

Université de Montréal

**Rehabilitation Professionals' Attitudes and Beliefs towards  
Chronic Pain**

**A Scoping Review, Consultation and Survey**

par

Sabrina Morin Chabane

École de réadaptation

Faculté de médecine

Mémoire présenté à la Faculté de médecine  
en vue de l'obtention du grade de maîtrise  
en sciences de la réadaptation

Juin 2016

© Sabrina Morin Chabane, 2016

## Résumé

**Objectifs :** 1) résumer et synthétiser des attitudes et croyances des professionnels de la réadaptation envers la douleur chronique; 2) explorer les perceptions de physiothérapeutes envers ces attitudes et croyances et 3) décrire les attitudes et croyances de physiothérapeutes envers la douleur chronique et vérifier si elles diffèrent en fonction de facteurs socio-démographiques.

**Méthodologie :** Pour le premier objectif, nous avons réalisé une revue exploratoire (*scoping review*) où nous avons effectué une recherche des écrits scientifiques sur divers moteurs de recherche de leur création à juillet 2014. Nous avons effectué une analyse thématique des articles correspondant à nos critères d'inclusion pré-établis. Afin de répondre au deuxième objectif, nous avons réalisé trois groupes de discussion (*focus groups*), puis analysés les transcriptions par analyse descriptive et thématique. Nous avons sondé 14 physiothérapeutes en utilisant le Questionnaire sur les attitudes et croyances envers la douleur chronique destiné aux professionnel(le)s de la santé (score total, sous-score compétence, engagement émotionnel et empathie). Nous avons utilisé des statistiques descriptives et analyses bivariées pour vérifier si les réponses des participants différaient en fonction de caractéristiques socio-démographiques et expérience.

**Résultats :** La recherche a donné 1538 articles; 26 articles pour révision complète. Nous avons développé sept thèmes post analyse. Les groupes de discussion ont permis d'identifier trois thèmes principaux liés 1) au développement de la douleur chronique; 2) à la légitimité de la douleur chronique et à sa relation avec l'incapacité et 3) à la capacité à gérer les aspects

psychologiques liés à la douleur des patients. Les physiothérapeutes ayant plus d'expérience clinique ont démontré plus d'engagement émotionnel ( $p=0.02$ ) et ceux ayant une expérience de travail antérieur dans une clinique de douleur multidisciplinaire ont démontré plus d'empathie ( $p=0.02$ ).

**Conclusion :** Les physiothérapeutes ont besoin de plus d'éducation et de formation concernant l'évaluation et le traitement des facteurs psychosociaux liés à la douleur. Les physiothérapeutes avec plus d'expérience clinique ont démontré plus d'engagement émotionnel et ceux ayant une expérience de travail dans une clinique de douleur multidisciplinaire ont démontré plus d'empathie envers les individus vivant avec de la douleur chronique.

**Mots-clés :** réadaptation, physiothérapie, attitudes, croyances, douleur chronique, revue exploratoire, consultation, enquête

## **Abstract**

**Objectives:** 1) to summarize and synthesize the literature regarding rehabilitation professionals' attitudes and beliefs towards chronic pain; 2) to explore physiotherapists' perceptions of those attitudes and beliefs and 3) to describe physiotherapists' attitudes and beliefs towards chronic pain and to see if they differ according to socio-demographic factors.

**Methods:** For the first objective, we conducted a scoping review where we searched the literature using various databases from inception until July 2014. We performed thematic analysis on articles that met our pre-established standards for inclusion. To answer objective two, we conducted three focus groups and analyzed transcripts through descriptive and thematic analysis. We also surveyed 14 physiotherapists (objective three) using the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals (total score, subscores of competence, emotional involvement and empathy). We used descriptive statistics and bivariate analysis to see if participants' responses differed based on socio-demographic characteristics and experience.

**Results:** The literature search yielded 1538 articles; 26 articles were included for full review. Seven themes evolved post analysis. Focus groups allowed to identify three core themes 1) the development of chronic pain; 2) the legitimacy of chronic pain and its relationship with disability and 3) the ability to manage psychological aspects of patient's pain. More experienced physiotherapists had higher emotional involvement ( $p = 0.02$ ) and those with previous experience working in a multidisciplinary pain clinic had greater empathy ( $p = 0.02$ ).

**Conclusion:** Physiotherapists need to be further educated and trained on how to assess and treat psychosocial factors associated with pain. Physiotherapists with more general clinical experience showed greater emotional involvement and those with specific multidisciplinary pain clinic experience showed more empathy towards individuals living with chronic pain.

**Keywords:** rehabilitation, physiotherapy, attitudes, beliefs, chronic pain, scoping review, consultation, survey

# Table of contents

List of tables.....	viii
List of figures.....	ix
List of initials.....	x
List of abbreviations.....	xi
Dedication.....	xiii
Acknowledgements.....	xiv
Introduction.....	1
Chapter 1. Objectives.....	3
1.1 General objective.....	3
1.2 Specific objectives.....	3
Chapter 2. Methods.....	4
2.1 Ethical considerations.....	4
2.2 Research design.....	4
2.2.1 Scoping review (article 1).....	4
2.2.2 Consultation (article 2).....	5
2.2.2.1 Participants, inclusion and exclusion criteria.....	8
2.2.2.2 Recruitment of participants.....	8
2.2.2.3 Focus groups.....	8
2.2.2.4 Data collection.....	9
2.2.2.5 Data handling and analysis.....	9
2.2.3 Survey (article 3).....	10

2.2.3.1	Participants, inclusion and exclusion criteria, recruitment.....	10
2.2.3.2	Attitudes and beliefs questionnaire.....	10
2.2.3.3	Data collection.....	11
2.2.3.4	Data handling and analysis.....	12
Chapter 3.	Results.....	13
3.1	Article 1. Rehabilitation professionals’ attitudes and beliefs towards chronic pain: a scoping review of the literature.....	13
3.2	Article 2. Out-patient physiotherapists’ attitudes and beliefs towards chronic pain: a qualitative study.....	44
3.3	Article 3. Exploring factors associated with physiotherapists’ attitudes and beliefs towards chronic pain.....	74
Chapter 4.	Discussion.....	98
4.1	Summary of the results.....	98
4.2	Link to literature.....	100
4.3	Strengths and limitations.....	103
4.4	Future directions.....	105
4.5	Clinical implications.....	106
Conclusion	.....	107
Bibliography	.....	109
Appendix 1.	Ethics approval.....	I
Appendix 2.	Consent form.....	II
Appendix 3.	Example of field notes.....	IX
Appendix 4.	Guide for focus groups.....	X

Appendix 5. Agreement of co-authors – article 1 .....	XVII
Appendix 6. Agreement of co-authors – article 2 .....	XVIII
Appendix 7. Agreement of co-authors – article 3 .....	XIX



## List of tables

Article 1. Table 1. Inclusion and exclusion criteria .....	32
Article 1. Table 2. Summary of relevant studies descriptors .....	33
Article 2. Table 1. Socio-demographic characteristics, education and experience of the groups .....	64
Article 2. Table 2. Guide for focus groups (association between Scoping themes and video sequence) .....	65
Article 3. Table 1. Socio-demographic characteristics, education and experience of the groups .....	86
Article 3. Table 2. Scores and subscores to the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals .....	87

## List of figures

Article 1. Figure 1. PRISMA flow diagram.....	31
Article 3. Figure 1. The association between attitudes and beliefs and socio-demographic characteristics and experience.....	88

## **List of initials**

AMN : Andrea Miller-Nesbitt

DEF : Debbie Ehrmann Feldman

FC : Franzina Coutinho

ML : Maude Laliberté

SMC : Sabrina Morin Chabane

TO : Tatiana Orozco

## List of abbreviations

4HCS : Four Habits Coding Scheme

AÉSP : *Axe éthique en santé des populations*

BPCQ : Beliefs about Pain Control Questionnaire

CERES : *Comité d'éthique de la recherche en santé*

COBS : City of Boston's Rehabilitation Professionals' Knowledge and Attitude Survey  
Regarding Pain

DALYs : Disability-adjusted life years

Dr : Doctor

E.g. : For example

ENTREQ : Enhancing Transparency in Reporting the Synthesis of Qualitative Research tool

GOSSIP : Groningen Observation Score for Illness Perceptions

HC-PAIRS : Health Care Providers Pain and Impact Relationship Scale

IASP : International Association for the Study of Pain

I.e. : id est/that is to say

IQR : Interquartile range

KT : Knowledge translation

M.Sc. : Master of science

NRS : Numeric Rating Scale

OT students : Occupational therapy students

OTs : Occupational therapists

PBAS : Professionals' Beliefs and Attitudes Scale

PBAS.PT : Pain Attitudes and Beliefs Scale for Physiotherapists

PGAP : Progressive Attainment Goal Program

PhD : Philosophiæ doctor

PT : Physiotherapist

PT students : Physiotherapy students

PTs : Physiotherapists

REB : Review Ethics Board

RPs : Rehabilitation professionals

SD : Standard deviation

UK : United Kingdom

USA : United States of America

VAS : Visual Analog Scales

Vs : Versus

*Being the daughter of a mechanical engineer and a nurse in psychiatry, I was probably destined to get passionate about human bodymechanics and mental health. I thus became a physiotherapist. Papa et maman, je tiens à vous remercier profondément pour votre éducation, amour et support continus...*

## **Acknowledgements**

I would like to thank my research director Debbie Ehrmann Feldman and my co-director Franzina Coutinho for their guidance, availability and flexibility during this journey. You have inspired me to become an assiduous worker. I am grateful for the diversified research and teaching opportunities you have given me. I would also like to thank Maude Laliberté, PhD student in bioethics, for encouraging me to engage in a Master program. You played the role of an invaluable mentor. I would also like to thank all the friends and co-workers who have shared thoughts throughout this stimulating journey.

## **Introduction**

Pain is a subjective, unpleasant sensory and emotional experience that can reflect a real or potential physical injury (1). Chronic pain is defined as recurrent or persistent pain lasting for more than three months (2), beyond the expected recovery time and it may or may not be associated with a physical injury (3). Chronic pain is influenced by physical but also cognitive, emotional and behavioral factors and its expression can appear disproportionate to the injury that initially caused it (3).

One Canadian in five suffers from chronic pain (2). About 20% of persons with chronic pain are diagnosed with depression (4). Canadians with chronic pain experience more days away from work and consult physicians 12.9 times more than the rest of the population (5). The contribution of musculoskeletal disorders to worldwide disability-adjusted life years (DALYs), which is the sum of years lost due to premature death and years lived with disability, has increased by 45.5% from 1990 to 2010 and now explains 6.8% of all DALYs (when compared to 291 other health problems including cardiovascular disease, cancer and infectious diseases) (6). Disability now explains a greater proportion of DALYs than premature mortality (6). The majority of individuals living with chronic pain report interference with daily activities (2) and those with functional limitations are often referred to rehabilitation services. Physiotherapy can be effective in managing chronic pain and in reducing its functional consequences (7-11). The quality of treatment provided to patients with chronic pain can vary and does not only depend on professionals' knowledge but also their beliefs and attitudes towards chronic pain (12-17).



Beliefs refer to a person's thoughts about what pain is and what it means to them (13). Attitudes are cultural dispositions that are learned and which guide one's reactions to accept or reject, engage or disengage, agree or disagree with a situation (3).

Many professionals have ambivalent feelings about chronic pain and its reality, which can impact upon the practice in rehabilitation (18-21), including the information they provide to patients, clinical decision making (12, 16), and quality of care (12, 13, 15-17). Understanding and addressing professionals' attitudes and beliefs towards chronic pain and their impact on pain management is important to ensure appropriate and quality care.

The overall goal of this Masters Thesis is to characterize rehabilitation professionals' attitudes and beliefs towards chronic pain and increase awareness of physiotherapists to these attitudes and beliefs, so as to ultimately improve management of persons with chronic pain. In Chapter 1, the objectives are presented followed by the methodology in Chapter 2. The literature review on rehabilitation professionals' attitudes and beliefs towards chronic pain is the subject of a scoping review (article 1) and is presented in Chapter 3. The results of focus groups (article 2) and a study (article 3) on physiotherapists' attitudes and beliefs towards chronic pain follow in Chapter 3. In Chapter 4, we summarize, discuss and link the results of these three articles to the literature. We then conclude by recalling the objectives and results of our research project and by providing recommendations on future directions.

# **Chapter 1. Objectives**

## **1.1 General objective**

The general objective of this research project is to describe and understand rehabilitation professionals' attitudes and beliefs towards chronic pain.

## **1.2 Specific objectives**

The specific objectives are

- 1) to summarize and synthesize rehabilitation professionals' attitudes and beliefs towards chronic pain;
- 2) to explore physiotherapists' (PTs) perceptions of those attitudes and beliefs;
- 3) to describe PTs' attitudes and beliefs towards chronic pain and to see if they differ according to socio-demographic factors.

## **Chapter 2. Methods**

### **2.1 Ethical considerations**

Ethics approval was obtained from *Comité d'éthique de la recherche en santé* (CERES) from Université de Montréal (Appendix 1) and the Review Ethics Board (REB) of the hospital center where study participants were recruited (this ethics certificate is not provided in appendix in order to protect participants' confidentiality). All participants signed an informed consent form prior to participating in the study (Appendix 2).

### **2.2 Research design**

We used a mixed methods design consisting of a scoping review (article 1), qualitative consultation study (article 2) and quantitative study (article 3).

#### **2.2.1 Scoping review (objective 1; article 1)**

To summarize and synthesize rehabilitation professionals' (RPs') attitudes and beliefs towards chronic pain and their impact on pain management (objective 1), we conducted a literature review based on the scoping review framework recommended by Arksey and O'Malley (22) and elaborated on by Levac, Colquhoun and O'Brien (23). The scoping review is a type of literature review that allows to map key concepts of a complex topic that has not been systematically reviewed yet (22). The scoping review is particularly useful in answering questions that are not related to the efficacy of an intervention (23). It allows the inclusion of studies of different designs and, unlike a systematic review, it does not involve the quality

assessment of the studies (22). The reasons for conducting a scoping review are: to determine the type and extent of sources and studies available on the topic, to determine the feasibility and relevance of engaging in a systematic review on the topic, to summarize and disseminate research findings or to identify gaps in the literature (22). Arksey and O'Malley (22) recommended a scoping review framework, later elaborated on by Levac, Colquhoun and O'Brien (23) consisting of five steps: 1) identifying the research question 2) identifying relevant studies 3) study selection 4) data extraction 5) collating, summarizing and reporting the results 6) consultation (optional) (22, 23). The methods are detailed in article one. The first article reports the results from step one to five.

### **2.2.2 Consultation (objective 2; article 2)**

The second article reports the results of consultations sessions; an optional sixth step in the scoping review as recommended by Arksey and O'Malley (22) and Levac, Colquhoun and O'Brien (23). Levac, Colquhoun and O'Brien suggest that this consultation step be a "required component" of the scoping review as it adds to its methodological rigor (23). The proposed purposes for the consultation are diverse: 1) to present the preliminary findings of the scoping review (23); 2) to disseminate its results (knowledge translation) (22, 23); 3) to complement and strengthen the results so they become more useful to policy makers, practitioners and service users; 4) to identify research questions and research priorities (24). There is a lack of guidance regarding "when, how and why to consult with stakeholders" and how to integrate their contributions to the final results of the scoping review (23). Levac, Colquhoun and O'Brien recommend that the results of step five be presented to stakeholders through a framework, list of themes or list of findings (23).

The aims of our consultations were to 1) share the findings from stage five with stakeholders (knowledge translation - KT); 2) validate the findings and get additional perspective on them and 3) get additional references on the topic.

To explore PTs' perceptions of attitudes and beliefs towards chronic pain (objective 2) and to validate the findings of the scoping review and get additional perspective on them, we selected a focus group approach.

Focus groups are useful to gather information about participants' feelings and opinion concerning an experience (25) or a phenomenon such as chronic pain. They are effective at evaluating current practice and perspectives of a group and allow to collect a wide range of in-depth information (26). Focus groups also allow to learn subgroups' conscious, semi-conscious and unconscious psychological characteristics and decision-making processes (25). Focus groups are thus a choice of intervention that allows gathering data on attitudes and beliefs, which could be conscious or unconscious.

We conducted three focus groups that allowed participants to exchange ideas regarding their attitudes and beliefs towards chronic pain.

As a basis for discussion in the focus groups and to share the findings of the scoping review (KT), we created an educational video illustrating professionals' attitudes and beliefs towards chronic pain. Knowledge translation (KT) is the "dynamic and iterative" exchange, synthesis, dissemination of knowledge between a researcher and stakeholders, which can be done before, during or after the completion of a research project (27). The result is a co-production of knowledge between researchers and stakeholders and ultimately a better

application of knowledge by stakeholders to ultimately improve the quality of health care provided (27).

Videos can be used for dissemination of knowledge and research, offer an opportunity for a dynamic educational intervention and stimulate a reflective practice in health care professionals (28). Videos have been used worldwide for over 30 years for teaching medical students (28-33). Different types of movies such as whole-length films (e.g. Patch Adams), movie clips, television series (e.g. Dr House) and homemade clips, are effective in stimulating reflective practice, critical thinking and development of moral reasoning skills in medical students at different stages of their training (29-31). Alexander et al. used clips from popular movies to teach medical residents the psychosocial aspects of medical care (34). Saab et al. used video clips to teach medical students communication skills (35). Rabinowitz et al. used videotaped staged interviews (trigger videos) to sensitize medical students towards the cultural dimensions of patient-physician communication (33). Ber and Alroy used homemade trigger videos depicting patient-physician interactions to stimulate reflection and small group discussion amongst medical students with the guidance of a tutor specialized in professional behaviour (29, 30). In a study entitled *Watch and Learn: An Innovative Video Trigger Curriculum to Increase Resident Screening for Social Determinants of Health*, videos allowed medical residents to improve their knowledge and decrease their discomfort regarding the screening of social determinants of health such as domestic violence and family stressors (32). Videos are useful in illustrating difficult concepts such as attitudes and beliefs. Videos can sensitize clinicians towards their attitudes and thus contribute to a change in knowledge, clinical judgment and practice (26).

Our video was developed in collaboration with Maude Laliberté (collaborator and PhD student at Université de Montréal) and Ky Vy Le Duc, film director and film editor. The content of the video is based on the themes identified in the scoping review. The duration of the video is 10 minutes 5 seconds. It was filmed in French. English subtitles were added during editing. The video can be viewed on YouTube (<https://www.youtube.com/watch?v=RJIw1uaig84&feature=youtu.be>).

#### *2.2.2.1 Participants, inclusion and exclusion criteria*

We recruited PTs using a purposive sampling method (36). The inclusion criteria were 1) PTs working in public physiotherapy out-patient departments and 2) PTs treating individuals with chronic musculoskeletal pain.

#### *2.2.2.2 Recruitment of participants*

We contacted the service managers of three public university health centers' physiotherapy departments to describe the project and request permission to meet their out-patient PTs to present our project. SMC met the potential participants to describe the project, explain and provide consent forms one month prior to the focus groups (Appendix 2).

#### *2.2.2.3 Focus groups*

We organized the three focus groups during a monthly in-service meeting already planned in the PTs' working schedules (during regular working hours). This allowed to facilitate the presence of PTs who wanted to participate to the focus groups. A member (SMC) of the research team facilitated the focus groups while two others (DF and TO) observed the sessions and took field notes about the context and highlights (example of field notes in

Appendix 3). SMC acted as a moderator to assure structure regarding group dynamics and to guide discussion with regards to the research interest (37). The three focus groups each lasted sixty minutes. The ten-minute video was first shown, followed by a semi-structured discussion. The main questions that guided the focus groups were "What are PTs' attitudes and beliefs towards chronic pain?" and "What are PTs' perspectives on the findings from our scoping review?" The focus group guide is presented in Appendix 4.

#### *2.2.2.4 Data collection*

All three focus groups were audio-recorded and transcribed by a professional in their original language (two English groups and one French group). Transcriptions were reviewed in Dedoose (38), a web application for qualitative and mixed methods research analysis. French verbatim quotations were translated into English by a native English-speaking member of the research team. Verbatim quotations are included in the results section (article 2, Chapter 3) to illustrate the analysis derived from the transcribed content of the focus groups.

#### *2.2.2.5 Data handling and analysis*

We performed the descriptive and thematic analysis of the transcripts and field notes (39). We performed triangulation by source (three focus groups) and by researcher (all research members analyzed the data, developed and tested the coding scheme) to enhance the credibility of this study (40). We detail the analysis further in article 2, Chapter 3.



### **2.2.3 Survey (objective 3; article 3)**

To describe PTs' attitudes and beliefs towards chronic pain and to see if they differ according to socio-demographic characteristics and experience (objective 3), we administered a questionnaire to a group of PTs.

#### *2.2.3.1 Participants, inclusion and exclusion criteria, recruitment*

Participants in this quantitative component of our study are the PTs who participated in the focus groups. The inclusion and exclusion criteria are described in section 2.2.2.1.

When SMC met the potential participants to describe the project, she explained both the focus groups and the survey. Consent forms provided to participants included both the focus groups and the survey (Appendix 2).

#### *2.2.3.2 Attitudes and beliefs questionnaire*

Questionnaires assessing health care professionals' attitudes and beliefs towards low back pain have been reviewed (41). To our knowledge, no published questionnaire assesses a broad range of attitudes and beliefs nor is specifically designed to assess attitudes and beliefs towards chronic pain.

The Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals (provided in Appendix A of article 3) developed by Bunzli S (School of Physiotherapy and Exercise Science, Curtin University, Perth Australia), Quinter, J and Griffiths B (personal communication) was developed to specifically assess professionals' attitudes and beliefs towards chronic pain. The face validity has been established by the authors. Test retest reliability and other measures of validity are yet to be established. Factor analysis identified

three main factors 1) competence (or how equipped a person feels to adequately deal with individuals living with chronic pain), 2) emotional involvement (or willingness to engage at an emotional level and emotional response to the management of chronic pain) and 3) empathy. Examples of items included under each factor and explanations on the scoring systems are provided in article 3, Chapter 3.

The original English version of the questionnaire was professionally translated into Canadian French. Back translation of this French version was done by two members of the research team. Participants could fill the questionnaire either in French or in English.

Participants also completed a questionnaire on socio-demographic characteristics and experience (provided in Appendix B of article 2).

#### *2.2.3.3 Data collection*

Participants completed the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals and the questionnaire on socio-demographic characteristics prior to the beginning of the focus groups. They also completed the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Care Professionals one month after the end of the focus groups. We selected this questionnaire because no other questionnaire assesses a broad range of attitudes and beliefs nor is specifically designed to assess attitudes and beliefs towards chronic pain. The Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals is described in article 3, Chapter 3.

#### *2.2.3.4 Data handling and analysis*

Descriptive statistics of scores and subscores of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals were calculated.

We used the Wilcoxon rank-sum test to evaluate associations between participants' characteristics (sex, years of clinical experience, personal history of chronic pain, experience working in a multidisciplinary pain clinic) and scores/subscores of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals. We used R (version 3.0.2) for our analysis.

Scores of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals post focus groups did not differ significantly from scores pre focus groups. Although we decided not to include these results in article 3, we discuss them in the discussion section at the end of this thesis.

## Chapter 3. Results

### 3.1 Article 1

The first article is a scoping review describing rehabilitation professionals (RPs) attitudes and beliefs towards chronic pain, their impact on treatment outcome and the effect of educational intervention on them. The principal author, Sabrina Morin Chabane (physiotherapist and candidate for the M.Sc. in rehabilitation sciences at Université de Montréal) made a significant contribution to the article. The co-authors are Debbie Ehrmann Feldman (research director, program director for graduate studies in rehabilitation sciences and professor, Université de Montréal), Maude Laliberté (PhD candidate in Bioethics, Université de Montréal), Franzina Coutinho (assistant professor at School of Physical and Occupational Therapy, McGill University) and Andrea Miller-Nesbitt (librarian at Schulich Library of Science and Engineering, McGill University). The principal author's and co-authors' contributions are detailed in the section *Authors' contributions* at the end of the article. All co-authors provided their written consent for this article to be included in this thesis (see the form Agreement of co-authors in Appendix 5). We submitted this article to the journal *Clinical Rehabilitation* on October 18<sup>th</sup>, 2015. The editor requested modifications prior to sending the article for review. We present below the manuscript following the editor's recommendations.

