

What Patients Actually Report: A Prospective Study of Postoperative Dental Pain Using mHealth



Muhammad Walji, PhD
& Sayali Tungare, BDS, MPH, PhD

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The nation's network

Disclosures



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Muhammad F Walji, PhD

Professor and Chair of Clinical and Health Informatics, UTHealth Houston McWilliams School of Biomedical Informatics
Director, Texas Center for Oral Healthcare Quality and Safety, UTHealth Houston School of Dentistry
POPS Principal Investigator



Sayali Tungare, BDS, MPH, PhD

Assistant Professor, UTHealth Houston McWilliams School of Biomedical Informatics
POPS quantitative and qualitative data analysis



Post-Operative Dental Pain Study (POPS)



POPULATION



Recruited
3,139 patients
post-dental
procedure from
144 dentists

WHAT THE STUDY EVALUATED



Post-op pain Experience:
Intensity and interference

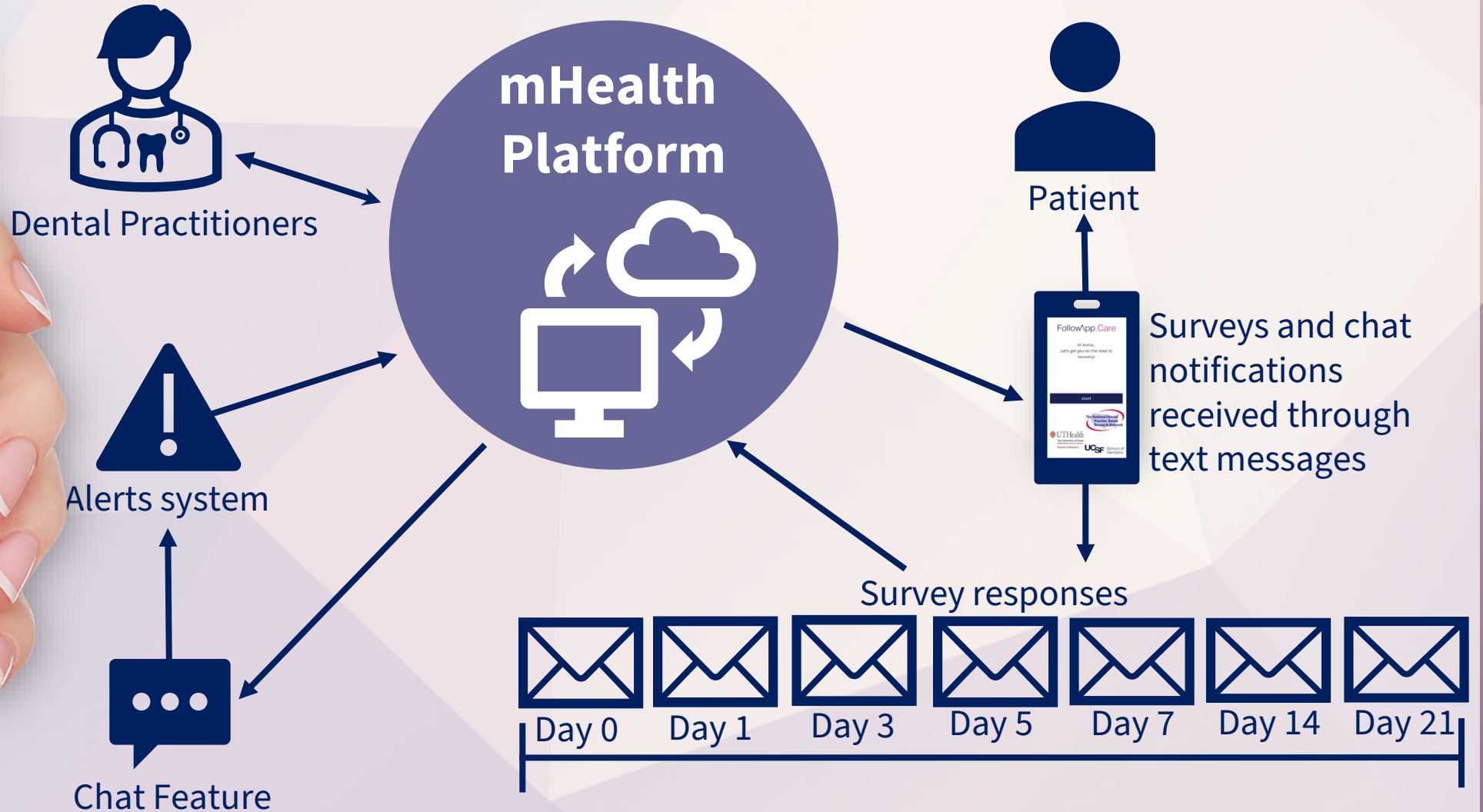
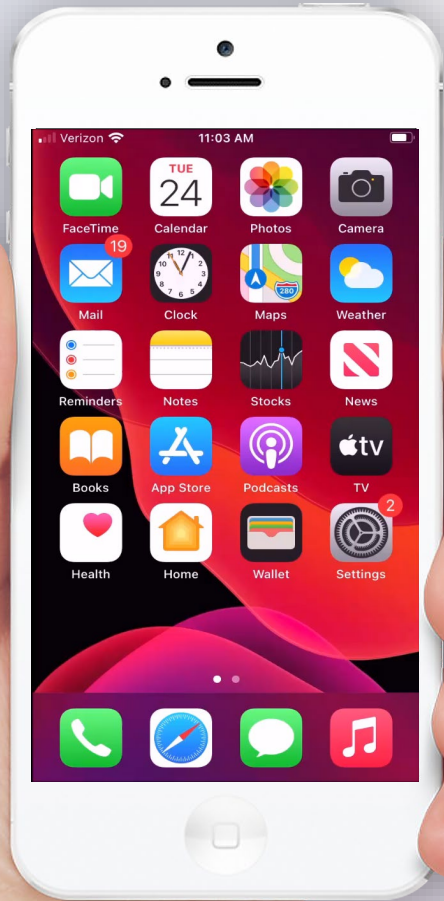


