


Pilot Study of French-Canadian Lifestyle Redesign[®] for Chronic Pain Management

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Abstract

As chronic pain (CP) interferes with an individual's lifestyle by limiting meaningful activities and health-related quality of life (HRQoL), occupational therapy (OT) plays an important role in CP management interventions. This pilot study aimed to explore the influence of a 13-week French-Canadian Lifestyle Redesign[®] for CP. A mixed-methods research design including a preexperimental quantitative component pre-/posttest was used with 15 participants with fibromyalgia. Although pain remained unchanged after the intervention, improvements were observed in participants' engagement in meaningful activities ($p < .01$), life balance ($p < .01$), mental components of HRQoL ($p < .01$), depressive symptoms ($p = .047$), and pain self-efficacy ($p < .01$). After the intervention, phone interviews ($n = 6$) highlighted the participants' appreciation of the focus being placed on their daily routines and the development of a sense of belonging throughout the intervention. This study suggests the potential feasibility and benefits of an occupation-based approach in CP management.

Keywords

lifestyle, occupational therapy, intervention, pain management, health-related quality of life

Introduction

Long considered as a symptom, chronic pain (CP) is officially recognized as a disease (Treede et al., 2015). CP is a major public health problem, affecting about one third (30.3%) of the population worldwide (Elzahaf et al., 2012). CP negatively impacts physical and mental health, social relationships, as well as the ability to perform meaningful activities, such as work and leisure, which in turn is negatively associated with health-related quality of life (HRQoL; Dueñas et al., 2016). According to the International Association for the Study of Pain, one person out of three is unable to maintain an independent and meaningful lifestyle due to CP (World Health Organization, 2004). Fibromyalgia (FM) is a common CP disorder affecting up to 6.6% of the world's population, mostly women (Marques et al., 2017). Pain is the main symptom, but FM patients also commonly present fatigue, non-restorative sleep, depression, anxiety, migraine, irritable bowel, sexual dysfunction, and vulnerability to posttraumatic stress disorder (Clauw, 2014; Fitzcharles et al., 2013). It has a significant negative impact on an individual's capacity to perform various occupations, including work, studies, social relationships, leisure, and domestic chores (Wuytack & Miller, 2011).

Occupational therapy's (OT) main objective is to enable occupation (Townsend & Polatajko, 2007). Occupation being everything people do to occupy themselves and meaningful activities, that is, fulfilling a goal or purpose that is

personally or culturally important (Townsend & Polatajko, 2007), are essential to satisfy biological, psychological, and social needs (Kielhofner, 2008). Engagement in such meaningful activities is considered an important determinant of health and well-being and the meaningfulness of occupations contributes to high quality of life (Townsend & Polatajko, 2007). Furthermore, by altering biological, psychological, and social factors, engaging in occupation can potentially mediate pain (Robinson et al., 2011; Strong, 1996). Occupational therapists provide pain management interventions targeting various physical, emotional, and spiritual domains to enable occupation in patients (Townsend & Polatajko, 2007). Through its overarching focus on occupational performance and engagement, OT makes a unique contribution to CP management (Canadian Association of Occupational Therapists, 2012; Lagueux et al., 2018). According to Poole and Siegel (2017), although

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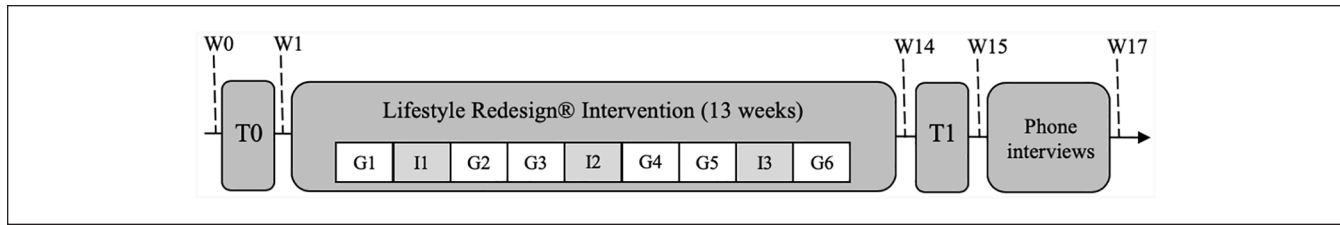


Figure 1. Timeline of the course of intervention and data collection.

Note. T_0 = pre-intervention; T_1 = post-intervention; G = group sessions; I = individual sessions; W = week.

evidence supports OT interventions with people living with FM, few interventions were occupation-based.

Developed by Clark and colleagues (1997), Lifestyle Redesign® is an OT intervention grounded in occupational science, facilitating the development of healthy routines to prevent and manage chronic health conditions (Clark et al., 2015). This intervention allows participants to acquire self-analysis and problem-solving skills by experiencing them through positive lifestyle changes (Clark et al., 2015). Specifically, participants are encouraged to adopt and maintain a healthy and meaningful life, while preventing the onset of various health problems, through reflection on the meaning of occupations and their impact on health (Clark et al., 2015). Lifestyle Redesign® is based on modules (e.g., energy and fatigue management, time management, and socialization) done in group and individual sessions. This intervention focuses on promoting participants' empowerment and implementation of behavior changes into their daily routine (Clark et al., 2015). In two randomized controlled trials with older Americans, Lifestyle Redesign® showed positive effects on daily functioning and quality of life (Clark et al., 1997, 2012). More recently, Simon and Collins (2017) studied the efficacy of Lifestyle Redesign® intervention for people with CP (Simon & Collins, 2017). Fifty-five (55) patients received a mean number of 9.04 individual OT sessions for an average of 18 weeks. Each session was approximately 45 to 60 min long. These sessions were carried out in an outpatient clinic facility, except for a few home safety evaluations. At the end of the intervention, significant changes were observed in occupational performance and satisfaction scores, physical and social functioning, role limitations due to physical and emotional problems, energy and fatigue, general health, and pain self-efficacy (Simon & Collins, 2017).