# Rehabilitation professionals' attitudes and beliefs towards chronic pain: a systematic scoping review of the literature

Sabrina Morin Chabane<sup>1</sup>, Debbie Ehrmann Feldman<sup>1</sup>, Maude Laliberté<sup>1</sup>, Andrea Miller-Nesbitt<sup>2</sup> and Franzina Coutinho<sup>3</sup>

<sup>1</sup> School of rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Canada

<sup>2</sup> Schulich Library of Science and Engineering, McGill University, Montreal, Canada

<sup>3</sup> School of Physical and Occupational Therapy, Faculty of Medicine, McGill University, Montreal, Canada

## Abstract

**Objectives:** To describe rehabilitation professionals' attitudes and beliefs towards chronic pain.

**Data sources:** MEDLINE, AMED, CINAHL, Embase, ERIC, PsychINFO and Web of Science were searched from inception to July 2014.

**Study selection:** Original research written in English or French that investigated attitudes and beliefs of rehabilitation professionals and students towards chronic pain in adults (non-cancer related pain lasting for at least three months) were included. Two reviewers independently reviewed articles for inclusion. A third researcher resolved disagreements.

**Data extraction:** The following were extracted: authors, year of publication, study location, sample size/population, construct assessed (attitudes and/or beliefs), definition of construct given, method of assessment, scale, outcome, specific attitudes and beliefs.

**Results:** The search yielded 1538 articles with 1512 excluded leaving 26 articles for full review. Seven themes evolved post analysis: 1) attitudes and beliefs about the development of

chronic pain; 2) attitudes and beliefs about validity and legitimacy of chronic pain and the relationship between chronic pain and disability; 3) professionals' beliefs in their ability to manage psychological aspects of patients' pain; 4) rehabilitation professionals' emotional engagement and response to chronic pain; 5) patient-professional interaction; 6) belief in the existence of a cure for chronic pain; 7) effect of educational interventions on rehabilitation professionals' attitudes and beliefs towards chronic pain.

**Conclusions:** Professionals' attitudes and beliefs can determine the type of treatment, and advice they give to patients. Educational interventions are effective in shifting professionals' attitudes and beliefs.

**Keywords:** chronic pain, attitudes, beliefs, physiotherapy, occupational therapy, scoping review

## **Introduction**

Chronic pain is defined as recurrent or persistent pain lasting for more than three months.<sup>1</sup> One in five Canadian and almost one in three American suffers from chronic pain.<sup>2,3</sup> About 20% of persons with chronic pain are diagnosed with depression.<sup>4</sup> Chronic pain has socioeconomic consequences for both the individual and society. In 2010, the Chronic Pain Association of Canada estimated the total annual cost of chronic pain to be over 10 billion dollars.<sup>3</sup> Canadians with chronic pain experience more days away from work and consult physicians 12.9 times more than the rest of the population.<sup>5</sup> Further, the majority of those living with chronic pain report interference with daily activities<sup>3</sup> and it is commonly known that those with functional

limitations are often referred to rehabilitation services. Physical rehabilitation has been shown to be effective in reducing pain and disability in those who live with chronic low back pain.<sup>6-10</sup>

In 2004, the International Association for the Study of Pain (IASP) and the European Federation of IASP declared that "*The treatment of pain should be a human right*" and that its treatment has been neglected despite the fact that cost-effective treatments are known.<sup>5</sup> The quality of treatment provided to patients with chronic pain depends on the knowledge, attitudes and skills of health care professionals.<sup>11</sup> Professionals' attitudes (cultural dispositions that guide reactions to a situation<sup>12</sup>) and beliefs (thoughts about what pain means to them<sup>13</sup>) can influence the information they provide to patients, clinical decision making<sup>14, 15</sup> and quality of care given to patients.<sup>13, 14, 16, 17</sup> The objective of this review is to describe rehabilitation professionals' attitudes and beliefs towards chronic pain.

## **Methods**

We summarized and synthesized the existing knowledge on rehabilitation professionals' attitudes and beliefs by conducting a scoping review of the literature. A scoping review allows for a comprehensive and rigorous way to collect, evaluate and present findings from a broad body of research. We used the framework recommended by Arksey and O'Malley<sup>18</sup> and elaborated on by Levac, Colquhoun and O'Brien<sup>19</sup>. We outline our specific methods below.

### *Identify the research question*

The primary question of this scoping review is "What are rehabilitation professionals' attitudes and beliefs towards chronic pain?". The secondary question also addressed is "What is the impact of those attitudes and beliefs on practice behaviour, treatment and outcome?".

### *Identify relevant studies and data sources*

The search strategy was developed by a librarian (AMN) and applied to MEDLINE (via Ovid, 1946 to present) (see Appendix A). The search was translated for AMED (via Ovid, 1985 to present), CINHAL (via EBSCO, 1937 to present), Embase (via Ovid, 1947 to present), ERIC (via ProQuest, from inception to present), PsychINFO (via Ovid, 1967 to present) and Web of Science (1900 to present). The Cochrane Library and PEDro databases were also searched. No limits were applied. Searches were run on February 5th, 2014 and updated on July 18th, 2014. Bibliographies of relevant articles were scanned in order to identify additional citations.

### *Selecting inclusion and exclusion criteria, selecting studies*

The inclusion and exclusion criteria are shown (Table 1). Two reviewers (SMC and FC) independently reviewed the retrieved articles for data extraction and analysis. Disagreements pertaining to inclusion of articles were resolved by consensus between the two reviewers. A third researcher (DEF) resolved disagreements if consensus could not be reached.

### *Data extraction*

A data extraction form was developed in Excel and initially piloted on five articles to check for consistency in data extraction. The final data extraction form recorded descriptive information about studies and methods (Table 2).

### *Collating, summarizing and reporting results*

Full text of selected articles were entered into Dedoose, a web application for qualitative and mixed methods research analysis.<sup>20</sup> Articles were coded using a coding tree developed by team



members. Line by line coding from included studies was done by SMC and reviewed by ML and FC. Saturation with codes was reached. Analysis was done through open thematic coding.<sup>21, 22</sup> Transparency was checked at the last stage of the review using Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) tool.<sup>22, 23</sup>

## **Results**

The screening process for the articles included in the final analysis is elaborated (Figure 1). A total of 26 studies were selected for data extraction and further analysis. Among the 26 studies included, only six provided a definition of attitudes and/or beliefs (Table 2). The studies contained a variety of definitions, constructs, methods of assessment, measurement scales, and professional populations (Table 2). There were a limited amount of studies addressing occupational therapists' attitudes and beliefs and only three studies that included physiotherapy or occupational therapy students.

We derived seven themes from our data analysis: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about legitimacy of chronic pain and the relationship between chronic pain and disability; 3) professionals' beliefs in their ability to manage psychological aspects of patient's pain; 4) rehabilitation professionals' emotional engagement and response to chronic pain; 5) patient-professional interaction; 6) belief in the existence of a cure for chronic pain; 7) effect of educational interventions on rehabilitation professionals' attitudes and beliefs towards chronic pain. These themes are detailed below.

*Theme 1: Attitudes and beliefs related to the development of chronic pain*

Two attitudes (also referred to as models of care or treatment orientations) are described regarding chronic low back pain.<sup>24</sup> The first one is the biomechanical (or biomedical) model where it is believed that chronic pain is explained by a physical injury.<sup>24</sup> The second model is the biopsychosocial model that recognizes that pain is complex and is influenced by social and psychological factors.<sup>24</sup> Two studies report that physiotherapists have predominantly biomedical views of chronic pain<sup>13, 25</sup>, while three studies that included physiotherapists, physicians and dentists recognized the influence of psychological and social factors in the development and persistence of chronic pain.<sup>12, 24, 26</sup> Another study reported that physiotherapists are unsure of the elements contributing to the development and persistence of chronic low back pain.<sup>15</sup>

The biomedical and biopsychosocial models of care also refer to treatment orientation<sup>13, 15, 24, 27</sup> and treatment endorsement. Physiotherapists and occupational therapists believed that psychology and physiotherapy were essential treatments.<sup>28</sup> Physiotherapists tended to strongly support biomedical interventions and medications.<sup>28</sup> Both occupational therapists and physiotherapists believed in the importance of teaching self-management strategies to individuals living with chronic pain.<sup>27, 28</sup> Multidisciplinary teams were supported by all, but there was no agreement as to their composition.<sup>28</sup>

Biomedically oriented pain beliefs influenced the information, explanations and exercises given to patients.<sup>13</sup>

*Theme 2: Attitudes and beliefs about legitimacy of chronic pain and the relationship between chronic pain and disability*

This refers to the belief that pain can justify disability. Studies highlighted a diversity of attitudes and beliefs amongst rehabilitation professionals towards the relationship between chronic pain and disability. Most studies found that professionals<sup>12, 29</sup> and physiotherapy students<sup>30</sup> disagreed that chronic pain could justify disability believing that pain and disability were not related. One study indicated that some physiotherapists were unsure of the relationship between pain and disability.<sup>15</sup>

Professionals' beliefs in the relationship between pain and disability may influence recommendations regarding activity, rest, exercises and daily activities.<sup>29</sup>

Professionals tend to judge the validity of patients' pain based on the presence of objective findings.<sup>31</sup> When objective findings are absent, professionals often consider that pain is exaggerated.<sup>32</sup> When patients' complaints don't match the physical findings, physiotherapists and general practitioners may become skeptical and suspect deception.<sup>33, 34</sup>

The absence of objective evidence can lead to symptom uncertainty that some physiotherapists may be uncomfortable with. Two strategies to reach certainty adopted by physiotherapists are 1) to consult more experienced colleagues and 2) provide the patient with a "plan of action" addressing the changes to the neurological or musculoskeletal systems that appeared secondary to the presence of the pain, e.g. postural changes or faulty movement patterns.<sup>35</sup>

Exercises were progressed more rapidly and symptoms less considered for patients believed to have "non-legitimate pain".<sup>33</sup>

*Theme 3: Professionals' beliefs in their ability to manage psychological aspects of patients' pain*

Issues related to this theme include awareness of psychological aspects of pain, role and responsibility of professionals, and willingness, comfort and confidence related to the management of psychological factors of pain.

A study involving physiotherapists reported that over half of the participants were able to recognize the psychological aspects of chronic pain and that they were aware that pain severity is influenced by psychological factors.<sup>36</sup>

There is no consensus in the studies as to whether or not it is physiotherapist's role and responsibility to address psychological aspects and responses to chronic pain.<sup>37, 38</sup> Psychological aspects considered by physiotherapists to necessitate a referral to another professional are anxiety and depression<sup>13</sup> and emotional distress.<sup>13, 37</sup> There is no consensus amongst physiotherapists as to whether cognitive-behavioral therapy was part of their scope of practice.<sup>37</sup>

One study indicated that a majority of physiotherapists were willing to address the psychological factors contributing to their patients' pain experience during their physiotherapy intervention.<sup>36</sup> However several physiotherapists, reported feeling "under-confident about the identification of the psychological aspects of pain" and uncomfortable addressing them.<sup>38</sup> Physiotherapists were more confident addressing the psychological aspects of pain when there was concomitant medical evidence to explain the pain.<sup>34</sup> Professionals may tend to confound patients' requests for emotional support with a need for psychological treatment.<sup>38</sup>

Physiotherapists working in multidisciplinary pain clinics tended to inquire more about the psychosocial factors that could contribute to their patients' pain whereas physiotherapists working in outpatient and sport clinics were more inclined to specifically address physical symptoms and complaints.<sup>33</sup>

The impact of not addressing the psychological factors of pain is that evidence-based management of chronic pain is not integrated into the treatment plan.<sup>37</sup> Addressing the psychological factors contributing to the persistence of chronic pain could improve patient outcomes.<sup>37</sup>

*Theme 4: Rehabilitation professionals' emotional engagement and response to chronic pain*

Physiotherapists have greater chances of avoiding involvement in the care they provide when faced with distressed patients and when perceiving the management of chronic pain as a negative experience.<sup>37</sup> Physiotherapists who "engaged at an emotional level" had either gained experience working in pain clinics or had observed or worked closely with pain specialist physiotherapists.<sup>37</sup> When physiotherapists perceived their patients as being honest, they tended to be more empathetic and more invested in the care they provided.<sup>33</sup> Physiotherapists felt that their personal history of pain made them more empathetic.<sup>13</sup>

Professionals' emotional responses also included impatience, annoyance<sup>26</sup>, frustration<sup>13, 32, 33, 36</sup> and lack of sympathy<sup>13, 34</sup>. Frustration in the management of chronic pain can be related to 1) a perception of limited treatment options to offer to individuals living with chronic pain<sup>32</sup>; 2) perceived lack of training<sup>36</sup>, knowledge or expertise<sup>32</sup>; 3) perception that a patient is difficult to treat<sup>13</sup> and 4) lack of response to treatment<sup>33</sup>. Conversely, both physiotherapists and occupational therapists reported feeling satisfaction when their

interventions alleviate pain.<sup>32</sup> Professionals felt less sympathy for 1) patients who exhibit a high level of pain behaviour along with the presence of psychological factors of pain such as work-related stress, relational difficulties, anxiety and depressed mood<sup>34</sup> and 2) those perceived as difficult to treat<sup>13</sup>. Patients perceived as difficult to treat can also lead to a feeling of poor efficacy by physiotherapists, who tend to respond by lowering their expectations.<sup>13</sup>

The perception professionals have of their patients with chronic pain may determine the treatment they provide and the responses to these treatments.<sup>33</sup> Patients considered difficult to treat could receive inferior treatment which could negatively impact on their outcome.<sup>13</sup> Yet, addressing the psychological factors contributing to the persistence of chronic pain could improve the outcome of treatment.<sup>37</sup> According to Wolff et al., when physiotherapists persist in using a biomedical model of care, despite lack of evidence supporting this model with chronic pain, they may be confronted with lack of response to treatment, which can lead to job dissatisfaction and disengagement in treatment from both the physiotherapist and the patient.<sup>36</sup>

#### *Theme 5: Patient-professional interaction*

This theme refers to the therapeutic encounter, shared-decision making, empathy demonstrated and quality of information given by professionals to individuals living with chronic pain.

Therapeutic encounter is described as a "meeting of two belief systems" where the physiotherapist and patient share their beliefs about the cause of pain, treatment expectations and outcomes.<sup>13</sup> Therapeutic encounters are described as a "demanding and complex process of negotiations" where both parties are working towards a common understanding of the pain and develop a collaboration.<sup>26</sup>

The aim of the shared-decision making approach is to develop a collaboration where the patient's preferences and values are integrated into the joint decision.<sup>35, 38</sup> The collaboration is achieved through negotiation between therapist and patient, which can enhance patient empowerment.<sup>26, 39</sup> The shared-decision making approach may be useful to promote self-management of chronic pain.<sup>40</sup> If the therapist and patient disagree on what treatment should be provided/received, it may alter the therapeutic alliance and decrease treatment outcome.<sup>41</sup> Parsons et al. recommended training and support for both the therapist and patient to facilitate the development of a shared-decision making approach.<sup>38</sup>

Physiotherapists, physicians and chiropractors had significantly poorer communication with patients who were older and who had long-standing low back pain. They gave those patients less information and demonstrated less empathy.<sup>42</sup> Gulbrandsen et al. recommend that professionals be sensitized to the fact that they tend to communicate less well with patients with chronic back pain than with those who have acute or sub-acute conditions.<sup>42</sup>

The quality of the communication with patients consulting for chronic pain may also be influenced by physiotherapists' level of experience. Experienced physiotherapists may work more efficiently and have the time to provide patient education and advice.<sup>13, 35</sup>

#### *Theme 6: Belief in the existence of a cure for chronic pain*

Three studies report professionals' belief in the existence of a cure<sup>12</sup> or possibility to resolve complaints related to chronic pain.<sup>13, 24</sup> The belief in the possibility to resolve complaints related to chronic pain include 1) the belief that therapy could completely resolve the functional symptoms from chronic low back pain<sup>24</sup>; 2) the belief that treatments are effective when patients are gaining function even if pain persists<sup>24</sup>; 3) the expectation to be able to

abolish patients' chronic pain<sup>13</sup>. Two studies report professionals' disbelief of a cure for chronic pain.<sup>36, 40</sup> Some occupational therapists' believe in the importance for the therapist and patient to accept that chronic pain will continue for the long-term<sup>40</sup> and some physiotherapists believe that physiotherapy is not helpful for patients consulting for non-cancer chronic pain<sup>36</sup>.

*Theme 7: Effect of educational interventions on rehabilitation professionals' attitudes and beliefs towards chronic pain*

Professionals' attitudes and beliefs towards chronic pain can influence the treatment they provide to patients.<sup>25</sup> It is recommended that professionals receive education on the biopsychosocial model and on how to integrate it to the care of individuals living with chronic pain.<sup>25</sup> Five studies assessed the efficacy of educational interventions that aimed at changing rehabilitation professionals' and students' attitudes and beliefs towards chronic pain.<sup>24, 30, 43-45</sup> Effective educational interventions varied in duration and content 1) a two-day course on the management of chronic non-malignant pain based on the International Association for the Study of Pain curriculum guidelines, covered pain mechanisms and treatment approaches<sup>43</sup>; 2) a 4-week (16 hours) specialized teaching module about chronic back pain<sup>30</sup>; 3) an 8-day university-based training course aimed at helping participants adopt a more biopsychosocial approach to the management of chronic pain and addressed the identification of psychological prognostic factors<sup>44</sup>. Physiotherapists who had already taken a course on the management of chronic pain had a significantly higher score on the behavioral orientation to treatment<sup>24</sup>, although the type and duration of their training were not documented. A Masters-level generic course, in which pain education was integrated, was ineffective in improving occupational therapy students' negative beliefs or biases about "malingering, patient dishonesty [and the usefulness of] clinical intuition".<sup>45</sup>



## **Discussion**

The primary result of this scoping review was the identification of the following themes related to rehabilitation professionals' attitudes and beliefs towards chronic pain: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about validity and legitimacy of chronic pain and the relationship between chronic pain and disability; 3) professionals' beliefs in their ability to manage psychological aspects of patients' pain; 4) rehabilitation professionals' emotional engagement and response to chronic pain; 5) patient-professional interaction; 6) belief in the existence of a cure for chronic pain; 7) effect of educational interventions on rehabilitation professionals' attitudes and beliefs towards chronic pain.

Through these themes, it was shown that rehabilitation professionals' attitudes and beliefs towards chronic pain can influence their clinical decision-making and type of treatment they provide to patients. Little is still known on the impact of professionals' attitudes and beliefs on patient outcomes.

Our review highlighted that views of chronic pain by rehabilitation professionals appeared to be more biomedical in nature vs biopsychosocial. The biopsychosocial model of chronic pain is becoming more prevalent in the literature and in the management of chronic musculoskeletal pain.<sup>25</sup> Physiotherapists are more aware of the psychological, social and behavioral factors that can influence a patient's pain experience.<sup>25</sup> Professional education programs still tend to follow the biomedical model<sup>25, 34</sup> and psychosocial factors may not be addressed as much.

Our results are similar to those of Darlow et al. who reported that professionals' attitudes and beliefs towards low back pain are associated with the education they provide to

patients.<sup>46</sup> In particular, professionals who hold a biomedical view of low back pain or high fear-avoidance beliefs tend to advise patients to limit activities and work and are also less likely to follow clinical guidelines for treatment of low back pain.<sup>46</sup> Surprisingly, none of our articles discussed therapists' fear-avoidance beliefs.

Educational interventions can be effective in changing attitudes and beliefs from a biomedical orientation to a more behavioral orientation to treatment.<sup>24, 30, 43-45</sup> The pain courses provided to participants in the reviewed studies vary in duration and structure and it is unclear if the courses provided education that explicitly addressed attitudes and beliefs towards chronic pain or education on pain mechanisms.<sup>43</sup>

The best approach to educate rehabilitation professionals on the effect of their attitudes and beliefs on the management of chronic pain has yet to be determined. There is a call for a change in the organization of undergraduate and post-graduate education to address patient and professionals' beliefs and behaviours.<sup>38</sup> In Australia<sup>47</sup>, Canada<sup>48, 49</sup>, Europe<sup>50</sup> and United States<sup>51</sup>, policies exist for professionals, who are required to take a minimum amount of continuing education each year. Professionals who register for a course on chronic pain management are likely those who already have an interest in pain management.<sup>44</sup> A strategy to reach professionals who hold stronger biomedical view could be to incorporate notions of chronic pain management within biomedically-oriented courses, such as manual therapy and Mechanical Diagnosis and Therapy (McKenzie approach).

In addition to education, a factor that may influence rehabilitation professionals' adhesion to the biopsychosocial views of chronic pain is their perception of whether it is their role and responsibility to address the psychosocial aspects of chronic pain. The results of the

current review showed no consensus in this regard. There is a need for rehabilitation professionals' education on their roles and responsibilities addressing psychosocial factors of chronic pain.

### *Strengths and limitations*

This paper follows the rigorous scoping review methodology and framework proposed by Arksey, H and O'Malley, L.<sup>18</sup> We reported the review process and results in a clear, accurate and transparent manner.<sup>22</sup>

This framework does not appraise study quality.<sup>18</sup> This review includes qualitative studies in which the results and conclusions are drawn from small samples and may not represent the attitudes and beliefs of all rehabilitation professionals.

Though every effort was made to review literature based on rehabilitation professionals' attitudes and beliefs towards chronic pain, we did not include gray literature, systematic reviews, case studies, editorials or commentaries in our review. Those documents may have contained themes not addressed in the articles included here. We were unable to identify studies that addressed the impact of rehabilitation professionals' attitudes and beliefs on patients' outcome.

Self-reported attitudes and beliefs described may give an indication on how professionals perceive chronic pain but it does not predict with certainty if they influence the clinical-decision making in real life situations. Only two studies took place in clinical settings<sup>13, 42</sup> and observed how professionals' attitudes and beliefs towards chronic pain manifested during clinical encounters with patients.

### *Future directions*

Future reviews should include gray literature on rehabilitation professionals' attitudes and beliefs towards chronic pain to complete the scoping review on this topic. As well, rehabilitation professionals' knowledge towards chronic pain and professionals' treatment preferences should be included as well as the impact on patient outcomes. Future studies addressing professionals' attitudes and beliefs should provide operational definitions of these terms.

#### **Clinical messages**

- Professionals' attitudes and beliefs towards chronic pain can influence the type of treatment they provide.
- The biopsychosocial model of care is not widely used by professionals.
- There is a need for education to allow professionals to identify and address the psychosocial aspects of chronic pain.

### **Conclusion**

Professionals' attitudes and beliefs towards chronic pain influences the treatment they provide to patients, including explanations, advice and interventions. Attitudes and beliefs may also explain why some professionals don't adhere to treatment guidelines. Changing attitudes and beliefs is possible using educational interventions that can shift professional beliefs from a biomedical model to a model that integrates the psychosocial aspects of chronic pain. However, the impact of professionals' attitudes and beliefs on patient outcomes needs to be elucidated.

### *Contribution of this review*

This review provides a new understanding of attitudes and beliefs on chronic pain by dividing them into themes. The analytical themes provide a comprehensive understanding of

rehabilitation professionals' attitudes and beliefs towards chronic pain, their influence on treatment and the effect of educational intervention.<sup>22</sup>

The sixth step of the scoping review framework described by Arkey, H and O'Malley, L<sup>18</sup> proposes an optional consultation exercise where stakeholders or practitioners in the field are invited to provide insights about the topic and additional references to be included in the scoping review. Levac et al.<sup>19</sup> proposed that this consultation exercise be an opportunity for knowledge translation with stakeholders. We conducted consultation sessions with three groups of out-patient physiotherapists to share the results of the present review and ask their opinion about the attitudes and beliefs documented. These results will be presented in a subsequent paper.

