

The Influence of Low Value Physical Therapy Care for Low Back Pain on Down Stream Healthcare Utilization and Opioid Use within the Military Health System

Shawn Farrokhi, PT, PhD
RESOLVE Trial Investigators

Spotlight on Pain Management
Feb 1, 2022



Disclosures

- Funding Source: The U.S. Army Medical Research Acquisition Activity, 820 Chandler Street, Fort Detrick MD 21702-5014 is the awarding and administering acquisition office" and; "This work was supported by the Assistant Secretary of Defense for Health Affairs endorsed by the Department of Defense, through the NIH-DOD-VA Pain Management Collaboratory - Pragmatic Clinical Trials Demonstration Projects under Awards No. W81XWH-18-2-0007.
- Disclaimer: The views expressed are those of the authors, and do not necessarily reflect the official policy of the Uniformed Services University of the Health Sciences, Departments of the Air Force, Army, Navy, Defense, Veterans Affairs, nor the United States Government.
- This study was approved by the Naval Medical Center San Diego Institutional Review Board (NMCS.D.2018.0034).

Contributors/Stakeholders



**Resolving the Burden of Low Back Pain
in Military Service Members and
Veterans: A Multi-Site Pragmatic
Randomized Clinical Trial**



Contributors/Stakeholders

Pain Medicine, 21(S2), 2020, S45–S52

doi: 10.1093/pm/pnaa367

Original Research Article

OXFORD

Resolving the Burden of Low Back Pain in Military Service Members and Veterans (RESOLVE): Protocol for a Multisite Pragmatic Clinical Trial

Shawn Farrokhi, PT, PhD,^{*,†} Elizabeth Russell Esposito, PhD,^{*,‡,††} Danielle McPherson, MACPR^{†,§}
Brittney Mazzone, DPT,^{*,†} Rachel Condon, DPT, DSc, FAAOMPT, OCS,[†] Charity G. Patterson, PhD,[¶]
Michael Schneider, DC, PhD,[¶] Carol M. Greco, PhD,[¶] Anthony Delitto, PT, PhD,[¶]
M. Jason Highsmith, PT, PhD,^{||,|||} Brad D. Hendershot, PhD,^{*,**,*††} Jason Maikos, PhD,^{‡‡} and
W. Christopher L. Dearth, PhD^{*,**,*††}

Low Back Pain in the Military

- Low back pain (LBP) is a common cause of disability, lost worker productivity, and healthcare costs within the Military Health System.
 - Frequent complaint in deployed and non-deployed Service members.
 - Among the leading causes of medical visits.

Knox et al., Spine, 2011



Image source: www.wearethemighty.com

Low Back Pain in the Military

- Low back pain (LBP) is a common cause of disability, lost worker productivity, and healthcare costs within the Military Health System.
 - Frequent complaint in deployed and non-deployed Service members.
 - Among the leading causes of medical visits.
Knox et al., Spine, 2011
- During a 5-year surveillance period:
 - 6 million outpatient healthcare encounters
 - 25,000 hospitalizations
Clark & Hu., MSMR, 2015
- LBP during military service predicts LBP in later life.
Mattila et al., PLoS One, 2017

Physical Therapy for LBP

- Physical Therapy is recommended by most clinical practice guidelines (CPGs) as the first line of treatment for LBP.
Qaseem et al., Ann Intern Med, 2017
Oliveira et al., Eur Spine J, 2018
Meroni et al., Disabil Rehabil, 2019
- Active Treatments: Involves activities that the patient must do, instead of actions being performed by the physical therapist.
- Passive Treatments: Procedures during which the patient has a passive role.
 - Examples: Ultrasound, needle therapies, electrical stimulation



Image Source: www.aptaaz.org



Image Source: www.issaonline.com



Image Source: www.spineuniverse.com

Low Value Care

- Low-value care is defined as services that are medically unnecessary and provide limited health benefits to patients.
 - In some cases, low-value care can lead to further unnecessary testing or treatment.



- The American Physical Therapy Association partnered with Choosing Wisely in 2015 to identify specific evidence-based recommendations that encourage physical therapists to make wise decisions about the most appropriate care. *White et al., PTJ, 2015*
 - Challenged physical therapists to identify services that are offered in the absence of evidence demonstrating benefit or, in some cases, in the presence of evidence demonstrating harm.
 - Don't use **passive treatments** except when necessary to facilitate participation in an active treatment program.
 - Limited evidence for use of passive treatments to obtain clinically important outcomes for musculoskeletal conditions.

Focus on Active Treatments Improves Outcomes!

- **Guideline Adherent Physical Therapy Management**

- A consistent recommendation by the clinical practice guidelines is the need for an active versus a passive approach.

- When greater than 75% of the codes utilized during an episode of care are active or allowed interventions and at least one active code is utilized during each session.

Fritz et al., *Med Care*, 2007

Childs et al., *BMC Health Services Research*, 2015

- Adherence rates were between 40-43%.

- Those receiving adherent care:

- ✓ Better improvements in disability and Pain **(Civilian)**

- ✓ Fewer visits **(Civilian)**

- ✓ Lower cost **(Civilian)**

- ✓ Lower utilization of advanced imaging **(Military)**

- ✓ Lower utilization of spinal injections **(Military)**

- ✓ Lower utilization of lumbar surgery **(Military)**

Physical Therapy Interventions for LBP

- **Do's**

- **APTA CPG:** Clinicians should consider trunk coordination, strengthening, and endurance exercises & spinal mobilization in patients with sub-acute and chronic LBP. *Delitto et al., JOSPT, 2015*
- **American College of Physicians CPG:** For patients with acute or subacute LBP, clinicians should select superficial heat, massage, acupuncture, or spinal manipulation. *Qaseem et al., Ann Intern Med, 2017*
- **American College of Physicians CPG:** For patients with chronic LBP, clinicians should select exercise, acupuncture, low-level laser therapy, or spinal manipulation. *Qaseem et al., Ann Intern Med, 2017*

- **Don'ts**

- **DoD-VA CPG:** For patients with LBP, there is insufficient evidence to support the use of electrical stimulation, ultrasound, and traction. *Pangarkar et al., J. Gen. Intern. Med., 2019*
- **APTA CPG:** There is moderate evidence that clinicians should not utilize traction in patients with acute, subacute, or chronic LBP. *Delitto et al., JOSPT, 2015*

