

## Introduction

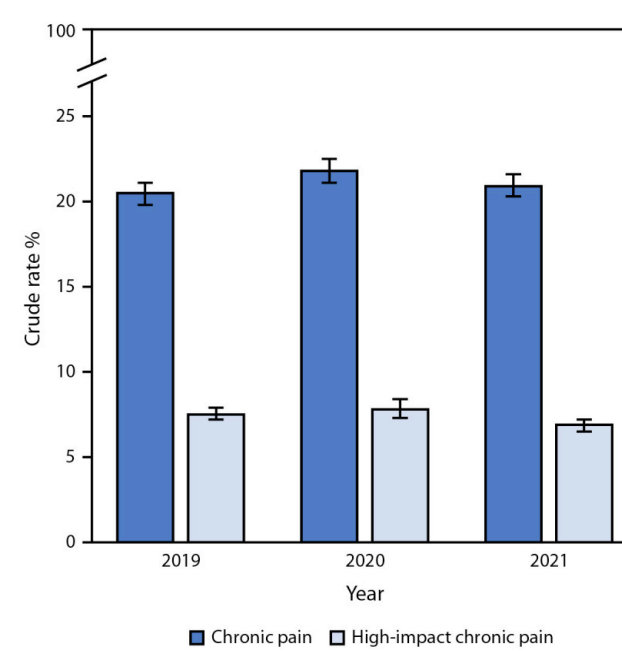
Chronic pain, a pervasive condition affecting hundreds of millions globally, is a complex challenge necessitating further exploration. This past summer, I immersed myself in a four-week experience in Zaragoza, Spain, where my focus centered on observing pain treatment across diverse clinical settings. This served as a unique opportunity to learn about the intricacies of chronic pain management strategies and shed light on the distinct approaches employed in the Spanish healthcare system.

## Purpose

In the realm of chronic pain, this project seeks to highlight the distinct approaches and treatments employed in Spain and the United States. Through meticulous observations and research, I hope to underscore the disparities between these two systems and hypothesize their consequential impact on overall quality of life. The project will offer a thorough exploration of the background of chronic pain, diverse treatment modalities, and the underlying structures of the respective healthcare systems, providing valuable insights into the multifaceted dimensions of chronic pain management.

## Background

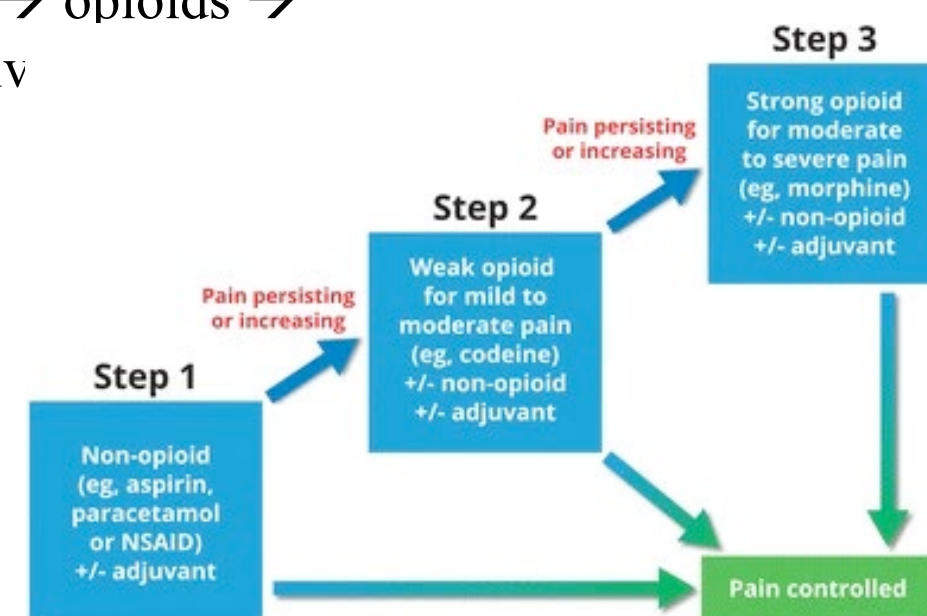
- Chronic Pain: pain that persists longer than 3 months in the absence of tissue damage
- Prevalence of chronic pain:
  - Spain: 16.6%
    - 50% - pain affects daily activities
    - 30% - pain accompanied by sadness and/or anxiety
    - 47.2% - pain affects their family life
  - US: 20.9%
    - 6.9% - experience high-impact chronic pain