### **Funding support**

This work was supported by Edith Strauss Rehabilitation Research Projects grant offered by Richard and Edith Strauss Canada Foundation; Faculty of Graduate Studies of the University of Montreal and the School of Rehabilitation of University of Montreal, joint Writing Scholarship for SMC.

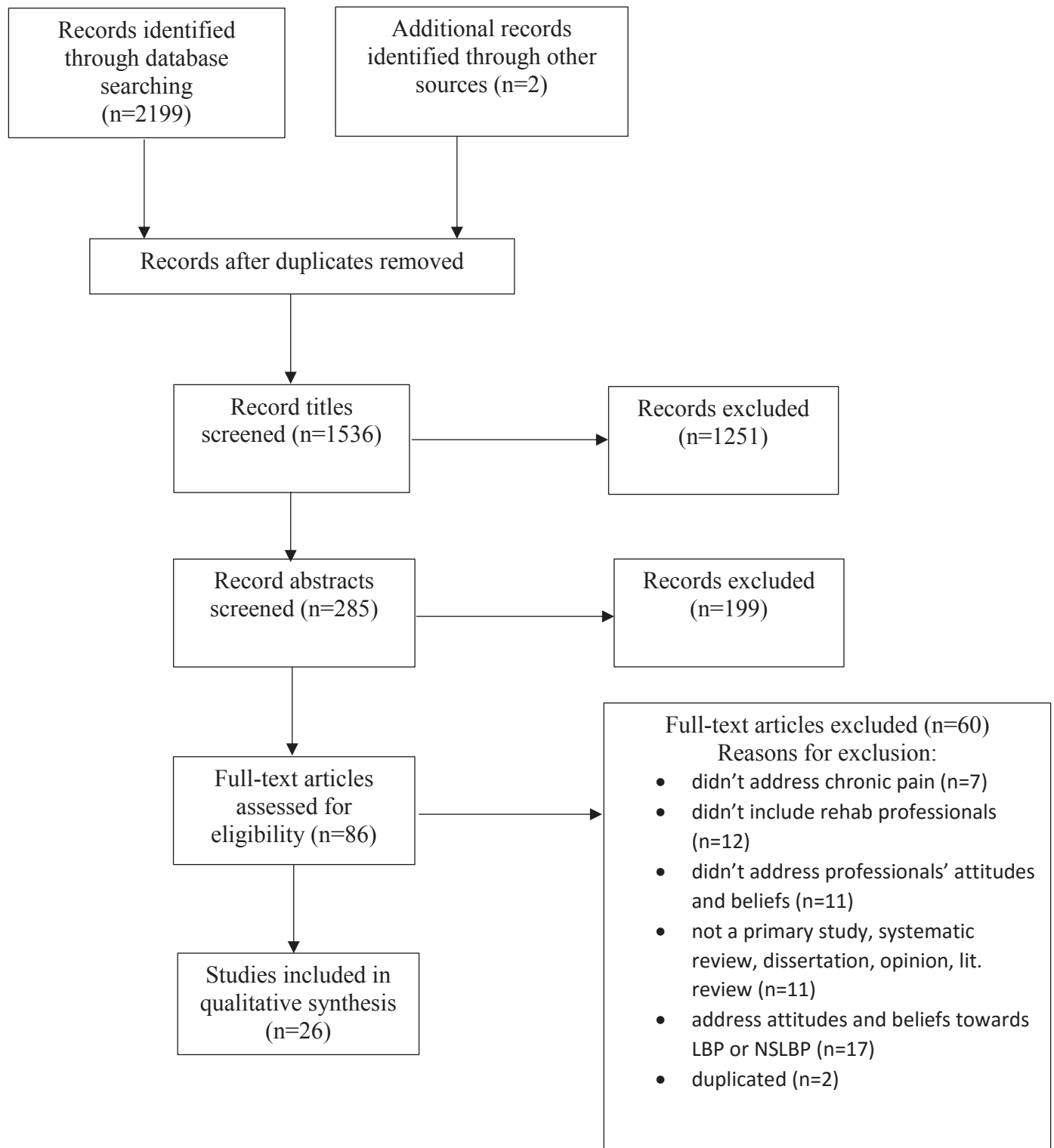
### **Authors' contributions**

SMC, FC, ML and DEF conceived this study. SMC and AMN developed the search strategy and SMC and FC reviewed the articles. SMC performed the analysis and FC reviewed the coding. SMC wrote the paper and all authors reviewed it and ultimately approved the final version.

### **Competing interests**

The authors declare that there is no conflict of interest.

**Figure 1.** PRISMA flow diagram.



**Table 1.** Inclusion and exclusion criteria.

---

Inclusion criteria

---

- Articles written in English or French
  - Original research studies that utilized attitudes and beliefs towards chronic pain (defined as non-cancer related pain lasting for at least three months)
  - Articles including rehabilitation professionals (physiotherapists and/or occupational therapists [and/or students in related fields] and nurses, physicians, psychologists, dentists, chiropractors, osteopaths and exercise therapists as their study population)
  - Articles addressing pain in adult populations
- 

Exclusion criteria

---

- Articles related to acute or sub-acute pain, not related to chronic non-cancer pain
  - Articles that did not include rehabilitation professionals
  - Articles that were not related to attitudes and beliefs
  - Synthesis of existing evidence as well as conference proceedings, books, letters, research briefs, abstracts, dissertations, case study, editorial and commentary
  - Articles addressing pain in pediatric population
  - Articles written in language other than English or French
-

<b>Table 2.</b> Summary of relevant studies descriptors.						
<b>Authors and year of publication</b>	<b>Study location</b>	<b>Sample size/Population</b>	<b>Construct assessed</b>	<b>Definition of construct given</b>	<b>Method of assessment</b>	<b>Scale</b>
Askew R et al. 1998	USA	PTs (n=46)	Beliefs	Yes	Qualitative approach	None
Barlow S and Stevens J. 2014	Australia	PTs (n=14)	Attitudes and beliefs	No	Qualitative approach, (phenomenology)	None
Blomqvist K. 2003	Sweden	Mixed population • Nursing auxiliaries (n=35) • Registered Nurses (n=13) • PTs and OTs (n=4)	Attitudes and beliefs	No	Qualitative approach	None
Brown CA. 2003	UK	• OTs (n=52) • Patients with chronic pain (n=55)	Beliefs	Yes	Survey	BPCQ
Brown CA. 2002	UK	OTs (n=44)	Beliefs	No	Survey	BPCQ
Brown CA. 2003	UK	• PTs (n=32) • OTs (n=52)	Beliefs	No	Survey	BPCQ
Chibnall JT and Tan RC. 1999	USA	Mixed population employees of a university-based medical center (n=116) including nurses, PTs...	Beliefs	No	Survey	Vignettes NRS
Daykin AR, Richardson B. 2004	UK	• PTs (n=6) • Patients with chronic low back pain (n=12)	Beliefs	Yes	Qualitative approach, (grounded theory)	None
De Ruddere L et al. 2014	Belgium	Mixed population • General practitioners (n=52) • PTs (n=46)	Attitudes and beliefs	No	Survey	Videotapes Vignettes VAS
Ferreira PH et al. 2004	Brazil	PT students (n=153)	Attitudes and beliefs	No	Survey	HC-PAIRS



<b>Table 2.</b> (continued)						
<b>Authors and year of publication</b>	<b>Study location</b>	<b>Sample size/Population</b>	<b>Construct assessed</b>	<b>Definition of construct given</b>	<b>Method of assessment</b>	<b>Scale</b>
Garcia DM and Mattos-Pimenta CA. 2008	Brazil	Mixed population • Physicians (n=44) • PTs (n=11) • Dentists (n=8)	Attitudes and beliefs	Yes	Survey	Survey of chronic pain attitudes-professionals
Gulbrandsen P et al. 2010	Denmark	Mixed population • PTs (n=9) • Chiropractors (n=9) • Physicians (n=3)	Attitudes	No	Survey	4HCS
Jones D, Ravey J and Steedman W. 2000	UK	OTs (n=19)	Attitudes and beliefs	Yes	Pre-post intervention design	PBAS
Latimer J, Maher C and Refshauge K. 2004	Australia	PT students (n=618)	Attitudes and beliefs	No	Pre-post intervention design	HC-PAIRS
Magalhães MO et al. 2012	Brazil	PTs (n=100)	Attitudes and beliefs	No	Survey	PABS.PT and HC-PAIRS
Ostelo RW et al. 2003	The Netherlands	PTs (n=421)	Attitudes and beliefs	Yes	Survey	PABS.PT
Overmeer T et al. 2009	Sweden	PTs (n=42)	Attitudes, beliefs and knowledge	No	Combined randomized controlled trial with pre-post intervention design	PABS.PT and HC-PAIRS

<b>Table 2. (continued)</b>						
<b>Authors and year of publication</b>	<b>Study location</b>	<b>Sample size/Population</b>	<b>Construct assessed</b>	<b>Definition of construct given</b>	<b>Method of assessment</b>	<b>Scale</b>
Parsons S et al. 2012	UK	Mixed population • PTs (n=10) • Osteopaths (n=5) • Chiropractors (n=4) • Patients with chronic pain (n=13)	Attitudes and beliefs	No	Qualitative approach, (phenomenology)	None
Rainville J, Bagnall D and Phalen L. 1995	USA	Mixed population • Physicians (n=56) • PTs (n=50) • Psychologists (n=24) • OTs (n=22) • Exercise therapists (n=21) • Nurses (n=15) • Rehabilitation counselors (n=12)	Attitudes and beliefs	No	Survey	HC-PAIRS
Rochman DL, Sheehan MJ and Kulich RJ. 2013	USA	OT students (n=194)	Attitudes and knowledge	No	Pre-post intervention design	COBS
Slade SC, Molloy E and Keating JL. 2012	Australia	PTs (n=23)	Attitudes and beliefs	No	Qualitative approach	None
Thomson D. 2008	UK	PTs (n=4)	Attitudes and beliefs	No	Qualitative approach, (ethnography)	None
Van Huet H, Innes E and Stancliffe R. 2013	Australia	OTs (n=9)	Beliefs	No	Qualitative approach, (narrative inquiry, storytelling)	None

<b>Table 2. (continued)</b>						
<b>Authors and year of publication</b>	<b>Study location</b>	<b>Sample size/Population</b>	<b>Construct assessed</b>	<b>Definition of construct given</b>	<b>Method of assessment</b>	<b>Scale</b>
Van Wilgen P et al. 2014	The Netherlands	PTs (n=19)	Beliefs	No	Audiotape of assessments	Observational instrument: GOSSIP
Wolff MS et al. 1991	USA	PTs (n=119)	Beliefs	No	Survey	Chronic Pain Knowledge/Attitude Test
Øien AM et al. 2011	Norway	•PTs (n=6) •Patients with chronic pain (n=11)	Attitudes	No	Longitudinal multiple case study	None
<p>PTs: physiotherapists. OTs: occupational therapists. PT students: physiotherapy students. OT students: occupational therapy students. PBAS: Professionals' Beliefs and Attitudes Scale. BPCQ: Beliefs about Pain Control Questionnaire. COBS: City of Boston's Rehabilitation Professionals' Knowledge and Attitude Survey Regarding Pain. GOSSIP: Groningen Observation Score for Illness Perceptions. HC-PAIRS: Health Care Providers Pain and Impact Relationship Scale. PABS.PT: Pain Attitudes and Beliefs Scale for Physiotherapists. NRS: Numeric Rating Scale. VAS: Visual Analog Scales. 4HCS: Four Habits Coding Scheme.</p>						

## Appendix A

The following search strategy was developed for MEDLINE (via Ovid) and translated for the other databases searched.

1. exp Allied Health Personnel/
2. therapist\*.mp.
3. physiotherapist\*.mp.
4. 1 or 2 or 3
5. exp Pain/
6. non-specific pain.mp.
7. ((chronic\* or constant\* or continu\* or persistant\* or longterm or long-term) adj3 (pain\* or ache\* or discomfort\*)).mp.
8. 5 or 6 or 7
9. "Attitude of Health Personnel"/
10. Patient Acuity/
11. fear-avoidance.mp.
12. belief.mp.
13. Empathy/
14. Needs Assessment/
15. Professional-Patient Relations/
16. bias\*.mp.
17. empathy.tw.
18. or/9-17
19. 4 and 8 and 18

## References

1. Andersson HI, Ejlertsson G, Leden I, et al. Chronic Pain in a Geographically Defined General Population: Studies of Differences in Age, Gender, Social Class, and Pain Localization. *Clin J Pain* 1993; 9: 174-82.
2. Johannes CB, Le TK, Zhou X, et al. The Prevalence of Chronic Pain in United States Adults: Results of an Internet-Based Survey. *J Pain* 2010; 11: 1230-9.
3. Reitsma ML, Tranmer JE, Buchanan DM, et al. The prevalence of chronic pain and pain-related interference in the Canadian population from 1994 to 2008. *Chronic Dis Inj Can* 2011; 31: 157-64.
4. Breivik H, Collett B, Ventafridda V, et al. Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. *Eur J Pain* 2006; 10: 287-.
5. Lynch ME, Campbell F, Clark AJ, et al. A systematic review of the effect of waiting for treatment for chronic pain. *Pain* 2008; 136: 97-116.
6. Clare HA, Adams R and Maher CG. A systematic review of efficacy of McKenzie therapy for spinal pain. *Aust J Physiother* 2004; 50: 209-16.
7. Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. *Aust J Physiother* 2002; 48: 297-302.
8. O'Sullivan PB, Phyty GDM, Twomey LT, et al. Evaluation of Specific Stabilizing Exercise in the Treatment of Chronic Low Back Pain With Radiologic Diagnosis of Spondylolysis or Spondylolisthesis. *Spine* 1997; 22: 2959-67.
9. Rossignol M and Arsenault B. Guide de pratique : Clinique des lombalgies interdisciplinaire en première ligne (CLIP). 2006: 1-43.

10. Van Middelkoop M, Rubinstein S, Kuijpers T, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *Eur Spine J* 2011; 20: 19-39.
11. De Rond MEJ, De Wit R, Van Dam FSAM, et al. A pain monitoring program for nurses: Effects on nurses' pain knowledge and attitude. *J Pain Symptom Manage* 2000; 19: 457-67.
12. Garcia DM and Mattos-Pimenta CA. Pain centers professionals' beliefs on non-cancer chronic pain. *Arq Neuropsiquiatr* 2008; 66: 221-8.
13. Daykin AR and Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine* 2004; 29: 783-95.
14. Bishop A, Foster NE, Thomas E, et al. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain* 2008; 135: 187-95.
15. Magalhães MO, Costa LOP, Cabral CMN, et al. Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: A cross-sectional study *Braz J Phys Ther* 2012; 16: 248-53.
16. Houben RM, Ostelo RW, Vlaeyen JW, et al. Health care providers' orientations towards common low back pain predict perceived harmfulness of physical activities and recommendations regarding return to normal activity. *Eur J Pain* 2005; 9: 173-83.
17. Pincus T, Foster NE, Vogel S, et al. Attitudes to back pain amongst musculoskeletal practitioners: a comparison of professional groups and practice settings using the ABS-mp. *Man Ther* 2007; 12: 167-75.

18. Arksey H and O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005; 8: 19-32.
19. Levac D, Colquhoun H and O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci* 2010; 5: 69.
20. Dedoose, Version 6.1.11. Web application for managing, analyzing, and presenting qualitative and mixed method research data. Los Angeles, CA: SocioCultural Research Consultants, LLC, 2015, [www.dedoose.com](http://www.dedoose.com).
21. Braun V and Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3: 77-101.
22. Tong A, Flemming K, McInnes E, et al. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol* 2012; 12: 181.
23. Whitemore R, Chao A, Jang M, et al. Methods for knowledge synthesis: an overview. *Heart Lung* 2014; 43: 453-61.
24. Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW, et al. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. *Man Ther* 2003; 8: 214-22.
25. Van Wilgen P, Beetsma A, Neels H, et al. Physical therapists should integrate illness perceptions in their assessment in patients with chronic musculoskeletal pain; a qualitative analysis. *Man Ther* 2014; 19: 229-34.
26. Øien AM, Steihaug S, Iversen S, et al. Communication as negotiation processes in long-term physiotherapy: a qualitative study. *Scand J Caring Sci* 2011; 25: 53-61.
27. Brown CA. Occupational therapists' beliefs regarding treatment options for people with chronic pain. *Br J Occup Ther* 2002; 65: 398-404.

28. Brown CA. Treatments for patients with chronic pain: therapists' beliefs. *British Journal of Therapy & Rehabilitation* 2003; 10: 46-52.
29. Rainville J, Bagnall D and Phalen L. Health care providers' attitudes and beliefs about functional impairments and chronic back pain. *Clin J Pain* 1995; 11: 287-95.
30. Latimer J, Maher C and Refshauge K. The attitudes and beliefs of physiotherapy students to chronic back pain. *Clin J Pain* 2004; 20: 45-50.
31. Chibnall JT and Tan RC. Social and medical influences on attributions and evaluations of chronic pain. *Psychol Health* 1999; 14: 719-29.
32. Blomqvist K. Older people in persistent pain: nursing and paramedical staff perceptions and pain management. *J Adv Nurs* 2003; 41: 575-84.
33. Askew R, Kibelstis C, Overbaugh S, et al. Physical therapists' perception of patients' pain and its affect on management. *Physiother Res Int* 1998; 3: 37-57.
34. De Ruddere L, Goubert L, Stevens MAL, et al. Health Care Professionals' Reactions to Patient Pain: Impact of Knowledge About Medical Evidence and Psychosocial Influences. *J Pain* 2014; 15: 262-70.
35. Slade SC, Molloy E and Keating JL. The dilemma of diagnostic uncertainty when treating people with chronic low back pain: a qualitative study. *Clin Rehabil* 2012; 26: 558-69.
36. Wolff MS, Michel TH, Krebs DE, et al. Chronic pain--assessment of orthopedic physical therapists' knowledge and attitudes. *Phys Ther* 1991; 71: 207-14.
37. Barlow S and Stevens J. Australian physiotherapists and their engagement with people with chronic pain: Do their emotional responses affect practice? *J Multidiscip Healthc* 2014; 7: 231-7.



38. Parsons S, Harding G, Breen A, et al. Will shared decision making between patients with chronic musculoskeletal pain and physiotherapists, osteopaths and chiropractors improve patient care? *Fam Pract* 2012; 29: 203-12.
39. Thomson D. An ethnographic study of physiotherapists' perceptions of their interactions with patients on a chronic pain unit. *Physiother Theory Pract* 2008; 24: 408-22.
40. Van Huet H, Innes E and Stancliffe R. Occupational therapists perspectives of factors influencing chronic pain management. *Aust Occup Ther J* 2013; 60: 56-65.
41. Brown CA. Service users' and occupational therapists' beliefs about effective treatments for chronic pain: a meeting of the minds or the great divide? *Disabil Rehabil* 2003; 25: 1115-25.
42. Gulbrandsen P, Madsen HB, Benth JS, et al. Health care providers communicate less well with patients with chronic low back pain – A study of encounters at a back pain clinic in Denmark. *Pain* 2010; 150: 458-61.
43. Jones D, Ravey J and Steedman W. Developing a measure of beliefs and attitudes about chronic non-malignant pain: A pilot study of occupational therapists. *Occup Ther Int* 2000; 7: 232-45.
44. Overmeer T, Boersma K, Main CJ, et al. Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course? *J Eval Clin Pract* 2009; 15: 724-32.
45. Rochman DL, Sheehan MJ and Kulich RJ. Evaluation of a pain curriculum for occupational therapists: experiences from a master's-level graduate program over six years. *Disabil Rehabil* 2013; 35: 1933-40.

46. Darlow B, Fullen BM, Dean S, et al. The association between health care professional attitudes and beliefs and the attitudes and beliefs, clinical management, and outcomes of patients with low back pain: a systematic review. *Eur J Pain* 2012; 16: 3-17.
47. Australian Physiotherapy Association. CPD overview, [https://www.physiotherapy.asn.au/APAWCM/Learning\\_and\\_Development/CPD\\_Overview/APAWCM/LearningDevelopment/CPD\\_Overview.aspx](https://www.physiotherapy.asn.au/APAWCM/Learning_and_Development/CPD_Overview/APAWCM/LearningDevelopment/CPD_Overview.aspx) (2015, accessed 20 June 2015).
48. College of Physiotherapists of Ontario. Quality improvement - building a portfolio, <http://www.collegept.org/Physiotherapists/CreatingYourPortfolioPage> (2015, accessed 20 June 2015).
49. Ordre professionnel de la physiothérapie du Québec. PACC et portfolio, <https://oppq.qc.ca/formation/formation-continue/pacc-et-portfolio/> (2015, accessed 19 June 2015).
50. European Region World Confederation for Physical Therapy. Continuous professional development, [http://www.erwcpt.eu/education/continuous\\_professional\\_development](http://www.erwcpt.eu/education/continuous_professional_development) (2015, accessed 20 June 2015).
51. American Physical Therapy Association. Professional development, lifelong learning, and continuing competence in physical therapy, [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/Professional\\_Development/ProfessionalDevelopmentLifelongLearning.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/Professional_Development/ProfessionalDevelopmentLifelongLearning.pdf) (2012, accessed 20 June 2015).

## 3.2 Article 2

In this article, we present the results of three consultation sessions exploring PTs' attitudes and beliefs towards chronic pain. The principal author, Sabrina Morin Chabane (physiotherapist and candidate for the M.Sc. in rehabilitation sciences at Université de Montréal) made a significant contribution to the article. The co-authors are Franzina Coutinho (assistant professor at School of Physical and Occupational Therapy, McGill University), Maude Laliberté (PhD candidate in Bioethics, Université de Montréal) and Debbie Ehrmann Feldman (research director, program director for graduate studies in rehabilitation sciences and professor, Université de Montréal). SMC, FC, ML and DEF conceived this study. SMC performed the analysis and FC, ML and DEF reviewed the transcript coding. SMC wrote the paper and all authors reviewed it and ultimately approved the final version. All co-authors provided their written consent for this article to be included in this thesis (see the form Agreement of co-authors in Appendix 6). This manuscript is ready for submission to the journal *Physiotherapy Canada*.

# Out-Patient Physiotherapists' Attitudes and Beliefs towards Chronic Pain: A Qualitative Study

**Sabrina Morin Chabane<sup>1</sup>, Franzina Coutinho<sup>2</sup>, Maude Laliberté<sup>3</sup>, Debbie Ehrmann Feldman<sup>4</sup>**

<sup>1</sup> School of rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Canada

<sup>2</sup> School of Physical and Occupational Therapy, Faculty of Medicine, McGill University, Montreal, Canada

<sup>3</sup> School of rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Canada

<sup>4</sup> School of rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Canada

## **ABSTRACT**

***Purpose:*** To describe physiotherapists' attitudes and beliefs towards chronic pain.

***Method:*** We conducted three focus groups with a total of 14 out-patient physiotherapists. We first showed a video created (reflecting an encounter between a clinician and a person living with chronic pain) based on themes that emerged from a scoping review we conducted, followed by a discussion about attitudes and beliefs towards chronic pain. The sessions were audio-taped and transcripts were analyzed through descriptive and thematic analysis.

***Results:*** We identified three core themes related to physiotherapists' attitudes and beliefs towards chronic pain: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about legitimacy of chronic pain and its relationship with disability and 3) professionals' beliefs in their ability to manage psychological aspects of their patient's pain.

**Conclusion:** Physiotherapists seem unsure of how to interpret severe pain within the context of minimal objective findings. Physiotherapists need to be further educated and trained on how to assess and treat psychosocial factors associated with pain.

**Key words:** physiotherapy specialty, attitudes, beliefs, chronic pain, qualitative research

## RÉSUMÉ

**Objet:** Décrire les attitudes et les croyances des physiothérapeutes envers la douleur chronique.

**Méthode:** Nous avons fait trois focus groups, comprenant un total de 14 physiothérapeutes travaillant en clinique externe. Nous avons d'abord présenté une vidéo que nous avons produite illustrant une interaction entre un clinicien et une personne vivant avec de la douleur chronique, suivie d'une discussion portant sur les attitudes et les croyances envers la douleur chronique. Les focus groups ont été enregistrés et les transcriptions ont été analysées par analyse descriptive et thématique.