Evidence Maps

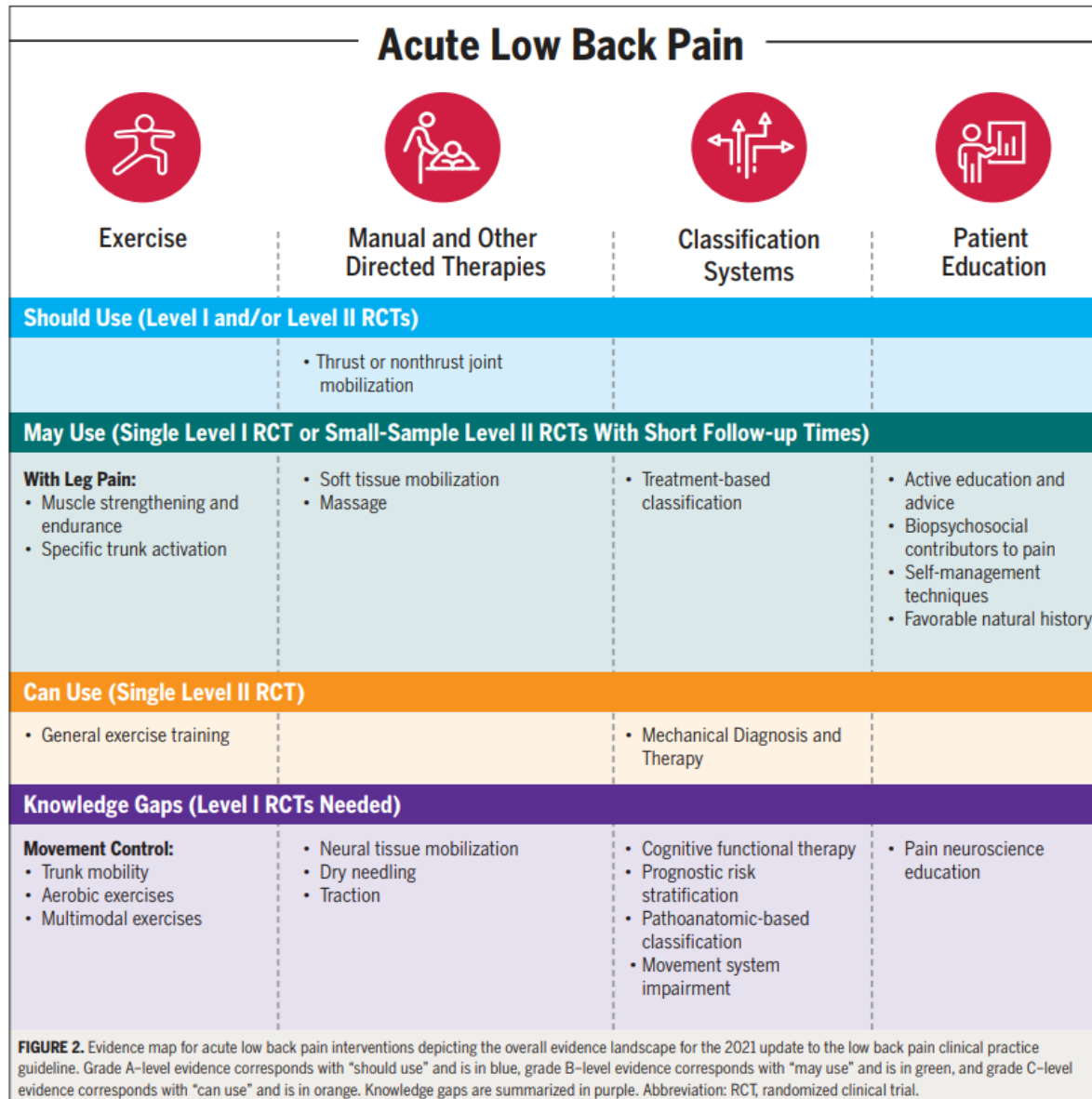
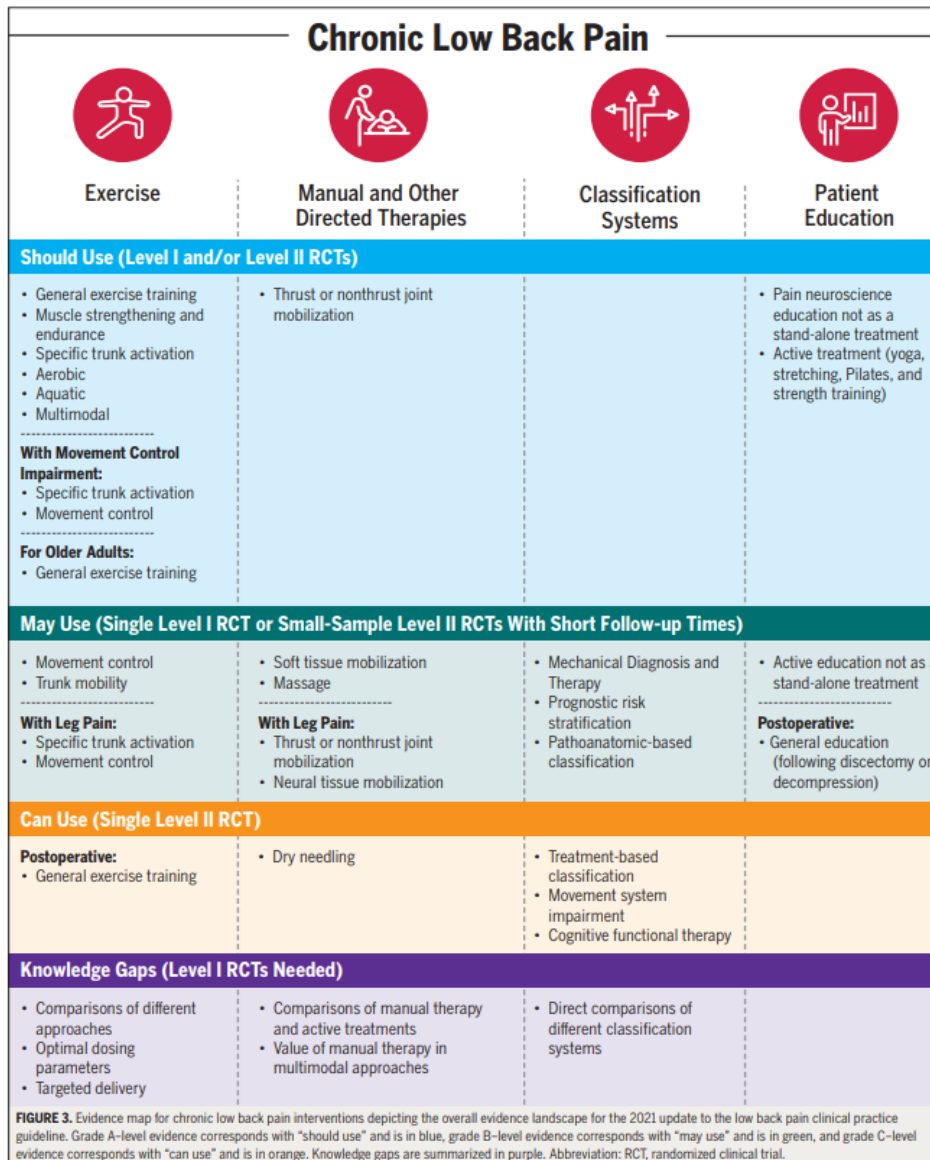


FIGURE 2. Evidence map for acute low back pain interventions depicting the overall evidence landscape for the 2021 update to the low back pain clinical practice guideline. Grade A-level evidence corresponds with "should use" and is in blue, grade B-level evidence corresponds with "may use" and is in green, and grade C-level evidence corresponds with "can use" and is in orange. Knowledge gaps are summarized in purple. Abbreviation: RCT, randomized clinical trial.

