Disproportionate Impact of Pain in Females and the Intersection with Age and Marginalization

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Introduction

- Chronic pain impacts **~20%** of the **Canadian population**.
- Barriers such as inflated referral wait times and uncoordinated care further hinder patient pain care access.
- In 2017 TAPMI created a **Single-Entry Model (SEM)** for chronic pain referrals to **streamline** care.
- Continued data capture efforts can help identify gaps in care to enable further healthcare refinement and improvement.
- Certain populations bear more of the burden, particularly vulnerable sectors such as females, older adults and communities who experience marginalization.
- There is a desperate need for innovation in the delivery of pain services that reflects the needs and requirements of the pain population.

Objectives

1. Explore the impact of the SEM on patient care six-years after implementation.
2. To examine **referrals from 2023** in depth to further elucidate patient characteristics of the population accessing interprofessional tertiary care.

Does an intersection between sex, age, marginalization and the reason for referral exist?
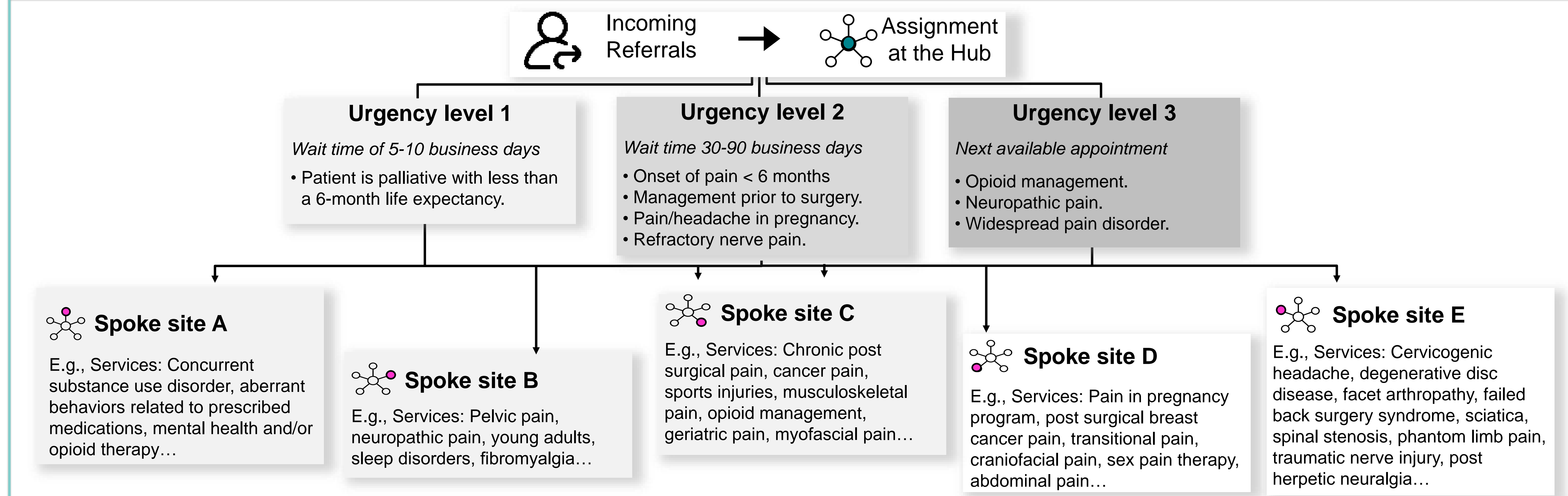
Methods

STUDY 1:

- **Implementation** of a standardized, single entry patient referral system.
- **Retrospective chart review** of all patient referrals from 2017 – 2022.
- **Extracted:** Sex, age, address (postal code), reason for referral, and wait times.
- **Analyzed** referral patterns, wait times and patient characteristics.

