Additionally, the association between higher education levels and mental health service use was said to indicate that poor education, affecting information levels and financial resources, may be a barrier to access mental health services (Azevedo et al., 2013; Gleicher et al., 2011). Despite the fact the pathways to care are said to be context-dependent (Rogler & Dharma, 1993), a relatively low use of mental health services and a set of similar factors were reported across different countries. This suggests that accessibility issues in terms of mental health services for PLWCP may be widespread.

Moreover, the positive association between mental health severity and mental health service use found in most studies is consistent with studies from different populations, where increased mental health needs lead to greater mental health service use (Sunderland & Findlay, 2013). However, even though PLWCP tend to use health services at a higher rate than the general population (Blyth et al., 2004; Duenas et al., 2016), pain severity was not associated with mental health service use for either mental health or pain-related reasons. Additionally, it was found that general health mediated the relationship between mental health and mental health help-seeking behaviours. Authors proposed that in the face of different conditions, some might be neglected to prioritize the care of others or that mental health needs may be addressed in the context of physician consults (Gleicher et al., 2011). Together, findings suggest that pain-related distress in the form of mental health problems could be a more important predictor of the need to access mental health services, regardless of pain severity. Less significance might be placed on mental health services for the management of chronic pain, despite their effectiveness, and PLWCP might choose to prioritize physician consults. The importance of addressing informational gaps is again accentuated, highlighting the need for care providers to understand and endorse the value of mental health services in the context of chronic pain, as well as the need for mental health providers to be trained in pain psychology.

It is worthwhile noting that in the case where mental health service use corresponded well with the mental health needs of the sample, the accessibility of mental health services was better than for the general population, as the sample consisted of veterans who usually have access to mental health services through the Veterans' administration in the United States (King et al., 2014). It can therefore be suggested that addressing impacting factors to improve the accessibility of mental health services may lead to increased service use by those with high perceived or evaluated mental health needs. Nonetheless, this may not be entirely the case for PLWCP for whom other factors may be impacting their service use (Darnall, 2021). The complexity of some patients in terms of mental health presentation is also expected to impact service use and the accessibility of mental health services. Psychological disturbances accompanying chronic pain are not only limited to depression and anxiety but also frequently involve traumas and personality disorders (for reviews, see Dersh et al., 2001; Martel et al., 2021; Turk et al., 2016).

Limitations

This narrative review presents some limitations. First, the fact that only one reviewer screened and inspected articles, and extracted the information may have created a source of bias. Second, since articles with secondary results were also included in the present review, despite efforts of including a wide variety of keywords, some articles may have gone unidentified. Third, study differences such as utilization reference periods, types of mental health services assessed, and service grouping methods restricted the ability to document current utilization reports for distinct types of mental health services, and thus, limited conclusions. Finally, since basic mental health assessments are a requirement in veterans' centers, mental health service utilization reports from veteran samples may be overreported because of the inclusion of assessment consultations.

Conclusions

Findings show that mental health service use by PLWCP pain does not correspond well to their mental health status. Information barriers, and geographical and educational factors seem to impact mental health service use, which suggests the presence of accessibility issues specific to this population. Further research is needed to elucidate access barriers for the different types of mental health services that could be beneficial for PLWCP, including services to manage pain.

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INTERIM DISCUSSION

In the previous chapter, findings from a narrative review of the literature concerning the utilization of mental health services by the chronic pain population were presented. Results showed that for either mental health or pain-related reasons, service utilization does not correspond well to the proportion of the samples suffering from mental health conditions and chronic pain. Different accessibility barriers were proposed such as limited available information about services, high costs, as well as the limited medical endorsement of mental health services in the context of chronic pain, among others. Taken together, the relatively low mental health service utilization reports and the apparent access barriers suggest that this population may encounter accessibility issues concerning mental health services. Nonetheless, only limited conclusions can be drawn from these results without first evaluating the perceived needs of this population to use such services, and then, the degree to which those needs have been met. However, there is little information available about this subject. For this reason, an evaluation of the perceived mental health care needs of a sample of people living with chronic pain and co-occurring mental health problems was carried out using an online survey.

The following manuscript has been prepared for submission.

CHAPTER 4 – MANUSCRIPT II

UNMET PERCEIVED MENTAL HEALTH CARE NEEDS FOR PEOPLE LIVING WITH CHRONIC PAIN: RESULTS FROM A QUEBEC ONLINE SURVEY.

Title: Unmet perceived mental health care needs for people living with chronic pain: Results from a Quebec online survey.

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Prepared for submission.

Abstract

Objectives: Chronic pain and mental health problems often co-occur. Mental health care (MHC) has shown benefits for both conditions; however, its accessibility is frequently limited. Suffering from mental health problems and chronic physical conditions may further increase the odds of having unmet MHC needs. The objective of this study is to evaluate the perceived needs for MHC of people living with chronic pain (PLWCP) and mental health problems. **Methods:** An online survey was administered to PLWCP living in the province of Quebec, Canada to inquire about their mental health problems and perceived MHC needs. **Results:** In total, 82 participants reported suffering from co-occurring mental health problems and perceiving a need for MHC in the past 12 months. Of these, only 16% reported having all of their MHC needs to be met. Perceived need for medication was met for the majority, whereas perceived counselling and service information needs were only met for a minority. Participants indicated that obstacles to access MHC were mainly associated with service costs and limited availability. **Discussion:** Based on a sample of PLWCP in Quebec, findings highlight the unmet MHC needs in the context of chronic pain and support the importance of addressing service accessibility issues. Future studies should continue to examine the perspective of PLWCP to better adapt MHC to their needs and preferences.

Introduction

Chronic pain is an important global health problem. In Canada, it is estimated that approximately 20% of the adult population suffers from chronic pain (Schopflocher et al., 2011; Shupler et al., 2019). The incidence and severity of chronic pain are said to increase during or following the COVID-19 pandemic due to either COVID-19 itself, pandemic-related health care shifts, or psychological stressors related to the pandemic (Clauw et al., 2020).

People living with chronic pain (PLWCP) often experience co-occurring mental health conditions as well. A bidirectional relationship between depression and anxiety and chronic pain has been previously established (Bondesson et al., 2018; Hooten, 2016; Lerman et al., 2015). Mental health factors such as negative pain attitudes and beliefs have been found to be associated with negative pain-related outcomes (Edwards et al., 2016; Gatchel et al., 2007; Turk et al., 2016).

Additionally, substantial evidence indicates that long-term opioid therapy, usually prescribed for chronic pain, may lead to the development of mental health issues, including major depression (Scherrer et al., 2014, 2015, 2016). Opioid treatment can also elicit problems. It is estimated that 20% to 30% of PLWCP misuse opioid medications and approximately 8% to 12% develop an opioid use disorder (Vowles et al., 2015). In a minority of chronic pain patients, the use of opioid medications may lead to fatal or non-fatal overdoses (Cheatle, 2011; Webster, 2017). In some cases, overdoses may be intentional as the rates of suicide ideation are relatively high in the chronic pain population (Cheatle, 2011).

Given the strong association between mental health and chronic pain, the importance of mental health care (MHC) in the context of chronic pain has been increasingly highlighted (Darnall, Carr, et al., 2016; Darnall, 2021). Psychological interventions such as cognitive behavioural therapy, acceptance and commitment therapy, mindfulness-based stress reduction, and others have shown effectiveness to manage chronic pain and related mental health problems, and to reduce opioid medication use (Driscoll et al., 2021; Eccleston et al., 2014, 2015; Williams et al., 2020). Nonetheless, access to MHC is usually problematic.

In Quebec, only mental health services provided through public institutions are covered by public health insurance. Mental health professional sessions in private practice need to be covered either through personal or group health insurance (i.e., work, school) or be paid out of pocket. For medication, on the other hand, there is universal coverage since it is covered for individuals who do not have personal or group health insurance (Cavaliere, 2014; Lapalme et al., 2018). In 2016, it was estimated that more than half of the population in Quebec does not receive mental health services due to high costs, and only a small proportion of individuals diagnosed with a mental disorder were being treated by mental health professionals (Lapalme et al., 2018). Efforts to model publicly funded mental health programs after countries with similar health care systems such as Australia and the United Kingdom have been underway in the past decade in Quebec. Nonetheless, access to MHC continues to be problematic (Drapeau & Bradley, 2019). Additionally, findings from the Canadian population suggest that suffering from mental health problems or chronic physical conditions increases the odds of having unmet or partially met perceived MHC needs (Sunderland & Findlay, 2013).

A recent narrative review showed that only a fraction of PLWCP who experience mental health problems use mental health services (Cohen-Reyes et al., *prepared for submission*). Factors such as achieving low education levels and living in rural areas have been associated with less use of MHC (Azevedo et al., 2013; Gleicher et al., 2011; Peacock et al., 2016). These factors have been suggested to relate to the limited amount of information about MHC that is transmitted to PLWCP, the low availability of services, and the high financial burden associated (Azevedo et al., 2013; Darnall, Scheman, et al., 2016; Gleicher et al., 2011; Peacock et al., 2016). Some authors indicate that such access barriers may be linked to the reduced importance placed on MHC in the context of chronic pain (Darnall, 2021; Darnall, Carr, et al., 2016). Physicians are said to receive limited training on the different dimensions of chronic pain, and this could affect the information and the treatment options that patients receive (Loeser & Schatman, 2017). Also, mental health professionals trained in pain psychology are not considered to be widespread, which may impact the availability of their services and the support provided to physicians (Darnall, 2021; Darnall, Carr, et al., 2016; Schatman & Fortino, 2020). Aside from barriers associated with the organization of the health system, as stated in Andersen's Behavioral health model, the likelihood of using health services is also determined by the individuals' perceived health needs, as well as predisposing and enabling factors (Aday & Andersen, 1974; Andersen, 1995). Although the relative use of MHC by PLWCP appears to be low, their perceived need to use such services if accessible is unclear. For this reason, the objectives of this study are to evaluate the perceived needs for MHC of PLWCP with self-reported mental health problems and the barriers encountered to receive MHC.

Materials and Methods

Participants

A sample of 140 individuals with chronic pain participated in this study. The inclusion criteria were (1) being over the age of 18, (2) suffering from chronic pain defined to be persistent or recurring pain that last 3 months or more (3) living in Quebec (4) being able to complete the questionnaire in English or French.

Procedure

An invitation to participate in the online questionnaire was sent to PLWCP through research networks in Quebec, social media, the Montreal-based Alan Edwards Pain Management Unit, and the Quebec Chronic pain association to recruit participants living with chronic pain. The survey was active from July 2021 to January 2022 on the platform LimeSurvey (https://limesurvey.org/), housed on a secure independent server in McGill University premises, Montreal, Quebec. Storing survey data on this server ensures the privacy of participants' data, as no third-party organization, including LimeSurvey, and only the research team has access to participants' responses.

