



Effects of the COVID-19 pandemic on chronic pain in Spain: a scoping review

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Abstract

The COVID-19 outbreak has been a great challenge in the management of chronic pain patients. We have conducted a rapid scoping review to assess the impact of the pandemic (and the associated public health measures) on the health status and management practices of chronic pain patients in Spain. To this end, we performed a bibliographic search in LitCOVID and PubMed, and reviewed official websites and documents, and expert reports. The review showed that (1) the studies consistently indicate that the pandemic has had a very negative impact on the physical and psychological health of chronic pain patients; (2) there are scarce data on how the pandemic affected pain unit consultations and a lack of protocols to organize health care in the face of future waves of contagion, with little implementation of telehealth. We make proposals to improve management of chronic pain patients in pandemic situations, which should pivot around 3 axes: (1) a coordinated response of all the relevant stakeholders to define a future roadmap and research priorities, (2) a biopsychosocial approach in pain management, and (3) development and implementation of novel telemedicine solutions.

Keywords: COVID-19 pandemic, Chronic pain, Telehealth, Pain clinics

1. Introduction

From 14 March to 18 May, the Spanish Government declared a nationwide state of alarm with strict measures to reduce spread of the SARS-CoV-2 virus. This unprecedented situation involved a generalized lockdown of the population with restriction of movements, except for some essential activities (eg, working, buying food or medicine, and taking pets out). People were required to stay confined in their habitual residences, to not participate in social gatherings, and to limit face-to-face interactions to household members. However, some restrictions were removed during this period; on 26 April, children 13 years old or younger were permitted to go out for an hour/d; on 2 May, people over 14 years old were allowed to return to outdoor physical activity at specific time slots. The nationwide state of alarm ended on 21 June, with official reports

of 246,272 people infected and 28,323 deaths.²⁰ However, an epidemiological study of seroprevalence estimated that approximately 5.2% of the Spanish population had been in contact with the virus, ie, more than 2,400,000 people might have been infected.²³ Although at the beginning of the summer there was a period of calm with few infections and more relaxed restrictions, outbreaks began to appear at the end of this season, leading to reimposition of targeted control measures in some locations. During the autumn, the second wave of transmission notably increased the official figures, with a total of 1,773,290 infections (seroprevalence estimations of around 10% of the population being infected²²) and 48,596 deaths as of 16 December 2020.²¹

Regardless of the effects of SARS-CoV-2 infection on the occurrence of pain-related problems, the health measures taken to halt the COVID-19 pandemic have had significant consequences on the management of chronic pain patients and on their health status. In the early stages of the alert, health authorities had to prioritize measures to prevent massive spread of the coronavirus, mitigate the risk for health care staff and patients and, reserve medical resources for COVID-19 patients. This resulted in limited access to pain management services and undertreatment of chronic pain patients. Although the consequences of disrupting treatments for chronic pain have yet to be estimated, they are likely to be substantial, probably increasing the quantity, severity, and complexity of pain symptoms. It is expected that the isolation/social distancing due to the COVID-19 pandemic will worsen the physical and emotional condition of chronic pain patients.¹⁹ Nevertheless, we have no solid data on the real impact of the pandemic and lockdown measures on chronic pain patients in Spain.

Thus, in this article, we attempted to review reports published in scientific journals, official documents produced by health agencies, recommendations by scientific societies, and reports from pain

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observatories and patients' associations. The objective was to assess the impact of the pandemic in Spain: (1) on the physical and psychological health status of chronic pain patients and (2) on changes in pain management practices, including telemedicine experiences. Also, we propose recommendations to improve attention to chronic pain patients in future waves of contagion.