Pain management strategies:
Participation and Satisfaction



mHealth platform:
Usability, acceptance and usage

Study Overview



2,674 participants from 144 dentists

73.5%
Caucasian

87%
Not Hispanic/
Latino

55%
Suburban

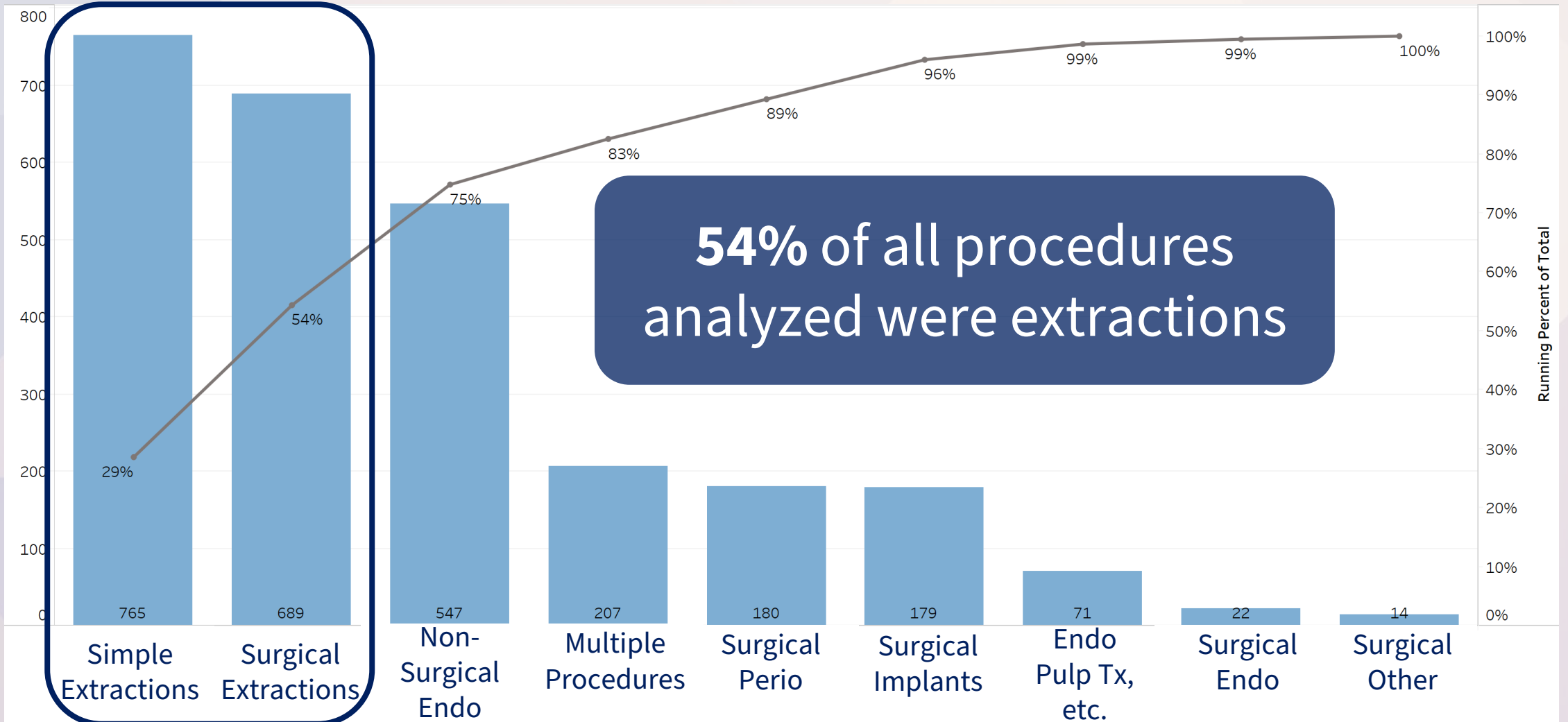
63%
Private
insurance

49.8 years
Mean age