The survey was designed by the first and last author in English and French using original conditional branching logic. The survey was validated by several members of the research team and pre-tested by 5 patient partners. Questionnaires measures in both English and French, consent forms as well as included mental health resources can be found in the supplementary material.

The first page of the online survey included a description of study purposes, a downloadable consent form, and a description of questionnaire sections : (1) Pain characteristics (i.e. chronic pain diagnosis, pain intensity, opioid medication intake), (2) Psychosocial support for co-occurring conditions (excluding mental health problems), (3) Mental health problems and perceived needs for MHC (if applicable), (4) Opioid medication habits and related psychosocial support (if applicable), (5) Questions concerning remote services' preferences and experience (6) Questions on how to improve MHC services, (7) Demographic characteristics, (8) Interest in participating in follow-up studies.

Before moving on to the first section of the survey, participants were encouraged to download the consent form that specified that the survey would be hosted on a server based on McGill University premises, where only the research team would have access to the data. It also specified that the data collected would be stored by the research team for a maximum of 5 years, after which it would be destroyed. Then, they were asked if they accepted to complete the questionnaire. If participants did not answer, they were not allowed to continue. If the participants responded that they did not accept to complete the questionnaire, they were redirected to a page containing an exit message thanking them for their interest in the study and encouraging them to contact the first author of the study if they had any questions or concerns that prevented them from accepting to complete the survey.

Moreover, in the first section of the survey “chronic pain” was defined as suffering from persistent or recurrent pain for more than 3 months, and participants were required to answer if they suffered from chronic pain in the past 12 months. This question was mandatory since it determined survey eligibility, and participants were not allowed to continue if not answered. If they stated that they did not suffer from chronic pain, they were directed to an exit message thanking them for their interest and explaining that the survey was intended for PLWCP. Additionally, before displaying questions from the section “Mental health problems and perceived needs for MHC”, participants were required to answer a question inquiring if they believed they had suffered from any mental health problems in the last 12 months. If participants answered negatively or indicated that they did not know, they were directed to the following section and were allowed to continue completing the survey. This question was also mandatory since it was related to the study’s main objectives. Only questions on informed consent, chronic pain eligibility, and self-reported mental health problems were mandatory. No other mandatory questions were included in order to reduce any risk of bias due to forced-choice questions.

To continually ensure participants’ consent, before each section participants were asked if they accepted to complete the following section. If they accepted, the sections’ questions were shown. If not, the section would be omitted for the participant, and they would be redirected to the following one. Additionally, in order to maintain their identity confidential, after the demographics’ section participants were seamlessly redirected to another survey to collect contact information for any future research project. The data collected from the two surveys remained separate. Due to the sensitive nature of the topics, participants were given additional space to express any opinions at the end of each section, and a downloadable document containing mental health-related resources was also shown.

The questionnaire included a total of 125 questions, and an average of 69 questions were shown to participants given the conditional branching logic programmed into the LimeSurvey software. The "Mental health problems and perceived needs for MHC" section was only presented to participants who declared suffering from a self-reported mental health problem. If participants did not declare one, they were directed to the following section. Also, participants were only shown the "Opioid medication habits and related psychosocial support" section if they had indicated in the first section that they were maintained on opioid medication therapy. Participants were allowed to pause and resume the survey at a later time.

The online questionnaire was part of a larger study whose aim is to better adapt service offerings for people who use opioids in the province of Quebec. As such, only sections 1, 3, and 7 will be described as the remaining ones do not fall within the scope of this article. The study was approved by the research ethics board of the South-Central Montreal Integrated Health and Social Services Centre (*CIUSSS Centre-Sud-de-l'Île-de-Montréal*).

Measures

Sociodemographic Variables

All participants were presented with questions about their age, sex, income level, and education level.

Pain characteristics

After reporting to have suffered from persistent pain for 3 months or more, participants indicated the duration of this pain in years and months expressed in text or numbers. An open-ended textbox was included at the end of this question for participants to specify any other details about their pain duration if they wished to do so. Then, participants described the usual intensity of their pain or discomfort from 1 to 10 on a Likert scale, and if they had received a medical diagnosis for their chronic pain. Additionally, participants answered if they were currently taking any opioid medications to relieve their pain and if so, they were asked to indicate for how long. Most pain characteristic questions were adapted from the 2020 Canadian Community Health Survey (Statistics Canada, 2020).

Self-reported mental health problems and psychological distress

Participants reported if they had experienced any mental health problems in the past 12 months. If so, they were asked to indicate which ones from the following: (1) Mood problems (i.e., depression, bipolar disorder, mania, dysthymia), (2) Anxiety problems (i.e., generalized anxiety disorder, phobia, obsessive-compulsive disorder, panic disorder), (3) Substance use problems (i.e., alcohol use problems, cannabis use problems, opioid use problems) (4) Other. Additionally, participants specified for which they had received a mental disorder diagnosis.

Perceived need for MHC

For participants that indicated suffering from a mental health problem in the past 12 months, perceived MHC needs were evaluated using the validated perceived need for care questionnaire (Meadows, Burgess, et al., 2000; Meadows et al., 2002; Meadows, Harvey, et al., 2000) used in the 2012 Canadian community health survey (Statistics Canada, 2012, 2019; Sunderland & Findlay, 2013). Participants were asked if any help was sought for their mental health problems and if any help was received. Those that did not seek help or did not receive help were asked to select the reasons from a list. Participants who indicated receiving MHC were then asked a series of questions to evaluate if their perceived needs for MHC in terms of information about services, medication, counselling or psychotherapy had been met, partially met, or unmet. For partially met or unmet needs, participants were also asked to indicate the obstacles encountered to receiving MHC from a list. The perceived need for care questionnaire has exhibited good psychometric properties showing good reliability for all perceived needs (kappa = 0.62), and good discriminant validity for perceived needs in terms of medication (kappa = 0.70), information (kappa = 0.56), and counselling or psychotherapy (kappa = 0.62) (Meadows, Harvey, et al., 2000).

Psychological distress

Psychological distress was measured using the Kessler K6 scale which screens for severe and moderate mental illness that warrants mental health intervention. Participants answer 6 questions about how frequently they have experienced psychological distress in different forms within the past month, rated on a 5-point Likert scale from “All the time” (4) to “None of the time” (0). Receiver operating characteristic curve analyses have shown that this scale has a high degree of accuracy in detecting moderate to severe mental illness in the population, with an area under the curve of at least 0.80 when compared to clinical samples (Prochaska et al., 2012). It has also demonstrated high accuracy in detecting mood and anxiety disorders in the population as described by an area under the curve of over 0.85 when compared to other frequently used measures (Furukawa et al., 2003; Kessler et al., 2003). A score of more than 5 has been determined to be indicative of moderate mental distress and a score of 13 or more has been found to predict suffering from severe mental illness (Prochaska et al., 2012).

Perceived Social Support Questionnaire

Perceived need for social support was measured using the English validated version of the German Brief Perceived Social Support Questionnaire (Fragebogen zur Sozialen Unterstützung Kurzform mit sechs Items, F-SozU K-6), which is the 6-item short form of original 14-item measure and assesses the degree of general social support in the general population and clinical samples. Participants rate 6 statements using a 5-point Likert scale ranging from “Not true at all” (1) to “Very true” (5). Higher scores indicate higher perceived social support, and lower scores indicate lower perceived social support. Scores on the F-SozU K-6 measure have correlated negatively with scores on mental health conditions such as depression, anxiety, and stress measures (Kliem et al., 2015; Lin et al., 2019). The English version of the F-SozU K-6 has demonstrated to have very good psychometric properties showing very good internal consistency ($\alpha = 0.89$) and a good average interim correlation (AIC = 0.57) in a U.S. representative sample.

For the present study, the English-validated version was translated into French to correspond with the participants’ choice of language, since no validated French translation of the measure existed (see Supplementary material). The measure was initially translated by the first author, and subsequently corrected and validated by two native French speakers from the research team. Finally, it underwent modifications during the pretest stage following suggestions by native French participants. In this study, the translated French version of the F-SozU K-6 also demonstrated very good psychometric properties, showing very good internal consistency ($\alpha = 0.80$) and a good average interim correlation (AIC = 0.42).

Data analysis

As shown in Figure 1, participant responses were first evaluated to ensure crucial sections such as informed consent, eligibility criteria, and MHC sections were answered. Data from participants who had not completed such sections were discarded. Then, responses from participants who did not indicate suffering from a self-reported mental health problem or did not know if they suffered from a mental health problem were also discarded. Three participants did not consent to completing the demographic section, but their responses were included since they had answered the eligibility sections. No participant saved and resumed the survey at a later time. The survey was completed in an average of 43.6 minutes, with a maximum time of 2.2 hours, and a minimum time of 7.8 minutes.