2. Methods

To map the available evidence on the impact of COVID-19 in chronic pain management, here, we conducted a scoping review. This type of review provides an overview of the emerging research.^{3,25}

We searched studies collected in LitCovid, a resource containing up-to-date scientific information about COVID-19, using "pain" as keyword and selecting those referred to Spain. Also, we searched in PubMed using the terms ([COVID* or coronavirus or SARS-CoV-2] and ["chronic pain*" or "pain disease*" or "pain patient*" or "chronic disease" or "pain management" or "pain unit*" or "pain clinic*" or "pain consultation*" or "pain treatment" or "pain medicine"] and Spain). The search was performed on the 16th of December 2020.

We additionally searched ongoing systematic reviews (PROSPERO) and registered clinical trials (clinicaltrials.gov and European Clinical Trials Registry).

To complement the search in databases, we performed a manual search on Google and on the pages of relevant institutions, agencies, and organizations (eg, website of the Spanish Ministry of Health, regional health systems, scientific societies and patient associations). In addition, we contacted with 3 experts in the field of chronic pain.

We exported the obtained references to Rayyan,²⁹ a free software that facilitates systematic reviews. Two authors double-screened all titles and abstracts, excluding all studies that were out of scope. We included studies conducted in Spain, evaluating the effect of the pandemic on the health status of patients with chronic pain and on pain units activity, regardless of their design. We included studies published in English or Spanish.

Given the nature of this review, only a descriptive analysis of the studies, and no risk of bias analysis was performed. The review aims to provide an overview of the existing evidence, regardless of methodological quality or risk of bias, and outlines the main implications to clinical practice, research, and health policy.

3. Results

The PRISMA flow chart is shown in **Figure 1**. After the initial screening by title and abstract, and elimination of duplicates, we obtained 14 articles. In addition, we identified 6 records from additional sources. After full-text reading, we eliminated 8 studies because they were not performed in our target population (ie, health care workers, older people, or general population) and 1 because it was not referred to the activity of pain units. Finally, 11 published articles were included.

In addition, we identified 3 websites with the results of online studies, which are also included in this narrative review.

We classified the records into the 2 categories described below.

3.1. Assessment of the impact of COVID-19 on chronic pain patients' health

We found 4 published reports specifically analysing the effects of lockdown and treatment discontinuation on chronic pain patients' health.^{6,17,26,30}

López-Medina et al.¹⁷ released an online survey through patient organisations and social media, which was eventually completed by 644 rheumatic patients. They found that 37.4% of the patients reported worsening of pain, fatigue, and stiffness (computed in a composite index) during the confinement. Also, 75.5% reported mood disorders, which were significantly associated with the worsening of physical symptoms. They authors explained those results as a consequence of the lack of daily physical activity and the disruption of treatments (observed in 20.3% of the patients).

Similarly, an online survey explored the effects of the pandemic (from 27 April to 25 May 2020) in a sample of 502 patients with chronic pain.²⁶ The main findings were as follows: (1) the lockdown was related to a worsening in most of the clinical domains assessed (pain intensity and frequency, pain-related interference and distress, sleep problems, among others); (2) the patients increased resting and medication intake to cope with their problems during the lockdown; positively, 48.2% incorporated stretching in their daily routine; and (3) the patients perceived that sleep problems, sedentarism, and psychological factors (worries about the future, fear of suffering from COVID-19, insecurity, sadness, and loneliness) were the main triggers for their pain.

One study explored the emotional distress derived from the pandemic situation among 362 patients with central sensitization pain (fibromyalgia, chronic widespread pain, and low back pain).³⁰ They found that the difficulties in receiving medical care or maintaining daily routines, and the loss of social support were the variables that best predicted emotional distress. In addition, changes in daily routines and emotional distress were significantly associated with pain intensity.

Brocalero-Camacho et al.⁶ analysed the effect of discontinuation of a neurostimulation treatment for pain. In a phone interview, 81 patients were asked to quantify their pain on a numerical rating scale. They observed that patients who discontinued their treatment reported worsened pain (from 5.0 to 6.7 on a scale of 10), whereas those who continued their treatment at home (8.6%) reported no change in their pain ratings. The study concluded that the effects did not depend on the lockdown per se but on the discontinuation of the therapeutic procedure. These results reinforce the need to develop interventions that can be performed at home.