A French-Canadian version of the Lifestyle Redesign® intervention for older adults with disabilities has been developed (Levasseur et al., 2019) as it was considered relevant for OT practice within the province of Quebec (Canada; Lévesque et al., 2019). Whereas most concepts and themes applied, some adaptations were required to reflect the specific health care system and population's characteristics. This French-Canadian version of the Lifestyle Redesign® has shown positive influence on participants' mental health and interest in leisure as well as on social participation and

positive attitudes toward leisure (Levasseur et al., 2019). Currently, no other study on French-Canadian Lifestyle Redesign® has been conducted in Quebec's publicly funded health care system, which is responsible for providing free health care. This needs to be done to better address the multiple CP-related daily challenges, especially for people living with FM.

This study aimed to explore whether a French-Canadian adaptation of the Lifestyle Redesign® for CP management resulted in changes in the engagement of FM patients in meaningful activities, life balance, HRQoL, pain severity, severity of FM, anxiety and mood, severity of insomnia, perceived self-efficacy and global impression of change in their condition. As a secondary objective, the study also explored the participants' perception of the intervention.

Materials and Method

Design and Settings

This study used a convergent mixed-methods research design, which allows in-depth understanding of an intervention's influence (Creswell & Plano Clark, 2011). The experimental quantitative design involved pretest (pre-intervention [T_0]) and posttest measurements taken immediately after the 13-week intervention (post-intervention [T_1]; Figure 1). The intervention was carried out of OT settings in two pain management clinics (Site 1 = Centre of Expertise in Chronic Pain [CECP] in a University Hospital; Site 2 = Chronic Pain Adaptation Clinic [CPAC] in a Rehabilitation Center) between March 2019 and June 2019 (end of the intervention). A qualitative clinical research design was also used to capture the patients' experience of this intervention (Miller & Crabtree, 2003). The centers where the study took place gave ethical approval.

Eligibility and Recruitment

A convenience sampling method was used to recruit potential participants from the waiting lists, which mostly included FM patients. To be included, individuals had to (a) be 18 years or older; (b) self-report a diagnosis of FM for more than 3 months confirmed by a physician, based on

the criteria established by the American College of rheumatology (Wolfe et al., 2010); (c) speak, read, and understand French; and (d) take part in the intervention. Exclusion criteria were (a) having an outstanding litigation regarding a patient's claim for disability payments, or (b) presenting a physical or psychiatric disorder (e.g., recent major trauma, major depressive disorder, and posttraumatic stress disorder) that requires treatment and could thus bias the influence of this intervention. Patients were screened for eligibility by a research assistant by telephone interview. Eligible participants were then scheduled for a first appointment to further explain the study and sign the consent form.

Intervention

The intervention consisted of six 2-hr group-based OT sessions, and three 60- to 90-min individual OT sessions over 13 weeks (Figure 1). All group sessions were conducted by two trained occupational therapists who also shared responsibility for the individual sessions. To ensure intervention uniformity and standardization at both sites, all occupational therapists attended a 2-day structured course on Lifestyle Redesign[®] for CP management based on the distance learning/online course (University of Southern California) and the adapted French manual on Lifestyle Redesign[®] for the well older adults (Clark et al., in press). Guidebooks for occupational therapists and for participants were developed by the research team in collaboration with clinicians to ensure the validity and fidelity of the intervention. Researchers in Lifestyle Redesign[®] for CP management also attended all the group sessions at both sites to ensure standardization concerning philosophical background, topical content, and methods of program delivery.

The intervention enabled participants to perform their own occupational analysis, considering the links between their daily activity patterns and their physical and mental well-being. The development of this reflexive practice, in parallel with daily routine changes, is the cornerstone of this occupation-based intervention (Pierce, 2014).

Themes and activities addressed in every group and individual session were chosen by the participants at each site, based on their perceived needs (Table 1). Group sessions included discussions, education, and sharing of lived experience about different themes and challenges related to health, occupation, and pain management. All sessions ended with planning of the next group session and a take-home assignment, such as short readings and reflexive activities about changes in the participants' daily routines. Individual sessions addressed the development, implementation, and follow-up of a Personalized Engagement Plan (PEP), which consists of a document listing obstacles, facilitators, personal characteristics (strengths and weaknesses), and personal goal-setting.

Data Collection Process

Quantitative data. Data were collected at T₀ and T₁ (Figure 1). Measures using self-administered questionnaires were mailed at both measurement times to the patients along with a stamped return envelope. Reminder phone calls were made if the questionnaires were not returned. Upon reception, questionnaires were verified and, if any information was missing, a research assistant contacted the patients. Participant confidentiality was preserved by replacing their name with a code.

Qualitative data. Phone interviews were conducted by a senior assistant trained in qualitative research 1 week after the end of the Lifestyle Redesign[®] intervention (Figure 1). These interviews took place one to two weeks after the last group session, with six volunteer participants (three from each site) who were identified by the occupational therapists to ensure a diversity of points of view about their experience throughout the intervention. The interview guide was developed by the research team and validated with one occupational therapist who delivered the program. The guide included open questions about participants' experience, changes in their daily routine, and the most contributive elements of the intervention (see Online Annexure 1). All interviews were digitally audiotaped, transcribed to manuscripts (verbatim), and verified with respect to the participants' wording.