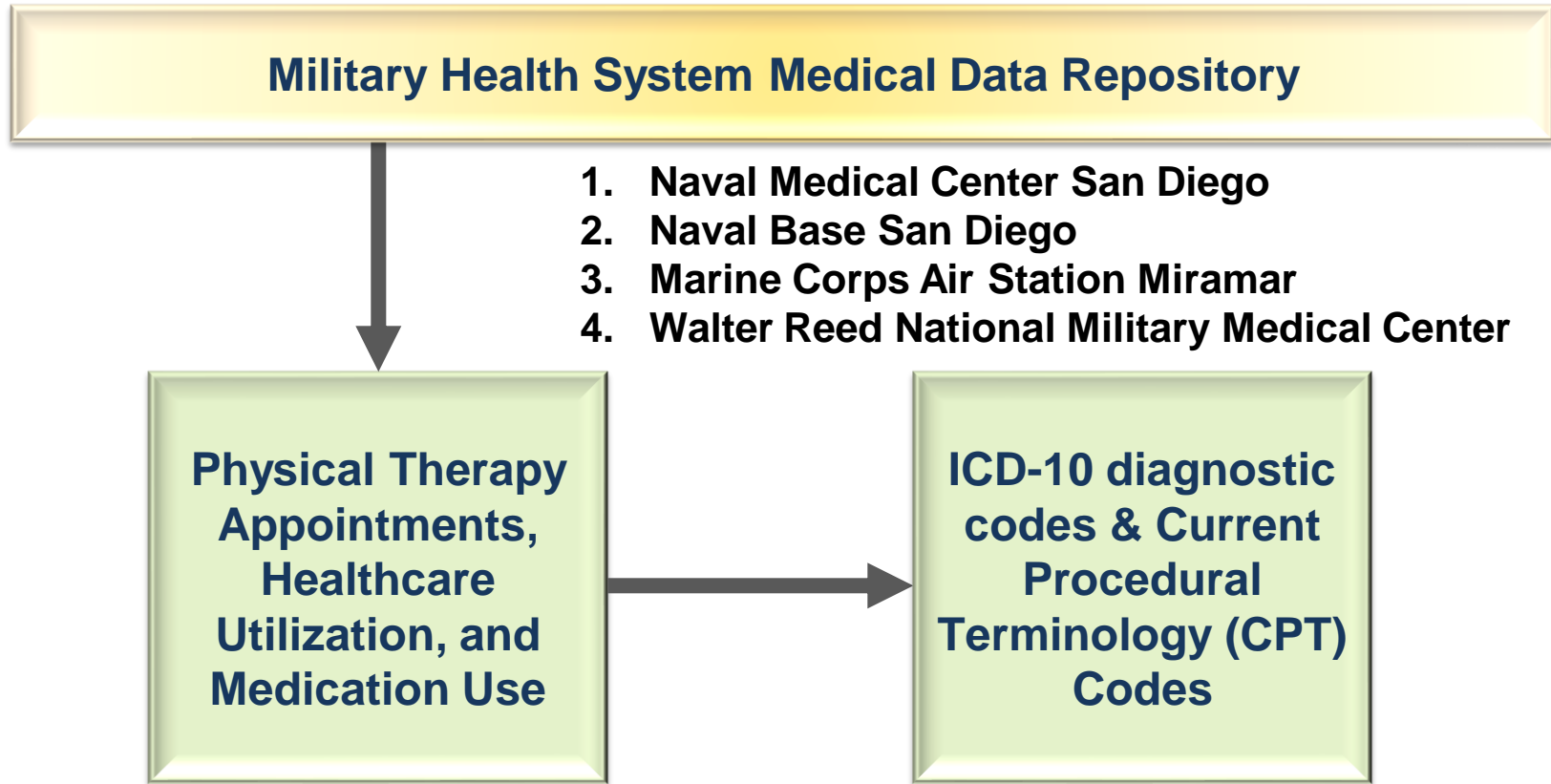
George et al. , JOSPT, 2021

Evidence Maps



George et al. , JOSPT, 2021

Methods

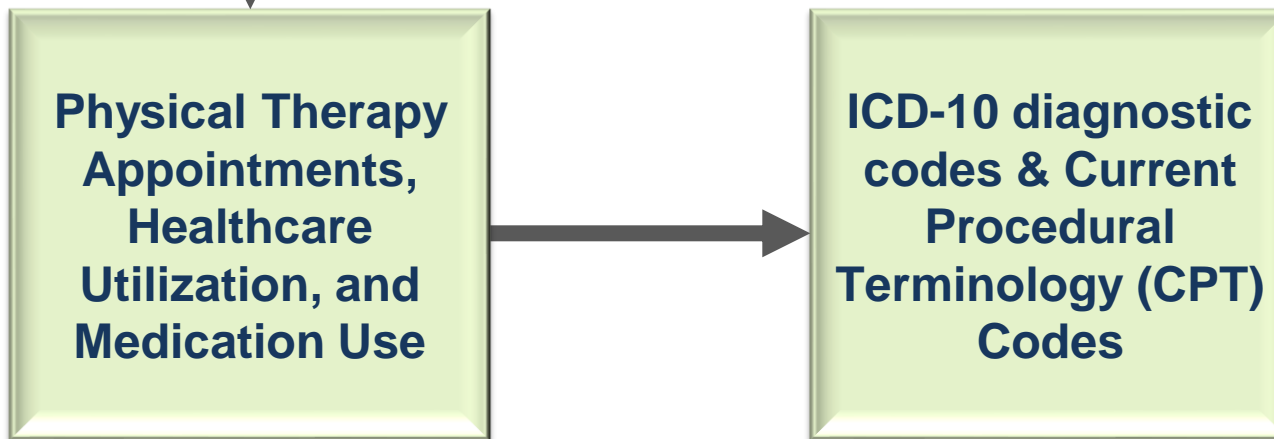


**Walter Reed
National Military
Medical Center**

Methods

Military Health System Medical Data Repository

The time queried for encounters and procedure codes started with beginning of physical therapy care between January 1, 2015 to January 1, 2018 , and included a 1-year follow-up period.

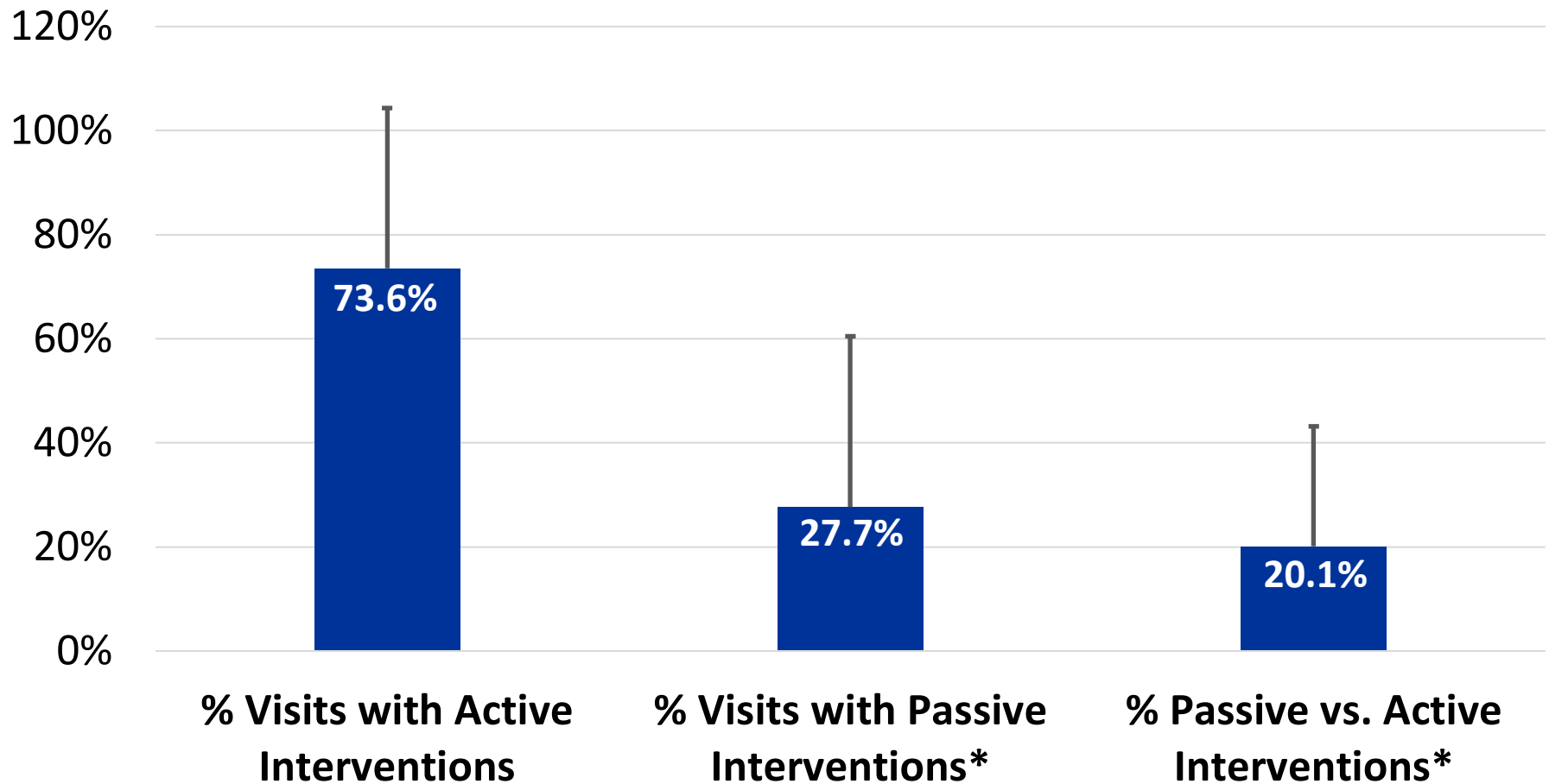


Demographics	N = 4990
Age (Years)	34.7 ± 9.1
Body Mass Index (BMI)	27.9 ± 8.0
Sex (Male)	3844 (77%)

Aim #1

1. Describe the **percentage** of physical therapy visits during a course of care that included either **active or passive** interventions.
2. Describe the overall percentage of **passive versus active** interventions during a course of physical therapy care.
3. To evaluate the **association** between percentage of active versus passive interventions during a course of care and the **1-year** opioid prescription and downstream healthcare utilization for patients receiving physical therapy care for LBP.