In addition, we found 2 reports published online on the consequences of the quarantine and of inaction on chronic pain patients. The International Observatory 4 D,²⁸ in collaboration with Spanish federations and associations for fibromyalgia and chronic fatigue disease, performed an online survey with 274 chronic pain patients during the first week of May 2020. Regarding the impact of confinement on physical health, more than 70% of the patients reported a significant worsening of chronic pain and 73.7% had to increase their medication (33.2% almost daily). In addition, more than 70% reported increased fatigue (36.5% of which were at maximum levels), 60.6% reported having to stay in bed longer than usual, and 82.1% reported more difficulty in sleeping (45.6% to a high degree). Concerning psychological health, around 80% of the participants reported increased levels of anxiety and depression, trouble concentrating and social isolation. Also, 71% reported changes in functionality doing their habitual work because of increased pain. Interestingly, 91.6% of the participants reported that the pandemic situation affected their access to health care services.

The Spanish Pain Society (Sociedad Española del Dolor [SED])³³ also published the results of a survey made during the lockdown among chronic pain patients (around 260 responses).

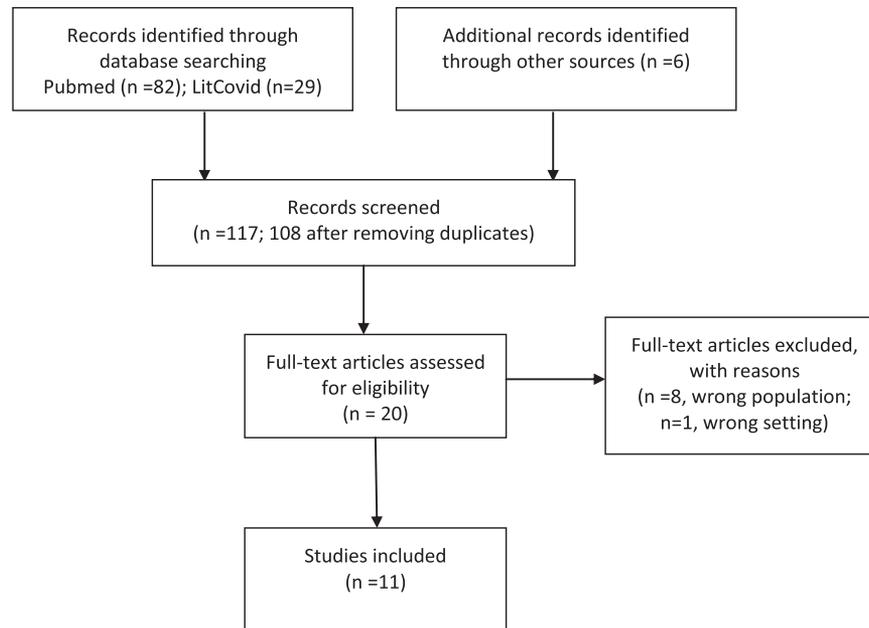


Figure 1. Flow diagram depicting the selection process.

The survey revealed that 61% of the patients reported that their pain at that time worsened, 42% reported that the situation had a negative effect on their mood, and 36% increased their use of medication. Also, sleep worsened for the 63.3% of the surveyed.

Although not directly performed with chronic pain patients, the Pain Observatory surveyed more than 670 employees (teachers, researchers, and administrative staff) of a Spanish University by e-mail.²⁷ They found that 46.8% of the participants did less physical exercise than before, and 23.3% of them slept badly or very badly. Although the respondents reported no difference in health perception during the pandemic, 41.9% of the participants who had previously suffered chronic pain reported that it was worse than before the confinement.