**Résultats:** Nous avons identifié trois thèmes dominants liés aux croyances et les attitudes des physiothérapeutes envers la douleur chronique concernant : 1) le développement de la douleur chronique; 2) la légitimité de la douleur chronique et la relation entre la douleur chronique et de l'invalidité et 3) la capacité des physiothérapeutes à gérer les facteurs psychologiques de la douleur.

**Conclusion:** Les physiothérapeutes semblent être incertains de la façon d'interpréter la douleur sévère lorsque les observations objectives sont peu concluantes. Les physiothérapeutes ont besoin d'être formés sur l'évaluation et le traitement des facteurs psychosociaux associés à la douleur chronique.

## INTRODUCTION

One Canadian in five suffers from chronic pain<sup>1</sup>, defined as recurrent or persistent pain lasting for more than three months<sup>2</sup>. Canadians with chronic pain experience more days away from work and consult physicians over ten times more than the rest of the population.<sup>3</sup> Further, the majority of those living with chronic pain report interference with daily activities.<sup>1</sup> People suffering from chronic musculoskeletal injuries are often referred to physiotherapy<sup>4</sup> which is effective in reducing pain and disability in those who live with chronic pain.<sup>5-9</sup> The quality of treatment received is influenced by professionals' attitudes and beliefs towards chronic pain.<sup>10-15</sup> Therefore, it is important for physiotherapists, in addition to acquiring knowledge and skills, to reflect on their attitudes and beliefs towards chronic pain.

Beliefs refer to a person's thoughts about what pain is and what it means to them.<sup>11</sup> Beliefs are shaped by one's culture<sup>16</sup>, experience and observation of the environment<sup>17</sup>. The sum of a person's beliefs determines his/her understanding of the world, behavior, and health-related behavior.<sup>11</sup> Attitudes are cultural dispositions that are learned and which guide one's reactions to accept or reject, engage or disengage, agree or disagree with a situation.<sup>17</sup> Attitudes predispose someone to react positively or negatively to a situation or a person.<sup>18</sup>

Our scoping review identified rehabilitation professionals' attitudes and beliefs towards chronic pain from the literature.<sup>19</sup> These attitudes and beliefs include 1) the development of chronic pain being attributed to an ongoing physical injury versus the contribution of biopsychosocial factors.<sup>11, 14, 17, 20-23</sup>; 2) the relationship between pain and disability<sup>17, 24</sup>; 3) physiotherapists' ability to recognize the psychological aspects of chronic pain<sup>25</sup> but lack of consensus as per whether it is their role and responsibility to address them<sup>26, 27</sup>; 4) physiotherapists' showing a variety of emotional responses towards individuals living

with chronic pain with more positive responses being influenced by work experience in pain clinic<sup>26</sup> and more negative responses, such as frustration, being elicited by their perceived limited treatment to offer<sup>28</sup>, perceived lack of training<sup>25</sup>, knowledge and expertise<sup>28</sup> in the management of pain, perception that a patient is difficult to treat<sup>11</sup> and lack of response to treatment<sup>29</sup>; 5) patient-professional interaction highlighting the importance of shared-decision making<sup>27, 30-32</sup> and the poorer empathy and quality of information given to patients consulting for chronic pain<sup>33</sup>; 6) the belief in the existence of a cure for chronic pain<sup>17</sup> and the expectation to be able to abolish pain<sup>11</sup> versus the possibility to reduce functional limitations despite the persistence of the pain<sup>21</sup>; 7) the effectiveness of educational interventions in improving rehabilitation professionals' attitudes and beliefs towards chronic pain<sup>18, 34, 35</sup>.

This paper addresses stakeholder consultation which is the final step to a rigorous scoping review and helps in knowledge translation.<sup>36, 37</sup> The objectives of the consultations were to 1) share the findings from our scoping review<sup>19</sup> with stakeholders (knowledge translation); 2) validate the findings and get additional perspective on them and 3) get additional references on the topic.

## **METHODS**

We created an educational video illustrating professionals' attitudes and beliefs towards chronic pain which purpose was to serve as a tool for knowledge translation and as a basis for discussion. The video is based on the themes identified in the scoping review<sup>19</sup>, is ten minutes long and filmed in French with English subtitles (<https://www.youtube.com/watch?v=RJIw1uaig84&feature=youtu.be>).

We selected a focus group approach to gather information about participants' beliefs and attitudes towards chronic pain. Focus groups are useful to gather information about participants' experience<sup>38</sup> and allow to collect a wide range of in-depth information<sup>39</sup>. Three focus groups were held in three out-patient physiotherapy departments of three hospitals.

### **Participants**

We recruited physiotherapists using purposive sampling.<sup>40</sup> The inclusion criteria were physiotherapists 1) working in public physiotherapy out-patient departments and 2) treating individuals with chronic musculoskeletal pain. We contacted the service managers of three public university health centers physiotherapy departments to describe the project and ask permission to meet their out-patient physiotherapists to present our project. A researcher from the team met with the potential sixteen participants to describe the project, explain and provide consent forms one month prior to the focus groups. Sixteen participants were recruited (see Table 1 for details on participants' socio-demographic characteristics, education and experience). Two potential participants were not present for the focus groups (one was on vacation, the other on a leave of absence from work).

### **Focus groups**

Three focus groups were held during a monthly in-service meeting (regular working hours in February and March 2015). A member (SMC) of the research team facilitated the focus groups while two others (DEF and TO) observed the sessions and took notes about the context and highlights. The main questions that guided the focus groups were "What are physiotherapists' attitudes and beliefs towards chronic pain?" and "What are physiotherapists' perspectives on the findings from our scoping review?". The three focus groups each lasted sixty minutes. A



semi-structured discussion followed, based on the video (see Table 2 for the guide for focus groups).

### **Data collection**

All three focus groups were audio-recorded and transcribed by a professional in their original language (English or French groups). Names of participants and hospitals were removed from the transcripts. Transcriptions were reviewed by SMC and entered in Dedoose<sup>41</sup>, a web application for qualitative and mixed methods research analysis. French verbatim quotations were translated into English by a native English-speaking member of the research team. Verbatim quotations are included in the results section of this article to illustrate the analysis derived from the transcribed content of the focus groups.

### **Data handling and analysis**

One member of the team (SMC) performed the descriptive and thematic analysis of the transcripts and field notes.<sup>42</sup> Transcripts were initially reviewed and their content was coded based on the themes developed in our earlier scoping review on rehabilitation professionals' attitudes and beliefs towards chronic pain<sup>19</sup>. No forced codification was done and no new codes were identified. All members of the research team reviewed the transcript coding and the themes from the scoping review were validated at different points during the analysis process. Transcripts of the three focus groups were compared to identify the most dominant themes. All members of the team agreed on the final analysis of the transcripts.

## **Ethical considerations**

This project was reviewed and approved by two university-based review ethics boards. Signed consent forms were obtained from all participants prior to the beginning of the focus groups.

## **RESULTS**

We conducted three focus groups of six, three and five participants. All participants had at least six years of clinical experience and had followed some continuing education, the majority of which related to manual therapy (n=8/14) and Mechanical Diagnosis and Therapy (McKenzie approach) (n=10/14).

We identified three core themes related to physiotherapists' attitudes and beliefs towards chronic pain: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about legitimacy of chronic pain and the relationship between chronic pain and disability and 3) professionals' beliefs in their ability to manage psychological aspects of their patient's pain. No new references on the research topic were suggested by participants.

### **Theme 1: Attitudes and beliefs about the development of chronic pain (Scoping review<sup>19</sup> theme 1)**

A minority of participants had strong mechanical views of chronic pain. They reported needing to identify a mechanical component to pain in order to be able to provide treatment: *"I have to find something. I can't... If I find nothing, I don't know what to do with them. It*

*doesn't have to be a specific structure, or nerve, or... But, it has to be, you know, they feel better with this type of movement versus that type of movement." (BF, 14)*

Most participants considered that ruling out/in mechanical factors of chronic pain was a priority of their assessment: *"You can't just, you know, assume right away it's anxiety. Have you cleared everything else first?" (BF, 13)* When not able to identify a mechanical source for the pain, many participants reported directing their treatment towards reducing functional limitations: *"I rule out, at least biomechanically, or with any reference that we have, any tests, that there's nothing dangerous and then I say: Well, regardless of the pain, let's try and see if we could gain function." (AF, 2)*

The vast majority of participants recognized psychosocial factors could influence the experience of pain, although they appeared to give more weight to the mechanical aspects of the pain and viewed the presence of psychosocial factors as an alternative explanation for the persistence of the symptoms when no mechanical/anatomical explanation could be identified: *"Me, I would see this more by a process of elimination. You know, I would say, you are going to go biomechanically. You say: OK, this is chronic pain. But me, when it is no longer rationally explicable, like we say, ok, there one can go towards the biopsychosocial explanation." (CM, 10)* Most participants felt they were trained to identify the mechanical cause of the pain and many reported being unsure of their ability to identify other factors that could contribute to the persistence of the pain.

**Theme 2: Attitudes and beliefs about legitimacy of chronic pain and the relationship between chronic pain and disability (Scoping review<sup>19</sup> theme 2)**

In our focus groups, the great majority of participants did not question the presence of the pain reported by patients and the possibility of secondary gains was only evoked once. There was disagreement among participants on how to interpret severe pain within the context of minimal objective findings. Some reported that pain expressed by the character in the video was exaggerated while almost half of participants agreed that pain is a subjective experience where severity cannot be questioned: *"But it's what nine on 10 means to her."* (AF, 5)

Others perceived the symptoms reported as a means for the patient to communicate a more general suffering: *"I feel it's also, like, using the scale for pain, it communicates something to the therapist [...the] patient is trying to communicate other things other than their pain to you. And maybe they don't have a way to do that, so they're saying: "It's nine out of 10. It's a big problem! Please take me seriously", but it's not necessarily that their pain in that moment is nine out of 10."* (AF, 4)

Many, judged the pain reported as exaggerated: *"Well, I do not question the pain [...] it's the intensity of the pain that I am going to challenge."* (CF, 9) *"It didn't look like she had a nine on ten"* (AM, 3) *"That's it, she did not appear to have a 9 to 10. She did not move as if she had a 9 or 10."* (CF, 7)

Most participants were unsure about the relationship between pain and disability: *"So you have this idea of function and the level of pain, so maybe people can function with a really high level of pain. They're not mutually exclusive, necessarily, right?"* (AF, 4)

Most participants reported making decisions and recommendations based on the level of pain reported by a patient. They reported deciding on an appropriate level of activity and exercise based on their patient's pain response:

*"...we use pain as a reaction to our treatment almost all the time [...] So I use it as that kind of a guide for myself." (AM, 1)*

One participant proposed an alternative approach to make recommendations and progress activities: *"I believe that tolerance will dictate what you can do. [...] Because if you start telling them they have to push through their pain, they may not be able to handle that either. So maybe it's a slow increment..." (BF, 13)*

### **Theme 3: Professionals' beliefs in their ability to manage psychological aspects of their patient's pain (Scoping review<sup>19</sup> theme 3)**

Most participants were aware that psychosocial factors could contribute to the persistence of the pain: *"To me, the physical and psychological are very closely linked. Whether one came after the other, either way, there's more than one thing to be addressed." (BM, 12)*

The great majority of participants reported not screening for psychological factors in their initial assessment with patients suffering from chronic pain. Participants perceived lacking the skills to identify such factors. Many were unsure if it was their role to assess the presence of psychosocial factors because they were not trained for it. One person reported that it is a physiotherapist's role to diminish patient's fear of movement. Another one mentioned educating patients on pain is part of patient care in physiotherapy:

*"And if you rule out the biomechanical reason and you assume there is a pain, in my head, I always go: There's a pain problem, or a pain response, to this mechanical thing and do go into the teaching of pain and pain response, I think. So, there is that, but can we deal with the whole psychological other issues? I don't think I'm at all competent to do this." (AM, 1)*

Participants who were willing to address psychosocial factors of chronic pain felt they had no skill in identifying and treating them: *"But, I don't feel competent often times to deal with... If I can't find the biomechanical reason, then I don't know what else I can do for them. I'd do anything, as far as the training..." (AM, 1)* Some reported that their working environment would prevent them from addressing psychosocial factors which is too time consuming for the schedule of an out-patient department. They felt this could be addressed more realistically in a rehabilitation setting: *"They almost need, like, a specialty appointment." (AF, 4)* *"If you have a session like an hour..." (AF, 6)*

There was a consensus among participants that they would listen to a patient who would bring up psychosocial difficulties, as a means to support the patient: *"not to dismiss them" (BF, 14)*. They considered it important to demonstrate an empathetic attitude towards patients, but would be careful not to go beyond their scope of practice: *"I'm careful on advice because I think that can backfire tremendously and also, you're stepping out of your scope of physio, which, you know, with your Code of ethics, you have to be very careful." (BF, 13)*

Many physiotherapists reported not knowing when and where to refer a patient reporting psychosocial difficulties: *"...is there a way to find a cut-off where, like, okay, I think this patient specifically would benefit from? Because we don't really have any screening tools for that. We don't really evaluate that. We don't assess that." (BM, 12)* When unsure, participants reported referring the patient back to the physician.

Many participants mentioned the difficult access to psychologists and pain clinics in the province of Quebec: *"You're referring them to a pain clinic; they're going to wait a year, maybe two." (AM, 1) "That's right, or a psychologist and then they can't afford it." (AF, 6) "They can't afford it because it's not covered." (AM, 3) "There's no system set up for them." (AM, 1)*

## **DISCUSSION**

### **Theme 1: Attitudes and beliefs about the development of chronic pain**

The literature documents two beliefs regarding the origin and cause of chronic pain. The first one is the biomechanical (or biomedical) model where it is believed that the persistence of pain to the chronic stage can be explained by a damaged anatomical structure.<sup>21</sup> The second is the biopsychosocial model that recognizes that psychological and social factors can influence the experience of chronic pain.<sup>21</sup> The literature reveals that the biopsychosocial model is still not widely used by physiotherapists, with many of them having predominantly biomedical views of chronic pain.<sup>11, 23</sup> Physiotherapists can hold 1) predominant biomechanical views of chronic pain; 2) recognize the contribution of psychosocial factors to the persistence of the pain<sup>17, 20, 21</sup> or 3) hold both physical and psychosocial beliefs about the development of chronic pain<sup>22</sup>.

The results of our study echo the literature by showing that although most participants accept the influence of psychosocial factors on the experience of chronic pain, they give priority to the identification of the mechanical component to pain. This may be inherent to the nature of their profession and biomedical training. Our results suggest that participants appear to consider the contribution of psychosocial factors as an alternative explanation to "physical

pain" and they do so when pain reported by a patient appears extreme, when no mechanical/anatomical explanation can be identified or when symptoms don't match the physical findings. Guidelines however recommend to equally consider the potential and concomitant contribution of physical and psychological factors to pain.<sup>43</sup>

## **Theme 2: Attitudes and beliefs about legitimacy of chronic pain and the relationship between chronic pain and disability**

Our scoping review<sup>19</sup> reported that most professionals<sup>17, 24</sup> and students<sup>34</sup> disagree that chronic pain could justify disability and some physiotherapists are unsure of the relationship between pain and disability.<sup>14</sup> In this study, participants disagree on how to interpret severe pain within the context of minimal objective findings suggesting ambiguity about the relationship between pain and disability.

The discrepancy observed between symptoms reported and physical findings can lead physiotherapists to experience doubt or symptom uncertainty.<sup>44, 45</sup> The consequence is for patients to see their pain underestimated by the clinician and undertreated.<sup>46</sup> Many participants of the focus groups judged that pain is exaggerated, suggesting a tendency to underestimate pain. Underestimation of pain is not a theme that came out in our scoping review on rehabilitation professionals' attitudes and beliefs towards chronic pain but was documented elsewhere with other professionals<sup>46</sup> and in studies on sensitivity to facial expression.<sup>47, 48</sup>

Participants of our focus groups reported adapting their treatment plans and level of exercises prescribed based on the severity of pain reported and pain response to treatment. The literature suggests that in the context of symptom uncertainty, physiotherapists should provide



the patient with a "plan of action" addressing changes to the deficits and disabilities observed e.g. postural changes or faulty movement patterns.<sup>44</sup> Professionals' beliefs in the relationship between pain and disability may influence recommendations regarding activity, rest, exercises and daily activities.<sup>24</sup>

### **Theme 3: Professionals' beliefs in their ability to manage psychological aspects of their patient's pain**

The literature on this theme is related to awareness of psychological aspects of pain<sup>25</sup>, role and responsibility of professionals<sup>26, 27</sup>, and willingness<sup>25</sup>, comfort and confidence<sup>27, 49</sup> related to the management of psychological aspects of chronic pain.

The ability to manage psychological aspects of chronic pain was by far the theme that raised the most interest and the most reactions from participants.

Our results are similar to those of recent reviews reporting that physiotherapists 1) are aware that psychosocial factors could influence the experience of pain<sup>50</sup>; 2) often recognize stress and anxiety as psychosocial factors of chronic pain<sup>50</sup> but have limited recognition of other cognitive (e.g. catastrophic thoughts), psychological (e.g. depression), social (e.g. cultural factors) and physical (e.g. sedentary lifestyle) factors<sup>45</sup>; 3) feel that they did not receive enough training to address the psychosocial factors associated to their patients' pain<sup>45</sup>,<sup>50</sup> and 4) perceive they have a limited role in the management of psychosocial aspects of pain because of their lack of skills and concerns about getting out of their scope of practice<sup>45</sup>. Participants of our focus groups did not mention other cognitive factors such as hypervigilance and catastrophizing.<sup>51</sup> Fear-avoidance beliefs and kinesiophobia were only briefly evoked by

two participants. These factors could have a significant impact on patient disability and prognosis.<sup>51</sup> Physiotherapists should be able to identify those factors and intervene on them.<sup>43</sup>

Adopting a systematic use of screening tools for psychosocial factors of pain (e.g. Fear Avoidance Beliefs Questionnaire, Coping Strategies Questionnaire) could help physiotherapists identify areas needing intervention.<sup>43, 45, 51</sup> Physiotherapists should also use other assessment strategies such as discussing with the patients their expectations, worries, unanswered questions and previous explanations received for the cause of pain, which could help them adapt their management and education of the patient.<sup>43, 45</sup>

Intervention strategies (e.g. cognitive-behavioral therapy, providing education on self-management strategies, avoiding the use of unclear or ambiguous terms, providing a reasonable explanation for the cause of the pain) exist in physiotherapy to address psychosocial factors of chronic pain.<sup>43</sup> Adopting these strategies could help physiotherapists provide better care for patients living with chronic musculoskeletal pain and ultimately improve patient outcomes.<sup>43</sup> There is no consensus amongst physiotherapists as to whether cognitive-behavioral therapy was part of their scope of practice.<sup>26</sup>

There is a need to provide physiotherapists with guidelines and training 1) on which psychosocial factors of pain they should screen for in the context of their clinical practice; 2) on how to screen for those psychosocial factors of pain; 3) on how to intervene on them in a practical way adapted to their clinical context.<sup>50</sup> Guidance from professional regulatory physiotherapy associations in this regard is currently lacking<sup>45</sup> and could help physiotherapists provide evidence-based management for chronic musculoskeletal pain that is within their scope of practice. By providing guidelines based on evidence and consultations with experts,

agencies should provide a framework in which physiotherapists could work, assuring their interventions remain within their scope of practice.

## **STRENGTHS AND LIMITATIONS**

In each of the three focus groups, a group dynamic installed rapidly. The majority of participants got actively involved in the group discussion. Participants appeared comfortable providing alternative explanations to their colleagues and sharing disagreements, opinions and experiences. As attitudes and beliefs are often implicit and therefore not discussed, many participants reported that the focus groups were an opportunity for them to engage in a reflection on their own attitudes and beliefs.

Using a video allowed to illustrate the difficult concepts<sup>39, 52, 53</sup> identified as attitudes and beliefs based on a review of the literature. It helped participants to rapidly understand the topic of the discussion and rapidly engage in discussion. In addition, the video served as a tool for knowledge translation as its scenario and dialogs were based on evidence taken from our previous scoping review<sup>19</sup>. Participants' responses might have been influenced by the video shown just before the discussion. We believe that this is acceptable considering that the aims of this study were to share the findings from the scoping review (knowledge translation) and consult stakeholders to get their perspectives on those findings. No new references on our research topic were suggested by participants. This could be explained by the fact that participants selected were not experts in the field although they did have experience working with patients living with chronic pain.

Transcripts and themes were not returned to participants for their confirmation and feedback. Participants were out-patient university hospital-based physiotherapists. Results

cannot be generalized to other settings. We cannot comment on the relative importance or frequency of ideas in the general population of physiotherapists because participants were purposefully selected.

The analysis was not inductive as the themes were developed through open thematic analysis in an earlier scoping review documenting rehabilitation professionals' attitudes and beliefs towards chronic pain<sup>19</sup>. The thematic analysis of the transcripts did not reveal new emerging themes thus validating the thoroughness of the scoping review.

## **CONCLUSION**

We identified three core themes related to physiotherapists' attitudes and beliefs towards chronic pain: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about legitimacy of chronic pain and its relationship with disability and 3) professionals' beliefs in their ability to manage psychological aspects of their patient's pain. Physiotherapists' attitudes and beliefs towards chronic pain influence the type of care they provide to patients. Although still not widely used by physiotherapists, the biopsychosocial model of care is gaining more acceptance. Physiotherapists need to be further educated and trained on how to assess and treat psychosocial factors associated to their patient's pain. This is particularly important as patients living with chronic pain constitute a large part of out-patient physiotherapists' caseloads.

## **Acknowledgements**

The video was developed in collaboration with Maude Laliberté (collaborator and PhD student at Université de Montréal) and Ky Vy Le Duc, film director and film editor.

We would like to thank Tatiana Orozco, physiotherapy student at University of Montreal, for taking notes during focus groups.

### **Funding Support**

The French version of the video was funded by the *Axe éthique en santé des populations* (AÉSP) which made the video available on its electronic platform (<http://ethiquesantepop.ca/>) for dissemination. English subtitles were added to the French version of the video with additional funding received by Edith Strauss Rehabilitation Research Project Grant provided by Richard and Edith Strauss Canada Foundation. The rest of the project was also funded by Edith Strauss Rehabilitation Research Project Grant.

### **Competing interests**

The authors declare that there is no conflict of interest.

## **KEY MESSAGES**

### **What is already known on this topic**

Professionals' attitudes and beliefs towards chronic pain can influence the clinical decision making and treatment provided to patients. Physiotherapists are more aware of the biopsychosocial model of care for chronic pain, but some still hold strong biomechanical views of chronic pain. There is a need for education at both undergraduate and post-graduate levels on the use of the biopsychosocial model of care for individuals living with chronic pain. Out-patient physiotherapists feel under-confident in their ability to identify and address

psychosocial aspects of chronic pain with their patients. Two possible explanations are the perceived lack of training in doing so and concerns about going beyond their scope of practice.

### **What this study adds**

Physiotherapists consider the contribution of psychosocial factors to chronic pain as an alternative explanation to "physical pain" when: 1) pain reported by a patient appears extreme; 2) no mechanical/anatomical explanation can be identified or 3) symptoms don't match the physical findings. We argue that guidelines for physiotherapists on the evaluation and treatment of psychosocial factors of chronic pain could help physiotherapists integrate interventions targeting psychosocial factors of pain in their treatment plans and assure them they provide interventions within their scope of practice.