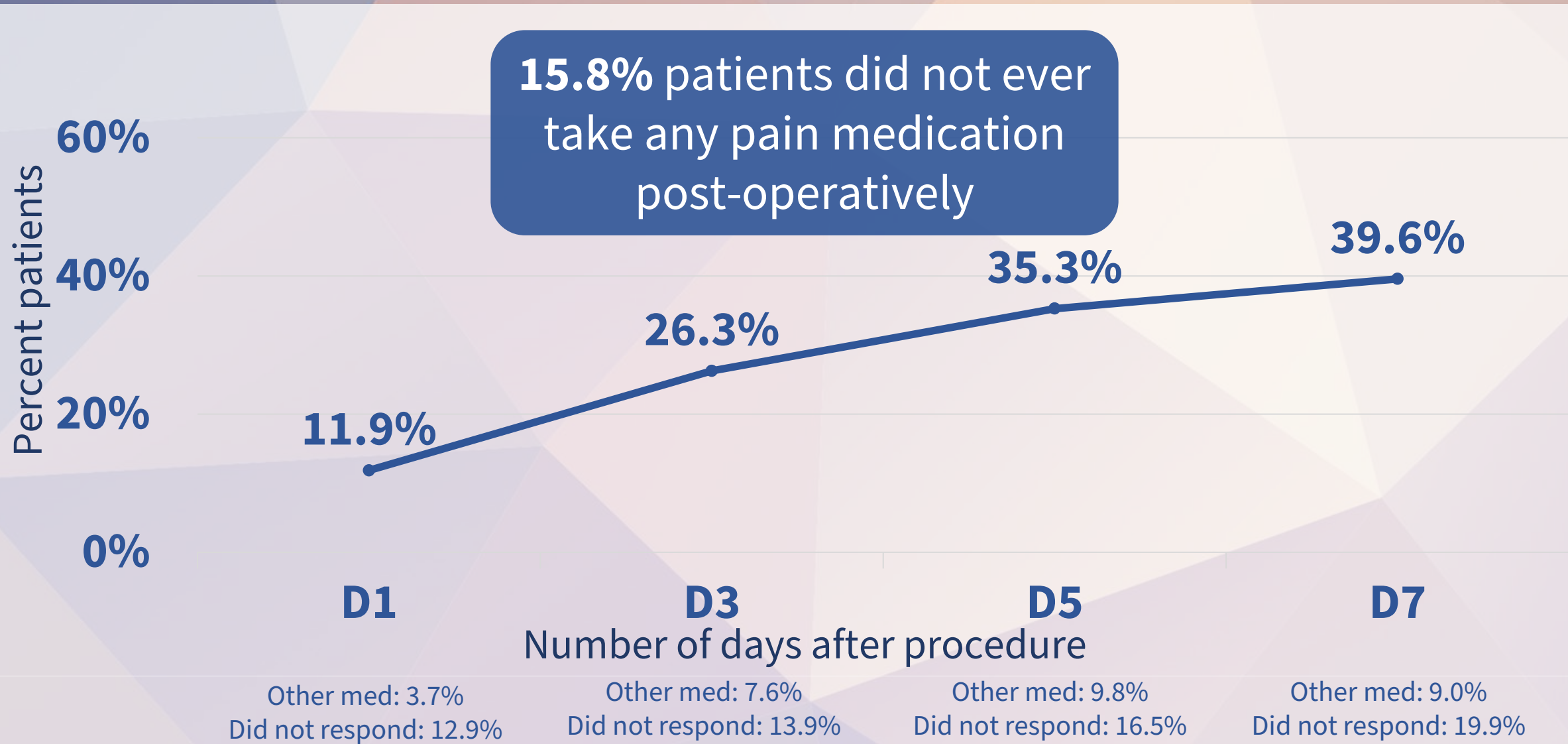
55.8%
Women

71.4%
some college/
associate
degree or
higher

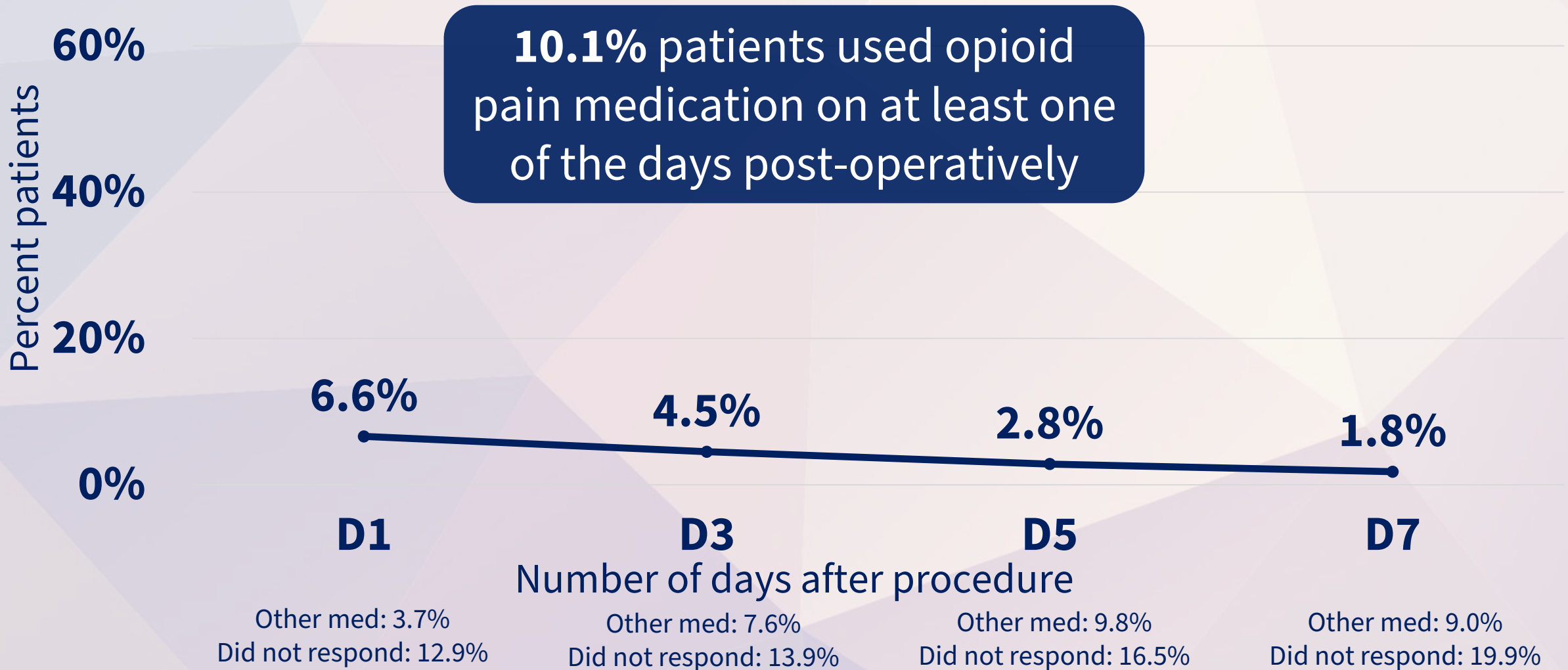
Types of Dental Procedures



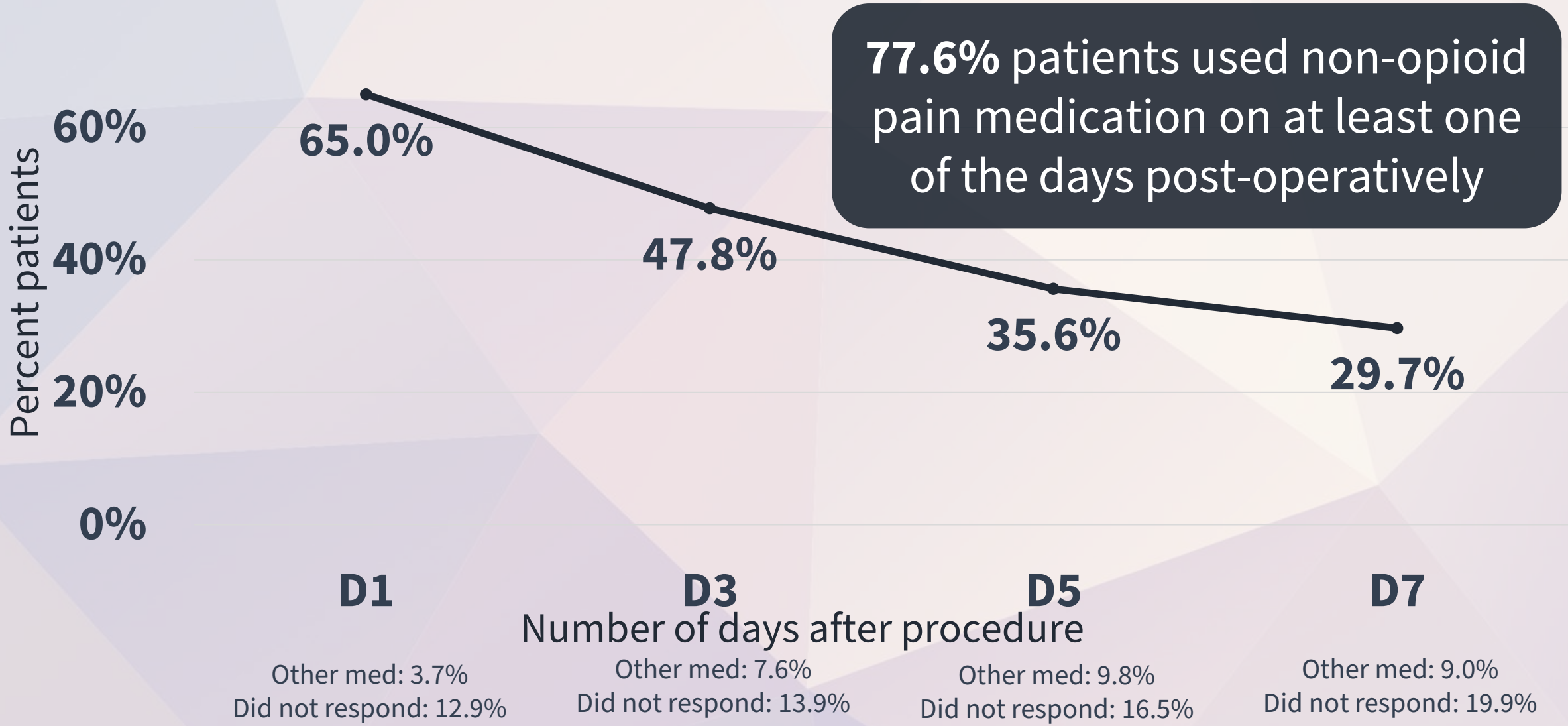
No Medication Taken Post-op



Opioid Medication Taken Post-Op

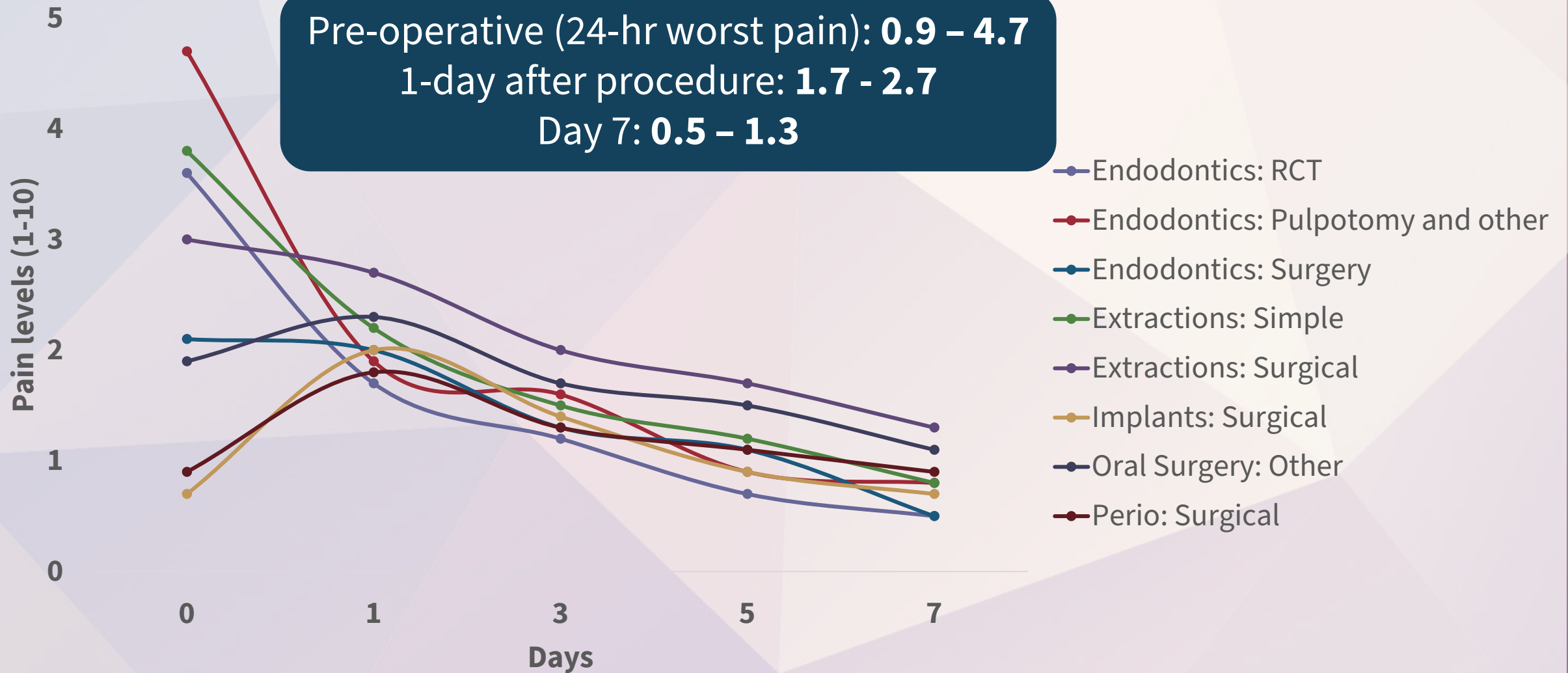