Outcome measures. Sociodemographic data were collected, including age, sex, education, marital status, work status, and duration of symptoms. To assess the intervention's influence, outcome measures were selected based on client centeredness, with an emphasis on occupation and function, applicability, and reliability of the validated French version. A range of measures showing good psychometric properties was chosen to capture the multifaceted nature of pain and the influence of Lifestyle Redesign[®]. When available, the minimal clinically important difference (MCID) was considered and indicated in Table 2. MCID is defined as the statistically determined smallest change in a treatment outcome to be identified as important for the patients (Jaeschke et al., 1989).

Engagement in meaningful activities was assessed with the Engagement in Meaningful Activities Survey (EMAS; Eakman, 2012; Lacroix et al., 2018). *Life balance* was assessed using the Life Balance Inventory (LBI; Larivière & Lévesque, 2016; Matuska, 2012). *HRQoL* was assessed with the 12-item Short-Form Health Survey Version 2 (SF-12v2), a questionnaire that measures both physical and mental QoL components (Ware et al., 1996). *Pain severity and impact of pain on functioning* were assessed with the French version of the Brief Pain Inventory (BPI; Cleeland & Ryan, 1994; Poundja et al., 2007). *Severity of FM* was measured with the Fibromyalgia Impact Questionnaire (FIQ; Perrot et al., 2003) as the revised version of the FIQ (FIQR) is not available in

Table 1. Overview of the Components of the French-Canadian Version of the Lifestyle Redesign® Intervention.

Session	Site 1 (CECP; n = 7)	Site 2 (CPAC; n = 8)
G1	Introduction <ul style="list-style-type: none"> Establishing contact and needs assessment 	
I1	<ul style="list-style-type: none"> Initial assessment, completion of individual needs assessment, and development of a PEP 	
G2	Occupations, health, and pain <ul style="list-style-type: none"> Discussion, education, and group activity about the links between occupation and health 	
G3	Self-management <ul style="list-style-type: none"> Discussion about self-management strategies Group activity: Intuitive painting conducted by a participant while the occupational therapists teach self-management strategies 	<ul style="list-style-type: none"> Education and experimentation of mindfulness meditation by a guest lecturer Group activity: Walk in the community to a cafe restaurant Discussion regarding integration of mindfulness meditation in everyday life
I2	<ul style="list-style-type: none"> Intervention on specific personal needs PEP: Assessment of the progression in goal achievement and goal adjustments (if necessary) 	
G4	Fatigue and energy management <ul style="list-style-type: none"> Discussion, education, and experimentation regarding fatigue management and energy conservation techniques 	
G5	Meal preparation <ul style="list-style-type: none"> Experimentation and discussion regarding meal preparation, workplace organization, ergonomics, and self-management strategies 	Interpersonal relationships <ul style="list-style-type: none"> Discussion and role play conducted by with a guest lecturer (president of a CP association)
I3	<ul style="list-style-type: none"> Intervention on personal needs PEP: Assessment of the progression in goal achievement and goal adjustments (if necessary) Consolidation of the learning process during the intervention 	
G6	Conclusion ^a <ul style="list-style-type: none"> Closing group activity: Discussion and education about the process of lifestyle changes, delivery of certificates of achievement, group picture 	

Note. CECP = Centre of Expertise in Chronic Pain; CPAC = Chronic Pain Adaptation Clinic; G = group; I = individual; PEP = personalized engagement plan.

^aGroup Session 6 (G6) at Site 2 was conducted in the apartment of a group participant in accordance with a group consensus.

French (Bennet et al., 2009). *Anxiety and depressive symptoms* were measured with the French-Canadian version of the Hospital Anxiety and Depression Scale (FC-HADS; Roberge et al., 2013). *Severity of insomnia* was measured using the insomnia severity index (ISI; Morin et al., 2011). *Perceived self-efficacy* to perform self-management behaviors, manage chronic disease in general, and achieve outcomes was assessed with the French-Canadian Chronic Pain Self-Efficacy Scale (FC-CPSES; Lacasse et al., 2015). *Patients' global impression of change* regarding their condition and overall perception regarding their treatment response was collected at the end of the intervention (T_1), using a modified version of the Patient Global Impression of Change (PGIC) Scale (Rampakakis et al., 2015). Participants were asked about their global impression of change regarding their (a) engagement in meaningful activities, (b) life balance, (c) quality of life, (d) psychological well-being, (e) functioning, and (f) pain, using a seven-item scale ranging from 0 (*considerably deteriorated*) to 6 (*considerably improved*). PGIC scores for each item were recoded into three categories: (a) Improved (slightly/greatly/considerably improved), (b) Stable (remained unchanged), and (c) Deteriorated (considerably/greatly/slightly deteriorated).

Analysis. Considering the small sample size (data were not normally distributed), descriptive statistics are presented as

median and interquartile range in the text and figures. To quantitatively appraise the influence (T_1 vs. T_0) of the intervention, Wilcoxon signed-ranks tests were performed, where a p value of less than .05 was considered as statistically significant. The Fisher exact test was used for between-group comparisons at T_0 and T_1 to compare the percent of change of each individual against the recognized MCID. Regarding the PGIC, verbal descriptors (ordinal to several categories) were grouped according to whether they were deteriorated, stable, or improved. A thematic content analysis was conducted, using the method proposed by Miles, Huberman, and Saldaña (Miles & Huberman, 2014). Coding was done independently by two authors who subsequently compared their work to reach a consensus. They presented the preliminary coding tree to another investigator. Critical discussions between the investigators led to the development of main themes. An iterative process was carried out throughout the analysis as the investigators went back and forth between the old and new data and themes. Analyses were performed, using the IBM SPSS Statistics 26.0 version of Windows 10 and Word for Office 365.