**Table 1.** Socio-demographic characteristics, education and experience of the groups.

		Groups			
		<u>A</u>	<u>B</u>	<u>C</u>	<u>Total</u>
		(n=6)	(n=3)	(n=5)	(n=14)
		n	n	n	n
Sex	Male	2	1	1	4
	Female	4	2	4	10
Age	30-39	2	1	0	3
	40-49	2	1	0	3
	50-59	2	1	5	8
Degree	Bachelors degree in PT	6	3	5	14
	Masters or PhD degree	0	0	0	0
Years of clinical experience	6 to 10	2	1	0	3
	> 10	4	2	5	11
Personal history of chronic pain or family member living with it	Yes	3	1	4	8
	No	3	2	1	6
Years of clinical experience working with individuals with chronic pain	< 5 years	1	1	0	2
	≥ 5 years	5	2	5	12
Post-graduate training taken (one participant can have taken more than one course)	Manual therapy	2	3	3	8
	Mechanical Diagnosis and Therapy (McKenzie)	6	3	1	10
	Cognitive behavioral therapy	0	1	1	2
	Chronic pain management	1	0	0	1
	Other (electrotherapy, exercise prescription, Mulligan, Sahrman, taping, temporo-mandibular joint, vestibular rehabilitation)	2	1	5	8
Experience working in a chronic multidisciplinary pain clinic	Yes	2	1	0	3
	No	4	2	5	11

**Table 2.** Guide for focus groups (association between Scoping themes and video sequence).

---

Questions

Introduction

What are your thoughts on the video we just saw?

I am going to name the attitudes and beliefs that we identified in our literature review and showed in the video. I will explain what they mean. Could you please tell me what are your thoughts, opinion or if you agree or not with them.

---

1. Scoping review theme 1

Rehabilitation professionals' beliefs about the origin and cause of chronic pain

In the literature, two models of care are described. The first one is the biomedical model where it is believed that chronic pain is explained by a physical injury. The structure causing pain needs to be identified to make a diagnosis and treat the patient. The second model is the biopsychosocial model that recognizes that pain is complex and also influenced by social and psychological factors. Chronic pain is not perceived as dangerous and the patient can be treated even if no damaged structure is identified. (video 4:18-4:24, 4:39-4:50)

The professional says: "I really need to find the cause of the pain. Otherwise, how can I treat her?"

---

2. Scoping review theme 2

Rehabilitation professionals' beliefs about validity of chronic pain (7 min)

The validity of chronic pain can be questioned when therapists find that the reported symptoms of a patient and the physical findings on objective testing don't match. (video 3:24-3:31, 5:50-6:01)

The professional says: "She's able to stand up without using her hands [...] Back movement seems fine. In any case, she moves well."

Rehabilitation professionals' beliefs about the relationship between pain and disability

This refers to the belief that pain can justify disability. (video 8:47-8:51)

The professional says: "Take it easy around the house. Don't do too much cleaning all at once, and if it hurts too much, stop."

Rehabilitation professionals' underestimation of patients' pain

Professionals have a tendency to underestimate the pain reported by patients. (video 5:51-6:08)

The professional says: "Pain 9 out of 10? No, she does not show signs of 9 out of 10 pain. She's definitely exaggerating her symptoms."

---



**Table 2.** Guide for focus groups (continuing).

---

3. Scoping review theme 3

Rehabilitation professionals' beliefs about their ability to manage psychological aspects of patients' pain. This refers to rehabilitation professionals' confidence to work with patients with chronic pain. (video 2:48-3:05)The professional reads the patient's file and says: "Maybe I should just tell her I can't help her right off the bat..."

---

4. Scoping review theme 4

Rehabilitation professionals' emotional involvement

This refers to the professionals' reaction and emotional response to patient distress. (video 2:47-3:05, 4:25-4:39)

The patient says: "It's really painful."

The professional: "Help me!"

---

5. Scoping review theme 5

Rehabilitation professionals' communication skills (patient-professional interaction)

This refers to the quality of the communication and information given by the professional. (video 8:14-8:47)

The professional says: "Well, it's clear that your stress causes the pain to increase [...] What do I tell her now?"

---

6. Scoping review theme 6

Belief in the existence of a cure for chronic pain

This theme was not addressed in the questionnaire.

---

7. Scoping review theme 7

Effect of educational interventions on rehabilitation professionals' attitudes and beliefs towards chronic pain

This theme was not addressed in the questionnaire.

---

Conclusion.

Are there any other attitudes or beliefs you might be aware of that we did not address in the video or that we have not discussed today?

Do you have any suggestion of references or document that I should look at to complete my results?

---

## REFERENCES

1. Reitsma ML, Tranmer JE, Buchanan DM, et al. The prevalence of chronic pain and pain-related interference in the Canadian population from 1994 to 2008. *Chronic Dis Inj Can.* 2011;31(4):157-64.
2. Andersson HI, Ejlertsson G, Leden I, et al. Chronic Pain in a Geographically Defined General Population: Studies of Differences in Age, Gender, Social Class, and Pain Localization. *Clin J Pain.* 1993;9(3):174-82.
3. Lynch ME, Campbell F, Clark AJ, et al. A systematic review of the effect of waiting for treatment for chronic pain. *Pain.* 2008;136:97-116.
4. Mäntyselkä PT, Kumpusalo EA, Ahonen RS, et al. Direct and indirect costs of managing patients with musculoskeletal pain—challenge for health care. *European Journal of Pain.* 2002;6(2):141-48.
5. Clare HA, Adams R, Maher CG. A systematic review of efficacy of McKenzie therapy for spinal pain. *Aust J Physiother.* 2004;50(4):209-16.
6. Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. *Aust J Physiother.* 2002;48(4):297-302.
7. O'Sullivan PB, Phytty GDM, Twomey LT, et al. Evaluation of Specific Stabilizing Exercise in the Treatment of Chronic Low Back Pain With Radiologic Diagnosis of Spondylolysis or Spondylolisthesis. *Spine.* 1997;22(24):2959-67.
8. Rossignol M, Arsenault B. Guide de pratique : Clinique des lombalgies interdisciplinaire en première ligne (CLIP). 2006:1-43.

9. Van Middelkoop M, Rubinstein S, Kuijpers T, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *Eur Spine J.* 2011;20(1):19-39.
10. Bishop A, Foster NE, Thomas E, et al. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain.* 2008;135(1-2):187-95.
11. Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine.* 2004;29(7):783-95.
12. De Rond MEJ, De Wit R, Van Dam FSAM, et al. A pain monitoring program for nurses: Effects on nurses' pain knowledge and attitude. *J Pain Symptom Manage.* 2000;19(6):457-67.
13. Houben RM, Ostelo RW, Vlaeyen JW, et al. Health care providers' orientations towards common low back pain predict perceived harmfulness of physical activities and recommendations regarding return to normal activity. *Eur J Pain.* 2005;9(2):173-83.
14. Magalhães MO, Costa LOP, Cabral CMN, et al. Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: A cross-sectional study *Braz J Phys Ther.* 2012;16(3):248-53.
15. Pincus T, Foster NE, Vogel S, et al. Attitudes to back pain amongst musculoskeletal practitioners: a comparison of professional groups and practice settings using the ABS-mp. *Man Ther.* 2007;12(2):167-75.

16. Brown CA. Service users' and occupational therapists' beliefs about effective treatments for chronic pain: a meeting of the minds or the great divide? *Disabil Rehabil.* 2003;25(19):1115-25.
17. Garcia DM, Mattos-Pimenta CA. Pain centers professionals' beliefs on non-cancer chronic pain. *Arq Neuropsiquiatr.* 2008;66(2A):221-8.
18. Jones D, Ravey J, Steedman W. Developing a measure of beliefs and attitudes about chronic non-malignant pain: A pilot study of occupational therapists. *Occup Ther Int.* 2000;7(4):232-45.
19. Morin Chabane S, Ehrmann Feldman D, Laliberté M, et al. Rehabilitation professionals' attitudes and beliefs towards chronic pain: a systematic scoping review of the literature. Forthcoming 2015.
20. Øien AM, Steihaug S, Iversen S, et al. Communication as negotiation processes in long-term physiotherapy: a qualitative study. *Scand J Caring Sci.* 2011;25(1):53-61.
21. Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW, et al. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. *Man Ther.* 2003;8(4):214-22.
22. Parsons S, Harding G, Breen A, et al. The influence of patients' and primary care practitioners' beliefs and expectations about chronic musculoskeletal pain on the process of care: a systematic review of qualitative studies. *Clin J Pain.* 2007;23(1):91-98.
23. Van Wilgen P, Beetsma A, Neels H, et al. Physical therapists should integrate illness perceptions in their assessment in patients with chronic musculoskeletal pain; a qualitative analysis. *Man Ther.* 2014;19(3):229-34.

24. Rainville J, Bagnall D, Phalen L. Health care providers' attitudes and beliefs about functional impairments and chronic back pain. *Clin J Pain*. 1995;11(4):287-95.
25. Wolff MS, Michel TH, Krebs DE, et al. Chronic pain--assessment of orthopedic physical therapists' knowledge and attitudes. *Phys Ther*. 1991;71(3):207-14.
26. Barlow S, Stevens J. Australian physiotherapists and their engagement with people with chronic pain: Do their emotional responses affect practice? *J Multidiscip Healthc*. 2014;7:231-37.
27. Parsons S, Harding G, Breen A, et al. Will shared decision making between patients with chronic musculoskeletal pain and physiotherapists, osteopaths and chiropractors improve patient care? *Fam Pract*. 2012;29(2):203-12.
28. Blomqvist K. Older people in persistent pain: nursing and paramedical staff perceptions and pain management. *J Adv Nurs*. 2003;41(6):575-84.
29. Askew R, Kibelstis C, Overbaugh S, et al. Physical therapists' perception of patients' pain and its effect on management. *Physiother Res Int*. 1998;3(1):37-57.
30. Slade SC, Molloy E, Keating JL. The dilemma of diagnostic uncertainty when treating people with chronic low back pain: a qualitative study. *Clin Rehabil*. 2012;26(6):558-69.
31. Thorneycroft P. Chronic pain -- an opportunity to help. *Journal of the Australian Association of Massage Therapists*. 2012;10(1):20-21.
32. Van Huet H, Innes E, Stancliffe R. Occupational therapists perspectives of factors influencing chronic pain management. *Aust Occup Ther J*. 2013;60(1):56-65.
33. Gulbrandsen P, Madsen HB, Benth JS, et al. Health care providers communicate less well with patients with chronic low back pain – A study of encounters at a back pain clinic in Denmark. *Pain*. 2010;150(3):458-61.

34. Latimer J, Maher C, Refshauge K. The attitudes and beliefs of physiotherapy students to chronic back pain. *Clin J Pain*. 2004;20(1):45-50.
35. Overmeer T, Boersma K, Main CJ, et al. Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course? *J Eval Clin Pract*. 2009;15(4):724-32.
36. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*. 2005;8(1):19-32.
37. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci*. 2010;5(1):69.
38. Basch CE. Focus Groups Interview: An Underutilized Research Technique for Improving Theory and Practice in Health Education. *Health Educ Behav*. 1987;14.
39. National Institute for Health and Clinical Excellence. How to change practice. Understand, identify and overcome barriers to change. 2007:1-48.
40. Marshall MN. Sampling for qualitative research. *Fam Pract*. 1996;13(6):522-26.
41. Dedoose Version 6.1.11, web application for managing, analyzing, and presenting qualitative and mixed method research data (2015). Los Angeles, CA: SocioCultural Research Consultants, LLC ([www.dedoose.com](http://www.dedoose.com)).
42. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
43. Harland N, Lavallee D. Biopsychosocial management of chronic low back pain patients with psychological assessment and management tools: Overview. *Physiotherapy*. 2003;89(5):305-12.

44. Slade SC, Keating JL. Effects of preferred-exercise prescription compared to usual exercise prescription on outcomes for people with non-specific low back pain: a randomized controlled trial [ACTRN12608000524392]. *BMC Musculoskelet Disord*. 2009;10:14.
45. Synnott A, O’Keeffe M, Bunzli S, et al. Physiotherapists may stigmatise or feel unprepared to treat people with low back pain and psychosocial factors that influence recovery: a systematic review. *J Physiother*.61(2):68-76.
46. Tait RC, Chibnall JT, Kalauokalani D. Provider Judgments of Patients in Pain: Seeking Symptom Certainty. *Pain Med*. 2009;10(1):11-34.
47. Prkachin KM, Solomon P, Hwang T, et al. Does experience influence judgments of pain behaviour? Evidence from relatives of pain patients and therapists. *Pain Research & Management*. 2001;6(2):105-12.
48. Solomon PE, Prkachin KM, Farewell V. Enhancing sensitivity to facial expression of pain. *Pain*. 1997;71(3):279-84.
49. De Ruddere L, Goubert L, Stevens MAL, et al. Health Care Professionals' Reactions to Patient Pain: Impact of Knowledge About Medical Evidence and Psychosocial Influences. *J Pain*. 2014;15(3):262-70.
50. Alexanders J, Anderson A, Henderson S. Musculoskeletal physiotherapists’ use of psychological interventions: a systematic review of therapists’ perceptions and practice. *Physiotherapy*. 2015;101(2):95-102.
51. O’Sullivan P. It's time for change with the management of non-specific chronic low back pain. *Br J Sports Med*. 2012;46(4):224-7.
52. Alexander M, Hall MN, Pettice YJ. Cinemeducation: an innovative approach to teaching psychosocial medical care. *Fam Med*. 1994;26(7):430-3.

53. Lumlertgul N, Kijpaisalratana N, Pityaratstian N, et al. Cinemeducation: A pilot student project using movies to help students learn medical professionalism. *Med Teach*. 2009;31(7):e327-32.



### 3.3 Article 3

In this article, we present the results of a survey investigating factors associated with physiotherapists' attitudes and beliefs towards chronic pain. The principal author, Sabrina Morin Chabane (physiotherapist and candidate for the M.Sc. in rehabilitation sciences at Université de Montréal) made a significant contribution to the article. The co-authors are Franzina Coutinho (assistant professor at School of Physical and Occupational Therapy, McGill University), Maude Laliberté (PhD candidate in Bioethics, Université de Montréal) and Debbie Ehrmann Feldman (research director, program director for graduate studies in rehabilitation sciences and professor, Université de Montréal). SMC, FC, ML and DEF conceived of this study. SMC performed the statistical analysis. SMC wrote the paper and all authors reviewed it and ultimately approved the final version. All co-authors provided their written consent for this article to be included in this thesis (see the form Agreement of co-authors in Appendix 7). This manuscript is ready for submission to the journal *Disability and Rehabilitation*.

# Exploring factors associated with physiotherapists' attitudes and beliefs towards chronic pain

**Sabrina Morin Chabane<sup>1</sup>, Franzina Coutinho <sup>2</sup>, Maude Laliberté<sup>1</sup>, Debbie Ehrmann Feldman<sup>1</sup>**

<sup>1</sup> School of rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Canada

<sup>2</sup> School of Physical and Occupational Therapy, Faculty of Medicine, McGill University, Montreal, Canada

## **Abstract**

*Purpose:* The goals of this study are 1) to describe physiotherapists' attitudes and beliefs towards chronic pain and 2) to see if they differ according to socio-demographic characteristics and experience.

*Method:* We analysed the responses of fourteen out-patient physiotherapists to the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals (total score, subscores of competence, emotional involvement and empathy). We used descriptive statistics and bivariate analysis to see if participants' responses differed based on their socio-demographic characteristics and experience.

*Results:* The majority of our sample (11/14) had more than 10 years of clinical experience, and three physiotherapists had previous experience working in a multidisciplinary pain clinic. Emotional involvement subscore was lower than both empathy or competence subscores.

Higher emotional involvement was associated with having more years of clinical experience ( $p = 0.02$ ) and greater empathy was associated with previous experience working in a multidisciplinary pain clinic ( $p = 0.02$ ). None of the socio-demographic or experience factors were related to feelings of competence in management of persons living with chronic pain.

*Conclusions:* Physiotherapists with greater amount of general clinical experience showed more emotional involvement and those with specific multidisciplinary pain clinic experience showed more empathy towards individuals living with chronic pain.

*Keywords:* physiotherapy, attitudes and beliefs, chronic pain, survey, Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals

## **Introduction**

Chronic pain is defined as recurrent or persistent pain lasting for more than three months [1] and its prevalence in Occidental countries is around 20% [2, 3]. The majority of individuals living with chronic pain report functional limitations [3] and are often referred to physiotherapy services [4]. Physiotherapy is effective in reducing pain and disability in persons living with chronic low back pain [5-7]. The quality of treatment physiotherapists provide is influenced by their attitudes and beliefs towards chronic pain [8-13]. Beliefs refer to a person's thoughts about what pain is and what it means to them [9] while attitudes are cultural dispositions that predispose someone to react positively or negatively to a situation [14, 15]. Attitudes and beliefs influence the information, explanations and exercises given to patients [9]. For example, physiotherapists progressed exercises more rapidly and were less

likely to consider symptoms for patients believed to have "non-legitimate pain" [16]. Some physiotherapists reported a lack of confidence in identifying psychological aspects of pain and were uncomfortable addressing them [17]. Addressing psychological factors contributing to the persistence of chronic pain could improve patient outcomes [18]. The overall goal of this study is to better understand factors associated with physiotherapists' attitudes and beliefs towards chronic pain. Understanding what influences physiotherapists' attitudes and beliefs towards chronic pain is a first step in developing specific interventions that aim at improving them. The specific goals are 1) to explore physiotherapists' attitudes and beliefs towards chronic pain and 2) to see if they differ according to socio-demographic characteristics (sex, personal history of chronic pain) and experience (years of clinical experience as physiotherapist and experience working in a multidisciplinary pain clinic).

## **Instruments and Methods**

### **Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals**

To quantify physiotherapists' attitudes and beliefs towards chronic pain, we used the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals (see appendix A), developed by Bunzli S (School of Physiotherapy and Exercise Science, Curtin University, Perth Australia), Quinter, J and Griffiths B (personal communication). Although face validity has been established by the authors, test retest reliability and other measures of validity are yet to be established. Factor analysis identified three main factors 1) competence (or how equipped a person feels to adequately deal with individuals living with chronic pain), 2) emotional involvement (or willingness to engage at an emotional level and emotional response

to the management of chronic pain) and 3) empathy. Empathy can be defined as the cognitive ability to perceive a situation through someone else's eyes, the affective ability to grasp someone else's emotions and the behavioral ability to communicate this understanding to the person [19]. An example of an item under the competence factor is "There is not much I can do to help a chronic pain sufferer", under emotional involvement is "I should not get too emotionally involved with chronic pain sufferers because that only makes me feel helpless" and under empathy is "The chronic pain sufferer is not just imagining or exaggerating his or her pain". The Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals contains 22 items. Items are scored by assigning "1" for "strongly agree" through "7" for strongly disagree. Items 3, 4, 5, 9, 11, 13, 21 need to be reversed scored before summing all items to obtain the total score (minimal score = 22, maximal score = 154). Items under the subscore competence are 6, 10, 14, 18, 19 (minimal score = 5, maximal score 35). Items under emotional involvement are 1, 4, 15, 17, 22 (minimal score = 5, maximal score 35). Items under empathy are 9, 11, 13, 16, 21 (minimal score = 5, maximal score 35). Higher scores indicate more evidence-based attitudes and beliefs towards chronic pain.

The original English version of the questionnaire was professionally translated into Canadian French. Back translation of the above mentioned French version was done by two members of the research team. Participants could fill the questionnaire either in French or in English.

Participants also completed a questionnaire on socio-demographic characteristics and experience (see appendix B).

### **Participants**

We recruited physiotherapists from three physiotherapy departments in a large university hospital centre, using a purposive sampling method [20]. The inclusion criteria were

physiotherapists 1) working in the out-patient department, 2) occasionally or regularly treating individuals with chronic musculoskeletal pain. Participants were recruited to participate in a one-hour focus group on attitudes and beliefs towards chronic pain, which has been described previously [21]. Sixteen participants were recruited and fourteen participated in the focus groups (see table 1 for a description of participants). The Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals was completed prior to the beginning of the focus groups.

### **Ethical considerations**

This project was reviewed and approved by two university-based review ethics boards. Signed consent forms were obtained from all participants before completing the questionnaire.

### **Analysis**

Descriptive statistics of scores and subscores of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals were calculated.

We used the Wilcoxon rank-sum test to evaluate associations between participants' characteristics (sex, years of clinical experience, personal history of chronic pain, experience working in a multidisciplinary pain clinic) and scores/subscores to Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals. The Wilcoxon rank-sum test, a non-parametric test, was chosen given our small sample of fourteen participants. We used R (version 3.0.2) for our analysis.

### **Results**

Our sample was mostly female (10/14) and 12/14 had five years or more experience working with persons living with chronic pain. Mean score on the questionnaire was 112.4 (out of a

maximum of 154) indicating moderate degree of positive attitudes and beliefs towards individuals living with chronic pain. Subscores for empathy and competence were higher than emotional involvement (see table 2).

Bivariate analysis revealed that having more than ten years of clinical experience was associated with greater emotional involvement ( $p = 0.02$ ), and having experience working in a multidisciplinary pain clinic was associated with greater empathy towards persons living with chronic pain ( $p = 0.02$ ) (see figure 1).

We did not find significant differences between sex, personal history of chronic pain, and scores or subscores on the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals.

## **Discussion**

We found that emotional involvement was the lowest among the three subscores, while empathy was highest which may indicate that physiotherapists feel empathy but tend to get less emotionally involved with their patients. The competence score was in between the other two, indicating a moderate perception of competence to deal with individuals who live with chronic pain. In our sample of fourteen physiotherapists, those who have more than ten years of clinical experience showed more emotional involvement and those with experience working in a multidisciplinary pain clinic showed more empathy towards individuals living with chronic pain. Our results contrast with those of a previous study reporting that physiotherapists' years of experience had no influence on their engagement with patients living with chronic pain [18]. In our sample of fourteen physiotherapists, neither sex of the therapist, nor personal history of chronic pain were associated with attitudes and beliefs

towards persons living with chronic pain. Our results are in line with those of previous studies reporting that physiotherapists' personal history of low back pain had no effect on whether they used a biomedical or a biopsychosocial model of care [22].

The competence factor refers to how equipped physiotherapists feel they can adequately deal with the patients consulting for chronic pain. The authors of the questionnaire suggested that this measure may correlate with self-efficacy. Examples of items under this factor are "dealing with chronic pain sufferers just makes me feel incompetent because there is not much I can do to help them" and "too much of my time can be taken up dealing with chronic pain sufferers when it is known that nothing much can be done to help them". Although we did not find any associations of competence with experience or socio-demographic factors, other authors have shown that physiotherapists who work in multidisciplinary pain clinics tend to inquire more about psychosocial factors that may contribute to their patient's pain, as compared to physiotherapists who work in outpatient and sport clinics [16], possibly indicating they adopted a biopsychosocial model of care (or treatment orientation), in line with guidelines for the management of chronic pain [23-25]. Given the complex nature of chronic pain, patients consulting for chronic pain likely require more of the therapist's time. Although our results did not reveal an association between experience and competence dealing with time issues, experienced physiotherapists may work more efficiently and have the time to provide patient education and advice [9, 26] and therefore have better communication with patients living with chronic pain.

Items included in the emotional involvement score refer to a physiotherapist's willingness to engage at an emotional level and refer to emotional responses to the management of chronic pain, e.g. "I become distressed if I get too emotionally involved with a chronic pain sufferer".



Participants from our study who had more than ten years of clinical experience showed a deeper emotional involvement with individuals suffering from chronic pain. Our results contrast with those of a recent study that concluded that age and years of experience had no influence on physiotherapists' engagement with patients living with chronic pain [18]. There is conflicting report in the literature regarding the development of burnout. Physiotherapists with less than five years of clinical experience have been shown to have higher levels of emotional exhaustion (inability to cope with a situation at a psychological level) and depersonalisation (negative and cynical attitudes towards a patient) than more experienced physiotherapists, which are two characteristics of burnout [27]. Younger physiotherapists are at a higher risk of developing burnout, which can diminish their psychological and physical health as well as the quality of treatment they provide [27]. Opposite conclusions have also been reported, stating that burnout was positively correlated with the amount of work experience of physiotherapists [28]. Future research could investigate whether burnout among more experienced physiotherapists could be related to their deeper emotional involvement and if the level of burnout among physiotherapists involved in the care of individuals living with chronic pain differs from that of physiotherapists who do not see this population. Specific training aimed at helping physiotherapists to develop their relational and engagement skills may help them better deal with individuals living with chronic pain [18].