STUDY 2:

- **Retrospective chart review** of accepted referrals January 1st, 2023 - December 31st, 2023
- **Extracted:** Sex, age, address (postal code), and reason for referral
- **Calculated:** the marginalization index for each patient using the Ontario Marginalization Index (ON-Marg).
- **Conducted:** Chi-squared tests with a significance of $p<0.05$

References

Tania Di Renna, Emeralda Burke, Anuj Bhatia, Hance Clarke, David Flamer, John Flannery, Andrea Furlan, Dinesh Kumbhare, James Khan, Karim Ladha, Howard Meng, Andrew Smith, David Sussman & Rachael Bosma (2024) Improving access to chronic pain care with central referral and triage: The 6-year findings from a single-entry model, Canadian Journal of Pain

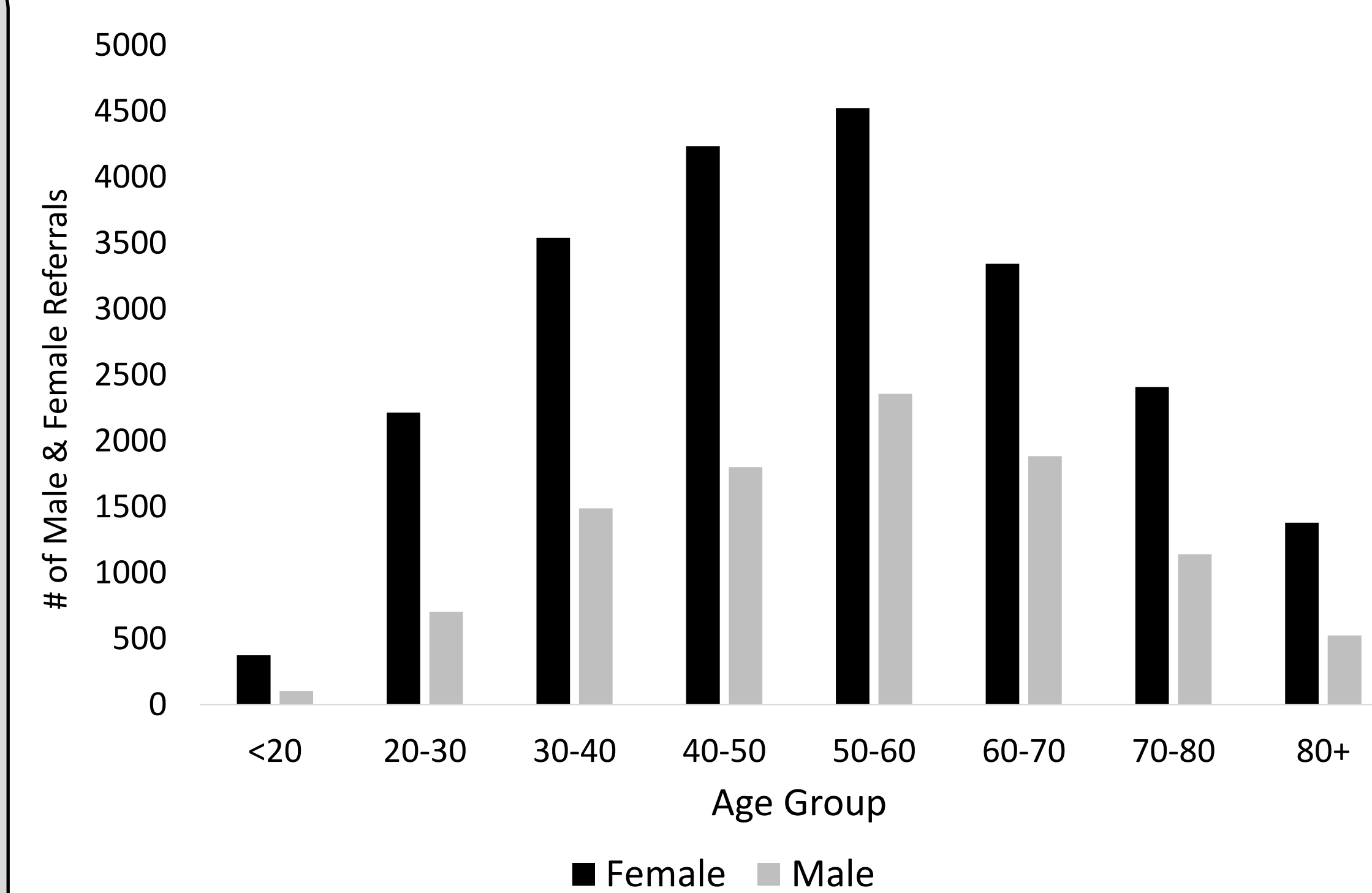## Clinical Context: *Single-site entry referral and assignment process*