Non-Opioid Medication Taken Post-Op

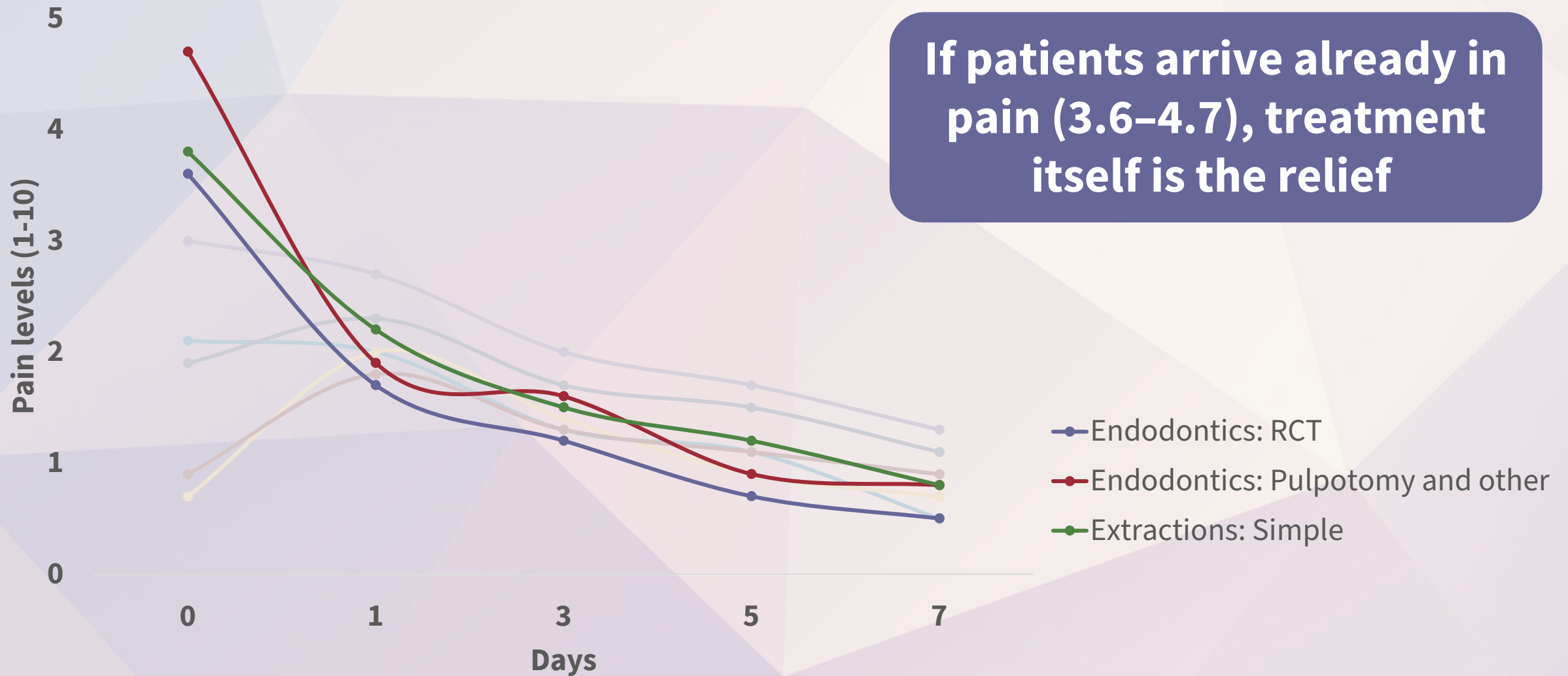


**What was the patients'
pain intensity?**

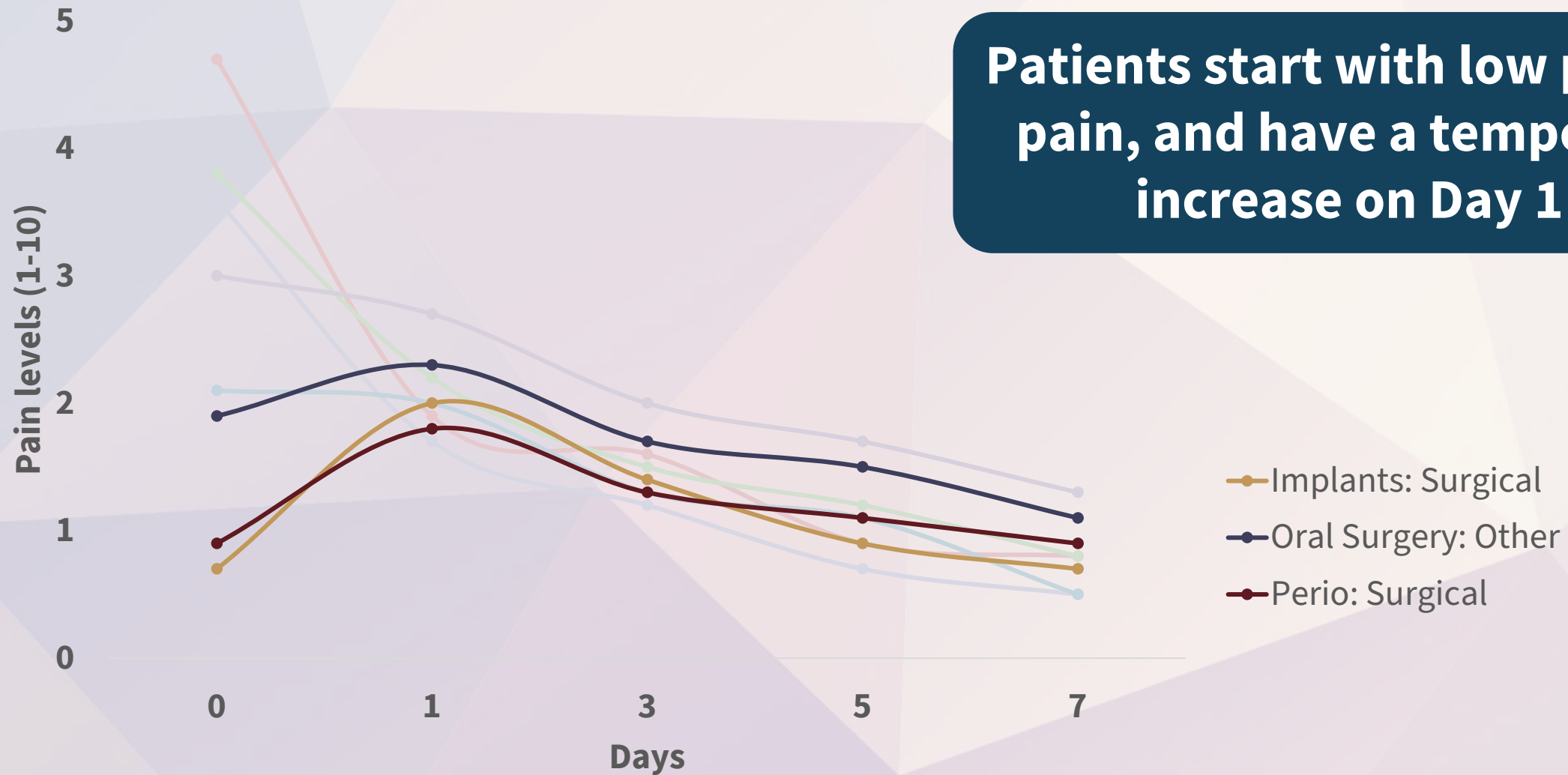
Pain levels ranged from 0.9 to 4.7



Treatment relieves pre-existing pain

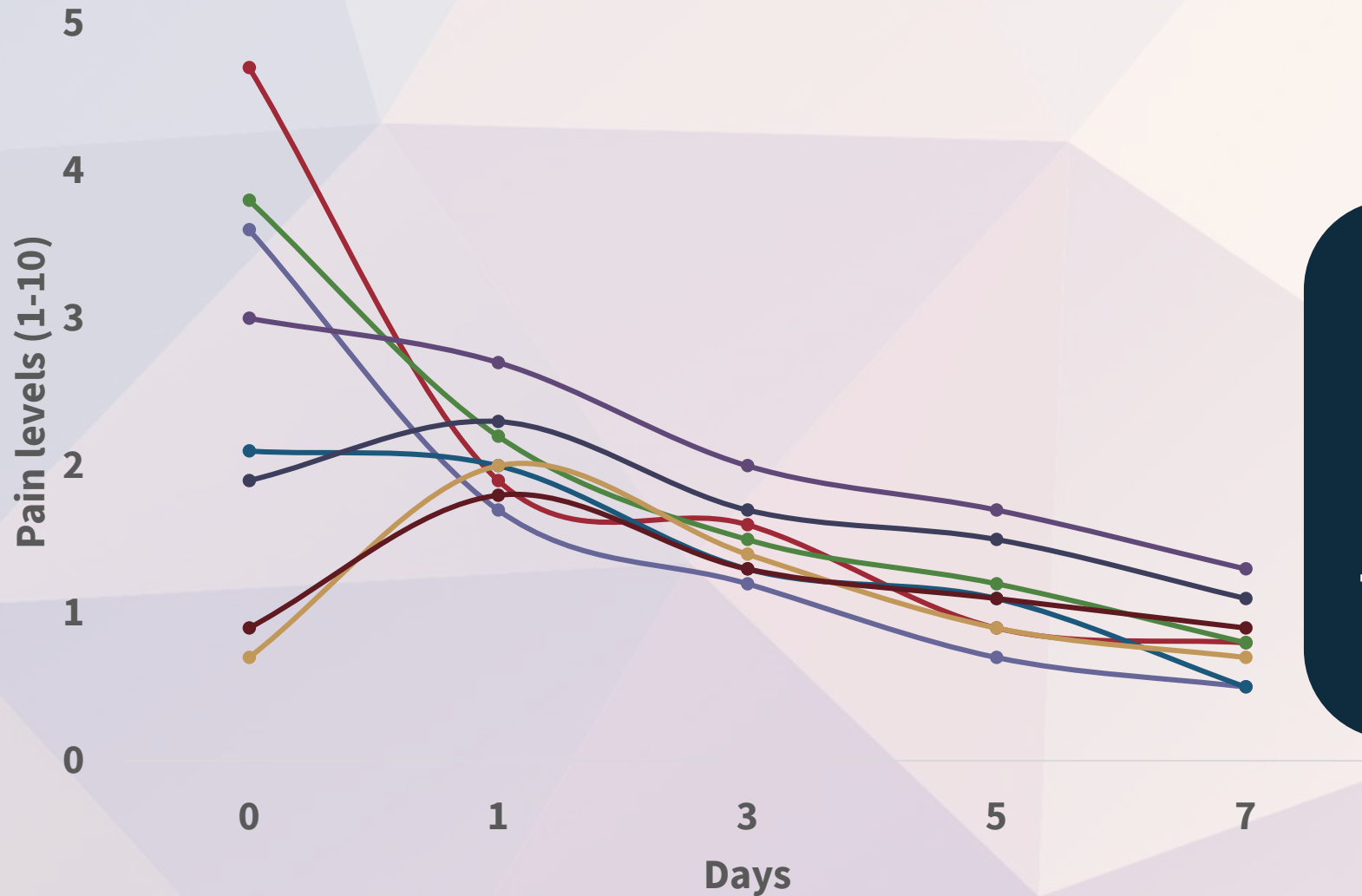


Surgical Procedures: Day 1 Spike



