A Qualitative Study of the Impact of the COVID-19 Pandemic on a Sample of Patients With Chronic Pain

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Abstract
This qualitative phenomenological study examined the impact of the COVID-19 pandemic on the lives of patients living with chronic pain. Patients referred to an intensive interdisciplinary pain management program between June 2020 to June 2021 were asked, “How did the COVID-19 pandemic affect your life?” as part of their interdisciplinary assessment. Ninety patients (50 Veterans, 40 civilians) provided comments to this question, which were independently organized into themes using an inductive approach by 4 researchers. Nine main themes emerged: (1) changed psychological state, (2) minimal to no effect, (3) affected personal life activities, (4) changes in accessing care, (5) changes in work/education situation, (6) changes in family dynamics, (7) experiencing more annoyances, (8) COVID-19 pandemic is a barrier to making positive changes, and (9) got COVID-19. Themes are consistent with topics of interest in light of this ongoing, global stressor. Most commonly reported themes reflected changes in psychological well-being and changes in access to care, highlighting similarities between life with chronic pain and life under the pandemic for this group.

Keywords
chronic pain, qualitative, COVID-19 pandemic

Introduction
On March 11, 2020, the World Health Organization (WHO) declared the outbreak of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) a pandemic, sending the world into a state of uncertainty that continues 18 months later. Worldwide, governments enforced several public health measures to curb this deadly virus, including social distancing, mandating masks in public, closing of businesses, cancelation of social events, and extended lockdowns. Given the persisting uncertainty and the sudden and drastic changes to individual lives, the COVID-19 pandemic has had significant impacts on the psychosocial health of communities around the world (1–3). However, emerging studies point to unequal distribution of the mental health effects of the pandemic, such that some populations appear to be more affected than others (3–5).

In particular, those with pre-existing, chronic health conditions, such as chronic pain, have been reported to be more severely affected (4–5). Chronic pain is characterized as pain that persists for 6 months or longer despite the absence of ongoing nociceptive stimuli (6). It is estimated that 20% of the global population suffers from this condition, making chronic pain one of the most prevalent problems clinically (7,8). In addition to the debilitating effects of the chronic pain condition itself on the overall quality of life (9,10), the COVID-19 pandemic introduced new challenges to this population, particularly with the disruption in accessing healthcare services that are paramount to its treatment (11).

The present qualitative study explores the psychosocial effects of the COVID-19 pandemic on a sample of people
living with chronic pain assessed for admission as patients at an interdisciplinary chronic pain management program. Psychosocial adjustment describes how individuals adapt to changes in the environment at the levels of mental health, social and occupational functioning (12). The present study contributes to this burgeoning work by exploring how patients living with chronic pain perceived the pandemic and its effects on their lives.

Methods

Comments analyzed in this study were collected between June 2020 and June 2021, in the course of a larger interdisciplinary assessment to determine patients’ eligibility to participate in the Intensive Chronic Pain Management Program at the Michael G. DeGroote Pain Clinic in Hamilton, ON, Canada. Towards the end of a semi-structured psychological assessment, patients were asked, “How did the COVID-19 pandemic affect your life?” Interviews were conducted by a registered psychologist and study author, EGH. Comments were provided orally and recorded by the interviewer in writing. They were then anonymized for blind review and analysis by another researcher. Procedures for this study were approved by the Hamilton Integrated Research Ethics Board.

An inductive, qualitative, phenomenological approach with thematic analysis was used. Comments were first reviewed and organized into themes by 2 researchers in batches of 20 at a time using Microsoft Excel®. The first author, independently of the co-authors, categorized comments into their own themes, and then met with the research team to discuss the themes and arrive at a consensus in order to ensure we had an interrater agreement. Two other researchers then reviewed all the comments and themes for corroboration and solidified the emerging themes from the comments provided by the patients.

Study data were collected and managed using REDCap (13,14) which is hosted on McMaster University servers. REDCap is a secure, web-based software platform for data collection, providing (1) an intuitive interface for validated data capture; (2) audit trails for tracking data manipulation and export procedures; (3) automated export procedures for seamless data downloads to common statistical packages; and (4) procedures for data integration and interoperability with external sources. All surveys were saved in REDCap and were de-identified using REDCap IDs. Patient names were removed from REDCap and stored in a password-protected Excel® that is saved on the shared drive and only accessible by the research coordinator. If participants filled out surveys online, responses were saved directly in REDCap and managed by the same coordinator. If a participant filled out the survey on paper, responses were inputted into REDCap and paper copies were securely locked in the patient’s file. Through the process for sampling saturation, anonymization, and corroboration, we ensured quality, credibility, and integrity of data analysis.