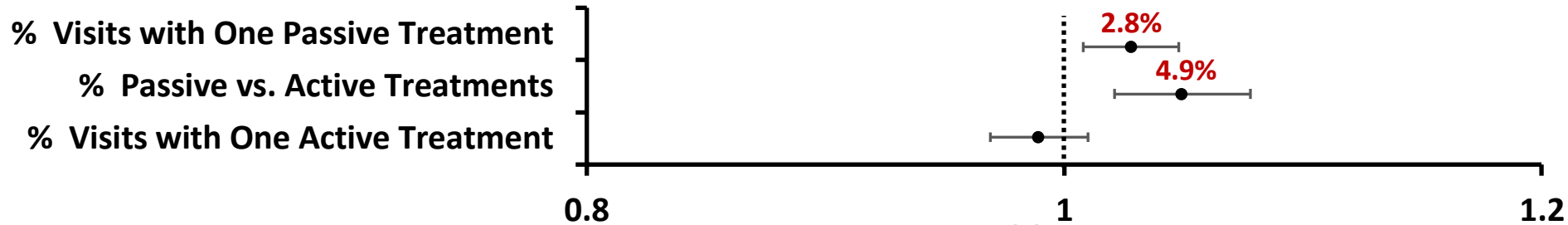
Active vs. Passive Interventions



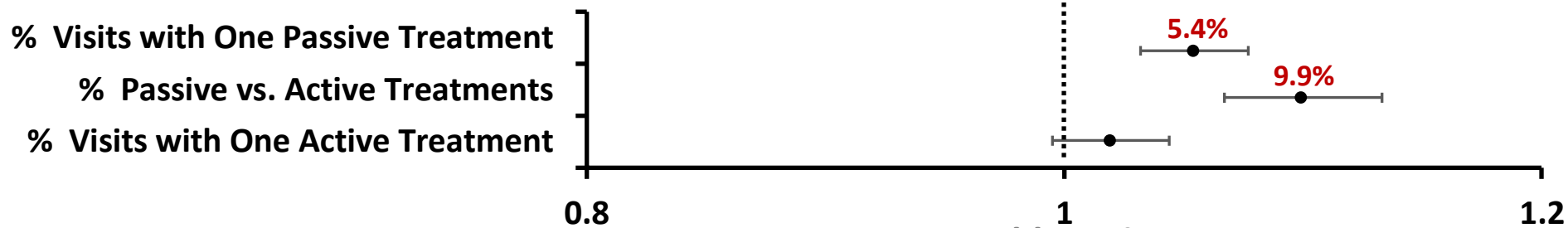
* Manual therapy was not included in the list of passive interventions

Active vs. Passive Interventions

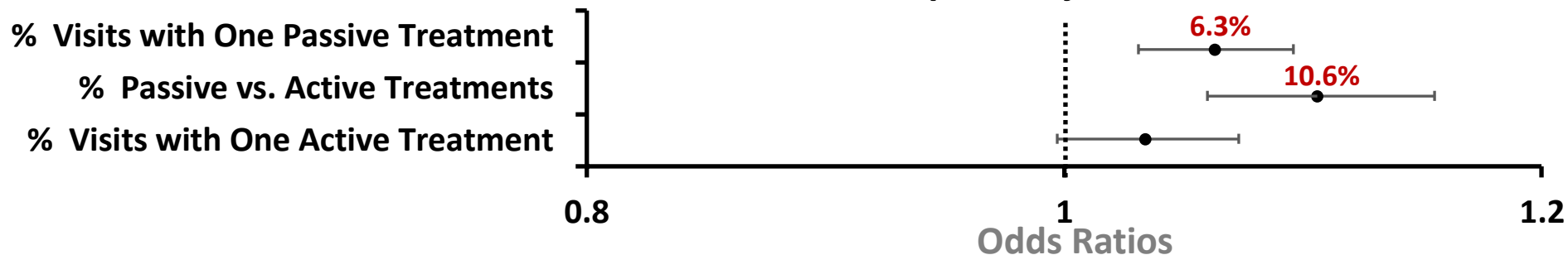
Opioid Use



Speciality Care



Spinal Injections



Conclusions

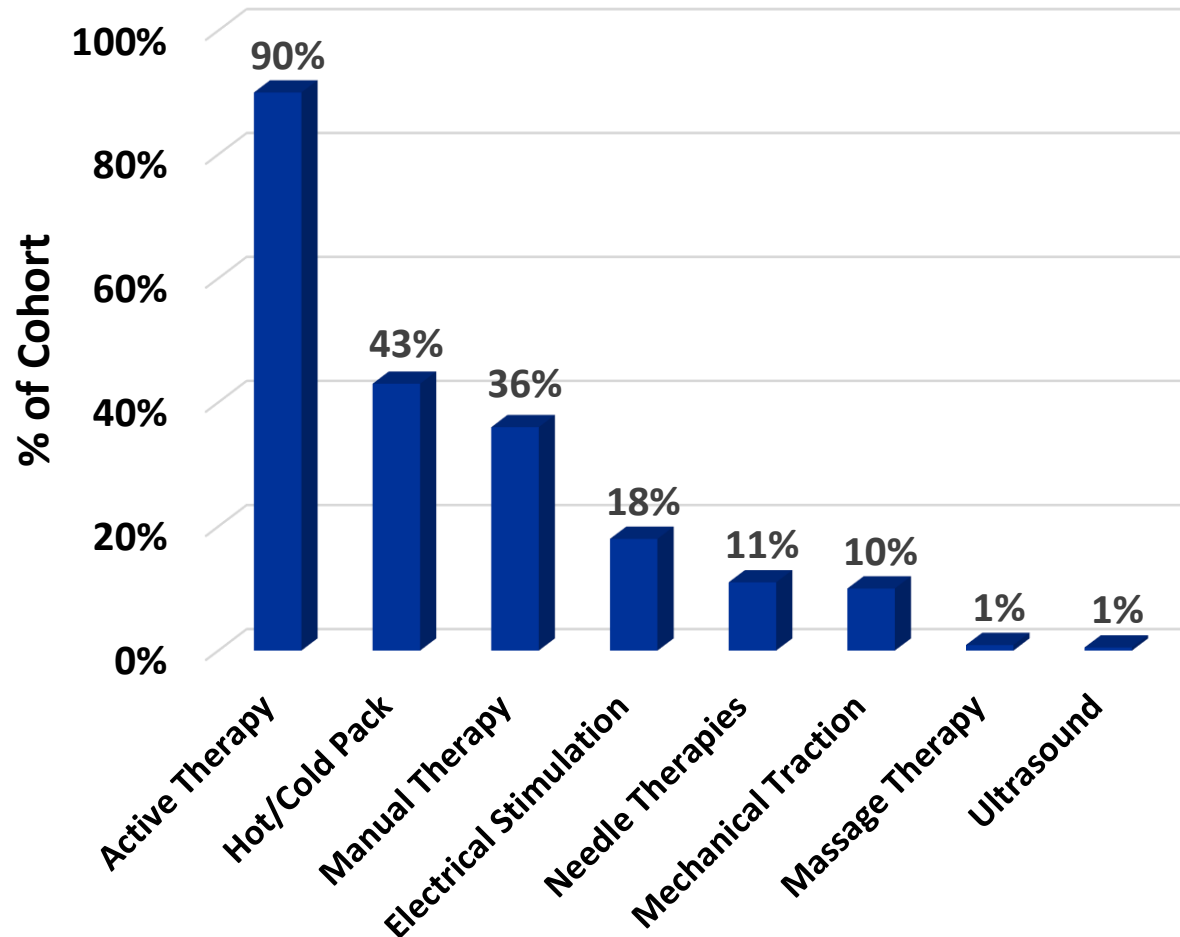
- During an episode of care for LBP
 - **70%** of visits included at least one **active** intervention
 - **28%** of visits included at least one **passive** intervention
 - **20% vs. 80%** passive to active intervention ratio
- An increase in % of visits with passive interventions or a higher % of passive vs. active interventions was associated with worse outcomes.
- If a patient received a passive intervention during **half** of their visits or an **equal** amount of passive and active interventions
 - 15%-25% ↑ in odds of receiving an opioid prescription
 - 27%-50% ↑ in odds of receiving specialty care
 - 32%-53% ↑ in odds of receiving spinal injection