An example of an item included in the empathy subscore is "the chronic pain sufferer is not just imagining or exaggerating his or her pain". Participants from our study who had previous experience working in a multidisciplinary pain clinic (n = 3/14) showed more empathy towards individuals with chronic pain. Although we found no association between a personal history of chronic pain and physiotherapists' attitudes and beliefs towards pain, one study

reported that physiotherapists felt that their personal history of pain made them more empathetic [9].

Several studies have measured professionals' attitudes and beliefs towards low back pain, but only two have observed how attitudes and beliefs manifested during clinical encounters with patients [9, 29]. One study observed that when physiotherapists were faced with patients they considered difficult to treat, they either aborted the treatment session to refer the patient back to the physician or multiplied treatments hoping for an eventual improvement [9]. The other study confirmed professionals' poorer communication and lack of empathy during their clinical encounters with patients living with chronic low back pain compared with those consulting for acute or sub-acute low back pain, possibly because of professionals' perception that they have limited options to offer to individuals with chronic pain [29]. Further research should evaluate how professionals' attitudes and beliefs towards pain manifest during clinical encounters.

### **Limitations**

Reliability and validity of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals are currently under study (personal communication) but have not been reported yet. Only face and content validity have been evaluated. The cut-off points for appropriate attitudes and beliefs for the total score and subscores have not been established. We opted to use this questionnaire because it is the only one designed to specifically evaluate physiotherapists' attitudes and beliefs towards chronic pain.

The questionnaire is self-administered and represents perceived attitudes and beliefs towards chronic. There is a possibility of social desirability bias as participants may have selected the answers they recognized to be the most acceptable rather than the answers that represent their

own attitudes and beliefs. Further, participants' attitudes and beliefs were not observed during clinical encounters. We do not know if the perceived attitudes and beliefs identified by the questionnaire take place in practice.

Another limitation to our study is the small sample size which precludes us from generalizing results to other settings or contexts.

#### IMPLICATIONS FOR REHABILITATION

- Physiotherapists' attitudes and beliefs towards chronic pain can influence the type of treatment they provide to individuals with chronic pain.
- In our sample of fourteen physiotherapists, those who have more than ten years of clinical experience show more emotional involvement and those with previous experience working in a multidisciplinary pain clinic tend to show more empathy towards individuals living with chronic pain.
- Physiotherapists' sex and a personal history of chronic pain did not influence their attitudes and beliefs towards chronic pain.

## **Conclusion**

Physiotherapists who have more than ten years of clinical experience show more emotional involvement and those with and a previous experience of work in a multidisciplinary pain clinic tend to show more empathy towards individuals living with chronic pain. Physiotherapists need to balance emotional involvement and empathy. They may benefit from participating in specific training aimed at developing their relational and engagement skills,

which could help them better deal with patients consulting for chronic pain and at the same time allow patients to receive better support.

### **Acknowledgement**

We would like to thank Tatiana Orozco for assisting with data entry and Dr Vincent-Philippe Lavallée for his assistance in data analysis using R (version 3.0.2).

### **Declaration of interest**

The authors declare that there is no conflict of interest.

This work and the French translation of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals was supported by Edith Strauss Rehabilitation Research Projects grant offered by Richard and Edith Strauss Canada Foundation; Faculty of Graduate Studies of the University of Montreal and the School of Rehabilitation of University of Montreal, joint Writing Scholarship for SMC.

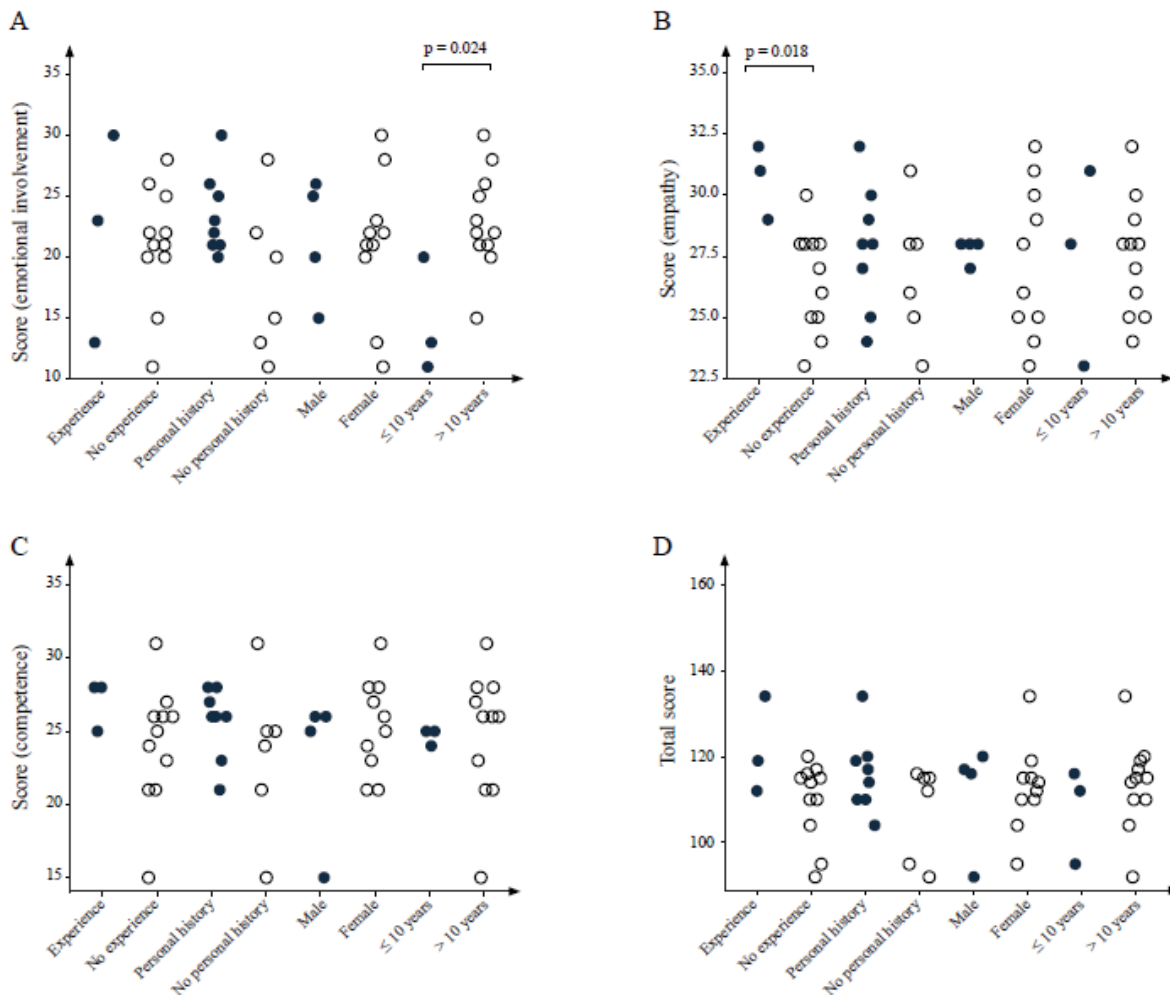
**Table 1.** Socio-demographic characteristics, education and experience of the groups.

		Groups			
		<u>A</u>	<u>B</u>	<u>C</u>	<u>Total</u>
		(n=6)	(n=3)	(n=5)	(n=14)
		n	n	n	N
Sex	Male	2	1	1	4
	Female	4	2	4	10
Age	30-39	2	1	0	3
	40-49	2	1	0	3
	50-59	2	1	5	8
Degree	Bachelors degree in PT	6	3	5	14
	Masters or PhD degree	0	0	0	0
Years of clinical experience	≤ 10	2	1	0	3
	> 10	4	2	5	11
Personal history of chronic pain or family member living with it	Yes	3	1	4	8
	No	3	2	1	6
Years of clinical experience working with individuals with chronic pain	< 5 years	1	1	0	2
	≥ 5 years	5	2	5	12
Post-graduate training taken (one participant can have taken more than one course)	Manual therapy	2	3	3	8
	Mechanical Diagnosis and Therapy (McKenzie)	6	3	1	10
	Cognitive behavioral therapy	0	1	1	2
	Chronic pain management	1	0	0	1
	Other (electrotherapy, exercise prescription, Mulligan, Sahrman, taping, temporomandibular joint, vestibular rehabilitation)	2	1	5	8
Experience working in a multidisciplinary pain clinic	Yes	2	1	0	3
	No	4	2	5	11

**Table 2.** Scores and subscores to the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals.

	Mean	Median	SD	IQR [Q1; Q3]
Total score	112.36	114.50	10.45	[110; 117]
Competence	24.71	25.50	3.89	[23; 27]
Emotional involvement	21.21	21.50	5.40	[13; 21]
Empathy	27.43	28.00	2.62	[25; 28]

SD=Standard deviation; IQR=Interquartile range; 1st quartile; 3rd quartile.



**Figure 1.** The association between the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals and its subscores with socio-demographic characteristics and experience. A. Emotional involvement subscore. B. Empathy subscore. C. Competence subscore. D. Total score. Experience = experience working in a multidisciplinary pain clinic; No experience = no experience working in a multidisciplinary pain clinic; Personal history = personal history of chronic pain (present of past episode, participant or family member; No personal history = no personal history of chronic pain (present or past episode, participant or family member); ≤ 10 = equal or less than ten years of clinical experience working as a physiotherapist; > 10 = more than ten years of clinical experience working as a physiotherapist.

**Appendix A.** Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals.

**Chronic Pain Questionnaire for Health Professionals**

Bunzli, S, Quintner, J and Griffiths, B

We are interested in obtaining the views of health professionals toward chronic pain sufferers. Some professional believe that little can be done for them, and describe treating chronic pain sufferers as a heart-sink experience. Others believe that much can be done to relieve their suffering. There are no right or wrong responses to the items below, we ask you to please give us your true and considered responses to them.



	Strongly disagree	Disagree	Somewhat disagree	Undecided	Somewhat agree	Agree	Strongly Agree
1. I should not get too emotionally involved with chronic pain sufferers because that only makes me feel helpless							
2. Pain sufferers often exaggerate the difficulties they face in their lives							
3. Chronic pain sufferers are in genuine distress							
4. I can help pain sufferers deal with their problems by showing my sympathy							
5. As pain sufferers believe that I am an expert, I should behave accordingly							
6. There is not much I can do to help a chronic pain sufferer							
7. Chronic pain is not life-threatening so I should not devote too much attention to pain sufferers							
8. Pain sufferers should just get on with life and stop complaining							
9. The chronic pain sufferer is not just imagining or exaggerating his or her pain							
10. The expectation of chronic pain sufferers that I can help them just makes me feel inadequate							
11. I try to imagine what it must be like to be the chronic pain sufferer sitting in front of me							
12. The chronic pain sufferer has very little to contribute to the management of his or her problem							
13. Chronic pain sufferers deserve our compassion							

	Strongly disagree	Disagree	Somewhat disagree	Undecided	Somewhat agree	Agree	Strongly agree
14. Dealing with chronic pain sufferers just makes me feel incompetent because there is not much I can do to help them							
15. I become distressed if I get too emotionally involved with a chronic pain sufferer							
16. When meeting with a chronic pain sufferer I try hard to avoid imagining what it must be like to be in chronic pain							
17. I should be professional and not get emotionally involved with the chronic pain sufferer							
18. Too much of my time can be taken up dealing with chronic pain sufferers when it is known that nothing much can be done to help them							
19. Dealing with chronic pain sufferers can be frustrating when I know I am incapable of meeting their expectations							
20. I get no satisfaction in trying to help chronic pain sufferers							
21. Letting chronic pain sufferers talk about the effects of pain on other areas of their life can be of help to them							
22. It is neither helpful to the chronic pain sufferer nor to me if I become emotionally involved							

**Appendix B.** Questionnaire on socio-demographic characteristics and experience.

**QUESTIONNAIRE ON SOCIO-DEMOGRAPHIC CHARACTERISTICS AND  
EXPERIENCE**

**We would like to ask you some questions about you and your clinical experience as a physiotherapist (PT).**

**Section 1: Socio-demographics**

1. What is your gender?

- Male
- Female

2. What is your age?

- 20-29
- 30-39
- 40-49
- 50-59
- 60+

3. Specify the degree of your professional training in PT completed:

- Bachelors degree
- Masters degree (Professional degree)
- Masters degree (Research degree)
- Doctorate degree

4. How many years of clinical experience do you have in your profession as a PT? (not including educational or health/personal leaves)

- \_\_\_\_\_ months
- 0-5
- 6-10
- 11-15
- 16-20
- 21-25
- 26-30
- 31 +

5. Have you ever experienced chronic pain yourself (present or past episode) or is there any member of your family suffering from it?

- Yes
- No

6. Do you currently work mostly in the:

- Site A (not reported to maintain participants' confidentiality)
- Site B
- Site C

7. Do you work with chronic pain patients (i.e. do you see at least 1 patient per month with chronic pain)?

- Yes
- No

**\*If NO, the survey will be terminated. Thank you for your participation.**

**Section 2: Work Environment and Client Characteristics**

For the following questions, mark the box that best represents the work environment in which you assess or treat clients with chronic pain.

8. How many years of clinical experience do you have working with clients with chronic pain?

- <5 year
- 5 years or more

9. What post-graduate course have you taken?

- Manual Therapy
- McKenzie
- Cognitive behavioural management such as graded activity
- Other, please specify : \_\_\_\_\_

10. What is your specialization?

- Manual Therapy
- McKenzie
- Chronic Pain Therapist
- Other, please specify : \_\_\_\_\_

11. Have you ever worked in a chronic multidisciplinary pain clinic?

- Yes
- No

## References

- [1] Andersson HI, Ejlertsson G, Leden I, Rosenberg C, Centre BH, Bromölla. Chronic Pain in a Geographically Defined General Population: Studies of Differences in Age, Gender, Social Class, and Pain Localization. *Clin J Pain* 1993;9(3):174-82.
- [2] Johannes CB, Le TK, Zhou X, Johnston JA, Dworkin RH. The Prevalence of Chronic Pain in United States Adults: Results of an Internet-Based Survey. *J Pain* 2010;11(11):1230-9.
- [3] Reitsma ML, Tranmer JE, Buchanan DM, Vandenkerkhof EG. The prevalence of chronic pain and pain-related interference in the Canadian population from 1994 to 2008. *Chronic Dis Inj Can* 2011;31(4):157-64.
- [4] Mäntyselkä PT, Kumpusalo EA, Ahonen RS, Takala JK. Direct and indirect costs of managing patients with musculoskeletal pain—challenge for health care. *European Journal of Pain* 2002;6(2):141-8.
- [5] Clare HA, Adams R, Maher CG. A systematic review of efficacy of McKenzie therapy for spinal pain. *Aust J Physiother* 2004;50(4):209-16.
- [6] Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. *Aust J Physiother* 2002;48(4):297-302.
- [7] O'Sullivan PB, Phyty GDM, Twomey LT, Allison GT. Evaluation of Specific Stabilizing Exercise in the Treatment of Chronic Low Back Pain With Radiologic Diagnosis of Spondylolysis or Spondylolisthesis. *Spine* 1997;22(24):2959-67.
- [8] Bishop A, Foster NE, Thomas E, Hay EM. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain* 2008;135(1-2):187-95.

- [9] Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine* 2004;29(7):783-95.
- [10] De Rond MEJ, De Wit R, Van Dam FSAM, Van Campen BTM, Den Hartog YM, Klievink RMA. A pain monitoring program for nurses: Effects on nurses' pain knowledge and attitude. *J Pain Symptom Manage* 2000;19(6):457-67.
- [11] Houben RM, Ostelo RW, Vlaeyen JW, Wolters PM, Peters M, Stomp-van den Berg SG. Health care providers' orientations towards common low back pain predict perceived harmfulness of physical activities and recommendations regarding return to normal activity. *Eur J Pain* 2005;9(2):173-83.
- [12] Magalhães MO, Costa LOP, Cabral CMN, Machado LAC. Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: A cross-sectional study *Braz J Phys Ther* 2012;16(3):248-53.
- [13] Pincus T, Foster NE, Vogel S, Santos R, Breen A, Underwood M. Attitudes to back pain amongst musculoskeletal practitioners: a comparison of professional groups and practice settings using the ABS-mp. *Man Ther* 2007;12(2):167-75.
- [14] Garcia DM, Mattos-Pimenta CA. Pain centers professionals' beliefs on non-cancer chronic pain. *Arq Neuropsiquiatr* 2008;66(2A):221-8.
- [15] Jones D, Ravey J, Steedman W. Developing a measure of beliefs and attitudes about chronic non-malignant pain: A pilot study of occupational therapists. *Occup Ther Int* 2000;7(4):232-45.
- [16] Askew R, Kibelstis C, Overbaugh S, Walker S, Nixon-Cave K, Shepard KF. Physical therapists' perception of patients' pain and its effect on management. *Physiother Res Int* 1998;3(1):37-57.

- [17] Parsons S, Harding G, Breen A, Foster N, Pincus T, Vogel S, et al. Will shared decision making between patients with chronic musculoskeletal pain and physiotherapists, osteopaths and chiropractors improve patient care? *Fam Pract* 2012;29(2):203-12.
- [18] Barlow S, Stevens J. Australian physiotherapists and their engagement with people with chronic pain: Do their emotional responses affect practice? *J Multidiscip Healthc* 2014;7:231-7.
- [19] Tait RC. Empathy: Necessary for effective pain management? *Current Pain and Headache Reports* 2008;12(2):108-12.
- [20] Marshall MN. Sampling for qualitative research. *Fam Pract* 1996;13(6):522-6.
- [21] Morin Chabane S, Coutinho F, Laliberté M, Ehrmann Feldman D. Out-Patient Physiotherapists' Attitudes and Beliefs towards Chronic Pain: A Qualitative Study. Forthcoming 2015.
- [22] Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW, Wolters PM, de Vet HC. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. *Man Ther* 2003;8(4):214-22.
- [23] Airaksinen O, Brox JI, Cedraschi C, Hildebrandt J, Klaber-Moffett J, Kovacs F, et al. Chapter 4 European guidelines for the management of chronic nonspecific low back pain. *Eur Spine J* 2006;15(2):s192-s300.
- [24] Harland N, Lavalley D. Biopsychosocial management of chronic low back pain patients with psychological assessment and management tools: Overview. *Physiotherapy* 2003;89(5):305-12.

- [25] Pillastrini P, Gardenghi I, Bonetti F, Capra F, Guccione A, Mugnai R, et al. An updated overview of clinical guidelines for chronic low back pain management in primary care. *Joint Bone Spine* 2012;79(2):176-85.
- [26] Slade SC, Molloy E, Keating JL. The dilemma of diagnostic uncertainty when treating people with chronic low back pain: a qualitative study. *Clin Rehabil* 2012;26(6):558-69.
- [27] Scutter S, Goold M. Burnout in recently qualified physiotherapists in South Australia. *Aust J Physiother* 1995;41(2):115-8.
- [28] Mandy A, Saeter M, Lucas K. Burnout and self-efficacy in Norwegian physiotherapists. *International Journal of Therapy and Rehabilitation* 2004;11(6):251-8.
- [29] Gulbrandsen P, Madsen HB, Benth JS, Lærum E. Health care providers communicate less well with patients with chronic low back pain – A study of encounters at a back pain clinic in Denmark. *Pain* 2010;150(3):458-61.



## **Chapter 4. Discussion**

### **4.1 Summary of results**

The general objective of this research project was to gain an understanding of rehabilitation professionals' attitudes and beliefs towards chronic pain.

To summarize and synthesize rehabilitation professionals' attitudes and beliefs towards chronic pain and their impact on pain management (objective 1), we conducted a scoping review of the literature, following a defined framework (22, 23). The results showed that these attitudes and beliefs include 1) the development of chronic pain being attributed to an ongoing physical injury vs the contribution of biopsychosocial factors ; 2) the relationship between pain and disability ; 3) PTs' ability to recognize the psychological aspects of chronic pain but lack of consensus as per whether it is their role and responsibility to address them ; 4) PTs' having varied emotional responses towards individuals living with chronic pain. More positive responses are influenced by work experience in pain clinic and more negative responses are elicited by their perceived limited treatment to offer, lack of training, lack of knowledge and expertise in the management of pain; and perception that patients with chronic pain are difficult to treat ; 5) the poorer empathy and quality of information given to patients consulting for chronic pain ; 6) the belief in the existence of a cure for chronic pain vs the possibility to reduce functional limitations despite the persistence of the pain and 7) the effectiveness of educational interventions in improving rehabilitation professionals' attitudes and beliefs towards chronic pain.

To explore PTs' perceptions of those attitudes and beliefs (objective 2), we conducted three focus groups with 14 out-patient PTs working in public out-patient departments. We first showed a video that we had produced illustrating the attitudes and beliefs identified through the scoping review, followed by a discussion about attitudes and beliefs towards chronic pain. Through thematic analysis of the transcripts, we identified three core themes related to PTs' attitudes and beliefs towards chronic pain: 1) attitudes and beliefs about the development of chronic pain; 2) attitudes and beliefs about legitimacy of chronic pain and its relationship with disability and 3) PTs' beliefs in their ability to manage psychological aspects of their patient's pain. We concluded that PTs need to be further educated and trained on how to assess and treat psychosocial factors associated with pain.

To describe PTs' attitudes and beliefs towards chronic pain and to see if they differ according to socio-demographic characteristics and experience (objective 3), we conducted a study whereby we administered a questionnaire to physiotherapists. We analysed the responses of 14 out-patient physiotherapists to the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals (total score, subscores of competence, emotional involvement and empathy). The results showed that PTs with greater amount of general clinical experience showed more emotional involvement and those with specific multidisciplinary pain clinic experience showed more empathy towards individuals living with chronic pain.

Participants in the focus groups completed the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals twice (the first time pre focus groups, the second time post focus groups). The pre-post analysis revealed no statistically significant differences for all three subcores (of competence, emotional involvement and empathy). This could be

explained by the fact that our focus groups had a more exploratory purpose and did not aim specifically at changing participants' attitudes and beliefs towards chronic pain.

## **4.2 Link to literature**

Patients' beliefs and psychosocial factors (such as fear of pain, self-efficacy, psychological distress and catastrophizing thoughts) regarding their pain can influence their long-term outcomes including disability (42). Health care professionals' beliefs are recognized to influence patients' beliefs (43), therefore, it becomes important to pay attention to the beliefs held by professionals. PTs' pain beliefs influence the treatment and explanations they provide to individuals living with chronic pain as well as the outcome of the therapeutic encounter with them (13, 44). Some general practitioners and PTs hold fear-avoidance beliefs which influence the advice they gave to patients of not returning to work and avoiding certain activities (45). One study found that general practitioners' recommendations of avoiding activities for hypothetical patients (described by vignettes) were associated with their biomedical treatment orientation (43). On the other hand, this same study challenged the assumptions that professionals' pain beliefs influenced patients' outcomes by not observing an association between general practitioners' treatment orientation, treatment behaviour and outcome for real patients with low back pain (43). The authors hypothesised that an existing association was either missed (due to methodological shortcomings) or not observed because none of the standard treatments for low back pain change patients' outcomes (in which case the influence of attitudes and beliefs would not make a difference) (43). They considered the absence of such an association to be surprising given the literature showing the influence of professionals' attitudes and beliefs on guidelines adherence (43, 46).

Evidence-based guidelines for the treatment of chronic low back pain recommend the use of a biopsychosocial approach over the use of the biomedical approach as it leads to a better treatment outcome (47). Although the biopsychosocial model of pain is gaining more acceptance among physiotherapists, it is not yet widely used (13, 48). Further, the use of this model does not only entail the identification of psychosocial factors of pain, but also the application of interventions targeting patients' psychosocial factors associated to pain. Interventions aimed at modifying patients' beliefs and behaviours regarding their pain are effective in improving long-term outcomes (49-51). Although physiotherapists are generally aware of psychosocial factors that can contribute to the persistence of pain, they report inappropriate understanding and underutilization of interventions targeting these factors (52). Participants of the focus groups we conducted also reported feeling undertrained in the treatment of psychosocial factors of pain (53).