Incoming Referrals → Assignment at the Hub

Urgency level 1
Wait time of 5-10 business days
- Patient is palliative with less than a 6-month life expectancy.

Urgency level 2
Wait time 30-90 business days
- Onset of pain < 6 months
- Management prior to surgery.
- Pain/headache in pregnancy.
- Refractory nerve pain.

Urgency level 3
Next available appointment
- Opioid management.
- Neuropathic pain.
- Widespread pain disorder.

Spoke site A
E.g., Services: Concurrent substance use disorder, aberrant behaviors related to prescribed medications, mental health and/or opioid therapy…

Spoke site B
E.g., Services: Pelvic pain, neuropathic pain, young adults, sleep disorders, fibromyalgia…

Spoke site C
E.g., Services: Chronic post surgical pain, cancer pain, sports injuries, musculoskeletal pain, opioid management, geriatric pain, myofascial pain…

Spoke site D
E.g., Services: Pain in pregnancy program, post surgical breast cancer pain, transitional pain, craniofacial pain, sex pain therapy, abdominal pain…

Spoke site E
E.g., Services: Cervicogenic headache, degenerative disc disease, facet arthropathy, failed back surgery syndrome, sciatica, spinal stenosis, phantom limb pain, traumatic nerve injury, post herpetic neuralgia…

Results

STUDY 1:

Top Reasons for Referral (2017 - 2022)

1. **Musculoskeletal Pain (39%)**
2. **Widespread regional Pain (13%)**
3. **Neuropathic Pain (11%)**
4. **Headache (8%)**
5. **Opioid Management (8%)**

Referrals by Age and Sex

Wait times — Across all pain conditions (2017/2018, 2022/2023)