Patients start with low pre-op pain, and have a temporary increase on Day 1

One Post-op Story



No matter where a patient starts, their pain experience is remarkably consistent from day 1 and resolve within a week

Higher pain levels are more likely when...



...the patient is
younger

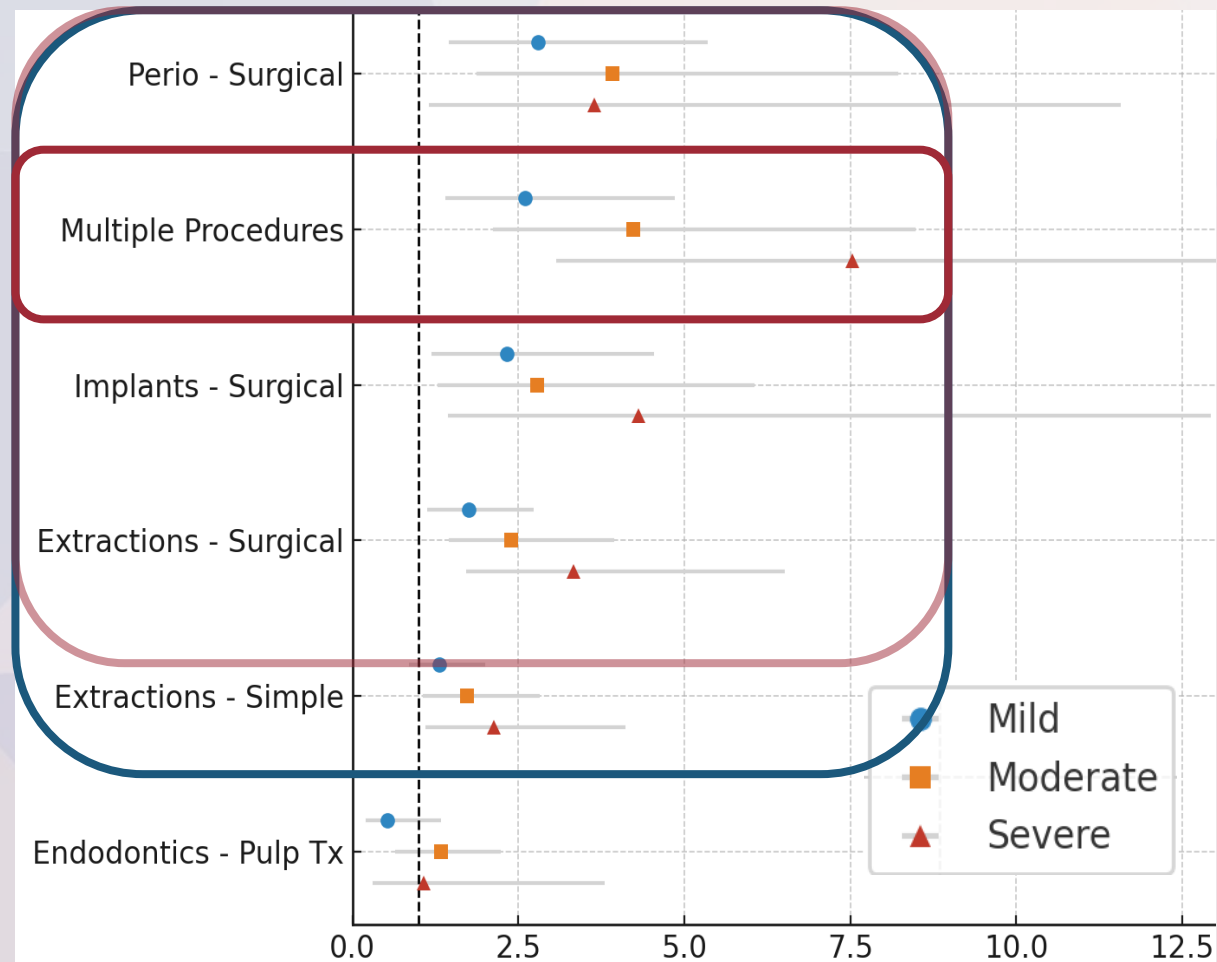


...post-op swelling is
present



...the patient takes
pain medication

Surgical Procedures Carry the Highest Post-op Pain Odds Compared to Root Canals



Highest odds of moderate to severe pain:

Multiple surgical procedures followed by surgical perio, implants, and extractions.

Moderate to severe pain is more likely when...