Educational interventions can be effective in changing rehabilitation professionals' attitudes and beliefs from a biomedical orientation to a more behavioral orientation to treatment (54-58). It is unclear whether these educational interventions explicitly address attitudes and beliefs towards chronic pain or education on pain mechanisms (54). The best approach to educate rehabilitation professionals on the effect of their attitudes and beliefs on the management of chronic pain has yet to be determined. There is a need for education of rehabilitation professionals on their roles and responsibilities addressing psychosocial factors of chronic pain. Recently, a cognitive functional therapy approach (including but not limited to education on the neurophysiology of pain, re-education of normal postural and movement behaviors, integration of normal movement behaviors into functional daily tasks as a mean to decrease avoidance, pain behavior and fear and advice on physical activities and lifestyle

training) was shown to improve long-term outcomes in pain and disability as well as psychosocial outcomes (depression, anxiety, back beliefs, fear of physical activity, catastrophizing, and self-efficacy) for individuals consulting for non-specific chronic low back pain (59). The Progressive attainment goal program (PGAP) is an evidence-based cognitive-behavioral therapy intervention targeting psychosocial barriers to recovery (such as catastrophizing and fear of pain) for people suffering from pain (60). Trained professionals, including physiotherapists and occupational therapists, who provide the PGAP follow intervention guidelines (60).

Professionals' adherence to guidelines and recommendations is associated with their belief that the recommended treatment is efficacious (61). It is questionable whether PTs holding strong biomedical views of pain would feel comfortable providing interventions targeting patients' psychosocial factors related to chronic pain or using cognitive functional therapy. PTs need to be educated on the lack of evidence supporting the use of a biomedical treatment approach for chronic pain and on the evidence supporting the complex multi-dimensional factors of chronic pain (physical, behavioral, lifestyle, neuro-physiological, psychological, cognitive and social) (62). Recommendations were made on the skills (e.g. communication skills, reflective thinking, motivational interviewing, empathy, identifying cognitive-maladaptive behaviour, distinguishing between specific anatomical pathology vs complex chronic pain) and knowledge (e.g. understanding the multi-dimensional nature of chronic pain) that biomedically-oriented professionals should acquire to offer behavioral treatment to the chronic pain population (62). The integration of these new skills would require a shift in professionals' attitudes and beliefs towards chronic pain from a biomedical model to a biopsychosocial model of care. This shift may depend on PTs' willingness to

actively engage in adopting a new approach to treatment, the perceived benefit of the new approach and their ability to integrate this new treatment approach to their clinical routine and maintain it (63).

Another factor that could influence RPs' adherence to the biopsychosocial views of chronic pain is their perception of whether or not it is their role and responsibility to address the psychosocial aspects of chronic pain. The results of our scoping review (64) showed no consensus in this regard. PTs' perception that the treatment of psychosocial factors of pain falls out of their field of practice was again recently reported (63).

Our quantitative study revealed that PTs with a greater amount of general clinical experience showed more emotional involvement and those with specific multidisciplinary pain clinic experience showed more empathy towards individuals living with chronic pain. More experienced PTs may be able to play the role of mentors to help younger PTs cope better with the challenges of pain management and help them provide strong emotional support to those living with chronic pain. Younger PTs consult more experienced PTs to guide them when there is diagnostic uncertainty (65), supporting the role of experienced PTs as mentors who assist younger PTs in dealing with complex cases. A mentorship program for PTs to implement a biopsychosocial approach towards chronic pain has recently been described (63) and may be helpful in optimizing PT management of persons with chronic pain.

### **4.3 Strengths and limitations**

There are both strengths and limitations to the research described in this thesis: the scoping review, focus groups/consultation sessions and survey. A strength of our scoping review (article 1) is that we followed a structured framework suggested by Arksey and

O'Malley and further elaborated by Levac (22, 23). This allowed us to map key concepts of the literature related to RPs' attitudes and beliefs towards chronic pain and present them in the form of a list of themes. Although we selected studies based on clear inclusion and exclusion criteria and performed rigorous thematic analysis, our results cannot reflect all the nuances and details contained in the included studies. We did not include gray literature, editorial, case studies which could have allowed to identify additional attitudes and beliefs towards chronic pain.

To complete the scoping review, we then pursued our work with an optional consultation step (article 2) that allowed us to validate and highlight three core themes related to PTs' attitudes and beliefs towards chronic pain. For our consultation step, we used a video that we created based on evidence from the scoping review. The video also served as a starting point for discussion with participants and helped illustrate the difficult concepts reflected by attitudes and beliefs. Participants' responses might have been influenced by this video shown just before the discussion. We believe that the decision of showing the video prior to the beginning of the discussion is acceptable considering that the aims of this study were to share the findings from the scoping review (knowledge translation) and consult stakeholders to get their perspectives on those findings. The thematic analysis of the transcripts did not reveal new emerging themes thus validating the thoroughness of the scoping review. Participants were out-patient university hospital-based physiotherapists. Results cannot be generalized to other settings and they are exploratory in nature due to the small sample size. We cannot comment on the relative importance or frequency of ideas in the general population of physiotherapists because participants were purposefully selected.

We used the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals to survey PTs. Although content validity has been established, other psychometric properties of the questionnaire that we used are yet to be established although this is currently underway (personal communication with S. Bunzli). Another limitation is that because we did not observe participants during clinical encounters, we don't know if the responses represent participants' actual attitudes and beliefs during real life situations.

#### **4.4 Future directions**

Future research should observe how professionals' attitudes and beliefs towards chronic pain manifest in clinical encounters and also measure their impact on treatment outcome.

Another course of action would be to develop educational interventions for rehabilitation professionals on the impact their attitudes and beliefs have on their clinical decision making and quality of treatment provided to their patients. There is a need to determine the best educational approach for rehabilitation professionals and students in terms of form (in person, online, etc.), duration, structure, content (pain mechanism vs pain management vs communication skills vs attitudes and beliefs).

Future research should also assess the effect of engaging professionals in a reflection on their own attitudes and beliefs on their practice, as well as the effectiveness of mentorship of less experienced therapists by those who are experienced in working with persons with chronic pain.



Determining the psychometric properties of the Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals would help further develop this assessment tool that fulfills an important gap in the current literature.

Finally, the development of guidance from professional regulatory agencies regarding the role and responsibilities of rehabilitation professionals in addressing psychosocial aspects of chronic pain could give professionals confidence in their ability to do so and reassurance that they remain within their scope of practice.

## **4.5 Clinical implications**

Rehabilitation professionals' attitudes and beliefs towards chronic pain can influence their clinical decision-making and the type of information and treatment they provide to patients. As the biopsychosocial model of care is still not widely used (although it is more accepted) by PTs, there is a need for education at both undergraduate and post-graduate levels on the use of the biopsychosocial model of care for individuals living with chronic pain. Given that PTs report feeling under-confident and under-trained to identify and manage the psychological aspects of patients consulting for chronic pain, those working with this population require further training on how to identify and address the psychosocial aspects of chronic pain. Physiotherapists who have more years of clinical experience and who have experience working in multidisciplinary pain clinics may be able to support less experienced physiotherapists in their engagement with patients living with chronic pain.

## **Conclusion**

The main objective of the scoping review was to describe rehabilitation professionals' attitudes and beliefs towards chronic pain. Our objectives for the consultations sessions were 1) to share the findings from our scoping review with stakeholders (KT); 2) validate the findings and get additional perspectives on them and 3) get additional references on the topic. Finally, our objectives for the survey were to describe PTs' attitudes and beliefs towards chronic pain in a quantitative fashion and to see if they differed according to socio-demographic characteristics (sex, personal history of chronic pain) and experience (years of clinical experience and experience working in a multidisciplinary pain clinic).

Our conclusions are that the biopsychosocial model of care which is recommended by evidence based guidelines is still not widely used by rehabilitation professionals. Educational interventions have been shown to be effective in bringing professionals to shift from a biomedical model of care to a more biopsychosocial one. There are still gaps in the understanding of psychosocial aspects of pain and role and responsibility addressing them. The impact of attitudes and beliefs on clinical decision-making and treatment provided was documented, but knowledge still needs to be gained on the impact of attitudes and beliefs on treatment outcome.

Our consultation sessions confirmed that PTs feel unprepared to address psychosocial factors contributing to their patients' pain experience.

Our quantitative study revealed that PTs with more experience have more emotional involvement with patients and those with previous experience working in a multidisciplinary pain clinic have greater empathy towards individuals living with chronic pain.

What needs to be done next is educating rehabilitation professionals and students on the impact of their attitudes and beliefs on the quality of treatment they provide to individuals living with chronic pain. We need to support rehabilitation professionals and provide interventions addressing psychosocial factors of chronic pain. Educational interventions geared at rehabilitation professionals and guidance from regulatory bodies need to be developed, implemented and evaluated so that rehabilitation management is optimized for patients with chronic pain.

## Bibliography

1. International Association for the Study of Pain. IASP Taxonomy 2014 [2 February 2016]. Available from: <http://www.iasp-pain.org/Taxonomy#Pain>.
2. Reitsma ML, Tranmer JE, Buchanan DM, Vandenkerkhof EG. The prevalence of chronic pain and pain-related interference in the Canadian population from 1994 to 2008. *Chronic Dis Inj Can*. 2011;31(4):157-64.
3. Garcia DM, Mattos-Pimenta CA. Pain centers professionals' beliefs on non-cancer chronic pain. *Arq Neuropsiquiatr*. 2008;66(2A):221-8.
4. Breivik H, Collett B, Ventafridda V, Cohen R, Gallacher D. Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. *Eur J Pain*. 2006;10(4):287-.
5. Lynch ME, Campbell F, Clark AJ, Dunbar MJ, Goldstein D, Peng P, et al. A systematic review of the effect of waiting for treatment for chronic pain. *Pain*. 2008;136:97-116.
6. Murray CJL, Vos T, Lozano R, Naghavi M, Flaxman AD, Michaud C, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012;380(9859):2197-223.
7. Clare HA, Adams R, Maher CG. A systematic review of efficacy of McKenzie therapy for spinal pain. *Aust J Physiother*. 2004;50(4):209-16.
8. Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. *Aust J Physiother*. 2002;48(4):297-302.

9. O'Sullivan PB, Phyty GDM, Twomey LT, Allison GT. Evaluation of Specific Stabilizing Exercise in the Treatment of Chronic Low Back Pain With Radiologic Diagnosis of Spondylolysis or Spondylolisthesis. *Spine*. 1997;22(24):2959-67.
10. Rossignol M, Arsenault B. Guide de pratique : Clinique des lombalgies interdisciplinaire en première ligne (CLIP). 2006:1-43.
11. Van Middelkoop M, Rubinstein S, Kuijpers T, Verhagen A, Ostelo R, Koes B, et al. A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *Eur Spine J*. 2011;20(1):19-39.
12. Bishop A, Foster NE, Thomas E, Hay EM. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain*. 2008;135(1-2):187-95.
13. Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine*. 2004;29(7):783-95.
14. De Rond MEJ, De Wit R, Van Dam FSAM, Van Campen BTM, Den Hartog YM, Klievink RMA. A pain monitoring program for nurses: Effects on nurses' pain knowledge and attitude. *J Pain Symptom Manage*. 2000;19(6):457-67.
15. Houben RM, Ostelo RW, Vlaeyen JW, Wolters PM, Peters M, Stomp-van den Berg SG. Health care providers' orientations towards common low back pain predict perceived harmfulness of physical activities and recommendations regarding return to normal activity. *Eur J Pain*. 2005;9(2):173-83.

16. Magalhães MO, Costa LOP, Cabral CMN, Machado LAC. Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: A cross-sectional study *Braz J Phys Ther.* 2012;16(3):248-53.
17. Pincus T, Foster NE, Vogel S, Santos R, Breen A, Underwood M. Attitudes to back pain amongst musculoskeletal practitioners: a comparison of professional groups and practice settings using the ABS-mp. *Man Ther.* 2007;12(2):167-75.
18. Askew R, Kibelistis C, Overbaugh S, Walker S, Nixon-Cave K, Shepard KF. Physical therapists' perception of patients' pain and its affect on management. *Physiother Res Int.* 1998;3(1):37-57.
19. Blomqvist K. Older people in persistent pain: nursing and paramedical staff perceptions and pain management. *J Adv Nurs.* 2003;41(6):575-84.
20. Chibnall JT, Tan RC. Social and medical influences on attributions and evaluations of chronic pain. *Psychol Health.* 1999;14(4):719-29.
21. De Ruddere L, Goubert L, Stevens MAL, Deveugele M, Craig KD, Crombez G. Health Care Professionals' Reactions to Patient Pain: Impact of Knowledge About Medical Evidence and Psychosocial Influences. *J Pain.* 2014;15(3):262-70.
22. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol.* 2005;8(1):19-32.
23. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci.* 2010;5(1):69.
24. Anderson S, Allen P, Peckham S, Goodwin N. Asking the right questions: scoping studies in the commissioning of research on the organisation and delivery of health services. *Health Research Policy & Systems.* 2008;6:7.

25. Basch CE. Focus Groups Interview: An Underutilized Research Technique for Improving Theory and Practice in Health Education. *Health Educ Behav.* 1987;14.
26. National Institute for Health and Clinical Excellence. How to change practice. Understand, identify and overcome barriers to change. 2007:1-48.
27. Canadian Institutes of Health Research. PHSI Knowledge Translation 2014 [19 March 2016]. Available from: <http://cihr-irsc.gc.ca/e/34350.html>.
28. Brett-MacLean PJ, Cave MT, Yiu V, Kelner D, Ross DJ. Film as a means to introduce narrative reflective practice in medicine and dentistry: a beginning story presented in three parts. *Reflective Practice.* 2010;11(4):499-516.
29. Ber R, Alroy G. Twenty Years of Experience Using Trigger Films as a Teaching Tool. [Miscellaneous]: *Academic Medicine* 2001.
30. Ber R, Alroy G. Teaching professionalism with the aid of trigger films. *Med Teach.* 2002;24(5):528-31.
31. Lumlertgul N, Kijpaisalratana N, Pityaratstian N, Wangsaturaka D. Cinemeducation: A pilot student project using movies to help students learn medical professionalism. *Med Teach.* 2009;31(7):e327-32.
32. O'Toole JK, Solan LG, Burkhardt MC, Klein MD. Watch and Learn: An Innovative Video Trigger Curriculum to Increase Resident Screening for Social Determinants of Health. *Clin Pediatr (Phila).* 2013;52(4):344-50.
33. Rabinowitz D, Melzer-Geva M, Ber R. Teaching the cultural dimensions of the patient-physician relationship: a novel approach using didactic trigger films. *Med Teach.* 2002;24(2):181-5.

34. Alexander M, Hall MN, Pettice YJ. Cinemeducation: an innovative approach to teaching psychosocial medical care. *Fam Med*. 1994;26(7):430-3.
35. Saab BR, Usta J, Major S, Musharrafieh U, Ashkar K. Communication skills in a Lebanese medical school: from movie theaters to medical classrooms. *Fam Med*. 2005;37(2):90-2.
36. Marshall MN. Sampling for qualitative research. *Fam Pract*. 1996;13(6):522-6.
37. Morgan DL. Focus Groups. *Annual Review of Sociology*. 1996;22:129-52.
38. Dedoose Version 6.1.11, web application for managing, analyzing, and presenting qualitative and mixed method research data (2015). Los Angeles, CA: SocioCultural Research Consultants, LLC ([www.dedoose.com](http://www.dedoose.com)).
39. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
40. Law M, Stewart D, Letts L, Pollock N, Bosch J, Westmorland M. Guidelines for Critical Review of Qualitative Studies Based on Guidelines for Critical Review Form- Qualitative Studies. 1998:1-9.
41. Bishop A, Thomas E, Foster NE. Health care practitioners' attitudes and beliefs about low back pain: a systematic search and critical review of available measurement tools. *Pain*. 2007;132(1):91-101.
42. Lee H, Hübscher M, Moseley GL, Kamper SJ, Traeger AC, Mansell G, et al. How does pain lead to disability? A systematic review and meta-analysis of mediation studies in people with back and neck pain. *Pain*. 2015;156(6):988-97.



43. Sieben JM, Vlaeyen JW, Portegijs PJ, Warmenhoven FC, Sint AG, Dautzenberg N, et al. General practitioners' treatment orientations towards low back pain: influence on treatment behaviour and patient outcome. *European Journal of Pain*. 2009;13(4):412-8.
44. Houben RM, Gijsen A, Peterson J, de Jong PJ, Vlaeyen JW. Do health care providers' attitudes towards back pain predict their treatment recommendations? Differential predictive validity of implicit and explicit attitude measures. *Pain*. 2005;114(3):491-8.
45. Linton S, Vlaeyen J, Ostelo R. The Back Pain Beliefs of Health Care Providers: Are We Fear-Avoidant? *Journal of Occupational Rehabilitation*. 2002;12(4):223-32.
46. Overmeer T, Linton SJ, Holmquist L, Eriksson M, Engfeldt P. Do evidence-based guidelines have an impact in primary care? A cross-sectional study of Swedish physicians and physiotherapists. *Spine*. 2005;30(1):146-51.
47. van Tulder MW, Ostelo R, Vlaeyen JW, Linton SJ, Morley SJ, Assendelft WJ. Behavioral treatment for chronic low back pain: a systematic review within the framework of the Cochrane Back Review Group. *Spine*. 2000;25(20):2688-99.
48. Van Wilgen P, Beetsma A, Neels H, Roussel N, Nijs J. Physical therapists should integrate illness perceptions in their assessment in patients with chronic musculoskeletal pain; a qualitative analysis. *Man Ther*. 2014;19(3):229-34.
49. Buchbinder R, Jolley D, Wyatt M. Population based intervention to change back pain beliefs and disability: three part evaluation. *BMJ*. 2001;322(7301):1516-20.
50. Linton SJ, Ryberg M. A cognitive-behavioral group intervention as prevention for persistent neck and back pain in a non-patient population: a randomized controlled trial. *Pain*. 2001;90(1-2):83-90.

51. Pincus T, Vlaeyen JW, Kendall NA, Von Korff MR, Kalauokalani DA, Reis S. Cognitive-behavioral therapy and psychosocial factors in low back pain: directions for the future. *Spine*. 2002;27(5):E133-E8.
52. Alexanders J, Anderson A, Henderson S. Musculoskeletal physiotherapists' use of psychological interventions: a systematic review of therapists' perceptions and practice. *Physiotherapy*. 2015;101(2):95-102.
53. Morin Chabane S, Coutinho F, Laliberté M, Ehrmann Feldman D. Out-Patient Physiotherapists' Attitudes and Beliefs towards Chronic Pain: A Qualitative Study. Forthcoming 2015.
54. Jones D, Ravey J, Steedman W. Developing a measure of beliefs and attitudes about chronic non-malignant pain: A pilot study of occupational therapists. *Occup Ther Int*. 2000;7(4):232-45.
55. Latimer J, Maher C, Refshauge K. The attitudes and beliefs of physiotherapy students to chronic back pain. *Clin J Pain*. 2004;20(1):45-50.
56. Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW, Wolters PM, de Vet HC. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. *Man Ther*. 2003;8(4):214-22.
57. Overmeer T, Boersma K, Main CJ, Linton SJ. Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course? *J Eval Clin Pract*. 2009;15(4):724-32.
58. Rochman DL, Sheehan MJ, Kulich RJ. Evaluation of a pain curriculum for occupational therapists: experiences from a master's-level graduate program over six years. *Disabil Rehabil*. 2013;35(22):1933-40.

59. O'Sullivan K, Dankaerts W, O'Sullivan L, O'Sullivan PB. Cognitive functional therapy for disabling nonspecific chronic low back pain: multiple case-cohort study. *Phys Ther.* 2015;95(11):1478-88.
60. University Centre for Research on Pain and Disability. The Progressive Goal Attainment Program (PGAP) 2016 [15 May 2016]. Available from: <https://www.pgapworks.com/en/whatisthepgap/index.php>.
61. Darlow B, Fullen BM, Dean S, Hurley DA, Baxter GD, Dowell A. The association between health care professional attitudes and beliefs and the attitudes and beliefs, clinical management, and outcomes of patients with low back pain: a systematic review. *Eur J Pain.* 2012;16(1):3-17.
62. O'Sullivan P. It's time for change with the management of non-specific chronic low back pain. *Br J Sports Med.* 2012;46(4):224-7.
63. Sanders T, Nio Ong B, Sowden G, Foster N. Implementing change in physiotherapy: professions, contexts and interventions. *Journal of health organization and management.* 2014;28(1):96-114.
64. Morin Chabane S, Ehrmann Feldman D, Laliberté M, Miller-Nesbitt A, Coutinho F. Rehabilitation professionals' attitudes and beliefs towards chronic pain: a systematic scoping review of the literature. Forthcoming 2015.
65. Slade SC, Molloy E, Keating JL. The dilemma of diagnostic uncertainty when treating people with chronic low back pain: a qualitative study. *Clin Rehabil.* 2012;26(6):558-69.

# Appendix 1. Ethics approval



Comité d'éthique de la recherche en santé

10 October 2014

Objet: Approbation éthique – « Rehabilitation Professionals' Attitudes and Beliefs Towards Chronic Pain : a Scoping Review and a Knowledge Translation Project »

Mme Sabrina Morin Chabane,

Le Comité d'éthique de la recherche en santé (CERES) a étudié le projet de recherche susmentionné et a délivré le certificat d'éthique demandé suite à la satisfaction des exigences précédemment émises. Vous trouverez ci-joint une copie numérisée de votre certificat; copie également envoyée à votre directeur/directrice de recherche et à la technicienne en gestion de dossiers étudiants (TGDE) de votre département.

Notez qu'il y apparaît une mention relative à un suivi annuel et que le certificat comporte une date de fin de validité. En effet, afin de répondre aux exigences éthiques en vigueur au Canada et à l'Université de Montréal, nous devons exercer un suivi annuel auprès des chercheurs et étudiants-chercheurs.

De manière à rendre ce processus le plus simple possible et afin d'en tirer pour tous le plus grand profit, nous avons élaboré un court questionnaire qui vous permettra à la fois de satisfaire aux exigences du suivi et de nous faire part de vos commentaires et de vos besoins en matière d'éthique en cours de recherche. Ce questionnaire de suivi devra être rempli annuellement jusqu'à la fin du projet et pourra nous être retourné par courriel. La validité de l'approbation éthique est conditionnelle à ce suivi. Sur réception du dernier rapport de suivi en fin de projet, votre dossier sera clos.

Il est entendu que cela ne modifie en rien l'obligation pour le chercheur, tel qu'indiqué sur le certificat d'éthique, de signaler au CERES tout incident grave dès qu'il survient ou de lui faire part de tout changement anticipé au protocole de recherche.