Results

Demographics

Participants in this study consisted of 91 patients with chronic pain: 51 Veterans and 40 civilians. One comment was excluded as no relevant theme could be identified. As such, the final sample consisted of 90 patients: 48% male and 62% married or in a common-law relationship. Participants’ age ranged from 21 to 76 years, with a mean (SD) of 45 (12) years. With respect to their chronic pain condition, 38% had suffered a motor vehicle accident, 47% had a service-related injury, 9% reported both, and 6% did not identify a specific event that precipitated their pain. Patients in this sample had been experiencing pain on average (SD) for 10 years (11.1). Further description of the sample’s demographics is provided in Table 1.

Qualitative Analysis

Ninety patients provided comments in response to the question, “How did the COVID-19 pandemic affect your life?” Nine themes emerged, presented in Table 2.

1. Changed psychological state: This very common theme describes changes in mood and psychological functioning reported by patients and contained 52 comments that can be broken down further into 2

Table 1. Patient Demographics and Psychosocial Characteristics.

| Characteristics                          | N = 90 |
|----------------------------------------|--------|
| Sex (%)                                 |        |
| Male                                    | 48     |
| Female                                  | 52     |
| Age (years)                             |        |
| Range                                   | 21-76  |
| Mean                                    | 45     |
| SD                                      | 12     |
| Place of birth (%)                      |        |
| Canada                                  | 85     |
| Outside of Canada                       | 15     |
| Marital status (%)                      |        |
| Married, common-law                     | 63     |
| Divorced, separated                     | 14     |
| Single                                  | 23     |
| Veteran status (%)                      |        |
| Veteran                                 | 57     |
| Civilian                                | 43     |
| Years of education (%)                  |        |
| < 8                                     | 3      |
| 9-12                                    | 26     |
| > 13                                    | 71     |
| Employment status at time of assessment (%) |        |
| Employed FT                             | 26     |
| Employed PT                             | 6      |
| Unemployed                              | 37     |
| Retired                                 | 31     |
| Pain duration (years; M [SD])           | 10 (11.1) |
Table 2. Number of Comments for Each Theme.

| Theme                                           | No. of comments |
|-------------------------------------------------|-----------------|
| Theme #1: Changed psychological state           | 52              |
| Theme #2: Minimal to no effect                  | 27              |
| Theme #3: Affected personal life activities      | 26              |
| Theme #4: Changes to accessing care             | 21              |
| Theme #5: Changes in work/education situation   | 9               |
| Theme #6: Changes in family dynamics            | 9               |
| Theme #7: Experiencing more annoyances          | 6               |
| Theme #8: COVID-19 pandemic is a barrier to making positive changes | 3               |
| Theme #9: Got COVID-19                          | 2               |

broad subthemes: (a) negative psychological change and (b) positive psychological change. Under the negative psychological change, patients reported worsening of mood, anxiety, and pain-related problems, increased sensitivity to pre-existing life stressors, concern for family members’ wellbeing, concern over contracting COVID-19, negative impacts on health due to pandemic-related restrictions including weight gain, reduced activity, and more frequent alcohol consumption. Under positive psychological changes, most patients reported relief at being able to stay at home and limit social interactions, often describing themselves as “introverted” or citing pre-existing “social anxiety.” Other patients reported that they have been able to engage in more positive health behaviors. Examples of these experiences are below:

Negative psychological change

Worsening of mood, anxiety, and pain-related problems:
- A male patient said, “When I was busier in life, it was easier to put it [pain] in the background even from before COVID, but not anymore. I am very sad, lots of triggering anxiety, don’t know where it comes from … wake up in complete pain, unsettling.”

Concern for family members’ wellbeing:
- A female patient reported, “I have more worry for the kids. My daughter got accepted to go to College but she deferred it. The other one is in high school.”

Positive psychological change
- A male patient stated that he is “happier being an introvert. Life has been solely focused on children and wife. The pandemic actually benefited me.”

2. Minimal to no effect: A total of 27 comments fell under this theme. The majority of patients reported that life in the COVID-19 pandemic mimics life before the pandemic in terms of social isolation and mood and anxiety problems related to their chronic pain condition.
- A female patient reported, “I was very isolated after the injury. COVID-19 didn’t change anything for me.”

3. Affected personal life activities: The 26 comments under this theme described the influence of the pandemic on social and recreational activities. Some patients reported feeling isolated and a desire for more social and leisure activities. Others indicated that plans for leisure activities, such as traveling, were interrupted. Some patients indicated that they have been able to spend more time with family. One patient indicated that his wedding plans had to be postponed.
- A female patient said, “The COVID-19 pandemic isolated me more generally. I like to go out so it has taken a huge mental strain on me. The gyms being closed—that has taken a great toll on me.”