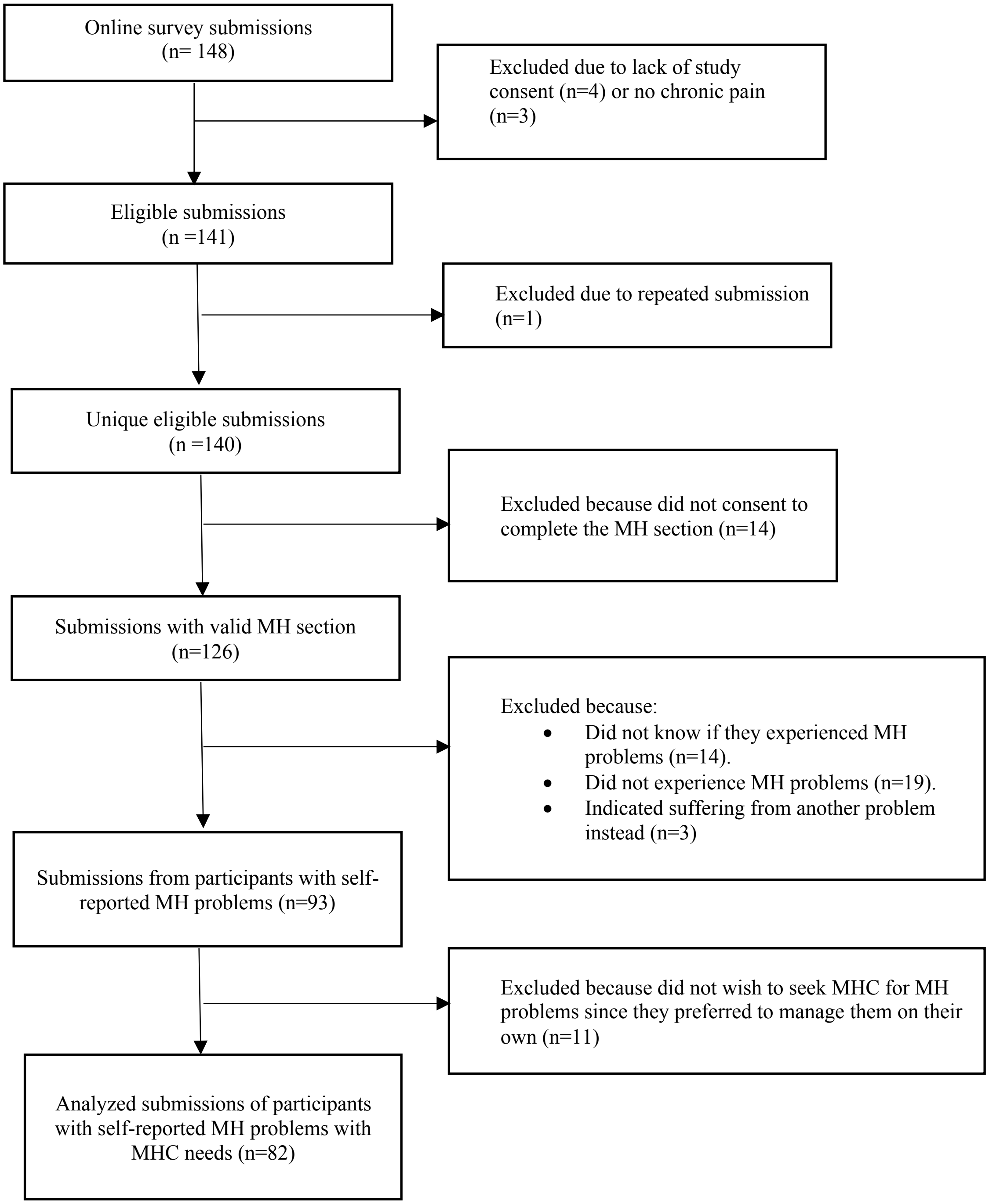

Figure 1. Online study sample flow diagram

Descriptive analyses were computed for sociodemographic, pain, and mental health-related questions for individuals who had indicated suffering from a self-reported mental health problem. Perceived need for MHC was calculated by grouping participants who did not seek MHC but wished to do so, those that sought MHC but did not receive it, and those who had received at least one type of MHC. Perceived need status for each type of help was computed for those who sought MHC. Met need for one type of MHC represented having received enough of said MHC. Partially met need represented not having received enough of a certain MHC. Unmet need for one type of MHC represented not having received said MHC, even though they wished to receive it. This type of operationalization of perceived MHC needs replicates previous work completed with the Canadian population using the Canadian community health survey (Sunderland & Findlay, 2013).

Additionally, a perceived need variable for "any" need was created by combining all three types of perceived needs for MHC as well as perceived needs for participants who did not seek any type of MHC but wished to do so. Here, "any unmet need" for MHC represented not having obtained any MHC after seeking it or not having sought any MHC because of a reason other than preferring to manage it on their own. "Any partially met need" for MHC represented a perceived need for more of any type of MHC regardless of having any other need met or having a met need for one type of MHC but an unmet need for another type. "Any met need" for MHC represented having all perceived MHC needs met. Barriers to receipt for MHC were identified for participants with unmet or partially met needs. Following categories used in the Canadian Community Health Survey (2012), barriers were grouped into 1) features of the health care system ("help not readily available", "language problems"); 2) personal circumstances ("didn't know how or where to get this kind of help," "haven't gotten around to it yet," "job interfered," "didn't have confidence in the health care system or social services," "couldn't afford to pay," "insurance did not cover," "afraid of what others would think," "other"); and 3) preferred to manage the situation by his/herself (Sunderland & Findlay, 2013). The proportion of participants that had indicated each barrier at least once for any MHC was computed.

Exploratory analyses were performed to inspect variable associations between participants with perceived MHC needs and no perceived MHC, and between participants with different perceived MHC need statuses (i.e. met, partially met and unmet perceived MHC needs). Chi-square tests were performed for dichotomous variables, as well as two-sided t-tests for continuous variables by the first author using the latest version of RStudio (RStudio Team, 2022). Corrective measures to control the alpha level were not employed despite performing multiple association tests. This choice was made given the exploratory nature of the statistical tests and the limited study sample size since corrective measures usually do so at the expense of statistical power. Participants' data were expected to distribute normally in line with statistical test assumptions.

As reported in Table 1, missing data were calculated and evaluated for participants who perceived a need for MHC (n=82). Variables computed from measures containing multiple items such as the psychological distress and perceived social support scales were counted as missing if any item response was empty. Less than 5% of data were missing for all variables, except for income data, where 13% (n=11) was missing. To evaluate the missing data, the package "finalfit" on the software RStudio was used. First, data visualization techniques were employed to evaluate any pattern of missingness. From these patterns, associations between missing and observed values were identified. Then, these associations were tested using a Kruskal Wallis test for continuous variables, or a chi-squared test for categorical variables. Results showed that for all variables, data was completely missing at random, except for income data. Missing income data showed to differ significantly by age group, specifically for groups from 45 to 54 years old and from 55 to 64 years old. However, no plausible reason is known for these values to be missing other than the fact that these two age groups represent almost half of the sample (n = 39). For this reason, the list-wise deletion method was employed to deal with missing data, omitting missing cases to perform statistical tests.

Results

Of 93 participants with self-reported mental health problems, 82 reported having a perceived need for MHC. Most of the sample was recruited through the Quebec chronic pain association (n=59). All data were confirmed to be distributed normally before performing statistical tests that included this assumption. As expected, analyses between participants with a perceived need for MHC (n = 82) versus those without a perceived need for MHC (n = 11) showed significant differences in terms of a mental disorder diagnosis ($X^2 = 10.55$, df = 1, $p<0.05$) and for personal yearly income levels ($X^2 = 10.55$, df = 4, $p<.05$). Further inspection showed that participants that did not perceive a need for MHC were more likely to not have obtained a diagnosis for a mental disorder. The most contributing factor in the differences in income levels was not perceiving a need for MHC and earning a personal yearly income below 70,000 CAD. (< 25,000 CAD; 25,000 – 49,000 CAD; 50,000 – 70,000 CAD). No significant differences between these two groups were found for the variables sex ($X^2 = 0.37$, df = 1, p>.05), age ($X^2 = 6.13$, df = 4, p>.05), education ($X^2 = 10.65$, df = 6, p>.05), opioid therapy ($X^2 = 0.0013$, df = 1, p>.05), pain intensity (t(90)=0.32, p> .05), pain duration (t(90) = 1.20, p> .05), psychological distress scores (t(84)= -1.29, p> .05), and social support scores (t(90) = 0.036, p> .05).

Most of the sample with self-reported mental health problems and a perceived need for MHC were female (n = 63), older than 45 years old (n = 50), had achieved a level of education below university (n = 47), and had an annual personal income below 24,999 CAD (n = 23). Almost half of the sample had experienced chronic pain for more than 10 years (n = 38), the majority were on opioid therapy (n = 53) and had obtained a diagnosis for their mental disorder (n = 62). Sociodemographic characteristics are summarized in Table 1.

In terms of perceived MHC needs, a perceived need for counselling was the most frequently reported one (n=52). Almost half of the sample reported a perceived need for medication (n=38), and one-third reported a perceived need for information (n=28). One participant did not specify the type of service they perceived a need for, and thus, it was not possible to know if their needs had been met. Only 16% (n=13) of the sample reported all their perceived MHC needs to be met. Perceived need for medication was met for over half of the participants reporting a need for medication (n=23). Perceived need for counselling was only met for one-third of participants reporting a need for counselling (n=18), similarly to information need (n=8). Perceived MHC needs results by need status are summarized in Table 2.

TABLE 1. Characteristics of sample with self-reported mental health problems and perceived MHC needs (N=82)

Sex*	N (%)
Women	63 (79)
Age*	
25-34 years	9 (11)
35-44 years	21 (26)
45-54 years	29 (36)
55-65+ years	21 (26)
Level of education*	
Below university degree	47 (59)
University degree	24 (30)
Post-university degree	9 (11)
Personal income††	
<24,999	23 (40)
25,000-49,999	14 (24)
50,000-69,999	9 (16)
70,000-100,000+	12 (21)
Usual pain intensity of the most frequent pain (mean, SD)	6.38 (1.69)
Duration of the most frequent pain (mean, SD)	13.12 (10.27)
Duration of the most frequent pain	
≤1 year	1 (1)
1-5 years	19 (23)
5-10 years	24 (29)
>10 years	38 (46)
On opioid medication	53 (65)
Obtained a diagnosis for a MH disorder	62 (78)
Psychological distress (mean, SD)*	13.74 (4.25)
Social support (mean, SD)	15.07 (6.19)

*Information missing in 2 cases.

†Information missing in 4 cases.

††Information missing in 11 cases.

TABLE 2. Distribution of mental health care (MHC) need status, by type of perceived need for participants with self-reported mental health problems (N=82)

Type of MHC need	MHC need status N (%)			
	Unmet need	Partially met need	Met need	Total
Any*	32 (40)	36 (44)	13 (16)	81 (100)
Information	10 (36)	10 (36)	8 (29)	28 (100)
Medication	9 (24)	6 (16)	23 (61)	38 (100)
Counselling	16 (31)	18 (35)	18 (35)	52 (100)

* Category also includes participants that received some type of help and stated they needed other kind of help but did not know what other kind of help they might need.
Note: Information missing in 1 case.

Most participants with an unmet or partially met MHC need reported barriers to receipt of MHC (n=59). Most of them were related to personal characteristics and circumstances (n=52), primarily due to not being able to afford or insurance not covering the desired MHC. More than half (n=37) reported barriers related to features of the healthcare system, mainly due to help not being available and one-quarter (n=16) indicated that they preferred to manage their mental health problems on their own. Reported barriers are summarized in Table 3.

TABLE 3. Barriers to receipt of mental health care (MHC), by type of MHC need for participants with self-reported mental health problems and MHC needs* (N=59)

Barrier	Type of unmet/partially met MHC need N (%)			
	Any	Information	Medication	Counselling
Features of the health care system	37 (54)	18 (26)	5 (7)	26 (38)
Personal circumstances	52 (76)	19 (28)	6 (9)	27 (40)
Preferred to manage on own	16 (24)	3 (4)	1 (1)	6 (9)

*Because respondents could report more than one type of barrier, the sum of percentages exceeds 100%.

Follow-up analyses explored the relationship between reported MHC need status and sociodemographic, pain, and mental health variables for participants reporting a mental health problem and a perceived MHC need. A significant difference in social support scores was found between perceived MHC needs groups (*F*(2)=4.868, p< .05).