Results

Fifteen women ($n = 15$) with FM were recruited to participate in the 13-week intervention (Table 2). Site 1 (CECP)

Table 2. Patients' Sociodemographic Information ($n = 15$).

Sociodemographic	Participants
	Median (IQR)
Age	49.2 (10.2)
Pain duration	12.0 (4.0)
Average pain intensity (BPI [0–10])	6.0 (1.3)
	n (%)
Sex	
Females	15 (100)
Education level	
University completed	6 (40)
Collegial/university non-completed	4 (26.7)
High school completed	5 (33.3)
Marital status	
Single	3 (20)
Married or in a common-law relationship	8 (53.3)
Divorced or separated	3 (20)
Widowed	1 (6.7)
Work status	
Full-time job	5 (33.3)
Part-time job	1 (6.7)
Retired	1 (6.7)
Temporary disability	2 (13.3)
Permanent disability	4 (26.7)
Unemployed	2 (13.3)

Note. IQR = interquartile range values; BPI = Brief Pain Inventory: Higher scores indicate more pain severity.

included seven participants while Site 2 (CPAC) included eight participants. All participants completed questionnaires at T_0 and T_1 .

Influences of the Intervention

The French-Canadian Lifestyle Redesign® for CP Management intervention had a significantly positive influence on participants' engagement in meaningful activities, life balance, mental HRQoL, depressive symptoms, and pain self-efficacy (Table 3). Most participants reached the MCID regarding their mental HRQoL and the impact of pain on their physical functioning (Table 3). Participants' global impression of change also improved after the intervention, except for pain (Figure 2). More specifically, one third of participants perceived pain improvement and almost half perceived that their pain remained stable (Figure 2).

Participants' Experience

Two major themes emerged from the interviews that were done with a subgroup of six women (W) about their experience with the Lifestyle Redesign® intervention: the occupational approach and the development of a sense of belonging.

Appraisal of the Occupational Approach

Each subgroup participant appreciated the occupational approach of the intervention. They stated that it decreased the importance given to their health condition while increasing focus on their daily occupational challenges. Two participants mentioned as follows:

We talk about the disease with the doctor. In the end, we are here to try to find a fulfilling lifestyle. [. . .] In fact, we want to take part in activities in which we can flourish [. . .]. (W4, 54 years old, FM for 11 years, divorced, university completed, full-time job)

It is not necessary to talk about the disease. I find it more important to talk about what can be done to improve our quality of life. (W5, 50 years old, FM for 5 years, de facto union, technical school completed, temporary disability)

Participants also reported positive statements regarding the activities done during the intervention:

It's different from other programs I've done before. We had the opportunity to take part in some activities. (W1, 52 years old, FM for 15 years, widowed, technical school completed, permanent disability)

During the intervention, participants reported changes in different areas of their life (e.g., work, leisure). Some participants rediscovered certain activities that they had abandoned:

It helped me to return to some habits that I had before to help me escape, like odd jobs or painting. It showed me that I could also put aside some of my stress or pain by changing the way I act. (W3, 51 years old, FM for 25 years, married, high school completed, permanent disability)

Some participants also became involved in new activities, such as volunteering. Participants became aware that it is possible to have a balanced lifestyle, despite the presence of FM:

It made me realize that despite the suffering, despite the pain, we can still have a balanced life. (W6, 61 years old, FM for 23 years, married, university completed, retired)

Having a balanced life became easier with the ability to self-manage their condition, thanks to the coping strategies learned during the intervention.

Development of a Sense of Belonging

The development of a sense of belonging was also a key theme that emerged from the interviews. Most participants felt that they belonged to the group and enjoyed the encounters with other individuals. Moreover, some participants

Table 3. Comparisons of Main Variables Before and After Intervention ($n = 15$).

Outcome measures	Baseline ^a	Post-intervention ^a	Comparison	MCID reached
	Median (IQR)	Median (IQR)	<i>p</i> values	<i>n</i> (%)
Engagement in meaningful activities				
EMAS (12–48)	23.0 ± 5.8	33.0 ± 4.8	.002**	N/A
Life balance				
LBI (1–3)	1.7 ± 0.3	2.0 ± 0.2	.003**	N/A
Health-related quality of life				
SF-12v2 physical component (0–100)	27.3 ± 4.6	28.6 ± 2.8	.330	4 (26.7)
SF-12v2 mental component (0–100)	30.6 ± 5.3	39.7 ± 7.6	.010**	9 (60.0)
Pain severity				
BPI Severity Scale (0–40)	25.0 ± 4.0	23.0 ± 3.8	.393	2 (13.3)
Impact of pain on functioning				
BPI Interference Scale (0–70)	40.5 ± 6.8	40.0 ± 6.8	.315	8 (53.3)
Severity of fibromyalgia				
FIQ (0–100)	56.5 ± 12.5	50.1 ± 16.1	.532	2 (13.3)
Anxiety and depressive symptoms				
HADS Anxiety Scale (0–21)	11.0 ± 2.8	9.0 ± 5.0	.231	4 (26.7)
HADS Depression Scale (0–21)	11.0 ± 2.0	10.0 ± 2.8	.050*	6 (40.0)
Severity of insomnia				
ISI (0–28)	18.0 ± 3.0	15.0 ± 6.8	.092	2 (13.3)
Perceived self-efficacy				
FC-CPSES (0–10)	5.2 ± 0.9	6.5 ± 0.8	.008**	N/A