4. Changes in accessing care: Twenty-one comments fell under this theme. Most patients reported disrupted access to care, such that some were unable to continue services they had prior to the pandemic (eg, physiotherapy, massage therapy), and others had to delay beginning new treatments. A smaller proportion of patients reported no loss of care, noting that they were able to use virtual services. However, one person commented that virtual care was challenging due to internet and connectivity issues. Similarly, under this theme, some patients reported limiting their own access to care due to fears of catching COVID-19. Examples of these experiences are below:

Loss of access:
- A female patient reported: “Treatment was cut off, had to go without things. Had to virtually heal myself. Still need that treatment. Mental health has been a problem, too.”

No loss of care:
- A male patient reported, “I have been able to attend in-person physiotherapy 1-to-1 and I speak to my psychologist monthly via Zoom.”

5. Changes in work/education situation: Comments under this theme described disruptions in work or...
school activities for patients as well as their family members adding to the distress some patients were already experiencing. The 9 comments under this theme described reductions in work hours, shifting to virtual work, changing jobs, and loss of employment.

- One female patient reported, “I became a commercial driver and started working in November 2019 until when COVID started and then that got interrupted.”

6. Changes in family dynamics: This theme describes reported changes in patients’ involvement with their families. Here, patients reported increased responsibilities, including caring for children and helping out more with their grandchildren and parents. Patients also reported that they were spending more time with family members than they would normally as everyone was encouraged to isolate themselves within their household in order to limit the spread of COVID-19. Many individuals have also become more concerned for the well-being of their family members, especially elderly family members. Nine comments fell under this theme.

Impact on family members:

- A female patient commented, “It just affected my little guy. Can’t get out to do things and that affected him at first. There was no teacher and I became the teacher but I was like the Military with him and that was not helpful.”

Increased responsibilities:

- A female patient reported: “My partner could be a lot more supportive, he is present but not helpful. My son is my priority. I attend to him regardless of how it makes me feel.”

7. Experiencing more annoyances: Several patients commented on their experience with pandemic-related behavioral changes and restrictions. The 6 comments under this theme described needing to wear a mask everywhere, increased screening to access health services, needing to become more aware of retail closures and signs in stores, and frustration with the pandemic.

- A male patient commented: “It’s annoying to have to wear a mask.”

8. COVID-19 pandemic is a barrier to making positive changes: Under this theme, patients identified that pandemic-related restrictions and uncertainty would be a barrier to managing their pain condition and making positive changes. Three comments fell under this theme.

- A male patient commented, “Nothing besides COVID would be a barrier to making changes right now.”

9. Got COVID-19: Two patients reported getting infected with COVID-19.

- A female patient indicated that she got COVID when it first started in March of 2020; she felt “upset and it was like a flu.”

Discussion

Research on the effects of the COVID-19 pandemic is fast advancing indicating that COVID-19 is one of the greatest collective challenges of our time. This study reports on the effects of the pandemic on 90 individuals experiencing chronic pain, assessed at the Michael G. DeGroote Pain Management Clinic over a period of 1 year from June 2020 to June 2021. Nine themes were extracted from patients’ answers to the question on how the COVID-19 pandemic affected their lives: (1) changed psychological state, (2) minimal to no effect, (3) affected personal life activities, (4) changes in accessing care, (5) changes in work/education situation, (6) changes in family dynamics, (7) experiencing more annoyances, (8) COVID-19 pandemic is a barrier to making positive changes, and (9) got COVID-19.

The themes identified here largely represent topics discussed during the pandemic. The most common theme, changes in psychological state, highlights the significance of the mental health impacts of the COVID-19 pandemic on people living with chronic pain. This is not surprising considering the disruption of daily life, uncertainty, and increased risk of illness that accompanied the onset of this global stressor. Indeed, numerous studies point to increased psychological distress, especially for vulnerable groups such as those with chronic health conditions, following the onset of the pandemic (1,3–5,15). Patients reporting negative psychological change described worsening of pre-existing pain-related problems, including depression, anxiety, sensitivity to life stressors, and pain intensity. These reported problems may reflect disruption in access to health services as was demonstrated by another theme that emerged in this study.