Nous vous prions d'agréer, Madame, l'expression de nos sentiments les meilleurs,

Dominique Langelier, présidente  
Comité d'éthique de la recherche en santé (CERES)  
Université de Montréal

DL/GP/gp  
c.c. Gestion des certificats, BRDV  
Deborah Feldman, professeure titulaire, Faculté de médecine - École de réadaptation  
Franzina Coutinho, professor, School of Physical and Occupational Therapy  
Anne-Marie Tourangeau (Physiothérapie)  
p.j. Certificat #14-106-CERES-D

**adresse postale**

C.P. 6128, succ. Centre-ville  
Montréal QC H3C 3J7

3744 Jean-Bélant  
4<sup>e</sup> étage, bur. 430-11  
Montréal QC H3T 1P1

Téléphone : 514-343-6111 poste 2604  
ceres@umontreal.ca  
www.ceres.umontreal.ca

## Appendix 2. Consent form



Université   
de Montréal



Faculté de médecine  
École de réadaptation






### INFORMATION AND CONSENT FORM

#### REHABILITATION PROFESSIONALS' ATTITUDES AND BELIEFS TOWARDS CHRONIC PAIN: A SCOPING REVIEW AND KNOWLEDGE TRANSLATION PROJECT

**Project leader**     **Sabrina Morin Chabane**  
Master student in rehabilitation sciences  
Faculté de médecine – École de réadaptation, Université  
de Montréal  
Phone :   
E-mail : 

**Research director**     **Debbie Feldman**  
Professeure titulaire, Faculté de médecine – École de  
réadaptation, Université de Montréal et directrice des  
programmes aux études supérieures en sciences de la  
réadaptation, École de réadaptation, Université de  
Montréal  
Phone :   
E-mail : 

**Research  
co-director**     **Franzina Coutinho**  
Assistant Professor at McGill School of Physical and  
Occupational Therapy  
Phone :   
E-mail : 

**Collaborator**     **Maude Laliberté**  
Ph.D. student (Bioethics), Faculté de médecine,  
Université de Montréal  
Phone :   
E-mail : 

**Funding  
organization**     Richard and Edith Strauss Canada Foundation

Page 1 of 7



## Project description

The management of patients with chronic pain is influenced by health care providers' knowledge, attitudes and beliefs towards chronic pain. In the past few months, we conducted a scoping review on attitudes and beliefs towards chronic pain held by rehabilitation professionals. The scoping review is a method to synthesize the existing literature on a topic. Based on this review, we then made a 9 minute video illustrating the attitudes and beliefs held by rehabilitation professionals towards chronic pain. The current project consists of showing the video to physiotherapists and discussing its content as well as the results of our scoping review.

All clinician physiotherapists working at [REDACTED] Hospital out-patient departments are invited to participate to this study. We expect to recruit 19 participants.

## Invitation to participate in a research project

You are invited to participate in this research project because you are working as an out-patient physiotherapist at [REDACTED]

**Your participation will involve a one hour group discussion during your monthly in-service already planned in the agenda (during regular working hours).** You will be asked to answer questions regarding your experience working with chronic pain patients. You will then watch a 9 minute video and participate in a discussion on rehabilitation professionals' attitudes and beliefs towards chronic pain with your physiotherapist colleagues. The group discussion will be audio recorded and transcribed. You will also be asked to complete a short paper questionnaire on attitudes and beliefs towards chronic pain twice (first before the group discussion and second, one month later). If you prefer not to participate in the group discussion, you could continue your regular duties, i.e. consultation with patients.

## Information collected

You will be asked to provide information describing your profile (age, gender, university degree, years of clinical experience, experience working with chronic pain, post-graduate training, specialization).

We would like your permission to record this interview. Any information that could identify you, including names that you mention in the interview will be kept confidential. You can also ask us not to include some stories or revelations in the data analysis.

Transcripts of the discussion will only be identified by a code. Questionnaires will also be only identified by a code. Transcripts will be kept by the investigators and access to the transcripts will be limited to the research team (investigators and collaborator). The code and contact information of the participants will be kept in separate locked cabinets. Digital recordings will be kept in encrypted folders, for a period of 7 years following the publication of results and then destroyed.

### **Foreseeable benefits**

Your participation in this study will allow you to acquire evidence based knowledge on rehabilitation professionals' attitudes and beliefs towards chronic pain. It may also stimulate a reflection on your own attitudes and beliefs towards chronic pain.

### **Foreseeable risks and inconveniences**

There are no foreseeable risks to your participation in this study. However, if a sensitive issue regarding chronic pain is brought up during the group discussion, you may feel some discomfort. You may then decide to mention it, to interrupt your participation in the group discussion and/or to report it to the contact person of the research team or the Ombudsman of Université de Montréal.

We wish to remind you that the project focuses on the beliefs of professionals, a related topic to your skills and knowledge. If you feel challenged by a question, you are free to answer or not. Moreover, this approach is part of a normal process of continuing education.

### **Compensation**

You will not receive a financial compensation for your participation in this study. Your participation will take place during paid working hours.

### **Confidentiality**

Questionnaires will contain only a number and your name will not appear on the questionnaires.

Digital recordings will be kept in encrypted folders, for a period of 7 years following the publication of results and then destroyed. The information about the participants will remain confidential, will be used for research purposes only and be accessible only to the research team. To ensure proper conduct of the study, the study file could be checked by a person authorized by the [REDACTED]

As the project involves a group discussion, we would like to remind you that the confidentiality of exchanges depends on participants' mutual commitment not to disclose the identity of other participants and the nature of the discussion to people who do not participate in the meeting.

Statistical analysis and presentation of the results will not allow to recognize the participants. You will not be identifiable in any publication that may result from this study. Your anonymity will be respected.

### **Secondary Use of Data**

The results of the paper questionnaire on attitudes and beliefs about chronic pain that you will complete will be forwarded to the authors of this questionnaire. These authors are researchers in the field of physiotherapy in Australia. The data will be shared in order to enable them to study the validity and reliability of their questionnaire. The results of the questionnaires will be anonymised and transcribed into an Excel spreadsheet that contains no information that could identify you. Only the Excel spreadsheet will be shared with the authors.

### **Dissemination of the results**

The results of the scoping review will be shared with you during the group discussion. The research team will be pleased to share the results of the project with you, at a future staff meeting to which Sabrina Morin Chabane will be invited.

### **Funding**

This research project is funded by Richard and Edith Strauss Canada Foundation.



### **Conflict of interest**

Sabrina Morin Chabane and Maude Laliberté are clinician physiotherapists

There are no other conflict of interest to declare.

### **Right of withdrawal**

You are free to accept or refuse to participate in this research project. Your acceptance or your refusal to participate in this project will not have a positive or a negative effect on your employment or on your working conditions. You may withdraw from this study at any time without giving any reason, by simply notifying the contact person of the research team.

### **Contacts**

If you have any questions on the scientific aspects of the research project, please contact: Sabrina Morin Chabane, Master student in rehabilitation sciences at École de réadaptation, Faculté de médecine, Université de Montréal (École de réadaptation, Faculté de médecine, Université de Montréal,

### **Roles of the research team members**

Sabrina Morin Chabane will guide the group discussions. She will analyze the results of the group discussions and the questionnaires with the support of the research team (Debbie Feldman, Franzina Coutinho and Maude Laliberté).

### **Responsibility of the research team**

By agreeing to participate in this study, you do not waive any of your rights nor release the researchers, the Sponsor or the establishment of their civil and professional responsibilities.

For any concerns about your rights or responsibilities of researchers regarding your participation in this project, please contact the ethics advisor of the Review Ethics Board at Université de Montréal (*Comité d'éthique de la recherche en santé-CERES*):

E-mail: [ceres@umontreal.ca](mailto:ceres@umontreal.ca)  
Telephone : (514) 343-6111 ext 2604  
Web site: <http://recherche.umontreal.ca/participants>.

Any complaints about this research may be addressed to the Ombudsman of the University of Montreal, phone number (514) 343-2100 or email address [ombudsman@umontreal.ca](mailto:ombudsman@umontreal.ca). The Ombudsman accepts collect calls. He speaks French and English, and takes calls from 9h to 17h.

Any concerns or complaints relating to your participation in this research may also be addressed to the Ombudsman

### Consent

I understand that I can take my time to consider my participation or my refusal to participate.

I can ask questions to the research team and ask to get satisfactory answers.

I agree with the group discussion being audio recorded.

I agree that the data collected in the questionnaire on attitudes and beliefs about chronic pain are used by the authors of the questionnaire, to conduct calculations of validity and reliability for this questionnaire, conditional on approval by a of research ethics committee. Yes  No

I understand that by participating in this research project, I do not waive any of my rights and do not relieve researchers of their responsibilities.

I read this information and consent form and agree to participate in the research project.

\_\_\_\_\_  
First and last name of the participant  
(print)

\_\_\_\_\_  
Participant's signature

\_\_\_\_\_  
Date :

I have explained to the participant the conditions of taking part in the study as stated in this Information and Consent Document and I answered all her/his questions.

\_\_\_\_\_  
First and last name of the researcher  
(print)

\_\_\_\_\_  
Researcher's signature

\_\_\_\_\_  
Date :

You will receive a signed copy of the consent form.

## Appendix 3. Example of field notes

Rehabilitation Professionals' Attitudes and Beliefs Towards Chronic Pain: A Scoping Review And A Knowledge translation Project  
January 30<sup>th</sup>, 2015  
Version no. 2

**The professional reads the patient's file and says:** "Maybe I should just tell her I can't help her right off the bat..."

- *"Psychologist should be working with physiotherapists": most participants agreed vehemently*
- *"I feel I can't protect myself" and "Not a good idea to get involved too much": other participants agreed (nodding)*

## Appendix 4. Guide for focus groups

### QUESTIONNAIRE FOR THE CONSULTATION

*Install projector, computer, flipchart, food (20 min)*

*Welcome Tatiana Orozco (research assistant, second year physiotherapy student), explain role (collect questionnaire, distribute notepads and pencils, take research notes by theme), give her grid and blank sheets (5 min)*

*Debbie's role: take procedural notes, suggestions for changes with next group*

*Welcome, introduce Debbie and Tatiana (1 min)*

*Intro: description of the project, description of the plan of the consultation session (3 min)*

I would like to thank you for participating in this consultation today.

In the past few months, we got interested in professionals' attitudes and beliefs towards chronic pain because not a lot seemed to be known about this topic.

Beliefs are "any person's thoughts about what pain is and what it means to them".

Attitudes are a "set of judgments and trends [towards pain] that drive behavior".

We conducted a literature review on rehabilitation professionals' attitudes and beliefs towards chronic pain.

Today, I am meeting you to ask your opinion about the results of our literature review.

Our meeting will last 60 minutes.

I will first ask you to complete 2 questionnaires (*Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals* and *questionnaire on socio-demographic characteristics*). We will use the following definition of chronic pain during this session and to answer the questionnaires: any musculoskeletal pain lasting for more than 3 months.

*Collect consent forms (make sure they are signed and that printed name is present), distribute Attitudes and Beliefs towards Chronic Pain Questionnaire for Health Professionals , socio-demographic questionnaire and write alphanumeric codes on consent forms (5 min)*

*Ask participants to complete questionnaires and collect them (10-15 min)*

*Distribute notepads and pencils to participants when participants return their questionnaires (2 min)*

We just gave you notepads so you can take notes, write down your comments while watching the video or during our discussion. We will not collect those notepads at the end.

I will show you a 9-minute video my research team and I made that illustrates rehabilitation professionals' attitudes and beliefs towards chronic pain. It is based on the results of our literature review.

After the video, we will talk about the attitudes and beliefs seen in the video. We are very interested in knowing what you think of them.

*Show video (10 min)*

I will guide the discussion with a series of questions. We are interested in your opinion and there are no good or bad answers to our questions. If you want me to repeat or clarify a question, please don't hesitate to ask. The session will be tape recorded. Therefore, I am going to ask one person to talk at a time. Your participation in this session is totally voluntary.

### Questions

1. What are your thoughts on the video we just saw? (7 min)

#### **Probing questions:**

- i. Did the clinician have attitudes or beliefs you agree with?
- ii. Did the clinician have attitudes or beliefs you disagree with?
- iii. Can you relate the attitudes and beliefs seen in the video to your personal practice or to practices you observe around you?

*Present themes and associated scenes of the video and ask participants their opinion about each theme. (20 min) (start with 3 themes per group. Address more if time allows. ■■■■: themes 2, 4, 9. ■■■■: themes 2, 3, 7. ■■■■: themes 2, 5, 8.)*

Now, I am going to name the attitudes and beliefs that we identified in our literature review and showed in the video. I will explain what they mean. Could you please tell me what are your thoughts, opinion or if you agree or not with them.

## 2. Rehabilitation professionals' beliefs about the origin and cause of chronic pain (7 min)

In the literature, two models of care are described. The first one is the biomedical model where it is believed that chronic pain is explained by a physical injury. This structure needs to be identified to make a diagnosis and treat the patient. The second model is the biopsychosocial model that recognizes that pain is complex and also influenced by social and psychological factors. Chronic is not perceived as dangerous and the patient can be treated even if no damaged structure is identified.

(video 4:18-4:24, 4:39-4:50)

**The professional says:** "I really need to find the cause of the pain. Otherwise, how can I treat her?"

### **Probing questions:**

- i. Is chronic pain explained by a physical injury (damaged structure)?
- ii. Is chronic pain dangerous?
- iii. As rehabilitation professionals, can we provide a treatment when we can't identify the structure causing of the pain?

## 3. Rehabilitation professionals' beliefs about validity of chronic pain (7 min)

The validity of chronic pain can be questioned when therapists find that the reported symptoms of a patient and the physical findings on objective testing don't match.

(video 3:24-3:31, 5:50-6:01)

**The professional says:** "She's able to stand up without using her hands [...] Back movement seems fine. In any case, she moves well"

**Probing questions:**

- i. The professional may perceive the pain as non-legitimate
- ii. The professional faces uncertainty when evaluating or treating someone with chronic pain.
- iii. The professional may doubt that the pain is present.
- iv. The professional may also believe that the patient is malingering.
- v. The professional may describe the pain as uncertainty or doubt the professional may face when evaluating or treating chronic pain.
- vi. The professional perceive the pain as being real or exaggerated.

4. Rehabilitation professionals' beliefs about their ability to manage psychological aspects of patients' pain. (7 min)

This refers to rehabilitation professionals' confidence to work with patients with chronic pain.

(video 2:48-3:05)

**The professional reads the patient's file and says:** "Maybe I should just tell her I can't help her right off the bat..."

**Probing questions**

- i. Do you think that rehabilitation professionals have the skills to manage the psychological aspects of chronic pain? Which ones? (Fear of pain? Fear of re-injury? Fear-avoidance?)
- ii. Do you think it is rehabilitation professionals' role to manage the psychological aspects of chronic pain?

5. Rehabilitation professionals' beliefs about the relationship between pain and disability (7 min)

This refers to the belief that pain can justify disability.

(video 8:47-8:51)



**The professional says:** "Take it easy around the house. Don't do too much cleaning all at once, and if it hurts too much, stop."

**Probing questions:**

- i. Can disability be justified by the presence of chronic pain?
- ii. Should someone who has chronic pain be recommended to avoid activities?

6. Rehabilitation professionals' underestimation of patients' pain (7 min)

Professionals have a tendency to underestimate the pain reported by patients.

(video 5:51-6:08)

**The professional says:** "Pain 9 out of 10? No, she does show signs of 9 out of 10 pain. She's definitely exaggerating her symptoms"

**Probing questions:**

- i. Are patients with chronic pain able to assess their pain accurately?
- ii. Are patients with chronic pain overestimating their pain?
- iii. Are professionals able to estimate patients' pain accurately?
- iv. Are professionals able to estimate patients' pain by looking at them (their facial expressions, the way they move)?

7. Rehabilitation professionals' communication skills (7 min)

This refers to the quality of the communication and information given by the professional.

(video 8:14-8:47)

**The professional says:** "Well, it's clear that your stress causes the pain to increase [...] What do I tell her now?"

**Probing questions:**

- i. Are professionals able to give clear explanations to patients who consult for chronic pain?
- ii. Are professionals able to show empathy in the way he communicates with patients who have chronic pain?

- iii. Are professionals giving as many explanations to patients with chronic pain than those with acute and sub-acute pain?
- iv. Are professionals trying to give explanations that respond to their patients beliefs?

8. Rehabilitation professionals' emotional involvement (7 min)

This refers to the professionals' reaction to patient distress, emotional response.

(video 2:47-3:05, 4:25-4:39)

**The patient says:** "It's really painful."

**The professional:** "Help me!"

**Probing question:**

- i. Are professionals willing to treat people with chronic pain?
- ii. Is there a difference between professionals willingness to treat someone with chronic pain vs someone with acute or sub-acute pain?
- iii. Are professionals willing to give emotional support to patient?

9. Are there any other attitudes or beliefs you might be aware of that we did not address in the video or that we have not discussed today? (2 min)

10. Do you have any suggestion of references or document that I should look at to complete my results?

*Draw thematic framework on flipchart and ask participants their opinion about it? Ask participants to suggest modifications and draw them on flipchart (10 min)*

*Thank participants (1 min)*


I will photocopy your consent forms and mail them to you shortly.

I would also like to remind you that I will come back to your next in service in one month (give exact date) for you to complete the *Attitudes and Beliefs towards Chronic Pain*

*Questionnaire for Health Professionals.* Your answers to this questionnaire are important for the completion of the study. Therefore, if you are not present the day of the in-service, I will leave a copy to your attention in a prepaid sealed envelope. You would simply have to complete the questionnaire and mail it back to me.

I would like to thank you for your participation today. If you are interested in knowing the results of the consultation sessions I conducted, I would be happy to come in a couple of months to an in-service to which you would invite me to share those results.

# Appendix 5. Agreement of co-authors – article 1


 Université de Montréal Faculté des études supérieures et postsecondaires

**ACCORD DES COAUTEURS D'UN ARTICLE  
 INCLUS DANS UN MÉMOIRE DE MAÎTRISE OU UNE THÈSE DE DOCTORAT**

Lorsqu'un étudiant n'est pas le seul auteur d'un article qu'il veut inclure dans son mémoire ou dans sa thèse, il doit obtenir l'accord de tous les coauteurs. De plus, le nom de tous les coauteurs doit apparaître dans le manuscrit pour chacun des articles. Enfin, une déclaration distincte doit être complétée et ce, également pour chacun des articles inclus dans le mémoire ou la thèse.

Pour toute information complémentaire, consultez le Guide de présentation et d'évaluation des mémoires de maîtrise et des thèses de doctorat dans la section LE CHEMINEMENT ET L'ENCADREMENT du site [www.fesp.umontreal.ca](http://www.fesp.umontreal.ca)

**1. Identification**

Nom MORIN CHABAWE	Prénom SABRINA	Matricule [REDACTED]
Grade Maîtrise	Programme M.Sc. sciences de la réadaptation	

**2. Description de l'article**

Auteurs  
Sabrina Morin Chabawe, Debbie Ehermann Feldman, Maude Laliberté, Andrea Miller-Nesbitt, Franzina Coutinho

Titre  
Rehabilitation professionals' attitudes and beliefs towards chronic pain: a scoping review

État actuel de l'article  publié  soumis pour publication  en préparation

Revue / journal \* Clinical Rehabilitation  
 Commentaires reçus de l'éditeur. Modifications demandées.

\* Si l'article est en phase finale de préparation ou a été soumis pour publication, veuillez fournir tous les détails disponibles.

**3. Déclaration de tous les coauteurs autres que l'étudiant**

À titre de coauteur de l'article identifié ci-dessus, j'autorise: Sabrina Morin Chabawe  
 à inclure cet article dans  son mémoire de maîtrise  sa thèse de doctorat  
 qui a pour titre: Rehabilitation professionals' attitudes and beliefs towards chronic pain

Debbie Ehermann Feldman Coeauteur	[REDACTED]	14 déc 2015 Date
Maude Laliberté Coeauteur	[REDACTED]	14 déc. 2015 Date
Andrea Miller-Nesbitt Coeauteur	[REDACTED]	Dec. 14, 2015 Date
Franzina Coutinho Coeauteur	[REDACTED]	14 Dec 2015 Date

FESP / formulaire accord des coauteurs mémoire ou thèse par articles / août 2012

## Appendix 6. Agreement of co-authors – article 2

### ACCORD DES COAUTEURS D'UN ARTICLE INCLUS DANS UN MÉMOIRE DE MAÎTRISE OU UNE THÈSE DE DOCTORAT

Lorsqu'un étudiant n'est pas le seul auteur d'un article qu'il veut inclure dans son mémoire ou dans sa thèse, il doit obtenir l'accord de tous les coauteurs. De plus, le nom de tous les coauteurs doit apparaître dans le manuscrit pour chacun des articles. Enfin, une déclaration distincte doit être complétée et ce, également pour chacun des articles inclus dans le mémoire ou la thèse.

Pour toute information complémentaire, consultez le Guide de présentation et d'évaluation des mémoires de maîtrise et des thèses de doctorat dans la section LE CHEMINEMENT ET L'ENCADREMENT du site [www.fesp.umontreal.ca](http://www.fesp.umontreal.ca).

#### 1. Identification

Nom MORIN CHABANE	Prénom SABRINA	Matricule [REDACTED]
Grade Maîtrise	Programme M.Sc. sciences de la réadaptation	

#### 2. Description de l'article

Auteurs Sabrina Morin Chabane, Franzina Coutinho, Maude Laliberté, Debbie Ehrmann Feldman		
Titre Out-patient physiotherapists' attitudes and beliefs towards chronic pain: a qualitative study		
État actuel de l'article <input type="checkbox"/> publié <input type="checkbox"/> soumis pour publication <input checked="" type="checkbox"/> en préparation		
Revue / journal * Physiotherapy Canada		
* Si l'article est en phase finale de préparation ou a été soumis pour publication, veuillez fournir tous les détails disponibles.		

#### 3. Déclaration de tous les coauteurs autres que l'étudiant

À titre de coauteur de l'article identifié ci-dessus, j'autorise: <u>Sabrina Morin Chabane</u>		
à inclure cet article dans <input checked="" type="checkbox"/> son mémoire de maîtrise <input type="checkbox"/> sa thèse de doctorat		
qui a pour titre <u>Rehabilitation professionals' attitudes and beliefs towards chronic pain</u>		
<u>Franzina Coutinho</u>	[REDACTED]	14 Dec 2015
Coauteur		Date
<u>Maude Laliberté</u>	[REDACTED]	14 déc 2015
Coauteur		Date
<u>Debbie Ehrmann Feldman</u>	[REDACTED]	14 déc 2015
Coauteur	Signature	Date
Coauteur	Signature	Date


## Appendix 7. Agreement of co-authors – article 3

### ACCORD DES COAUTEURS D'UN ARTICLE INCLUS DANS UN MÉMOIRE DE MAÎTRISE OU UNE THÈSE DE DOCTORAT

Lorsqu'un étudiant n'est pas le seul auteur d'un article qu'il veut inclure dans son mémoire ou dans sa thèse, il doit obtenir l'accord de tous les coauteurs. De plus, le nom de tous les coauteurs doit apparaître dans le manuscrit pour chacun des articles. Enfin, une déclaration distincte doit être complétée et ce, également pour chacun des articles inclus dans le mémoire ou la thèse.

Pour toute information complémentaire, consultez le Guide de présentation et d'évaluation des mémoires de maîtrise et des thèses de doctorat dans la section LE CHEMINEMENT ET L'ENCADREMENT du site [www.fesp.umontreal.ca](http://www.fesp.umontreal.ca).

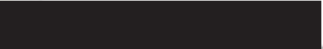


#### 1. Identification

Nom MORIN CHABANE	Prénom SABRINA	Matricule 
Grade Maîtrise	Programme M.Sc. sciences de la réadaptation	

#### 2. Description de l'article

Auteurs Sabrina Morin Chabane, Franzina Coutinho, Maudé Laliberté, Debbie Ehrmann Feldman			
Titre Factors associated with physiotherapists' attitudes and beliefs towards chronic pain.			
État actuel de l'article <input type="checkbox"/> publié <input type="checkbox"/> soumis pour publication <input checked="" type="checkbox"/> en préparation			
Revue / journal *			
* Si l'article est en phase finale de préparation ou a été soumis pour publication, veuillez fournir tous les détails disponibles.			

#### 3. Déclaration de tous les coauteurs autres que l'étudiant

À titre de coauteur de l'article identifié ci-dessus, j'autorise: <u>Sabrina Morin Chabane</u>		
à inclure cet article dans <input checked="" type="checkbox"/> son mémoire de maîtrise <input type="checkbox"/> sa thèse de doctorat		
qui a pour titre <u>Rehabilitation professionals' attitudes and beliefs towards chronic pain</u>		
<u>Franzina Coutinho</u>		14 Dec 2015
Coauteur		Date
<u>Maudé Laliberté</u>		14 déc. 2015
Coauteur		Date
<u>Debbie Ehrmann Feldman</u>		14 déc 2015
Coauteur	Signature	Date