Objective #2

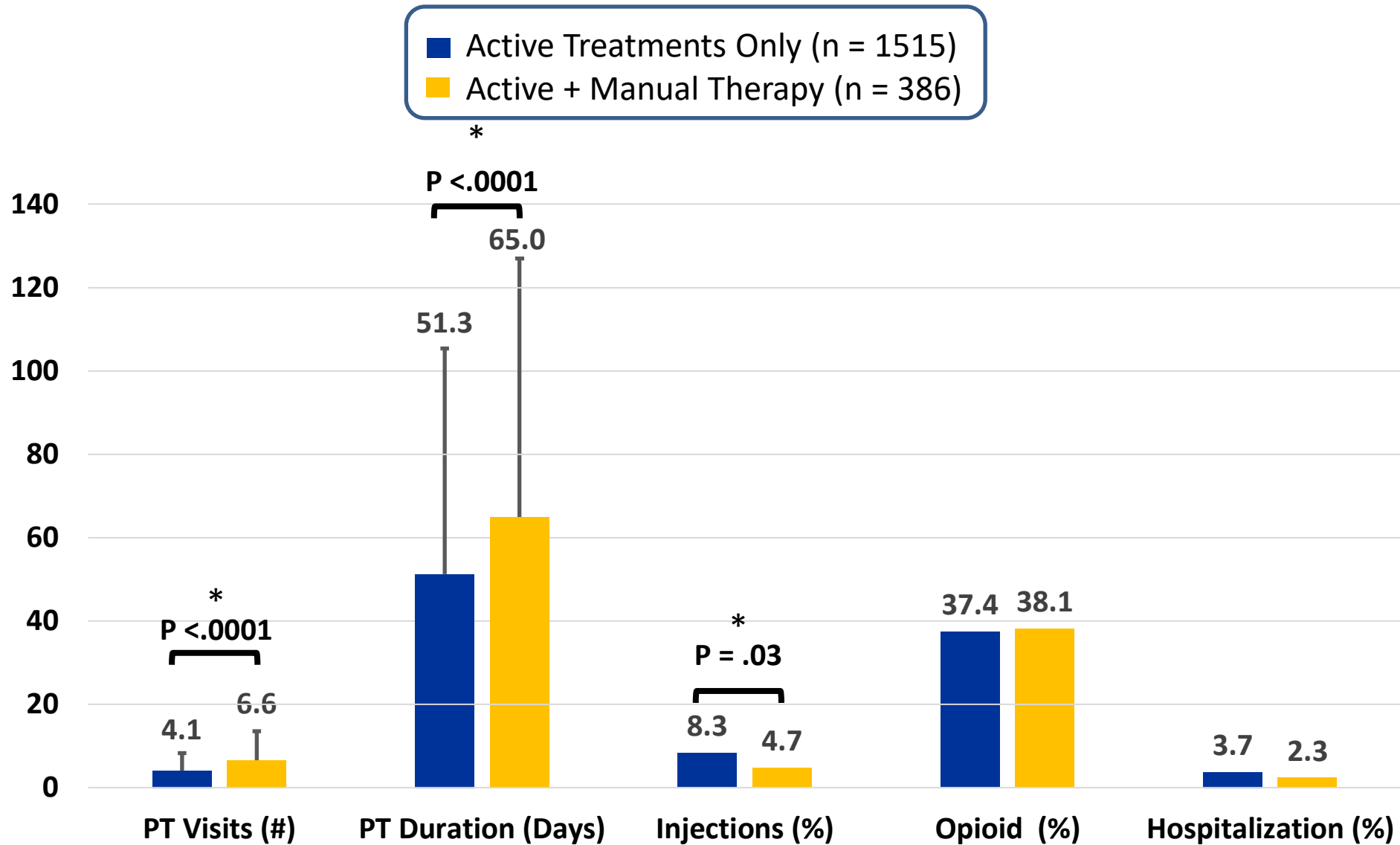
1. Describe the specific **patterns** of active and passive physical therapy intervention use for patients with LBP receiving care for LBP.
2. To compare the **length** of physical therapy care and **number of visits** between different patterns of active and passive intervention use.
3. To evaluate the **association** between patterns of active and passive intervention use during a course of care and the **1-year** opioid prescription and downstream healthcare utilization for patients receiving physical therapy care for LBP.