Note. MCID = minimal clinically important difference; IQR = interquartile range; EMAS = Engagement in Meaningful Activities Survey: Higher scores indicate higher engagement in meaningful activities (Eakman, 2012; Lacroix et al., 2018); LBI = Life Balance Inventory: Higher scores indicate better life balance (Larivière & Levasseur, 2016; Matuska, 2012); SF12v2 = 12-Item Short-Form Health Survey Version 2: Higher scores indicate better health-related quality of life (Ware et al., 1996); BPI = Brief Pain Inventory: Higher scores indicate a higher pain severity (BPI Severity Scale) or more pain interference with various aspects of daily living (BPI Interference Scale; Cleeland & Ryan, 1994; Poundja et al., 2007); FIQ = Fibromyalgia Impact Questionnaire: Higher scores indicate greater fibromyalgia severity (Perrot et al., 2003); HADS = Hospital Anxiety and Depression Scale: A higher score indicates an increased risk of severity of anxious or depressive symptomatology (Roberge et al., 2013); ISI = insomnia severity index: Higher scores indicate higher levels of insomnia (Morin et al., 2011); FC-CPSES = French-Canadian Chronic Pain Self-Efficacy Scale: Higher scores indicate higher self-efficacy (Lacasse et al., 2015). N/A = nonavailable.

* $p < .05$. ** $p < .01$.

^aData are presented as median ± IQR values.

specified that meeting people having a similar reality was supportive, as mentioned by two women:

What I really appreciated was meeting other people who were experiencing the same things as me. (W2, 51 years old, FM for 21 years, divorced, high school completed, unemployed)

We feel less alone in the world in our situation. Because we can talk about it in our surroundings, but we do not feel very well understood. (W5)

On top of individual sessions, being part of a group helped decrease loneliness. As the group evolved, interactions between the participants stimulated them to initiate lifestyle changes:

“We evolved at the same time, and this was rewarding because I think we helped each other, so I think I’ve grown more quickly than if I had done this alone.” “We decided to keep in touch even if the intervention was done. I really feel like we have created

links with each other, as if a web has been formed between each of us.” (W4)

Discussion

This study explored the influence of a French-Canadian adaptation of Lifestyle Redesign[®] for CP management on 15 FM patients and their perceived experience. This intervention had a statistically beneficial influence on participants’ engagement in meaningful activities, life balance, mental HRQoL, depressive symptoms, and pain self-efficacy. Most participants also reported a clinically significant improvement of their mental HRQoL and of the impact of pain on their physical functioning. They also perceived an overall improvement of their health condition following the intervention. Pain remained stable or improved for the majority, whereas it deteriorated for a few others. Participants appreciated the focus being placed on the daily routine and were able to develop a sense of belonging throughout the intervention.

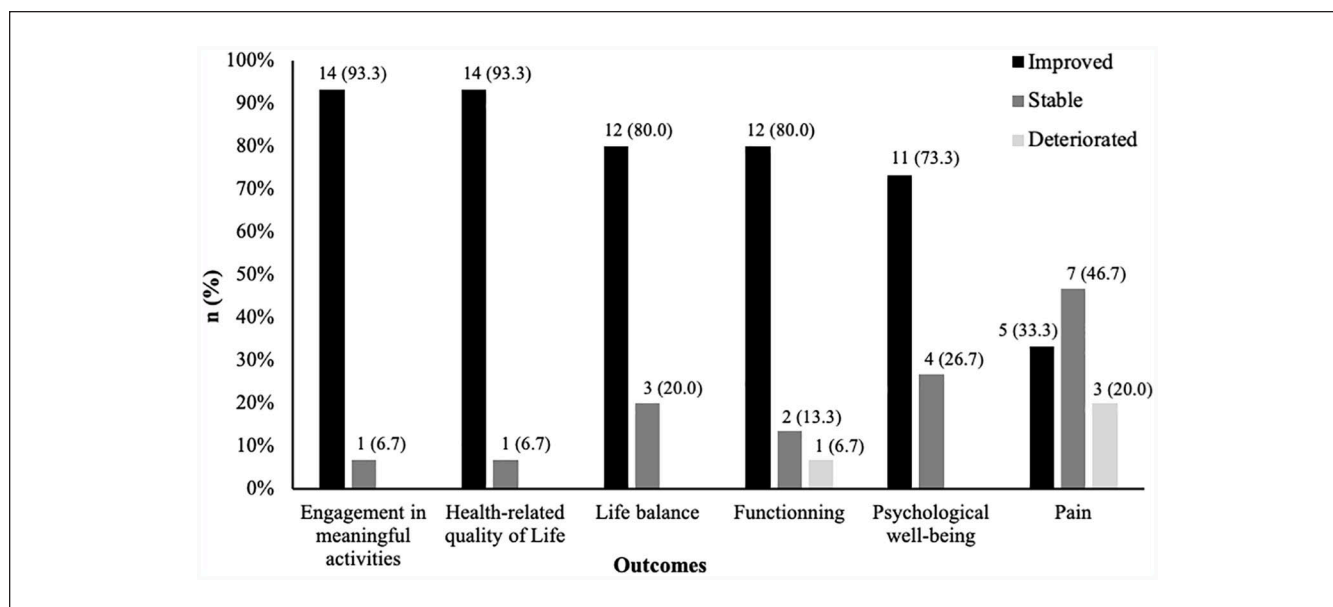


Figure 2. Frequency (and percentage) of participants who perceived changes on each outcome, using the modified version of the Patient Global Impression of Changes Scales between T_0 (pre-intervention) and T_1 (post-intervention) ($n = 15$).