Further analyses showed that participants with perceived met MHC need status had a higher social support score (*M*=19.62, *SD*=5.95) than those with partially met MHC need status (*M*=13.44, *SD*=6.29); (*t*(47)=3.03, $p < .05$). Additionally, MHC perceived need status significantly varied by participants' education status ($X^2 = 22.59$, df = 12, $p<0.05$), where the most contributing factor was having a perceived met MHC and achieving a diploma up to college level, specifically achieving a trade certificate or diploma. Finally, MHC needs status varied significantly depending on the presence of a diagnosis for a mental disorder ($X^2 = 7.96$, df = 2, $p<0.05$), where the most contributing factor was having partially met or unmet perceived MHC needs and not having received mental disorder diagnosis. No significant differences were found in terms of perceived MHC needs for the remaining variables: sex ($X^2 = 0.54$, df = 2, $p>.05$), age ($X^2 = 5.19$, df = 8, $p>.05$), income ($X^2 = 7.69$, df = 8, $p>.05$), opioid medication use ($X^2 = 0.73$, df = 2, $p>.05$), pain intensity (*F*(2)=0.30, $p>.05$), pain duration (*F*(2)=0.17, $p>.05$) and psychological distress scores (*F*(2)=0.78, $p>.05$).

Discussion

This study evaluated the perceived needs for MHC among a sample of PLWCP with self-reported mental health problems in Quebec (n=93). Of 82 participants reporting a MHC need, only a minority perceived all of their MHC needs to be met. Perceived needs for counselling and information about services were the most frequent ones to be unmet or partially met by participants reporting a need for either. The most frequently reported barriers to receipt of MHC were associated with costs, limited insurance coverage, and service availability Findings are consistent with the literature where information about MHC in the context of chronic pain has been identified as an important obstacle for PLWCP to use MHC (Darnall, Carr, et al., 2016). Barriers such as costs and availability have also been suggested elsewhere (Azevedo et al., 2013; Gleicher et al., 2011).

Exploratory analyses showed that the degree to which participants perceived their MHC needs to be met varied significantly by income, education, mental disorder diagnosis, and perceived social support levels. Barriers to receipt of MHC may be associated with such characteristics and should be taken into consideration when adapting MHC to the needs of this population.

Additionally, most of the sample reported being maintained on opioid therapy. Since long-term opioid therapy is considered to be a risk factor for developing major depression

(Scherrer et al., 2014, 2016), the impact that it may have on participants' self-reported mental health problems and their subsequent perceived MHC needs should be considered. In the case that access barriers were reduced and MHC needs were more frequently met, perhaps the reliance on long-term opioid medication could be lowered, and mental health problems could improve.

When asked their opinion about a future publicly funded psychotherapy program in Quebec, psychotherapists and psychologists indicated that individuals experiencing difficulties related to health problems should be a priority group (Drapeau & Bradley, 2019). Nonetheless, chronic pain conditions have not been specifically included in such initiatives that would mainly consist of evidence-based treatments for common mental disorders (Bradley & Drapeau, 20140512; Cavaliere, 2014). Therefore, effective mental health treatments for chronic pain conditions would also need to be included to ensure the MHC needs of this population are also being met.

To address additional MHC access obstacles for PLWCP, Darnall (2021) proposes increasing the availability of internet-based MHC, training physicians to deliver brief psychological interventions, and increasing the variety of psychological treatments to respond to individuals' specific needs and preferences. Also, no-cost pain education initiatives for mental health professionals as well as creating a website where both patients and providers can find them have also been proposed (Darnall, Scheman, et al., 2016). Schatman & Fortino (2020) proposed extending pain psychology training to clinical social workers to increase treatment availability and the support given to physicians. Further studies are needed to understand the different barriers to access mental health services from the perspectives of PLWCP and implicated healthcare providers, as well as the feasibility of the suggestions proposed in the literature.

This study has some important limitations that should be considered. First, this is a cross-sectional survey study, which limits the possibility to draw conclusions based on causal relationships. Moreover, participants included in this study constituted a convenience sample mainly representing members of the Quebec chronic pain association. Study participants tended to be older and suffer from chronic pain for longer than 10 years. Taken together with the fact that most participants were part of a patient association, results may better represent the perspective of similar PLWCP, instead of the entire population. It should also be noted that the study was conducted in the context of the COVID-19 pandemic, which greatly limited recruitment. Additionally, data regarding mental problems were based on participants' self-reports, and not on diagnostic data or clinicians' diagnoses, which could be subject to bias. The survey was also based on the assumption that participants would have some knowledge about mental health problems and that they possess knowledge about MHC services. This, however, may not be the case for many participants, and thus, perceived MHC needs for this sample may be underestimated. Also, perceived MHC needs were evaluated in terms of only three types, which may not cover all MHC services that participants may perceive a need for. Furthermore, participants who did not consent to completing the "Mental health problems and perceived needs for MHC" section may differ from those who completed that section on this specific topic, which could have affected results. Finally, participants who did not report suffering from a mental health problem or that declared not knowing if they suffered from one were not given access to the MHC needs section, and thus, no information about their perceived needs for MHC needs was collected, which could have affected results as well.

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CHAPTER 5 – DISCUSSION

In this thesis, the accessibility of mental health services for people living with chronic pain was evaluated. First, we conducted a narrative review of the literature concerning the utilization of mental health services by people living with chronic pain for mental health or pain-related reasons. Findings showed that a low proportion of study samples were using mental health services relative to the proportion suffering from pain with or without co-occurring mental health conditions. Different factors such as poor mental health, higher education, and living in an urban area were identified to predict higher utilization of mental health services. Moreover, some access barriers were proposed such as limited information, high cost, and reliance on the biomedical model to treat chronic pain. To evaluate if the utilization reports identified in the literature were indeed indicative of accessibility issues, we then proceeded to evaluate the perceived needs for mental health care (MHC) of a convenience sample of people living with chronic pain (PLWCP) in Quebec, Canada. Findings showed that more than half of the sample (58.5%) perceived a need for MHC for their mental health problems (addressed or not). Although these results should be interpreted with caution given the limitations of convenience samples, when compared to a representative sample from the Canadian population 17% (Sunderland & Findlay, 2013), and 24% of a sample from a catchment area in Montreal (Fleury et al., 2015) perceived a need for MHC to manage mental health problems in the last 12 months. Although comparisons may not be possible given the fact that the sampling methods were different, the perceived needs for MHC of PLWCP in the present online survey sample were higher. It is important to note, however, that based on the literature, higher results were indeed expected compared to the Canadian population given the higher prevalence of mental health problems in the chronic pain population, and the fact that people suffering from mental health conditions, and chronic illnesses are more likely to perceive MHC needs (Mills et al., 2019; Sunderland & Findlay, 2013).

In terms of receipt of MHC, in the present online survey, 35.7% of all participants with chronic pain, and 53% of participants with chronic pain and co-occurring mental health problems received MHC. Results from the narrative review, however, showed that mental health services were used on average by 16.1% of study samples for pain-related reasons, and by 35.6% for mental health-related reasons. Again, only limited conclusions can be drawn given the variability of study samples, the differences in settings, and mental health service measurements (i.e.

consults versus help received). Also, in the present online study, the use of mental health services for pain-related reasons was not measured. Nonetheless, results from both the narrative review and the online survey indicate that the majority of the samples that could benefit from mental health services for either mental health or pain are not receiving it, and therefore, accessibility issues may exist.

Moreover, when focusing on the degree to which the receipt of MHC matches their perceived needs, results from the online survey sample suggest that this may not be the case since 40% indicated not receiving any type of MHC despite perceiving a need for it. Additionally, simply receiving MHC may not be enough since the type of MHC received might not address the issues perceived by the person. In this case, results from the survey sample show that only a minority (16%) received the desired type of help in the preferred amount according to their perceived needs. This can be contrasted to the Canadian population, where two-thirds of a representative sample indicated that their perceived needs for MHC were completely met (Sunderland & Findlay, 2013). Results from a Montreal catchment area sample were similar to those of the present study, where only 16.3% of the sample indicated that their perceived needs for MHC were completely met (Fleury et al., 2015). The proportion of unmet perceived MHC needs, however, was higher in the present study (40%), compared to the Montreal catchment area sample (18.2%). As previously stated, generalizations based on such comparisons may not be appropriate. However, it is still apparent that in the sample of PLWCP from the present online study, most participants perceived needs for MHC, and these needs were only completely met for a minority. Together, outcomes suggest that the current service offer of MHC for PLWCP based on our study sample is not currently adapted to their needs.

To better adapt mental health services to the needs of PLWCP in Canada, authors from reviewed studies suggest addressing costs, availability, and information barriers. In Canada, the inclusion of psychotherapy in public health insurance has been repeatedly proposed (Cavaliere, 2014), and a plan has been in development in certain provinces such as Quebec (Bradley & Drapeau, 20140512; Drapeau & Bradley, 2019). The inclusion of the chronic pain population as a priority group in a potential plan would still need to take place, however. Additionally, to adapt services to the specific needs of this population, Darnall (2021) proposes increasing the variability and the availability of interventions to cater to patient preferences, thus potentially increasing treatment retention and effectiveness rates. Also, it remains important to increase pain-education initiatives for both health professionals and patients to better understand the role of mental health and mental health services in the context of chronic pain, as well as to extend this training to other mental health professionals such as social workers (Darnall, 2021; Schatman & Fortino, 2020).

CONCLUSION

In this thesis, the proposed objectives to evaluate the accessibility of mental health services for PLWCP were accomplished. Nonetheless, understanding the obstacles to obtaining mental health services may not be enough to adapt such services to the needs of this population. Further investigation of their perspectives about how to improve mental health services as well as the evaluation of their perceived needs for MHC to manage chronic pain is still needed. Subsequently, access barriers and suggestions for improvement of MHC for mental health and pain-related reasons may be addressed in pilot programs aiming to increase the accessibility and utilization of MHC by this population.