Results

Most Frequent Interventions

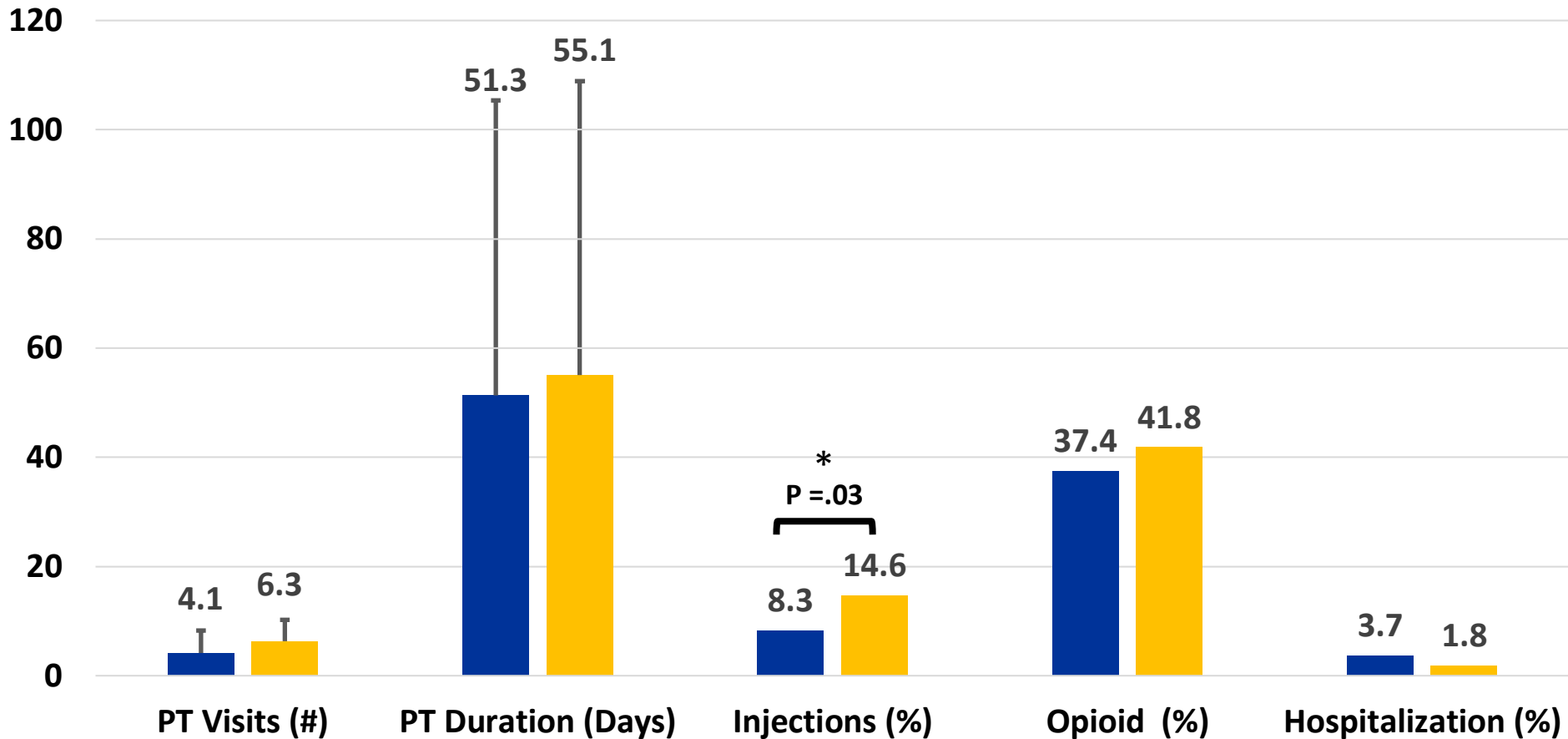


Results



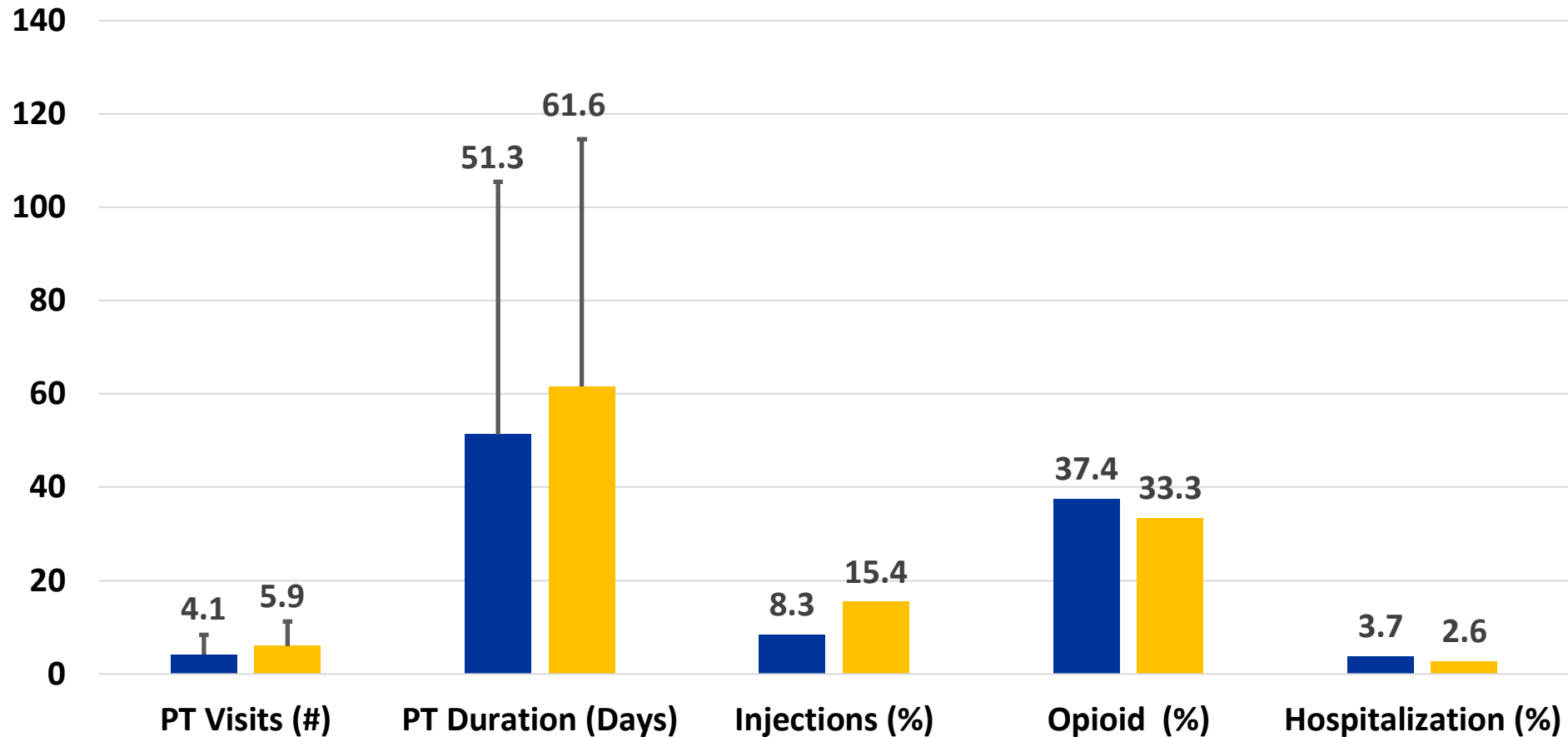
Results

■ Active Treatments Only (n = 1515)
■ Active + Traction (n = 110)