Graph depicts the percentage of Americans suffering from chronic pain & high-impact chronic pain from 2019 – 2021. The graph

- Treatment approaches:
  - Spain – referral to multidisciplinary pain clinic
  - US – anti-inflammatory → opioids → antidepressants → invasive

The infographic illustrates the 3-step approach to treating chronic pain in the US



## Background, cont.

- Access to care:
  - Spain – 99.5% have insurance coverage
  - US – 89.8% have insurance coverage
- Cost of chronic pain:
  - Spain - €5118.97 (\$5602.46) annually
  - US - \$7,726 annually
- Limitations:
  - US – Medicare coverage
    - Up to 20 acupuncture sessions over 1-yr, low back pain
  - pain assessment, medication management, and care coordination and planning
  - Opioid pain medication. Prescription opioids, like hydrocodone (Vicodin®), oxycodone (OxyContin®), morphine, codeine, and fentanyl

## Methods

- Observations in the following clinical settings:
  - Centro De Salud - Family Medicine Clinic (1 week)
  - Rural Health Clinic (1 day)
  - Anesthesiology Service for:
    - Same-day outpatient procedures – orthopedic (2 days), labor & delivery (2 days)
    - In-patient – general (2 days), trauma (2 days), ENT (1 day), neurology (1 day) procedures
    - Outpatient pain clinic (1 week)
- Observations on:
  - Patient population
  - Frequency of procedures
  - Types of medication or treatments prescribed



Me & my classmates on our Rural Medicine visit



Ruesca, Spain – clinic on far left, washing station on far right

## Results

- Family Medicine Clinic
  - Patient population: 10 YO – 95 YO
  - No chronic pain patients
  - HTN, T2D, skin lesions, UTIs, arthritis
  - NSAIDs, opioids, referrals
  - Wart removal (cryofreeze gun), skin tag removal (electric scalpel)
- Rural Health Clinic
  - Patient population: 65 YO – 95 YO
  - HTN, T2D, skin lesions, arthritis
  - NSAIDs, opioids, antidepressants
- Same-day outpatient procedures – orthopedic, labor & deliver
  - Patient population: 1 YO – 95 YO
  - ACL reconstructions, hip & knee replacements, endoscopy, Egg-retrieval, C-sections
  - Nerve blocks, epidural injections, opioids, NSAIDs
- In-patient general, trauma, ENT, neurology procedures, OB-GYN
  - Patient population: 1 YO – 95 YO
  - oophorectomy (ovarian torsion), hernia repair, digit amputation, meningeal tumor removal, jaw reconstruction
  - Nerve blocks, epidural, opioids, NSAIDs, ketamine
- Outpatient pain clinic
  - Patient population: 40 YO – 90 YO
  - Low back pain, plantar fasciitis, sciatica, chronic headaches, diabetic neuropathy
  - Epidural injections, sacral injections, radiofrequency therapy, Botox injections, steroid injections, anticholinergics, antidepressants
  - Referrals for acupuncture, massage therapy, psychologist, nutritionists
  - Treatments every 3-6 months