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APPENDICES - Supplementary Materials from Manuscripts

List of Appendices - Supplementary Materials

1. Manuscript 1 – Literature Review Search Strategy (OVID PsycInfo)

OVID APA PsycINFO search
<1806 to week 2 2022>:

1	(care adj3 utili#ation).ab,id,ti.	6,524
2	("health care" adj3 utili#ation).ab,id,ti.	5,244
3	(healthcare adj3 utili#ation).ab,id,ti.	2,149
4	(health-care adj3 utili#ation).ab,id,ti.	5,244
5	("mental health" adj3 utili#ation).ab,id,ti.	2,243
6	(service* adj3 utili#ation).ab,id,ti.	7,276
7	"mental health care".ab,id,ti.	15,545
8	"mental health service*".ab,id,ti.	32,438
9	("health care" adj3 use*).ab,id,ti.	4,885
10	(care adj3 use*).ab,id,ti.	12,339
11	(healthcare adj3 use*).ab,id,ti.	2,396
12	(health-care adj3 use*).ab,id,ti.	4,885
13	("mental health" adj3 use*).ab,id,ti.	10,181
14	(service* adj3 use*).ab,id,ti.	23,945
15	*Mental Health Services/ or *Health Care Access/ or *Health Care Utilization/ or *Community Mental Health Services/	50,043
16	"chronic pain".ab,id,ti.	17,933
17	*Chronic Pain/	12,929
18	16 or 17	20,601
19	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15	106,998
20	18 and 19	538
21	limit 20 to yr="2011 - 2021"	313
22	limit 21 to adulthood <18+ years>	213

2. Manuscript 1 – Literature Review Search Strategy (OVID MEDLINE)

OVID MEDLINE search

#	Query	Results from 31 Jan 2022
1	*Health Services/sn [Statistics & Numerical Data]	4,969
2	*Mental Health Services/sn [Statistics & Numerical Data]	4,770
3	(care adj3 utili#ation).ab,kf,ti.	18,139
4	("health care" adj3 utili#ation).ab,kf,ti.	12,485
5	(healthcare adj3 utili#ation).ab,kf,ti.	11,725
6	(health-care adj3 utili#ation).ab,kf,ti.	12,485
7	("mental health" adj3 utili#ation).ab,kf,ti.	1,658
8	(service* adj3 utili#ation).ab,kf,ti.	14,065
9	"mental health care".ab,kf,ti.	13,466
10	"mental health service*".ab,kf,ti.	23,636
11	("health care" adj3 use*).ab,kf,ti.	15,541
12	(care adj3 use*).ab,kf,ti.	44,597
13	(healthcare adj3 use*).ab,kf,ti.	11,091
14	(health-care adj3 use*).ab,kf,ti.	15,541
15	("mental health" adj3 use*).ab,kf,ti.	9,333
16	(service* adj3 use*).ab,kf,ti.	37,185
17	*Chronic Pain/px, rh, th [Psychology, Rehabilitation, Therapy]	5,177
18	"chronic pain".ab,kf,ti.	44,434
19	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16	157,041
20	17 or 18	46,237
21	19 and 20	1,011
22	limit 21 to yr="2011 - 2021"	750
23	limit 22 to "all adult (19 plus years)"	392

3. Manuscript 1 – Literature Review Search Strategy (OVID EMBASE)

OVID EMBASE search

#	Query	Results from 31 Dec 2021
1	(care adj3 utili#ation).ab,kf,ti.	24,881
2	("health care" adj3 utili#ation).ab,kf,ti.	17,741
3	(healthcare adj3 utili#ation).ab,kf,ti.	21,724
4	(health-care adj3 utili#ation).ab,kf,ti.	17,741
5	("mental health" adj3 utili#ation).ab,kf,ti.	1,724
6	(service* adj3 utili#ation).ab,kf,ti.	16,084
7	"mental health care".ab,kf,ti.	15,087
8	"mental health service*".ab,kf,ti.	26,107
9	("health care" adj3 use*).ab,kf,ti.	17,919
10	(care adj3 use*).ab,kf,ti.	56,835
11	(healthcare adj3 use*).ab,kf,ti.	15,974
12	(health-care adj3 use*).ab,kf,ti.	17,919
13	("mental health" adj3 use*).ab,kf,ti.	10,437
14	(service* adj3 use*).ab,kf,ti.	42,507
15	*mental health service/	22,320
16	*mental health care/	10,503
17	*health care utilization/	20,020
18	chronic pain/dm, rh, th [Disease Management, Rehabilitation, Therapy]	9,637
19	"chronic pain".ab,kf,ti.	62,230
20	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	218,051
21	18 or 19	66,381
22	20 and 21	1,689
23	limit 22 to yr="2011 - 2021"	1,292
23	limit 23 to (adult <18 to 64 years> or aged <65+ years>)	814

4. Manuscript 1 – Literature Review Search Strategy (SCOPUS)

SCOPUS search

Results from 31 Dec 2021

1 (TITLE-ABS-KEY ((utili*ation OR use) W/3 ("mental health service*" OR psych* OR "mental health")) AND TITLE-ABS-KEY ("chronic pain")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT-TO (PUBYEAR , 2015) OR LIMIT-TO (PUBYEAR , 2014) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT-TO (PUBYEAR , 2012) OR LIMIT-TO (PUBYEAR , 2011)) 19

2 (TITLE ((use) W/3 ("mental health service*")) AND TITLE-ABS-KEY ("chronic pain")) AND (LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT-TO (PUBYEAR , 2012)) 5

5. Manuscript 2 – Research Ethics Board approval letter

Le 05 juillet 2021

PAR COURRIEL

Monsieur Michel Perreault, Ph. D.
Chercheur

Objet : Autorisation de réaliser la recherche au CIUSSS du-Centre-Sud-de-l'Île-de-Montréal.

Titre : Troubles liés à l'usage d'opioïdes et problèmes associés: analyse de différents profils d'utilisation afin de soutenir une offre de services mieux adaptée

Numéro du projet : DIS-2021-09-MP

Identifiant Nagano : MP-51-2021-504, DIS-2021-09-MP

Monsieur Perreault,

Il nous fait plaisir de vous autoriser à réaliser le volet 1 de la (questionnaire sur le web) recherche identifiée en titre sous les auspices du Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal (CCSMTL).

Pour vous donner cette autorisation, notre établissement reconnaît l'examen éthique qui a été effectué par le **Comité d'éthique de la recherche Dépendances, inégalités sociales et santé publique**

- qui agit comme CER évaluateur pour ce projet, conformément au Cadre de référence des établissements publics du RSSS pour l'autorisation d'une recherche menée dans plus d'un établissement (le Cadre de référence);
- qui a confirmé dans sa lettre du **08 avril 2021** le résultat positif de l'examen scientifique et de l'examen éthique du projet; et
- qui a approuvé la version réseau du formulaire de consentement en français utilisé pour cette recherche.

Cette autorisation vous est donnée à condition que vous vous engagiez à :

- respecter les dispositions du Cadre de référence se rapportant à votre recherche;
- respecter le cadre réglementaire de notre établissement sur les activités de recherche, notamment pour l'identification des participants à la recherche;
- utiliser la version des documents se rapportant à la recherche approuvée par le CER évaluateur, les seuls changements apportés, si c'est le cas, étant d'ordre administratif et identifiés de façon à ce que le CER évaluateur puisse en prendre connaissance;
- respecter les exigences fixées par le CER évaluateur pour le suivi éthique continu de la recherche; et
- **respecter les directives de l'établissement en matière de prévention des infections, notamment en ce qui concerne les activités de recherche en période de pandémie.**

Cette autorisation est notamment fondée sur le fait que vous détenez des privilèges de recherche octroyés par notre établissement ou par un autre établissement du réseau de la santé et des services sociaux qui ont été dûment reconnus par le CCSMTL.

L'autorisation qui vous est donnée ici de réaliser la recherche sous les auspices de notre établissement sera renouvelée sans autre procédure à la date indiquée par le CER évaluateur dans sa décision de renouveler son approbation éthique de cette recherche.

Vous consentez également à ce que notre établissement communique aux autorités compétentes des renseignements personnels qui sont nominatifs au sens de la loi en présence d'un cas avéré de manquement à la conduite responsable en recherche de votre part lors de la réalisation de cette recherche.

La personne à joindre pour toute question relative à cette autorisation ou à son renouvellement ou au sujet de changements d'ordre administratif qui auraient été apportés à la version des documents se rapportant à la recherche approuvée par le CER évaluateur, est Mme Rossitza Nikolova. Vous pouvez la joindre à l'adresse courriel suivante: rossitza.nikolova.ccsmtl@ssss.gouv.qc.ca.

En terminant, nous vous demandons de toujours mentionner dans votre correspondance au sujet de cette recherche le numéro attribué au projet de recherche par le CER évaluateur.

Veuillez agréer nos sentiments les meilleurs.

Annie-Kim Gilbert, Ph. D.
Directrice de l'enseignement universitaire et de la recherche

6. Manuscript 2 – Email invitation to participate in survey (English version)

Hello,

You are invited to participate on an online survey as part of the research project: “Opioid use disorder and associated problems: Analysis of different use profiles in order to support a better adapted service offer.”

This survey is addressed to people living with chronic pain and seeks to know your opinion about the different psychosocial services that are offered to you.
Survey: [link]
Thank you for considering our invitation!
Michel Perreault, PhD research team
Douglas Hospital Research Centre

7. Manuscript 2 – Email invitation to participate in survey (French version)

Madame, Monsieur,

Vous êtes invité(e) à participer à un sondage web dans le cadre de l'*étude « Troubles liés à l'usage d'opioïdes et problèmes associés: analyse de différents profils d'utilisation afin de soutenir une offre de services mieux adaptée »*.

Ce sondage d'adresse aux personnes souffrant de douleur chronique et vise à recueillir votre opinion sur les différents services psychosociaux qui vous sont offerts.

Sondage : [link]

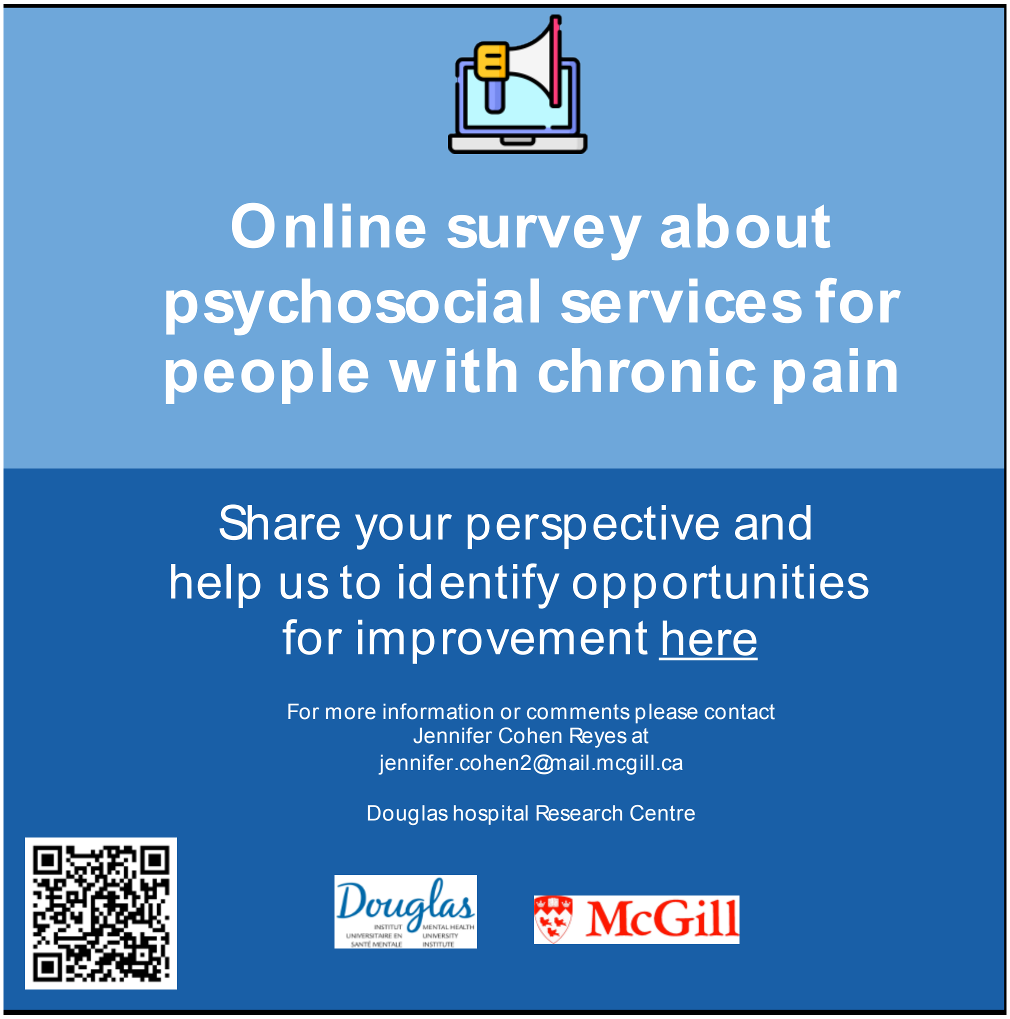
Merci pour l'attention que vous porterez à notre invitation,