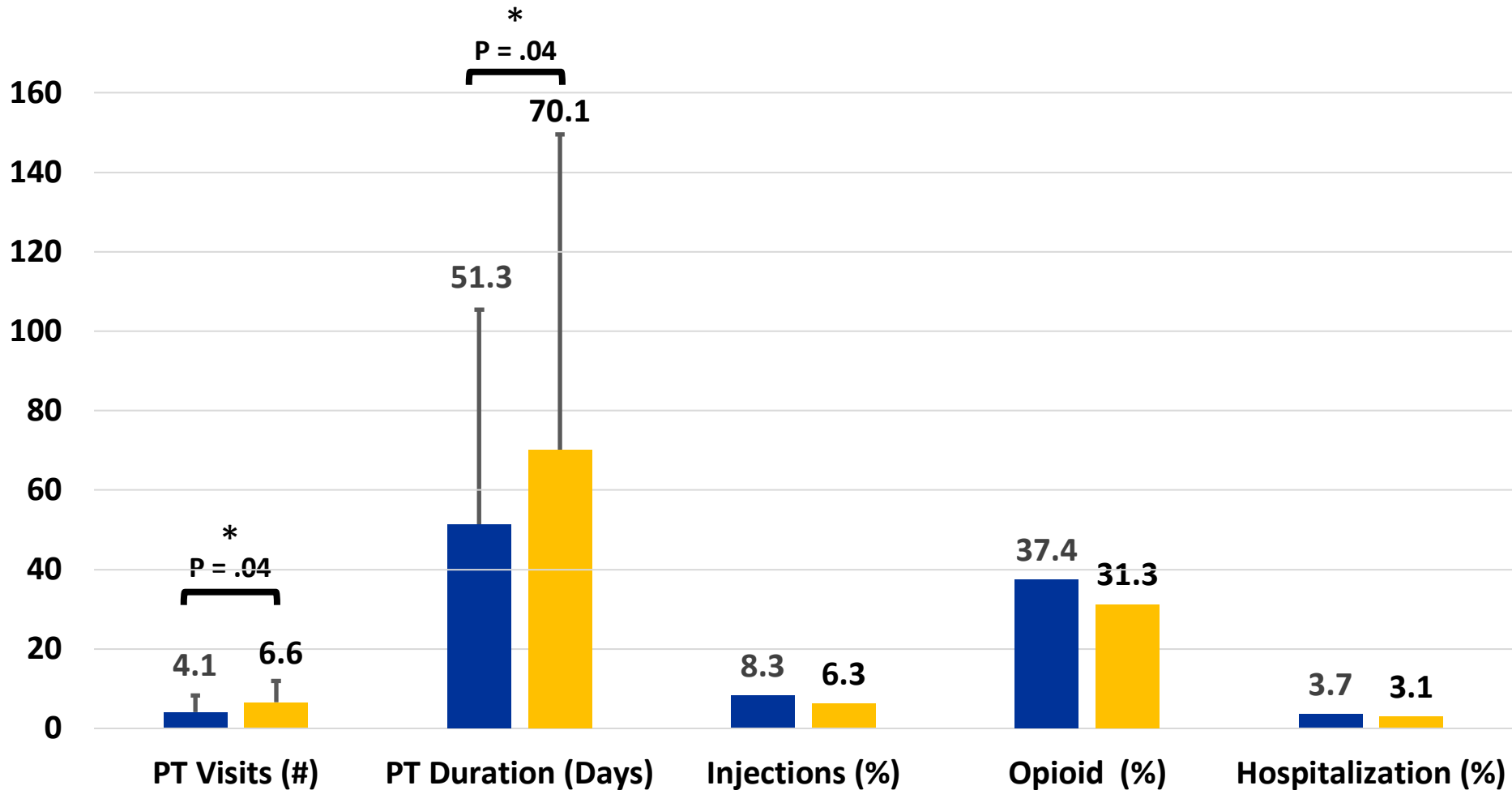
Results

- Active Treatments Only (n = 1515)
- Active + Needle Therapy (n = 39)



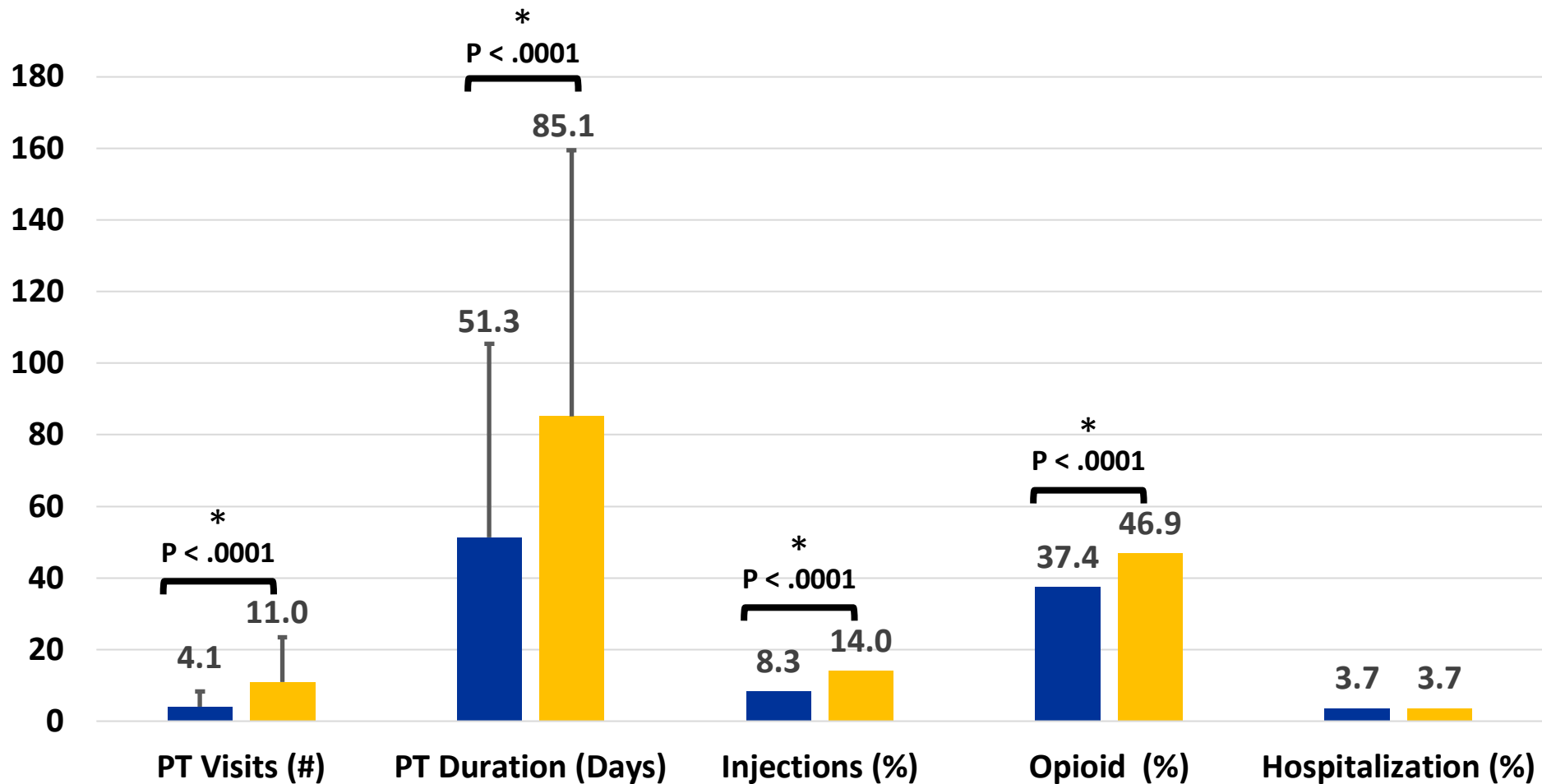
Results

■ Active Treatments Only (n = 1515)
■ Active + Electrical Stimulation (n = 32)

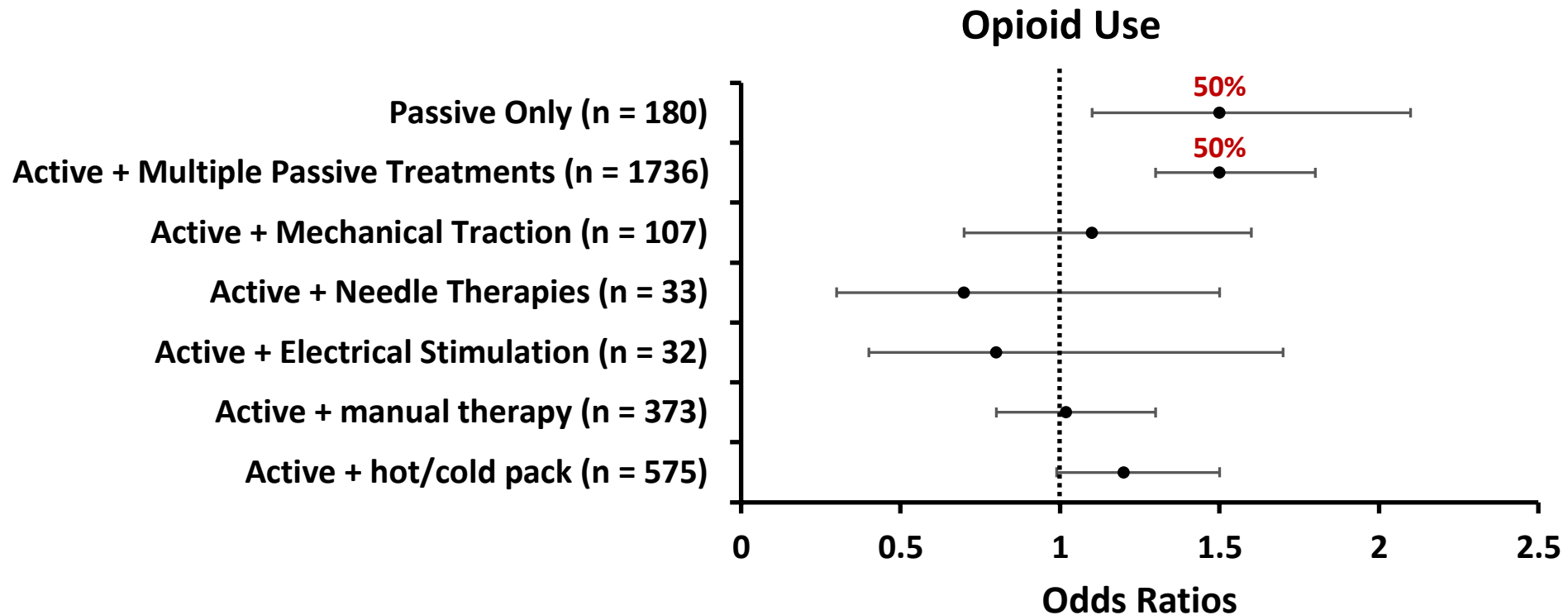


Results

■ Active Treatments Only (n = 1515)
■ Active + Multiple Passive Treatments (n = 1787)