In sum, the studies performed used online/telephone procedures and altogether surveyed more than 2,000 patients with chronic pain. All of them consistently found negative effects of the pandemic and lockdown measures (including closure of clinics) on clinical symptoms, mood, and functionality.

3.2. Changes in chronic pain management during the COVID-19 pandemic

We found 5 articles analysing the effect of the pandemic in pain management practices.^{1,2,9,12,15,16,18}

It is widely acknowledged that the pandemic situation also caused delays in procedures, treatments, and interventions for chronic pain patients. We have not found data on how much activity in the pain units of Spain was cancelled during the alarm state, but we can estimate it from online surveys performed in headache units¹⁵ or rheumatology services.¹² The percentage of cancelled consultations in headache units differed among regions depending on the rate of COVID-19 infections (ranging between 29% and 100%), with more than 75% of cancellations in approximately half of the regions. Most of the respondents anticipated an increase in waiting lists in the following months and manifested their desire to increase the use of telemedicine, which could also be increasingly demanded by patients. In Spain,

almost 90% of the rheumatology services were locked down, and in more than 60% of the services surveyed, the closure was complete during more than 7 weeks.¹² Coma et al.⁹ analysed 34 indicators of Healthcare Quality Standard in primary care attention to chronic diseases, and found a negative effect of the pandemic on 85% of the indicators (related to the adequacy of treatment, follow-up and control of chronic diseases, screening, vaccinations, or quaternary prevention). They found that the lockdown measures significantly reduced the follow-up and control of patients.

Concerning the measures to mitigate the impact of the pandemic on the management of chronic pain, we found a report proposing specific measures for the reestablishment of the pain units activity.¹ In this article, the authors reviewed different pain treatments and made proposals of interventions with minimal interference on the immune system, as well as recommendations to guarantee the safety of the patients. In this line, other publication made recommendations about pharmacological therapy for chronic pain patients depending on the presence of not of COVID-19 infection or immunity.²

We did not find any preregistered clinical trial (review of Clinicaltrials.gov and European Clinical Trials Registry) on the effect of management practices or interventions to attenuate the impact of the pandemic situation on chronic pain, with the exception of one trial consisting of an educational and psychological intervention programme—involving people infected with SARS-Cov-2—aimed at reducing the consequences on the postintensive care syndrome and chronic pain (ClinicalTrials.gov Identifier: NCT04394169).

Although both clinicians and patients look favourably on telehealth care,¹⁵ it is difficult to know exactly the extent to which Information and Communication Technologies (ICTs) were used in pain units during the pandemic. Again, we could extrapolate data from headache consultations¹⁵: around 92% of the units replaced visits by telephone contacts. A survey of 244 rheumatic patients conducted to assess the level of satisfaction with phone consultations found that 52.7% were satisfied with the service,

whereas 47.3% were not satisfied.¹⁶ The patients who considered phone consultation to be useful were significantly younger (about 3.5 mean years less) and showed lower levels of stiffness and axial pain.

We also reviewed official documents and expert recommendations to know what measures were undertaken to mitigate the impact of closure of pain clinics. The Spanish Ministry of Health (<https://www.mscbs.gob.es>) published a series of recommendations for the management of patients, of those infected with COVID-19 and of vulnerable groups, such as oncology patients and patients in dialysis units or in palliative care. There were no specific recommendations for the management of chronic pain patients during the pandemic, which were taken up by scientific societies.

The Spanish Pain Society (SED; <https://www.sedolor.es>) has provided information resources for professionals and patients with chronic pain. In relation to patients, apart from the basic recommendations for prevention (hygiene, isolation, and face-masks) and for behaviour in the case of COVID-19 infection, at the beginning of the state of alarm, the SED published specific information for chronic pain patients on 3 subjects: consumption of analgesics, pain management in the pandemic, and a proposal for organizing pain clinics to face this crisis. Regarding the use of medication, the recommendation was to continue with the regular consumption of analgesics, in the absence of any evidence that these have negative effects on COVID-19. In addition, patients were given recommendations for coping with confinement, such as staying active, exercising, maintaining proper sleep hygiene, and managing emotions in a positive way. Regarding the functioning of pain units, it was reported that all nonurgent visits were cancelled, and that on-site care would only be available for urgent and nondeferrable cases (eg, control of recent surgeries or filling intrathecal pumps), whereas the use of telematic methods was recommended.