L'équipe de Michel Perreault, PhD (chercheur)

Centre de recherche de l'hôpital Douglas

Contact: jennifer.cohen2@mail.mcgill.ca

8. Manuscript 2 – Social media survey recruitment poster (English version)



Online survey about psychosocial services for people with chronic pain

Share your perspective and help us to identify opportunities for improvement here

For more information or comments please contact
Jennifer Cohen Reyes at
jennifer.cohen2@mail.mcgill.ca

Douglas hospital Research Centre

9. Manuscript 2 – Social media survey recruitment poster (French version)

Sondage web sur les services psychosociaux pour les personnes souffrant de douleur chronique

Partagez votre perspective et aidez-nous à identifier des pistes d'amélioration en cliquant ici

Pour plus d'information ou commentaires contactez
Jennifer Cohen Reyes au
jennifer.cohen2@mail.mcgill.ca

Centre de Recherche d'hôpital Douglas

10. Manuscript 2 – Adapted Perceived for care questionnaire (English version)[1, 2]

1. During the past 12 months, did you receive the following kinds of help because of these mental health problems? (conditional)

   Information about these problems, treatments or available services, medication, counselling or therapy, other type of help

☐Yes

☐No

2. Which ones? (conditional) [check all that apply]

☐Information about these problems, treatments or available services
☐Medication
☐Counselling or therapy
☐Other type of help
☐Don't know

You mentioned that you received: [information about these problems, treatments or available services / medication / counselling or therapy / other help]. (tailored text)

3. During the past 12 months, do you think you got as much of [each of these kinds / this kind] of help as you needed? (tailored text; conditional; repeated for each service)

☐Yes
☐No
☐Don't know

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[1] Meadows, G., Harvey, C., Fossey, E., & Burgess, P. (2000). Assessing perceived need for mental health care in a community survey: Development of the Perceived Need for Care Questionnaire (PNCQ). *Social Psychiatry and Psychiatric Epidemiology*, *35*(9), 427–435. https://doi.org/10.1007/s001270050260

[2] Statistics Canada. (2012). *Canadian Community Health Survey (CCHS)—Mental Health. "Perceived need for care (PNC)" module.* https://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=106304&UL=1V&

4. During the past 12 months, which kind of help did you need more of? (conditional; repeated for each service) [check all that apply]

☐Information about these problems, treatments or available services
☐Medication
☐Counselling, therapy, or help for problems with personal relationships
☐Other
☐Don’t know

5. During the past 12 months, why didn't you get [more information about these problems, treatments or available services / more medication / more counselling or therapy/ more of the other kind of help you mentioned? (tailored text; conditional; repeated for each service)

Check all that apply

☐You preferred to manage yourself
☐You didn't know how or where to get this kind of help
☐You haven't gotten around to it (e.g., too busy)
☐Your job interfered (e.g., workload, hours of work or no cooperation from supervisor)
☐ Help was not readily available
☐You didn't have confidence in health care system or social services
☐You couldn't afford to pay
☐Insurance did not cover
☐You were afraid of what others would think of you
☐Poor support from family or friends
☐Language problems
☐Help is ongoing
☐Other: Specify
☐Don’t know

6. During the past 12 months, which of the following best describes why you preferred to manage yourself rather than seek help? (conditional)

Please choose the main or the single reason which most closely applies.

☐You didn't think they knew how to help
☐You were uncomfortable talking about these problems
☐You relied on faith and spirituality
☐ You relied on family and friends
☐ You felt you'd be treated differently if people thought you had these problems
☐You didn't feel ready to seek help
☐You couldn't get this kind of help where you live
☐Other
☐Don’t know

7. You mentioned that you did not receive:

[information about these problems, treatments or available services / medication / counselling or therapy / other help]. (tailored text; conditional)

8. During the past 12 months, do you think you needed [this kind /any of these kinds] of help? (conditional)

☐Yes
☐No

9. During the past 12 months, which kind of help did you need? (conditional)

☐Information about these problems, treatments or available services
☐Medication
☐Counselling or therapy
☐Don’t know

10. During the past 12 months, why didn't you get [more information about these problems, treatments or available services / more medication / more counselling or therapy / more of the other kind of help you mentioned? (tailored text; conditional)

Check all that apply

☐You preferred to manage yourself
☐You didn't know how or where to get this kind of help
☐You haven't gotten around to it (e.g., too busy)
☐Your job interfered (e.g., workload, hours of work or no cooperation from supervisor)
☐Help was not readily available
☐You didn't have confidence in health care system or social services
☐You couldn't afford to pay
☐Insurance did not cover
☐You were afraid of what others would think of you
☐Poor support from family or friends
☐Language problems
☐Help is ongoing
☐Other
☐Don’t know

11. During the past 12 months, which of the following best describes why you preferred to manage yourself rather than seek help? (conditional)

☐You didn't think they knew how to help
☐You were uncomfortable talking about these problems
☐You relied on faith and spirituality
☐You relied on family and friends
☐You felt you'd be treated differently if people thought you had these problems
☐You didn't feel ready to seek help
☐You couldn't get this kind of help where you live
☐Other
☐Don’t know

11. Manuscript 2 – Adapted Perceived for care questionnaire (French version)[3, 4]

1. Au cours des 12 derniers mois, avez-vous reçu les types d'aide suivants en raison des problèmes de santé mentale précédemment mentionnés?

Types d’aide : Information à propos de ces problèmes, leurs traitements ou les services disponibles, médicaments, consultation, thérapie, ou d’autre type d'aide

☐ Oui
☐ Non
☐ Ne sait pas

2. Lesquels?

☐ Information à propos de ces problèmes, leurs traitements ou les services disponibles
☐ Médicaments
☐ Consultation, thérapie, ou aide au niveau des relations interpersonnelles
☐ Autre type d'aide
☐ Ne sait pas

Vous avez mentionné avoir reçu : [de l'information à propos de ces problèmes, leurs traitements ou les services disponibles / des médicaments / de la consultation, thérapie / d'autre aide].

3. Pensez-vous avoir reçu autant de [chacun de ces types / ce type] d'aide que vous en aviez besoin (au cours des 12 derniers mois)? *[question personnalisée et conditionnelle]*

☐ Oui
☐ Non
☐ Ne sait pas

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[3] Meadows, G., Harvey, C., Fossey, E., & Burgess, P. (2000). Assessing perceived need for mental health care in a community survey: Development of the Perceived Need for Care Questionnaire (PNCQ). *Social Psychiatry and Psychiatric Epidemiology*, *35*(9), 427–435. https://doi.org/10.1007/s001270050260

[4] Statistics Canada. (2012). *Enquête sur la santé dans les collectivités canadiennes (ESCC)—Santé mentale 2011. Extrait du module « Besoins perçus de soins (PNC) ».* https://www23.statcan.gc.ca/imdb/p3Instr_f.pl?Function=getInstrumentList&Item_Id=106304&UL=1V&

4. Au cours de 12 derniers mois, lequel ou lesquels de ces genres d'aide auriez-vous eu besoin davantage?

☐Information à propos de ces problèmes, leurs traitements ou les services disponibles
☐Médicaments
☐Consultation ou thérapie
☐Autre type d'aide
☐Ne sait pas

5. Au cours de 12 derniers mois, pourquoi n'avez-vous pas reçu [plus d'information à propos de ces problèmes, leurs traitements ou les services disponibles / plus de médicaments / plus de consultation, de thérapie / plus de l'autre type d'aide que vous avez mentionné? *[question personalisée et conditionnelle]*

☐Vous avez préféré vous débrouiller seul
☐Vous ne saviez pas comment ou à quel endroit obtenir ce type d'aide
☐Vous n'avez pas trouvé le temps de vous en occuper (p. ex. : trop occupé)
☐Votre travail vous en empêchait (p.ex. : charge de travail, heures de travail ou manque de coopération du superviseur)
☐L'aide n'était pas disponible
☐Vous ne faisiez pas confiance au système de soins de santé ou aux services sociaux
☐ Vous n'aviez pas les moyens financiers
☐Vos assurances ne couvraient pas les frais
☐Vous aviez peur de ce que les autres pourraient penser de vous
☐Faible soutien de votre entourage
☐Problèmes de langue
☐Vous recevez encore ce type d'aide
☐Autre (Précisez : ______)
☐Ne sait pas

6. Au cours des derniers mois, lequel des énoncés suivants décrit le mieux pourquoi vous avez préféré vous débrouiller seul au lieu d'aller chercher de l'aide?

☐Vous pensiez que personne ne saurait comment vous aider
☐Vous étiez mal à l'aise d'avoir à parler de ces problèmes
☐Vous avez fait appel à la foi et à la spiritualité
☐Vous avez fait appel à votre famille et à vos amis
☐Vous aviez l'impression que vous seriez traité différemment si les gens pensaient que vous aviez ces problèmes
☐Vous ne vous sentiez pas prêt à demander de l'aide
☐Vous n'avez pas pu obtenir ce type d'aide à l'endroit où vous demeurez
☐Autre
☐Ne sait pas

7. Vous avez mentionné ne pas avoir reçu :

[de l'information à propos de ces problèmes, leurs traitements ou les services disponibles / de médicaments / de consultation, de thérapie / d'autre aide].

Au cours des 12 derniers mois, pensez-vous que vous aviez besoin de [ce type / n'importe quel de ces types] d'aide?

☐Oui
☐Non
☐Ne sait pas

8. Au cours des 12 derniers mois, de quel genre d'aide aviez-vous besoin?

☐Information à propos de ces problèmes, leurs traitements ou les services disponibles
☐Médicaments
☐Consultation, thérapie, ou aide au niveau des relations interpersonnelles
☐Autre type d'aide (Précisez :______)
☐Ne sait pas

9. Au cours des 12 derniers mois, pourquoi n'avez-vous pas reçu [plus d'information à propos de ces problèmes, leurs traitements ou les services disponibles / plus de

médicaments / plus de consultation, de thérapie, ou d'aide au niveau des relations interpersonnelles / plus de l'autre type d'aide que vous avez mentionné?