Positive Occupational Adjustments Without Significant Influence on the Severity of FM and Pain

Our results corroborate those of the previous study on the original version of the Lifestyle Redesign[®] for CP management (Simon & Collins, 2017) intervention as both studies showed a trend for pain to remain stable over time although participants' daily functioning in meaningful activities improved. These findings suggest that the intervention might indeed have contributed to better CP management. This occupation-based intervention still allowed the participants to initiate lifestyle changes, contributing to an improvement in their quality of life and daily functioning. By focusing on the development of a meaningful healthy routine and habits despite pain, the Lifestyle Redesign[®] for CP management intervention is in line with evidence-based contemporary OT practice advancements (Black et al., 2019). This intervention highlights the importance of directly addressing links between meaningful occupations and health and well-being instead of focusing on pain and disabilities.

Combination of Group and Individual Sessions Within a Diagnosis-Specific Population

In the French-Canadian context, six group sessions and three individual sessions were offered to two groups of seven and eight FM patients over a 13-week period. This format differs from the original Lifestyle Redesign[®] for CP management study (Simon & Collins, 2017), which had an average of nine individual sessions over an 18-week mean duration with 45

participants presenting a variety of CP diagnoses, the most common being low back pain, myalgia (including FM), and complex regional pain syndrome. In this outpatient multidisciplinary clinical setting, an individual-based treatment was preferred, because group interventions were not offered, and it allowed more flexibility to schedule appointments. Authors argued that this individual format promoted increased personalized care. In the present study, the hybrid format was favored as proposed in the original Lifestyle Redesign[®] intervention (Clark et al., 1997, 2012). Individual sessions enabled personalized occupational adjustments, whereas group sessions had a beneficial influence on participants' sense of belonging throughout the entire process. Considering that group belonging is associated with improved mental health (Jetten et al., 2011; Sturgeon et al., 2015), allowing participants to share strategies, support each other, and break down social isolation might have contributed to the improvements seen with this version of the intervention. Interactions among participants having the same diagnosis and/or facing similar occupational challenges might have contributed to this sense of belonging. These findings suggest that the content and structure of this CP management intervention allow enough flexibility to adopt a client-centered approach and consider particularities of diverse social contexts and clinical settings. Occupational therapists must possess good facilitation skills to offer group sessions.

Strengths and Limitations

The combination of quantitative measures and qualitative interviews provided a deeper exploration of the participants'

experiences using the Lifestyle Redesign[®]. To ensure internal validity and representativeness of FM patients, occupational therapists followed a rigorous training program, and the study was conducted in two regions within the Province of Quebec. Fidelity of the intervention was not specifically assessed, but it was considered when applying the intervention. Although the duration of the intervention was considerably shorter than typical Lifestyle Redesign[®] interventions, and the sample size was relatively small, this study demonstrated significant influence in most measures. Indeed, we had previously estimated a sample size of 18 people to detect an effect size of 0.75 (Machin et al., 2009). Finally, to increase representativeness, future studies should involve a larger sample, other CP populations, and evaluate long-term changes (e.g., 3, 6, 12, and 24 months).

Conclusion

This pilot study suggests that Lifestyle Redesign[®] for CP management, an evidence-based contemporary OT intervention, can foster short-term lifestyle improvements for patients living with FM. Further studies should investigate its applicability, regarding its feasibility and implementation in Quebec clinical settings, as well as evaluate its long-term influence on pain management within diverse CP populations. This is a promising intervention that puts forward OT expertise to improve health and well-being through meaningful occupations, despite pain.

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Declaration of Conflicting Interests

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Ethical Approval

This study was approved by the Integrated University Health and Social Services Centers (CIUSSS) of the Eastern Townships—Centre Hospitalier Universitaire de Sherbrooke and the CIUSSS du Centre-Sud-de-l'Île-de-Montréal (No. MP-31-2019-2944).

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Supplemental Material

Supplemental material for this article is available online.