At the beginning of the de-escalation phase (May 2020), the SED made recommendations to professionals on how to manage chronic pain problems when care activity in pain units resumed (www.sedolor.es).¹⁸ Those recommendations were based on a narrative review made in the middle of May 2020 and generally followed recommendations from the EU roadmap, taskforces from international scientific societies, or groups of experts.^{8,11,31} In addition to safe procedures in face-to-face consultations, the guidelines included triage norms, prioritization of pharmacological and rehabilitation services (noninterventional), and assessment of patients' comorbidities for risk stratification before proceeding with interventional techniques. At this stage, the advice was to limit on-site consultations to preferential cases (such as uncontrolled oncological pain, any severe pain with alarm signs, high intensity neuralgia (eg, postherpetic and craniofacial), complex regional pain syndrome, or sudden onset or worsening of radiculalgia), and to promote the use of teleconsultation (preferentially by videoconference). Similar recommendations have been published in the Spanish Journal of Anaesthesiology and Reanimation (*Revista Española de Anestesiología y Reanimación*, SEDAR).⁴

We have also identified one position statement on standard headache and neuralgia treatment in the context of the COVID-19 pandemic, developed by the Headache Study Group of the Spanish Society for Neurology.²⁴ In this document, the authors recommended the use of conventional treatments because they did not find any scientific evidence to contraindicate these. In addition, guidelines on drug interaction with drugs used to treat COVID-19 were provided. We identified some proposals on related disciplines with chronic care such as rehabilitation, describing actions to expand the use of

new technologies such as telerehabilitation and wearable assessment devices.⁷ The Spanish Society for Rheumatology (*Sociedad Española de Reumatología*) also published a position article on functioning and restoration of the activity of rheumatology services in the face of the COVID-19 crisis.³²

We also reviewed recommendations from Spanish regional health services concerning telemedicine use during the pandemic. A recent study reviewed the formats, uses, advantages, and dangers of telemedicine tools during the pandemic.³⁴ Although the health application of ICTs is included in the agenda of all the governments, which encouraged their use in the pandemic situation, we found that these instruments were preferably placed at the service of COVID patients, and regional health systems in Spain show uneven development and application of ICTs.

4. Discussion

The first wave of the epidemic by COVID-19 was very harsh in Spain, and this forced the adoption of the strictest measures, compared with other countries. In this study, we aimed to review how the management of patients with chronic pain was performed, and how they were affected by the pandemic situation, in case this learning can be used in future comparable situations.

The pandemic has confronted humankind with an unknown situation and posed an unprecedented challenge to health systems and society. It is understandable that in this context health resources have mainly been allocated to the fight against COVID-19. In Spain, as in other countries, we have suffered what has been called "the distraction effect," namely, the ability of COVID-19 to overshadow all other health concerns with consequent negative effects on patient health and the limitation of economic resources available for other health problems.¹⁰

Although little research has been conducted in Spain on COVID-19 and chronic pain, the available evidence reveals that the lockdown has had a strong impact on the physical and psychological health of chronic pain patients. The confinement and social isolation have resulted in increased sedentary behaviour and anxiety, with negative consequences on pain, medication use, sleep, and fatigue. The data show that the impact of the COVID-19 crisis on health has been greater in people with chronic pain than in the general population. However, the studies reviewed focused on the early phases of the pandemic (March to May 2020), and we have no data on how the continued situation of health and socioeconomic uncertainty is affecting patients with chronic pain.