...severe pre-op pain
is present



...the patient is a
female



...the patient's
annual income is
under \$50K

**How did the patients' pain
interfere with daily life?**

Moderate to Severe Pain Post-Op



Speaking

Mild pain more likely for surgical extraction and implant/periodontal procedures

Moderate and severe pain had significant variability

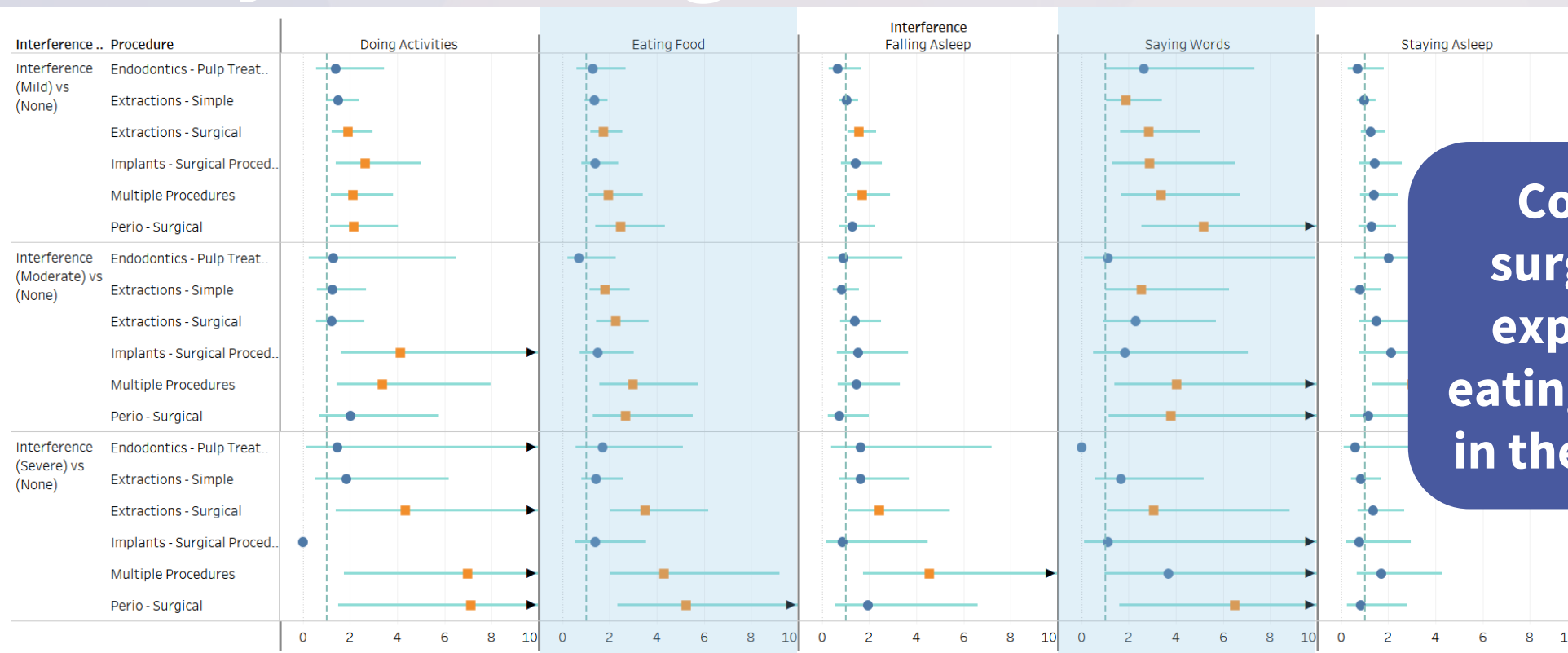


Eating

Mild, moderate and severe pain more likely for any surgical procedure (except implants)

Focus patient counseling on what to expect, what to eat/not eat for smoother recovery

Post-op Pain Disrupts Eating and Speaking Mostly After Surgical Procedures



Counsel every surgical patient: expect difficulty eating and speaking in the first few days

The wide variability in confidence intervals suggests patient to patient variability

**How satisfied were patients
with their pain management?**

Participant Satisfaction

**How satisfied are you
with your pain
treatment?**

8.88

← Extremely Dissatisfied (1)

Extremely Satisfied (10) →

**Were you allowed to
participate in decisions
about your pain treatment
as much as you wanted to?**

8.36

← Not at all (1)

Very much so (10) →

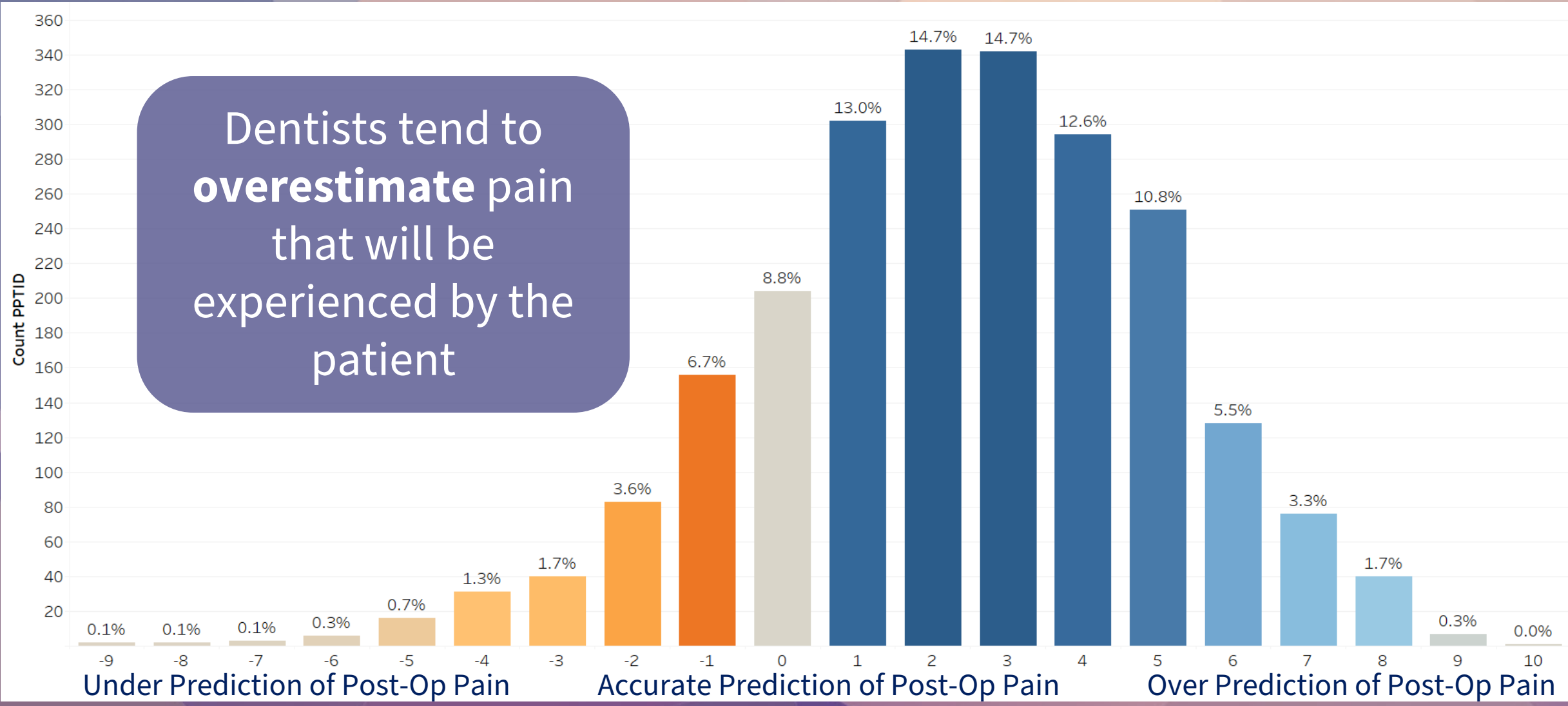
When adjusting for medication, initial pain, gender, age, insurance, income, and swelling, there was **no statistically significant effect of procedure groups.**