☐Vous avez préféré vous débrouiller seul
☐Vous ne saviez pas comment ou à quel endroit obtenir ce type d'aide
☐Vous n'avez pas trouvé le temps de vous en occuper (p. ex. : trop occupé)
☐Votre travail vous en empêchait (p.ex. : charge de travail, heures de travail ou manque de coopération du superviseur)
☐L'aide n'était pas disponible
☐Vous ne faisiez pas confiance au système de soins de santé ou aux services sociaux
☐Vous n'aviez pas les moyens financiers
☐ Vos assurances ne couvraient pas les frais
☐ Vous aviez peur de ce que les autres pourraient penser de vous
☐Faible soutien de votre entourage
☐Problèmes de langue
☐Vous recevez encore ce type d'aide
☐Autre (Précisez :______)
☐Ne sait pas

10. Lequel des énoncés suivants décrit le mieux pourquoi vous avez préféré vous débrouiller seul au lieu d'aller chercher de l'aide (au cours des 12 derniers mois)?

☐Vous pensiez que personne ne saurait comment vous aider
☐Vous étiez mal à l'aise d'avoir à parler de ces problèmes
☐Vous avez fait appel à la foi et à la spiritualité
☐Vous avez fait appel à votre famille et à vos amis
☐Vous aviez l'impression que vous seriez traité différemment si les gens pensaient que vous aviez ces problèmes
☐Vous ne vous sentiez pas prêt à demander de l'aide
☐Vous n'avez pas pu obtenir ce type d'aide à l'endroit où vous demeurez
☐Autre (Précisez :______)
☐Ne sait pas

12. Manuscript 2 – Psychological distress scale (English version)[5]

During the past 30 days, about how often did you feel ...	**All of the time**	**Most of the time**	**Some of the time**	**A little of the time**	**None of the time**
...nervous?	4	3	2	1	0
...hopeless?	4	3	2	1	0
...restless or fidgety?	4	3	2	1	0
…so depressed that nothing could cheer you up?	4	3	2	1	0
...that everything was an effort?	4	3	2	1	0
...worthless?	4	3	2	1	0

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[5] Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., Howes, M. J., Normand, S.-L. T., Manderscheid, R. W., Walters, E. E., & Zaslavsky, A. M. (2003). Screening for Serious Mental Illness in the General Population. *Archives of General Psychiatry*, *60*(2), 184. https://doi.org/10.1001/archpsyc.60.2.184

13. Manuscript 2 – Psychological distress – Kessler 6 scale (French version)[6, 7]

Au cours du dernier mois derniers jours, à quelle fréquence vous êtes-vous senti …	**Tout le temps**	**La plupart du temps**	**Parfois**	**Rarement**	**Jamais**
…nerveux?	4	3	2	1	0
…désespéré?	4	3	2	1	0
…agité ou ne tenant pas en place?	4	3	2	1	0
…si déprimé que plus rien ne pouvait vous faire sourire	4	3	2	1	0
…que tout était un effort?	4	3	2	1	0
...bon à rien?	4	3	2	1	0

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[6] Statistics Canada. (2015). *Enquête sur la santé dans les collectivités canadiennes (ESCC) – 2013. Extrait du module « Détresse (DIS) »*. https://www23.statcan.gc.ca/imdb/p3Instr_f.pl?Function=assembleInstr&a=1&&lang=fr&Item_Id=152567#qb160402

[7] Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., Howes, M. J., Normand, S.-L. T., Manderscheid, R. W., Walters, E. E., & Zaslavsky, A. M. (2003). Screening for Serious Mental Illness in the General Population. *Archives of General Psychiatry*, *60*(2), 184. https://doi.org/10.1001/archpsyc.60.2.184

14. Manuscript 2 – Perceived social support scale (English version)[8]

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

	Not true at all				Very true
1. I experience a lot of understanding and security from others.	1	2	3	4	5
2. I know a very close person whose help I can always count on.	1	2	3	4	5
3. If necessary, I can easily borrow something I might need from neighbors or friends.	1	2	3	4	5
4. I know several people with whom I like to do things.	1	2	3	4	5
5. When I am sick, I can without hesitation ask friends and family to take care of important matters for me.	1	2	3	4	5
6. If I am down, I know to whom I can go without hesitation.	1	2	3	4	5

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[8] Lin, M., Hirschfeld, G., & Margraf, J. (2019). Brief form of the Perceived Social Support Questionnaire (F-SozU K-6): Validation, norms, and cross-cultural measurement invariance in the USA, Germany, Russia, and China. *Psychological Assessment*, *31*(5), 609–621. https://doi.org/10.1037/pas0000686

15. Manuscript 2 – Perceived social support scale (French version)[9, 10]

On est intéressé à savoir comment vous vous sentez par rapport aux phrases suivantes. Veuillez lire chaque phrase attentivement et l'indiquer ci-dessous.

	Pas du tout vrai				Très vrai
1. Je me sens compris et rassuré par mon entourage	1	2	3	4	5
2. J'ai un proche sur lequel je peux toujours compter	1	2	3	4	5
3. Si nécessaire, je peux facilement emprunter quelque chose dont j'aurais besoin à des voisins ou à des amis.	1	2	3	4	5
4. Je connais plusieurs personnes avec lesquelles j'aime faire des activités.	1	2	3	4	5
5. Quand je suis malade, je peux demander à mes amis ou à ma famille de s'occuper des choses importantes sans hésiter	1	2	3	4	5
6. Si je me sens déprimé, je sais à qui je peux m'adresser sans hésiter	1	2	3	4	5

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[9] Lin, M., Hirschfeld, G., & Margraf, J. (2019). Brief form of the Perceived Social Support Questionnaire (F-SozU K-6): Validation, norms, and cross-cultural measurement invariance in the USA, Germany, Russia, and China. *Psychological Assessment*, *31*(5), 609–621. https://doi.org/10.1037/pas0000686

[10] Translation carried out by first author and validated by francophone members of the research team.

16. Manuscript 2 – Informed consent form (English version)

INFORMATION SHEET FOR CHRONIC PAIN PATIENTS TO PARTICIPATE IN AN ONLINE SURVEY

RESEARCH TITLE

Opioid use disorder and associated problems: Analysis of different consumption profiles in order to support a more adapted service offer.

RESEARCH TEAM

- **Michel Perreault**, **PhD**, Douglas Hospital Research Centre (Principal researcher)
- **Karine Bertrand**, **PhD**, *Sherbrooke University* (Co-investigator)
- **Didier Jutras-Aswad**, **MD**, Centre hospitalier de l'Université de Montréal – CHUM (Co-researcher)
- **Marc O. Martel**, **PhD**, McGill University (Co-investigator)
- **Léonie Archambault**, Douglas Hospital Research Centre (Doctoral student)
- **Jennifer Cohen Reyes**, Douglas Hospital Research Centre (Master's student)
- **Caroline Robitaille**, Douglas Hospital Research Centre (Post-doctoral researcher)

FUNDING

Substance Use and Addictions Program (Health Canada)

***

You are invited to participate in a research project. Please take the time to consider the following information before making your decision. This form may contain words or phrases that you do not understand or that you have questions about. If this should be the case, feel free to discuss it with the investigator or research coordinator. Take as much time as you need to decide. Your participation in this research project is on a voluntary basis.

***

DESCRIPTION OF THE RESEARCH PROJECT

This project aims to document and to understand the different types of profiles of people with or at risk for developing an opioid use disorder, as well as their needs as a function of their different characteristics linked to chronic pain, mental health problems and to the consumption of different substances. To this effect, we will consult physicians, pharmacists, nurses and social workers involved with this population, as well as persons with or at risk for developing opioid use disorders, to obtain their opinions.

EXPECTED PARTICIPATION IN THE PROJECT

The aim of this survey is to obtain the opinions of chronic pain patients currently taking opioid medication regarding psychosocial services. It takes about 25 minutes to complete and you can stop and resume completing at a later time, should you choose to.

BENEFITS OF PARTICIPATION

You will not receive any personal benefits from participating in this research project. However, your participation will help to develop recommendations to offer better adapted services to the different opioid use profiles and trajectories in order to improve the access to services and the retention in treatment for patients with or at risk of developing opioid use disorder.

RISKS RELATED TO PARTICIPATION

There are no risks associated with your participation in this project. The only potential inconvenience is related to the time required to complete the survey.

DATA RETENTION AND CONFIDENTIALITY

All information collected is anonymous and will be treated confidentially within the limits of the law; the data will only be used for this research project. The information will be stored for one year in the LimeSurvey software on a McGill University server and for five years in a locked filing cabinet in the principal investigator's office. Only the research team will have access to it. No information that could identify you will be published. All data collected will be destroyed five years after the completion of the research project.

COMMUNICATION OF RESULTS

The research data may be published in scientific journals or be the subject of scientific discussion. The names of the participants will never be mentioned.

FINANCIAL COMPENSATION

You will not receive any financial compensation for your participation in this research project.

FREEDOM TO PARTICIPATE IN THE RESEARCH AND RIGHT TO WITHDRAW

Your participation is voluntary. You may refuse to participate in the project without justification and this would not affect your relationship with the investigator leading the project or other stakeholders. You can stop answering the questionnaire at any time. In case of withdrawal, if your questionnaire has already been completed, it will not be possible to remove it from the common data.

LIABILITY FOR DAMAGE

By agreeing to participate in this project, you are not waiving any of your rights or releasing the investigators, the funding agency or the institution from their civil and professional liability.

CONTACTS

If you have any questions about this study, you can contact the principal investigator, **Michel Perreault,** by email at michel.perreault@douglas.mcgill.ca, or the person responsible for this study, master's student and research assistant **Jennifer Cohen Reyes**, by email at Jennifer.cohen2@mail.mcgill.ca

If you wish to inquire about your rights or file a complaint, you can contact the Service Quality and Complaints Commissioner of the CIUSSS Centre-Sud-de-l'Île-de-Montréal at the following number: 514-593-3600.

For any questions regarding the ethical aspects of the project, you can contact the Ethics Committee for Research on Addiction, Social Inequalities and Public Health at 514-527-9565, ext. 3789 or by e-mail at rossitza.nikolova.ccsmtl@ssss.gouv.qc.ca

PRINCIPAL INVESTIGATOR'S STATEMENT

I, along with my research team, hereby promise to adhere to what has been stipulated in the information and consent form.