References

- Bennet, R. M., Friend, R. F., Jones, K. D., Ward, R., Han, B. K., & Ross, R. L. (2009). The Revised Fibromyalgia Impact Questionnaire (FIQR): Validation and psychometric properties. *Arthritis Research & Therapy*, 11(4), 415. <https://doi.org/10.1186/ar2783>
- Black, M. H., Milbourn, B., Desjardins, K., Sylvester, V., Parrant, K., & Buchanan, A. (2019). Understanding the meaning and use of occupational engagement: Findings from a scoping review. *British Journal of Occupational Therapy*, 82(5), 272–287. <https://doi.org/10.1177/0308022618821580>
- Canadian Association of Occupational Therapists. (2012). *Position statement pain management and occupational therapy*. <https://www.caot.ca/document/3711/P%20-%20Pain%20Mgt%20and%20OT.pdf>
- Clark, F. A., Azen, S. P., Zemke, R., Jackson, J., Carlson, M., Mandel, D., Hay, J., Josephson, K., Cherry, B., Hessel, C., Palmer, J., & Lipson, L. (1997). Occupational therapy for independent-living older adults. A randomized controlled trial. *Journal of the American Medical Association*, 278(16), 1321–1326.
- Clark, F. A., Blanchard, J., Sleight, A., Cogan, A., Florindez, L., Gleason, S., Heymann, R., Hill, V., Holden, A., Murphy, M., Proffitt, R., Schepens Niemiec, S., & Vigen, C. (2015). *Lifestyle Redesign[®]: The intervention tested in the USC Elderly Studies* (2nd ed.). The American Occupational Therapy Association Inc.
- Clark, F., Blanchard, J., Sleight, A., Cogan, A., Florindez, L., Gleason, S., Heymann, R., Hill, V., Holden, A., Murphy, M., Proffitt, R., Schepens Niemiec, S., & Vigen, C. (in press). *Remodeler sa vie[®]| Version canadienne-française du manuel Lifestyle Redesign[®]: The Intervention Tested in the USC Well Elderly Studies* (M. Levasseur, M.-H. Lévesque, M. Beaudry, F.-H. Therrien, N. Larivière, J. Filiatrault, M. Parisien, V. Provencher, M. Cauchon, H. Corriveau, N. Champoux, G. Mercier, H. Carbonneau & Y. Couturier, Trans.). QC, Canada: CAOT Publications ACE.
- Clark, F. A., Jackson, J., Carlson, M., Chuo, C.-P., Cherry, B. J., Jordan-Marsh, M., Knight, B. G., Mandel, D., Blanchard, J., Granger, D. A., Wilcox, R. R., Lai, M. Y., White, B., Lam, C., Marterella, A., & Azen, S. P. (2012). Effectiveness of a lifestyle intervention in promoting the well-being of independently living older people: Results of the Well Elderly 2 Randomised Controlled Trial. *Journal of Epidemiology and Community Health*, 66(9), 782–790. <http://dx.doi.org/10.1136/jech.2009.099754>
- Clauw, D. J. (2014). Fibromyalgia: A clinical review. *Journal of the American Medical Association*, 311(15), 1547–1555. <https://doi.org/10.1001/jama.2014.3266>
- Cleland, C. S., & Ryan, K. M. (1994). Pain assessment: Global use of the Brief Pain Inventory. *Annals of the Academy of Medicine, Singapore*, 23(2), 129–138.

- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research*. SAGE.
- Dueñas, M., Ojeda, B., Salazar, A., Mico, J. A., & Failde, I. (2016). A review of chronic pain impact on patients, their social environment and the health care system. *Journal of Pain Research*, 9, 457–467. <https://doi.org/10.2147/JPR.S105892>
- Eakman, A. M. (2012). Measurement characteristics of the engagement in meaningful activities survey in an age-diverse sample. *The American Journal of Occupational Therapy*, 66(2), 20–29. <https://doi.org/10.5014/ajot.2012.001867>
- Elzahaf, R. A., Tashani, O. A., Unsworth, B. A., & Johnson, M. I. (2012). The prevalence of chronic pain with an analysis of countries with a Human Development Index less than 0.9: A systematic review without meta-analysis. *Current Medical Research and Opinion*, 28(7), 1221–1229. <https://doi.org/10.1185/03007995.2012.703132>
- Fitzcharles, M.-A., Ste-Marie, P. A., Goldenberg, D. L., Pereira, J. X., Abbey, S., Choinière, M., Ko, G., Moulin, D. E., Panopalis, P., Proulx, J., Shir, Y., & National Fibromyalgia Guideline Advisory Panel. (2013). 2012 Canadian Guidelines for the diagnosis and management of fibromyalgia syndrome: Executive summary. *Pain Research and Management*, 18(3), 119–126. <https://doi.org/10.1155/2013/918216>
- Jaeschke, R., Singer, J., & Guyatt, G. H. (1989). Measurement of health status. Ascertaining the minimal clinically important difference. *Controlled Clinical Trials*, 10(4), 407–415. [https://doi.org/10.1016/0197-2456\(89\)90005-6](https://doi.org/10.1016/0197-2456(89)90005-6)
- Jetten, J., Haslam, C., & Haslam, S. A. (2011). *The social cure: Identity, health and well-being*. Psychology Press.
- Kielhofner, G. (2008). *Model of human occupation: Theory and application*. Lippincott Williams & Wilkins.
- Lacasse, A., Bourgault, P., Tousignant-Laflamme, Y., Courtemanche-Harel, R., & Choinière, M. (2015). Development and validation of the French-Canadian Chronic Pain Self-Efficacy Scale. *Pain Research and Management*, 20(2), 75–83. <https://doi.org/10.1155/2015/832875>
- Lacroix, P.-A., Pelletier, A.-J., Blondin, M.-P., Dugal, A., Langlois, C., Levasseur, M., & Larivière, N. (2018). Translation and validation of the Engagement in Meaningful Activities Survey. *Canadian Journal of Occupational Therapy*, 85(1), 11–20. <https://doi.org/10.1177/0008417417702925>
- Lagueux, É., Dépelteau, A., & Masse, J. (2018). Occupational therapy's unique contribution to chronic pain management: A scoping review. *Pain Research and Management*, 2018, 5378451. <https://doi.org/10.1155/2018/5378451>
- Larivière, N., & Levasseur, M. (2016). Translation and validation of the Life Balance Inventory: An occupational therapy questionnaire. *Canadian Journal of Occupational Therapy*, 83(2), 103–114. <https://doi.org/10.1177/0008417416632260>
- Levasseur, M., Filiatrault, J., Larivière, N., Trépanier, J., Lévesque, M. H., Beaudry, M., Parisien, M., Provencher, V., Couturier, Y., Champoux, N., Corriveau, H., Carbonneau, H., & Sirois, F. (2019). Influence of Lifestyle Redesign[®] on Health, Social Participation, Leisure, and Mobility of Older French-Canadians. *The American Journal of Occupational Therapy*, 73(5), 1–18. <https://doi.org/10.5014/ajot.2019.031732>
- Lévesque, M.-H., Trépanier, J., Sirois, M.-J., & Levasseur, M. (2019). Effects of Lifestyle Redesign on older adults: A systematic review. *Canadian Journal of Occupational Therapy*, 86(1), 48–60. <https://doi.org/10.1177/0008417419830429>
- Machin, D., Campbell, M., Tan, S.-B., & Tan, S.-H. (2009). *Sample size tables for clinical studies* (3rd ed.). Wiley Blackwell.
- Marques, A. P., de Sousa do Espírito Santo, A., Berresaneti, A. A., Matsutani, L. A., & Yuan, S. L. K. (2017). Prevalence of fibromyalgia: Literature review update. *Revista Brasileira de Reumatologia*, 57(4), 356–363. <https://doi.org/10.1016/j.rbre.2017.01.005>
- Matuska, K. (2012). Description and development of the Life Balance Inventory. *OTJR: Occupation, Participation and Health*, 32(1), 220–228. <https://doi.org/10.3928/15394492-20110610-01>
- Miles, M., & Huberman, M. (2014). *Qualitative data analysis* (3rd ed.). SAGE.
- Miller, W. L., & Crabtree, B. F. (2003). Clinical research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry* (pp. 292–314). SAGE.
- Morin, C. M., Belleville, G., Bélanger, L., & Ivers, H. (2011). Insomnia severity index: Psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep*, 34(5), 601–608. <https://doi.org/10.1093/sleep/34.5.601>
- Perrot, S., Dumont, D., Guillemin, F., Pouchot, J., Coste, J., & French Group for Quality of Life Research. (2003). Quality of life in women with fibromyalgia syndrome: Validation of the QIF, the French version of the fibromyalgia impact questionnaire. *The Journal of Rheumatology*, 30(5), 1054–1059.
- Pierce, D. E. (2014). *Occupational sciences for occupational therapy*. Slack Incorporated.
- Poole, J. L., & Siegel, P. (2017). Effectiveness of occupational therapy interventions for adults with fibromyalgia: A systematic review. *The American Journal of Occupational Therapy*, 71(1), 1–10. <https://doi.org/10.5014/ajot.2017.023192>
- Poundja, J., Fikretoglu, D., Guay, S., & Brunet, A. (2007). Validation of the French version of the brief pain inventory in Canadian veterans suffering from traumatic stress. *Journal of Pain and Symptom Management*, 33(6), 720–726. <https://doi.org/10.1016/j.jpainsymman.2006.09.031>
- Rampakakis, E., Ste-Marie, P. A., Sampalis, J. S., Karellis, A., Shir, Y., & Fitzcharles, M.-A. (2015). Real-life assessment of the validity of patient global impression of change in fibromyalgia. *RMD Open*, 1, Article e000146. <https://doi.org/10.1136/rmdopen-2015-000146>
- Roberge, P., Doré, I., Menear, M., Chartrand, E., Ciampi, A., Duhoux, A., & Fournier, L. (2013). A psychometric evaluation of the French-Canadian version of the Hospital Anxiety and Depression Scale in a large primary care population. *Journal of Affective Disorders*, 147(1–3), 171–179. <https://doi.org/10.1016/j.jad.2012.10.029>
- Robinson, K., Kennedy, N., & Harmon, D. (2011). Review of occupational therapy for people with chronic pain. *Australian Occupational Therapy Journal*, 58(2), 74–81. <https://doi.org/10.1111/j.1440-1630.2010.00889.x>
- Simon, A. U., & Collins, C. (2017). Lifestyle Redesign[®] for chronic pain management: A retrospective clinical efficacy study. *The American Journal of Occupational Therapy*, 71(4), 1–7. <https://doi.org/10.5014/ajot.2017.025502>
- Strong, J. (1996). *Chronic pain: The occupational therapist's perspective*. Churchill Livingstone.
- Sturgeon, J. A., Dixon, E. A., Darnall, B. D., & Mackey, S. C. (2015). Contributions of physical function and satisfaction with social roles to emotional distress in chronic pain: A Collaborative Health Outcomes Information Registry (CHOIR)

- study. *Pain*, 156(12), 2627–2633. <https://doi.org/10.1097/j.pain.0000000000000313>
- Townsend, E., & Polatajko, H. J. (2007). *Enabling occupation II: Advancing an occupational therapy vision for health, well-being, & justice through occupation*. Canadian Association of Occupational Therapists.
- Ware, J., Kosinski, M., & Keller, S. (1996). A 12-Item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*, 34(3), 220–233. <https://doi.org/10.1097/00005650-199603000-00003>
- Wolfe, F., Clauw, D. J., Fitzcharles, M.-A., Goldenberg, D. L., Katz, R. S., Mease, P., Russell, A. S., Russell, I. J., Winfield, J. B., & Yunus, M. B. (2010). The American College of Rheumatology preliminary diagnostic criteria for fibromyalgia and measurement of symptom severity. *Arthritis Care & Research*, 62(5), 600–610. <https://doi.org/10.1002/acr.20140>
- World Health Organization. (2004). *World Health Organization supports global effort to relieve chronic pain*. <https://www.who.int/mediacentre/news/releases/2004/pr70/en/>
- Wuytack, F., & Miller, P. (2011). The lived experience of fibromyalgia in female patients, a phenomenological study. *Chiropractic & Manual Therapies*, 19(1), 22. <https://doi.org/10.1186/2045-709X-19-22>