However, some patients reported positive changes in their psychological state during the pandemic, describing improvements in subjective well-being related to decreased day-to-day demands and limited social interactions prescribed by public health policies. This set of comments is interesting as they point to the complexity of the relationship between functional activity and psychological well-being in chronic pain. Although activity avoidance is linked to increased emotional distress in this population, there are mixed findings regarding optimal patterns of activity (16–18). It may be that life during the pandemic involves fewer daily hassles that would be perceived as stressful by those with chronic pain. Alternatively, these comments capture respondents’ psychological well-being at a single point in time, and longitudinal studies looking at the relationship between activity engagement and mental health over the course of the pandemic are needed.
Interestingly, many patients reported minimal or no impact of the COVID-19 pandemic on their lives. Comments under this theme described similarities between the lives of chronic pain patients and life under the pandemic: patients described themselves as experiencing isolation, psychological distress, limited engagement in activities outside the home, and interrupted employment long before the pandemic. These comments highlight the significantly decreased quality of life associated with chronic pain (9,19) and raise the question of whether strategies employed to mitigate the negative social and psychological impacts of the pandemic (eg, virtual social events) may support adjustment of people living with chronic pain outside of the pandemic.

An important theme that emerged for this population described changes in accessing care. The most effective treatment for chronic pain involves practitioners from different disciplines, considering the multifactorial nature of this chronic condition (20). The suspension of all in-person services posed a significant challenge to providers and patients. Although there was a shift to telehealth and virtual services that enabled some to continue accessing care, loss of care was associated with increased distress and may explain the worsening of symptoms. Similarly, some patients limited their own access to care due to fear of contracting COVID-19. Relatedly, theme #8 highlighted the impact of the COVID-19 pandemic on the potential for adopting positive change strategies that are central to the self-management of pain.

Two related themes emerged reflecting disruptions of one’s daily routine: themes #3 and #6. Some patients described isolation and distress related to closures and limited contact with others while others described positive experiences with spending more time with family members. Relatedly, some patients appear to have assumed additional family responsibilities, such as being more involved in their children’s learning or caring for elderly family members. Overall, patients reported increased concern for vulnerable family members such as elderly parents and children. Considering the increased emotional reactivity of individuals living with chronic pain to life stressors (21), understanding the impact of these experiences on pain intensity and pain-related adjustment is an important area for future research.

The economic impact of the pandemic led to the loss of employment for many people. This consequence was also experienced by those with chronic pain, as evidenced by comments describing disruptions in employment and schooling. Disruptions in work and academic activities are likely to have a financial burden on individuals living with chronic pain which has been linked to greater vulnerability to pain in this population (22).

Theme #7 highlighted patients’ experience of pandemic-related restrictions and precautions in place to prevent infection, such as mask-wearing and social distancing. Patients reported finding adjusting to these measures “annoying”; in light of work suggesting increased vulnerability to daily stressors among people living with chronic pain (21), it may be important to examine how these experiences relate to the pain condition.

The final theme that emerged in this study related to actually contracting COVID-19. Only 2 patients provided comments that fell under this theme, which is interesting to note considering the increasing incidence rates of COVID-19 in Ontario over the period during which these data were collected (23). However, the fact that few mentions this may reflect the limited socialization of patients experiencing chronic pain as described in the comments above.

Emerging work demonstrates disparities in how the COVID-19 pandemic has affected individuals (4), emphasizing the importance of fine-grained exploration of individual experiences during the pandemic. In this qualitative phenomenological study, we highlight several themes of particular relevance to individuals living with chronic pain during the pandemic, which could be targeted for future research and policy. More longitudinal and representative research is needed. We did not examine themes based on gender, despite existing work demonstrating gender differences in mental health outcomes among patients with chronic pain (24), as well as broadly among individuals during the pandemic (4,25–27). Further work should also examine whether themes differ between veterans and civilians. In addition, some work suggests varying trajectories of mental health outcomes between individuals across the pandemic period (1,2). Although our data were collected over a 1-year period, we did not examine whether themes varied by time of data collection. Finally, an important direction for future work is exploring how these themes relate to one another.

The present qualitative study contributes to the growing body of literature exploring the psychosocial impacts of the COVID-19 pandemic, focusing specifically on individuals living with chronic pain. Our findings point to changes in psychological well-being, loss of access to care, and similarly limited social and recreational activities due to the chronic pain condition prior to COVID-19 as especially relevant themes for patients.

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Declaration of Conflicting Interests
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval
This study was approved by Hamilton Integrated Research Ethics Board.
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Statement of Human and Animal Rights
All procedures in this study were conducted in accordance with the Hamilton Integrated Research Ethics Board approved protocols (Approval #11166).

Statement of Informed Consent
Written informed consent was obtained from the patients for their anonymized information to be used for research purposes.

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Note
1. This comment was unrelated to the impact of the COVID-19 pandemic on the respondent; rather it was a statement describing the respondent’s connection to an event that appeared recently in the news.

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