Michel Perrault ______________________ August 27th, 2020

Investigator's name and signature Date

17. Manuscript 2 – Informed consent form (French version)

FORMULAIRE D’INFORMATION DESTINÉ AUX PATIENTS SOUFFRANT DE DOULEUR CHRONIQUE POUR PARTICIPER À UN SONDAGE

TITRE DE LA RECHERCHE

Troubles liés à l'usage d'opioïdes et problèmes associés: analyse de différents profils d'utilisation afin de soutenir une offre de services mieux adaptée

ÉQUIPE DE RECHERCHE

☐ Michel Perreault, Ph.D., Chercheur, Centre de recherche de l’Hôpital Douglas (chercheur principal)
☐ Karine Bertrand, PhD, Université de Sherbrooke (co-chercheure)
☐ Didier Jutras-Aswad, MD, Centre hospitalier de l'Université de Montréal (co-chercheur)
☐ Marc Martel, PhD, Université McGill (co-chercheur)
☐ Léonie Archambault, Centre de recherche de l’hôpital Douglas (Étudiante doctorat)
☐ Jennifer Cohen, Centre de recherche de l’hôpital Douglas (Étudiante maîtrise)
☐ Caroline Robitaille, Centre de recherche de l’hôpital Douglas (Étudiante post-doctorat)

FINANCEMENT

Programme sur l’usage et les dépendances aux substances (Santé Canada)

***

Vous êtes invité(e) à participer à un projet de recherche. Veuillez prendre le temps de considérer les renseignements qui suivent avant de vous décider. Il se peut que ce formulaire contienne des mots ou des expressions que vous ne comprenez pas ou que vous vous posiez des questions. Si c’est le cas, n’hésitez pas à en faire part au chercheur ou à la coordonnatrice de recherche. Prenez tout le temps nécessaire pour vous décider. Votre participation à ce projet de recherche est volontaire.

***

DESCRIPTION DU PROJET DE RECHERCHE

Le projet vise à documenter et comprendre les différents profils de personnes aux prises avec un troubles liés à l'usage d'opioïdes (TUO) ou à risque de développer un TUO ainsi que leurs besoins de services en fonction de caractéristiques liées à la douleur chronique, aux problèmes de santé mentale et à la consommation d’autres substances. Pour ce faire, nous allons recueillir les opinions de médecins, pharmaciens, infirmiers et intervenants sociaux impliqués auprès de cette clientèle, ainsi que de personnes ayant un vécu expérientiel de trouble liés à l’usage d’opioïdes.

PARTICIPATION ATTENDUE AU PROJET

Le sondage anonyme a pour but de recueillir l’opinion des patients souffrant de douleur chronique qui prennent des médicaments opioïdes sur les services de soutien psychologique et social offerts. Ce sondage est d’une durée de 25 minutes.

AVANTAGES LIÉS À LA PARTICIPATION

Vous ne retirerez aucun avantage personnel à participer à ce projet de recherche. Cependant, votre participation aidera à développer des recommandations pour offrir des services mieux adaptés aux différents profils et trajectoires d’utilisation d’opioïdes afin de favoriser l’accès et la rétention des patients en traitement du trouble lié à l’usage d’opioïdes.

RISQUES ET INCONVÉNIENTS LIÉS À LA PARTICIPATION
Il n'y a pas de risques liés à votre participation. Les inconvénients concernent le temps nécessaire pour répondre au sondage.

CONFIDENTIALITÉ ET CONSERVATION DES DONNÉES
Tous les renseignements recueillis sont anonymes et seront traités de manière confidentielle dans les limites prévues par la loi et ne seront utilisés que pour ce projet de recherche. Les renseignements seront conservés un an dans le logiciel LimeSurvey sur un serveur sécurisés de l'université McGill et dix ans dans un classeur verrouillé dans le bureau du chercheur principal. Seule l'équipe de recherche y aura accès. Aucune information permettant de vous identifier ne sera publiée. L'ensemble des données collectées sera détruit 10 ans après la fin du projet de recherche.

À des fins de surveillance ou de contrôle de la recherche, il est possible que le chercheur doive permettre l'accès à votre dossier de recherche à une personne mandatée par le Comité d'éthique de la recherche en Dépendance, Inégalités sociales et Santé publique, par l'établissement ou par les organismes subventionnaires de la recherche. Ces personnes et ces organismes adhèrent tous à une politique de stricte confidentialité.

DIFFUSION DES RÉSULTATS DE RECHERCHE
Les données pourront être publiées dans des revues spécialisées ou faire l'objet de discussions scientifiques.

COMPENSATION FINANCIÈRE
Vous ne recevrez aucune compensation financière pour votre participation à ce projet de recherche.

LIBERTÉ DE PARTICIPATION À LA RECHERCHE ET DROIT DE RETRAIT
Votre participation est volontaire. Vous pouvez refuser de participer au projet sans avoir besoin de vous justifier, et sans que cela nuise à vos relations avec le chercheur responsable du projet et les autres intervenants. Vous pouvez arrêter à tout moment de remplir le questionnaire. En cas de retrait et si votre questionnaire est complété, il ne sera pas possible de le retirer des données communes.

RESPONSABILITÉ EN CAS DE PRÉJUDICE
En acceptant de participer à ce projet, vous ne renoncez à aucun de vos droits ni ne libérez les chercheurs, l'organisme subventionnaire ou l'établissement de leur responsabilité civile et professionnelle.

PERSONNES RESSOURCES
Si vous avez des questions concernant cette étude, vous pouvez communiquer avec le chercheur principal, Michel Perreault au 514-761-6131, poste 2823 ou avec la coordonnatrice de recherche, Léonie Archambault au 514-761-6131 poste 2835.
Si vous souhaitez vous renseigner sur vos droits ou pour formuler une plainte, vous pouvez joindre le commissaire aux plaintes et à la qualité des services du CIUSSS Centre-Sud-de-l'Île-de-Montréal au numéro suivant: 514-593-3600.
Pour toute question concernant les aspects éthiques du projet, vous pouvez contacter le Comité d'éthique de la recherche en Dépendance, Inégalités sociales, Santé publique 514-527-9565, poste 3013 ou encore par courriel à david.lecuyer.ccsmtl@ssss.gouv.qc.ca

En remplissant ce sondage, vous acceptez de participer au projet de recherche.

Nous vous recommandons d'imprimer et de conserver une copie du présent document.

Perreault et al. 14 janvier 2021
Troubles liés à l'usage d'opioïdes et problèmes associés

DÉCLARATION DU CHERCHEUR/DE LA CHERCHEUSE RESPONSABLE DU PROJET DE RECHERCHE

Je m'engage avec l'équipe de recherche à respecter ce qui a été convenu au formulaire d'information et de consentement.

Michel Perreault
____ ______________
Nom et signature du chercheur/de la chercheuse Date

18. Manuscript 2 – Mental health resources list included in online questionnaire (English)

Mental health resources

Interligne
No-judgement helpline for emotional or mental health problems
24/7
514-866-0103
Toll-free call or text: 1-888-505-1010

Information and Referral Centre of Greater Montreal
Information about community resources
8h00 - 18h00 (7/7)
514-527-1375

Info-santé | Info social
Free and confidential phone consultation
811 (24/7)

Drogue, help and referral
Support and information
514-527-2626 (24/7)
Toll-free: 1-800-265-2626

Tel-Aide
No-judgement helpline for emotional or mental health problems
24/7
514-935-1110

Suicide Action Montréal
In distress, anxious, bereaved:
We are present, here and now
Toll-free: 1-866-277-3553 (24/7)
514-935-1110

19. Manuscript 2 – Mental health resources list included in online questionnaire (French)

Ressources en santé mentale

Écoute entraide
Ligne d’écoute sans jugement en santé mentale et difficultés émotionnelles
8h à minuit (7/7)
514.278.2130

Centre de références du grand Montréal
Information sur les ressources communautaires
8h00 - 18h00 (7/7)
514.527.1375

Info-santé | Info social
Consultation téléphonique gratuit et confidentiel
811 (24/7)

Drogue, aide et référence
Soutien et information
514.527.2626 (24/7)
Sans frais : 1.800.265.2626

Tel-Aide
Ligne d’écoute sans jugement en santé mentale et difficultés émotionnelles
Bilingue, 24/7
514-935-1110

Suicide Action Montréal
En détresse, inquiet
Nous sommes là, ici maintenant
1.866.277.3553 (24/7)
514-935-1110

20. Manuscript 2 – Online questionnaire link (inactive version)

English online survey link: https://surveys.mcgill.ca/ls3/477811

French online survey link: https://surveys.mcgill.ca/ls3/477811

21. List of thesis work presentations and knowledge dissemination content

1. Léonie Archambault, M.A; Jennifer Cohen-Reyes, B,Sc.; Niamh Power, M.Sc; Caroline Robitaille, PhD; Marie- Anne Ferlatte, PhD.; Michel Perreault, PhD; (2021). Presentation: *Accès aux services en santé mentale pour les personnes qui souffrent de douleur chronique et qui prennent des opioïdes.* Seminar series of the Douglas research centre Mental health and Society division, Montreal, Canada
2. Jennifer Cohen-Reyes, B,Sc.; Caroline Robitaille, PhD; Michel Perreault, PhD; (2021). Presentation: *Barriers and facilitators for people living with chronic pain to access mental health services: A rapid review of the literature.* 4th Annual integrative psychiatry conference, Montreal, Canada. Abstract published in the McGill Journal of Medicine: https://mjm.mcgill.ca/article/view/921/676

3. Jennifer Cohen-Reyes, B,Sc.; Caroline Robitaille, PhD; Michel Perreault, PhD; (2021). Narrated poster : *Accès aux services psychologiques pour les personnes souffrant de douleur chronique : Une revue de la littérature.* Convergence Recherche Intervention (CRI) 2021, Montreal, Canada. Narrated poster capsule: https://www.youtube.com/watch?v=6-5Wr2U3-mQ

4. Jennifer Cohen-Reyes, B,Sc.; Caroline Robitaille, PhD; Michel Perreault, PhD; (2021). Presentation: *Accès aux services en santé mentale pour les personnes souffrant de douleur chronique : Revue de la littérature.* Convergence Recherche Intervention (CRI) 2021, Montreal, Canada. Recording: https://www.youtube.com/watch?v=RAHLaQR_5_k&t=6s

5. Jennifer Cohen-Reyes, B.Sc.; Michel Perreault, PhD. (2022). *Access to mental health services for people with persistent pain.* Lunch & Talk series - Quebec Pain Research Network, Montreal, Canada. Webinar: https://www.youtube.com/watch?v=Ph2rg4DjHhA
6. Jennifer Cohen-Reyes, B.Sc.; Michel Perreault, PhD. (2022). Poster presentation: Accessing mental health services by people living with chronic pain: A scoping review. Annual scientific meeting of the Canadian Pain Society, Montreal, Canada. *In press.*

7. Jennifer Cohen-Reyes, B.Sc.; Michel Perreault, PhD. (2022). Presentation: *Perceived mental health care needs of people living with chronic pain.* Douglas research centre research day, Montreal, Canada.

8. Social media accounts for knowledge dissemination: https://linktr.ee/jenncrresearch