Interestingly, we found that the difficulty in receiving medical care was a significant predictor of emotional distress³⁰ and increased pain.⁶ Chronic pain patients are a vulnerable population, and they should receive special attention in situations of health care emergency. Although the experts did recognize that the attention given to patients during the pandemic was limited, because of the cancellation of face-to-face consultations and the delay in interventional procedures, we found few initiatives to mitigate the effects of the closure of pain units. In addition, we did not find any information regarding plans to improve the response in second or successive waves of contagion. We found a current clinical trial aimed at reducing chronic pain after COVID-19 infection. In the coming months, it would be interesting to determine the number of people suffering from chronic pain after this infection. We have contacted pain specialists from 2 large hospitals in the region (NW Spain), and they reported only 1 case of pain after femoral thrombosis.

Most of the face-to-face consultations cancelled were substituted by phone consultations, with little use of online platforms for homecare and patient monitoring. The studies revealed a large proportion of unsatisfied people, so the challenge is to improve patients' satisfaction with telemedicine services, identify those who are most likely to receive successful online care, and to develop triage protocols to identify patients who need face-to-face visits. This review identified a lack of any plan or protocol to use telemedicine resources to optimize the care of chronic pain patients in periods of pandemic. In other fields, we found that the Spanish Society for Cardiology has prepared a consensus document to improve the quality of care in their telephone consultations, defining which aspects can be treated telemedically and which require face-to-face consultation.⁵

As a limitation of this review, we may have overlooked some research in progress. Given the recent emergence of the pandemic and the time scale at which science usually progresses, it is possible that some research in Spain has not yet been published or preregistered in research databases. Indeed, we are aware of other studies being performed in Galicia (NW Spain).

5. Conclusions and proposal for the future

The exceptional circumstances derived from this pandemic have been particularly extreme in our country (high rate of infections, very strict confinement, cancellation of activities in pain clinics, and huge economic crisis...). Thus, the study of the personal and socioeconomic consequences on patients with chronic pain is especially relevant in Spain.

This scoping review evidenced a large impact of the lockdown measures on the physical and psychological health of chronic pain patients. To improve the health care of chronic pain patients, adapted to the new challenges generated by the pandemic, we proposed the following recommendations.

First, a coordinated response of health authorities, scientific societies, researchers, and patient associations to define a future road map and changes in health care delivery to chronic pain patients.

Second, one aspect that has become evident during this crisis is the need to adopt a biopsychosocial approach to prevent undermining the care of patients with chronic pain.^{14,19} As indicated in one study, the emotional impact of the pandemic and its effects on pain support the need for psychological monitoring of chronic pain patients during periods of health crisis.⁴ This should lead to the adoption of a biopsychosocial approach and the inclusion of multidisciplinary pain interventions, also a necessary response to adapt to an aging population and to a probably future increase in chronic pain problems.

Telemedicine should be the third cornerstone of the future road map in chronic pain management. The pandemic has brought telemedicine to the forefront of patient care and will certainly boost the use of these instruments. As in education and administration, telehealth tools can mitigate the impact of the viral pandemic and contribute to improving the well-being of the chronic pain population. Pain specialists should also be ambitious and understand that telehealth can involve much more than phone consultations. It is important to expand the formats, using specific platforms that are already available (such as electronic medical records and home telecare platforms), and to extend the application of these tools to diverse aspects of health care (ie, for daily monitoring of patients, for remote control of treatment devices such as neuromodulatory interventions, rehabilitation, and psychological interventions). To achieve this, it is

essential to have a common coordinated plan involving all health care agents.

The COVID-19 pandemic has presented unusual challenges that may change the health care system forever. It has been presented as an opportunity to provide impetus to telemedicine procedures and perhaps as a prelude to a revolution in the delivery of health care in the future, including care for chronic pain patients.¹³ In the next months, we will see whether the opportunity that the pandemic represents for that revolution has been lost or not.

Disclosures

The authors have no conflicts of interest to declare.

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