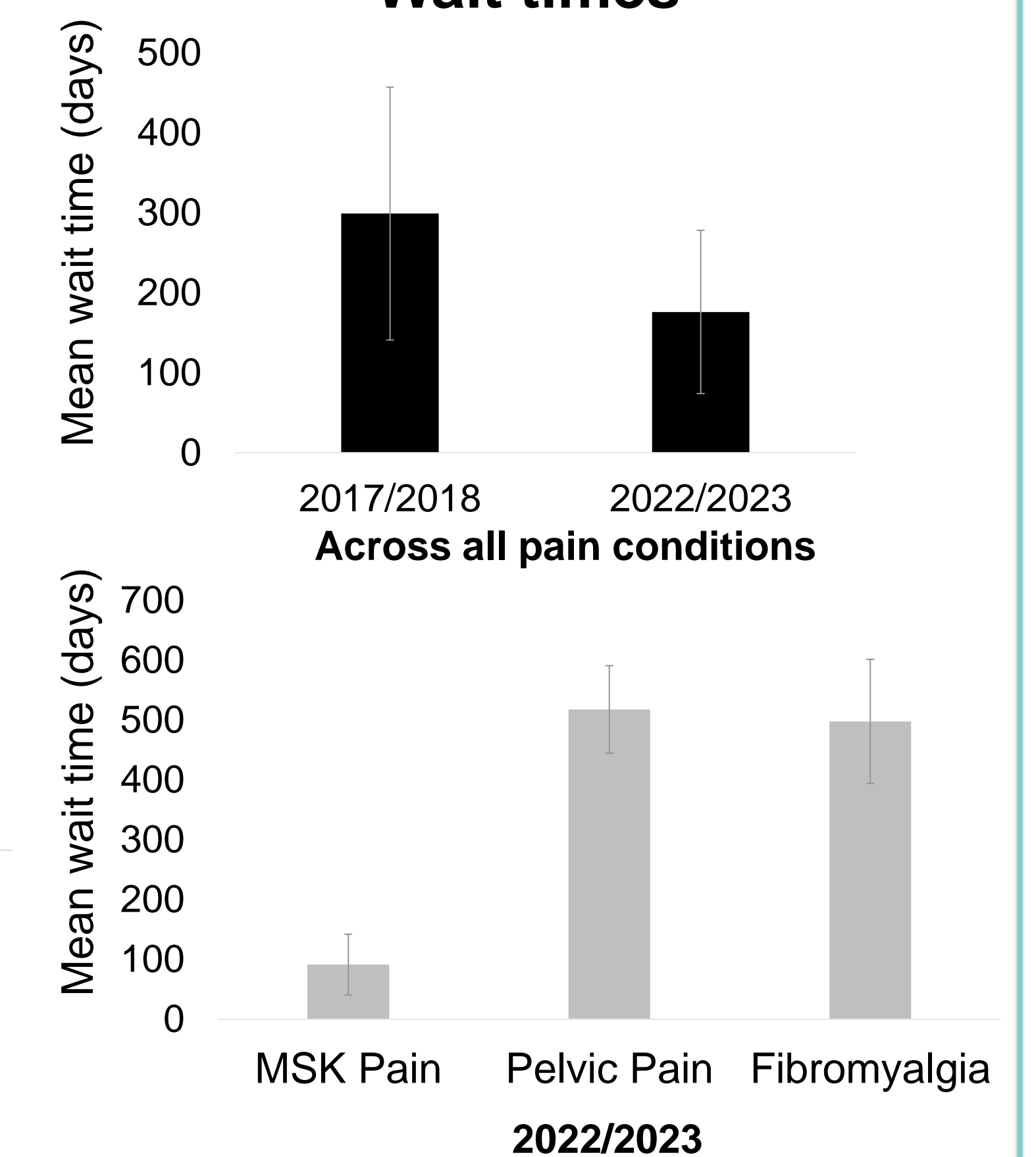Wait times 2022/2023 — MSK Pain, Pelvic Pain, Fibromyalgia

STUDY 2:

- **5071** patients were accepted for interprofessional pain care in 2023
- Females accounted for **67.2%** of referrals
- **~40%** of all referrals were between the ages of 45-64 years
- Similar proportions of females and males across all age categories
- No statistical differences in the marginalization indices between the sexes.
- For adults over 80 years, 26.6% of females were marginalized, compared to only 16.7% of males.
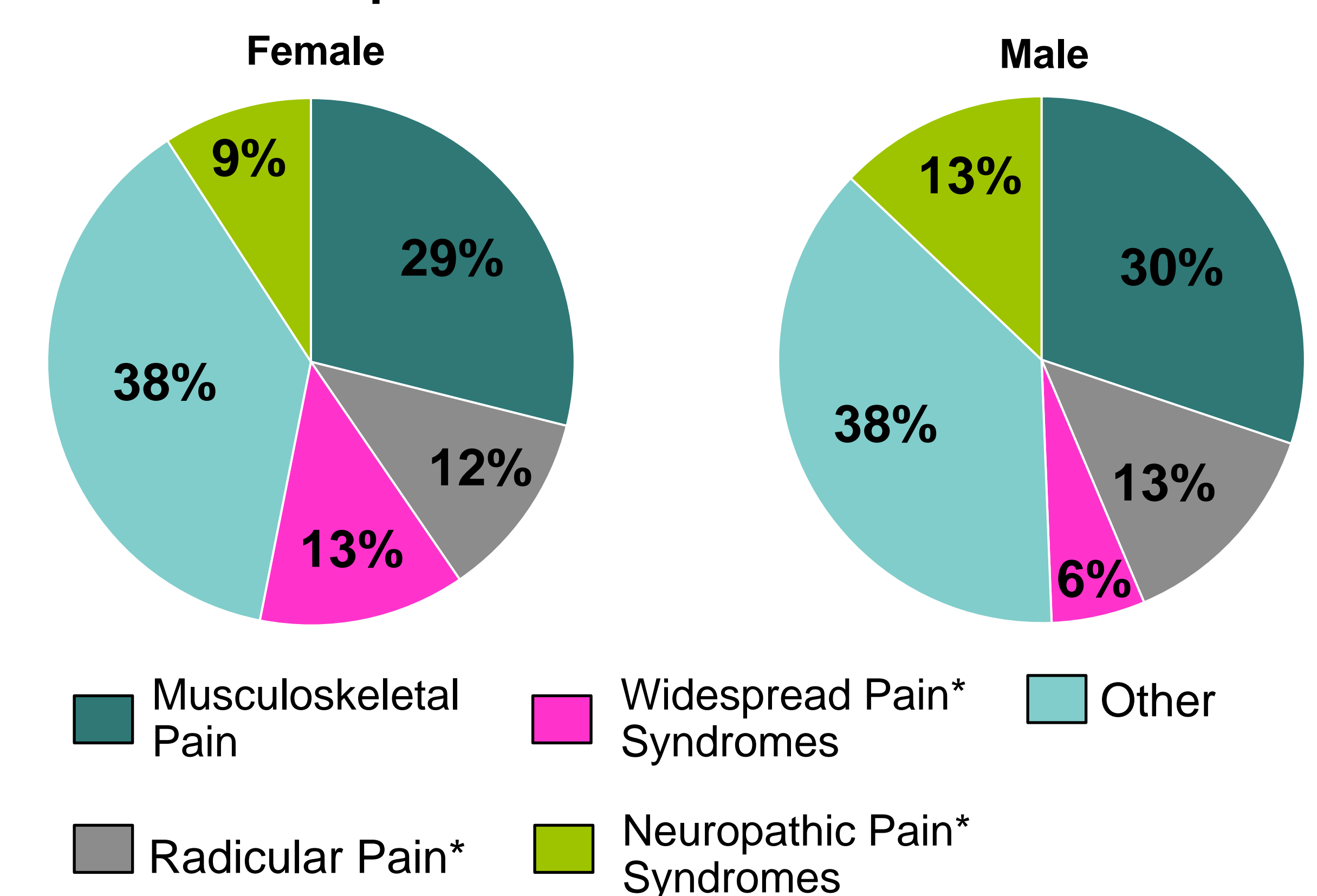
Top Reasons for Referral 2023:

Female: Musculoskeletal Pain 29%, Radicular Pain* 12%, Widespread Pain* Syndromes 13%, Other 38%, Neuropathic Pain* Syndromes 9%

Male: Musculoskeletal Pain 30%, Radicular Pain* 13%, Widespread Pain* Syndromes 6%, Other 38%, Neuropathic Pain* Syndromes 13%

Legend: Musculoskeletal Pain · Widespread Pain* Syndromes · Other · Radicular Pain* · Neuropathic Pain* Syndromes

Conclusions

- Our results indicate the SEM helped reduce wait times for pain conditions and standardized the referral pathway.
- Consistent with prior literature there is a disproportionate impact of chronic pain on females.
- Our findings highlight the diagnostic differences between females and males living with pain.
- These results highlight the necessity for comprehensive pain care to be tailored to the needs of females.