anticholinergics



My classmate & I on our first day at the Centro De Salud



Getting ready to head into surgery

## Summary

In the Family Medicine Clinic, patients ranged from 10 – 95 YO. This clinic primarily focused on managing chronic conditions as well as performing minor skin surgeries. In the Rural Health Clinic (patient age: 65-95), the predominant focus includes hypertension, type 2 diabetes, skin infections, and arthritis. Pain from chronic conditions was managed by NSAIDs, opioids, and antidepressants. The hospital offers same-day outpatient and inpatient procedures for patients aged 1-95. These procedures range from ACL reconstructions to oophorectomies and utilize interventions like nerve blocks, epidurals, opioids, and NSAIDs to manage acute pain. The outpatient pain clinic (patient age: 40-90) specializes in chronic pain treatments and provides interventions such as epidural injections, sacral injections, radiofrequency therapy, steroid injections, and Botox injections every 3-6 months, in addition to giving referrals for holistic care. provides

## Conclusion & Discussion

In Spain, the inclusive healthcare system ensures that both citizens and immigrants have access to chronic pain treatment at no cost. The seamless referral process to pain clinics within hospitals facilitates early intervention through minimally invasive procedures, diminishing the reliance on opioids and pharmaceutical adjuncts. The structure of physician employment, tied to government roles with fixed incomes and guaranteed job security until retirement, eliminates incentives for excessive pharmacologic prescriptions. This stability fosters collaboration with specialists, allowing for the prescription of more effective but invasive treatments. The universal healthcare model encourages early patient intervention, preventing the escalation of chronic pain to debilitating levels.

Conversely, in the United States, 11.2% of the population lacks healthcare coverage, limiting access to pain treatments. Government-funded insurance, such as Medicare, often excludes coverage for many minimally invasive procedures. The predominant focus on pharmacologic solutions within health insurance coverage perpetuates reliance on short-term intervention therapy, leaving a significant portion of the U.S. population without adequate pain management options. Furthermore, financial incentives for physicians in the U.S. to prescribe pharmacologics over referrals to multidisciplinary pain clinics can contribute to patient dependence on pharmaceuticals for relief.

In conclusion, the divergent approaches to chronic pain management in Spain and the United States underscore the critical impact of healthcare systems on patient outcomes. Spain's universal model, marked by accessibility, early intervention, and collaborative treatment, stands in contrast to the challenges faced by a significant portion of the U.S. population due to gaps in coverage and incentives favoring pharmaceutical solutions. Addressing these disparities is pivotal for enhancing the overall well-being of individuals grappling with chronic pain on an international scale.



My classmates & I with the program director, Rosa Magallon



Library on Medicine in Zaragoza, Spain



View of Zaragoza, Spain from Torre Del Pilar

## References

Rikard, S Michaela et al. "Chronic Pain Among Adults - United States, 2019-2021." MMWR. Morbidity and mortality weekly report vol. 72,15 379-385. 14 Apr. 2023. doi:10.15585/mmwr.mm7215a1

Hylands-White, Nicholas et al. "An overview of treatment approaches for chronic pain management." Rheumatology International vol. 37,1 (2017): 29-42. doi:10.1007/s00296-016-3481-8

Dueñas, Maria et al. "A nationwide study of chronic pain prevalence in the general spanish population: identifying clinical subgroups through cluster analysis." Pain medicine (Malden, Mass.) vol. 16,4 (2015): 811-22. doi:10.1111/pme.12640

"Chronic Pain Management & Treatment Services." Medicare, www.medicare.gov/coverage/chronic-pain-management-treatment-services. Accessed 26 Nov. 2023.

Sarris-Santamera, Antonio et al. "Economic Costs of Pain in the Spanish Working Population." Journal of occupational and environmental medicine vol. 64,4 (2022): e261-e266. doi:10.1097/JOM.0000000000002497

Foundation, US Pain. "The Financial and Emotional Cost of Chronic Pain." U.S. Pain Foundation, 29 Sept. 2021, uspainfoundation.org/news/the-financial-and-emotional-cost-of-chronic-pain/.

Supported by: RWJMS Global Health Department  
Funding source: Sukumar and Anne Nagendran  
International Medical Study Scholarship