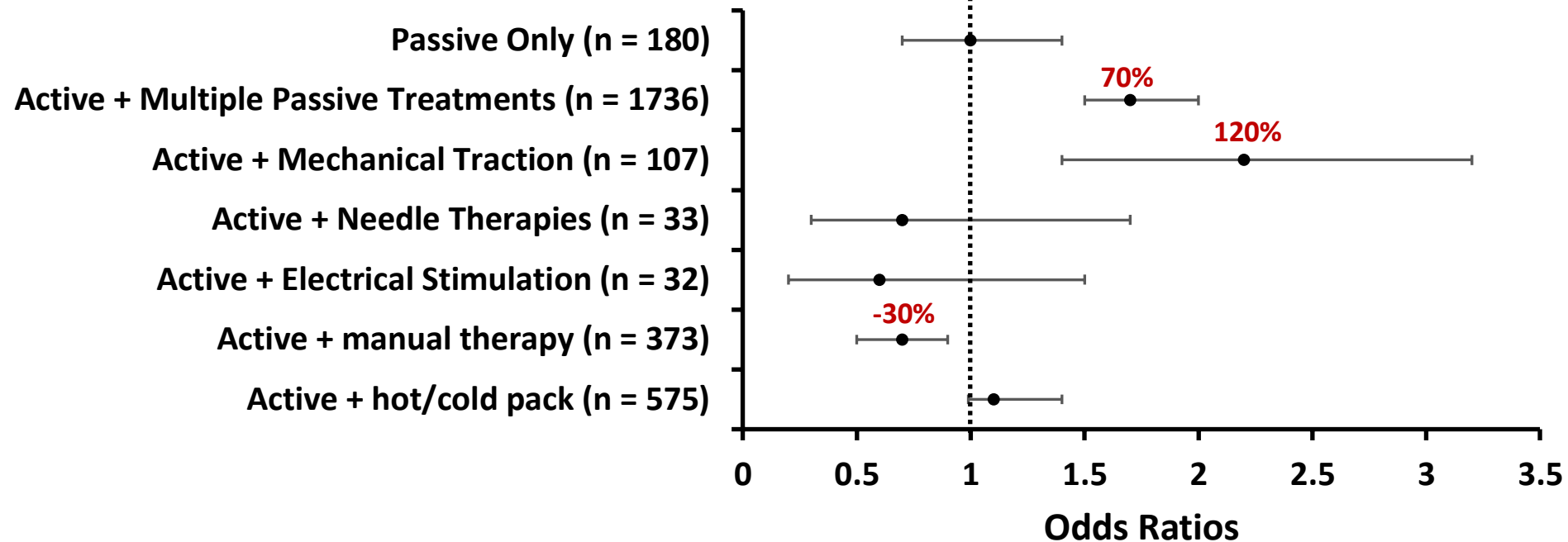
Results



- **Comparator Group:** Active Treatment only (n=1483)
 - All analyses are controlled for **age and gender**

Results

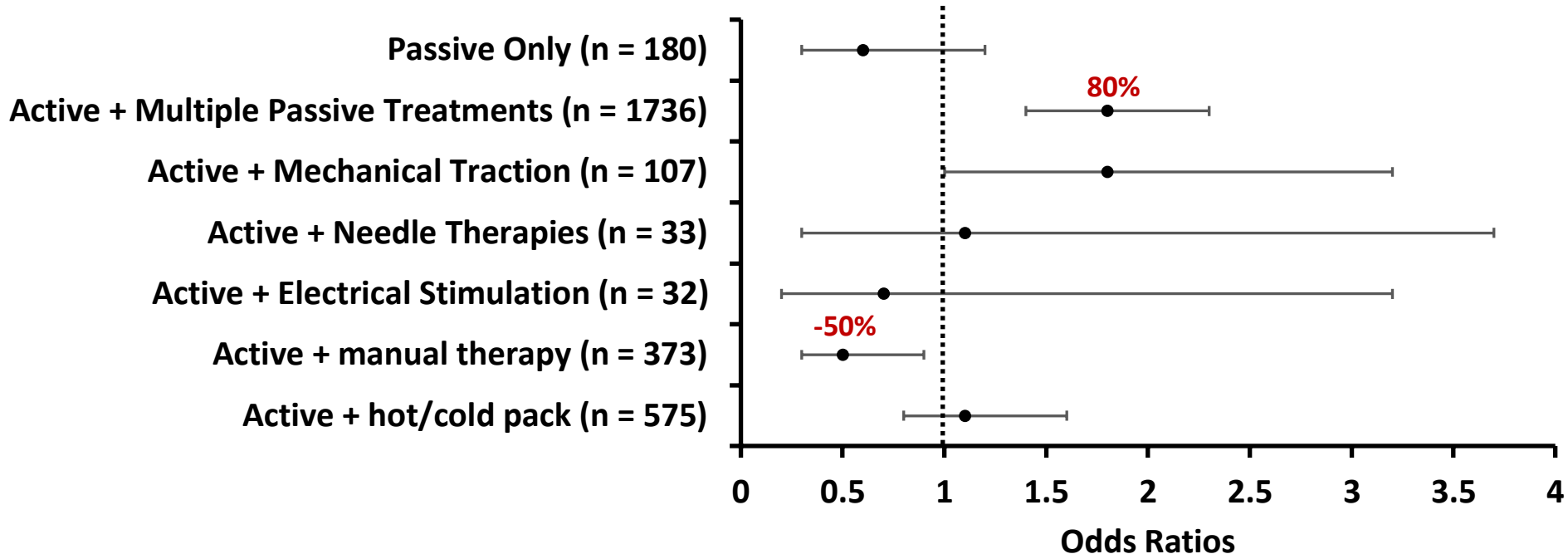
Speciality Care



- **Comparator Group:** Active Treatment only (n=1483)
 - All analyses are controlled for **age and gender**

Results

Spinal Injections



- **Comparator Group:** Active Treatment only (n=1483)
 - All analyses are controlled for **age and gender**

Conclusions

- More than 90% of patients with LBP received active treatments as a part of their physical therapy care.
 - However passive treatments were also frequently used.
- Number of visits and length of physical therapy was the shortest for the patients who only received active treatments as compared those who received active plus Hot/Cold packs, Manual Therapy, and Electrical Stimulation.
 - Addition of manual therapy led to a small reduction in injections.
 - No other group differences in healthcare utilization or opioid use.
- Chronicity or complexity of the patient's LBP condition might sometimes require a higher number of visits and longer course of PT care, which was not considered in the current study.

Clinical Relevance

- Patients who received active plus mixture of passive treatments (n = 1787) had substantially more visits, longer episode of care, and higher odds of receiving opioid prescription, spinal injection, and specialty care as compared to their counterparts who received active-only interventions.
 - On average had 7 more visits
 - Episode of care was 35 days longer
 - 6% greater rate of injections
 - 10% greater rate of opioid use
- Active management approaches empower patients to manage their own symptoms, as opposed to passive intervention strategies that foster a sense of dependency in the patient.

Any
Questions