**How did patient reported pain
compare with practitioner
predicted pain?**

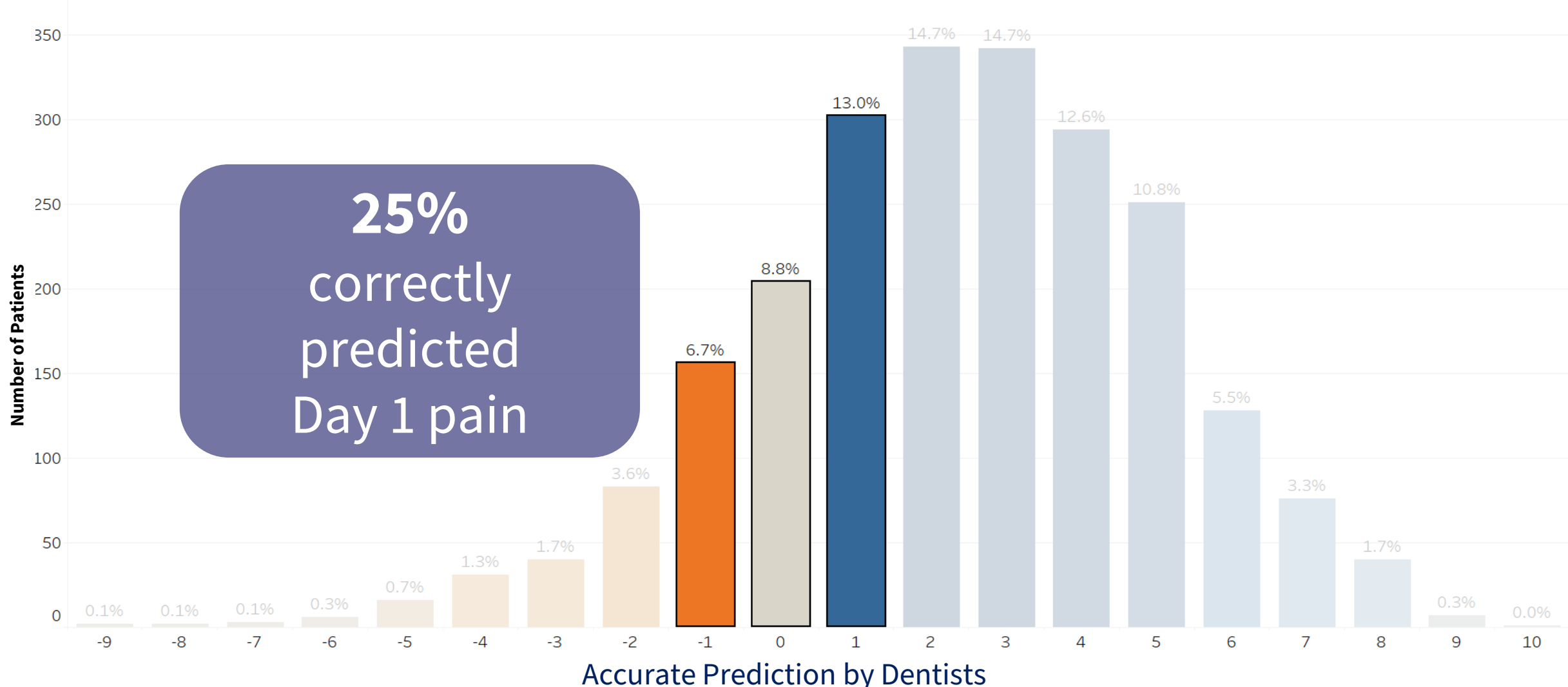
Day 1 Post-Op Pain Predicted by Dentists vs Pain Reported by Patients



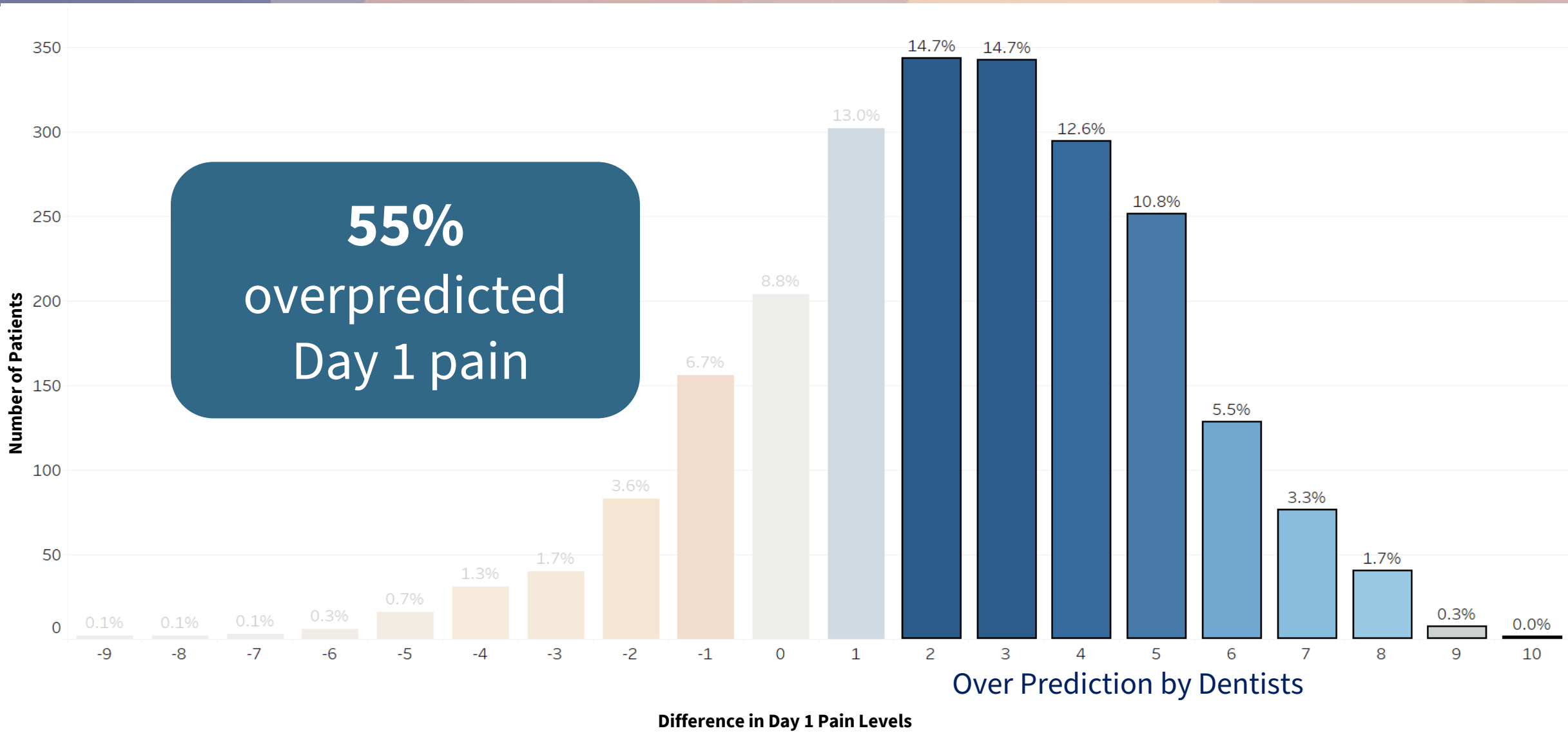
Dentists tend to **overestimate** pain that will be experienced by the patient



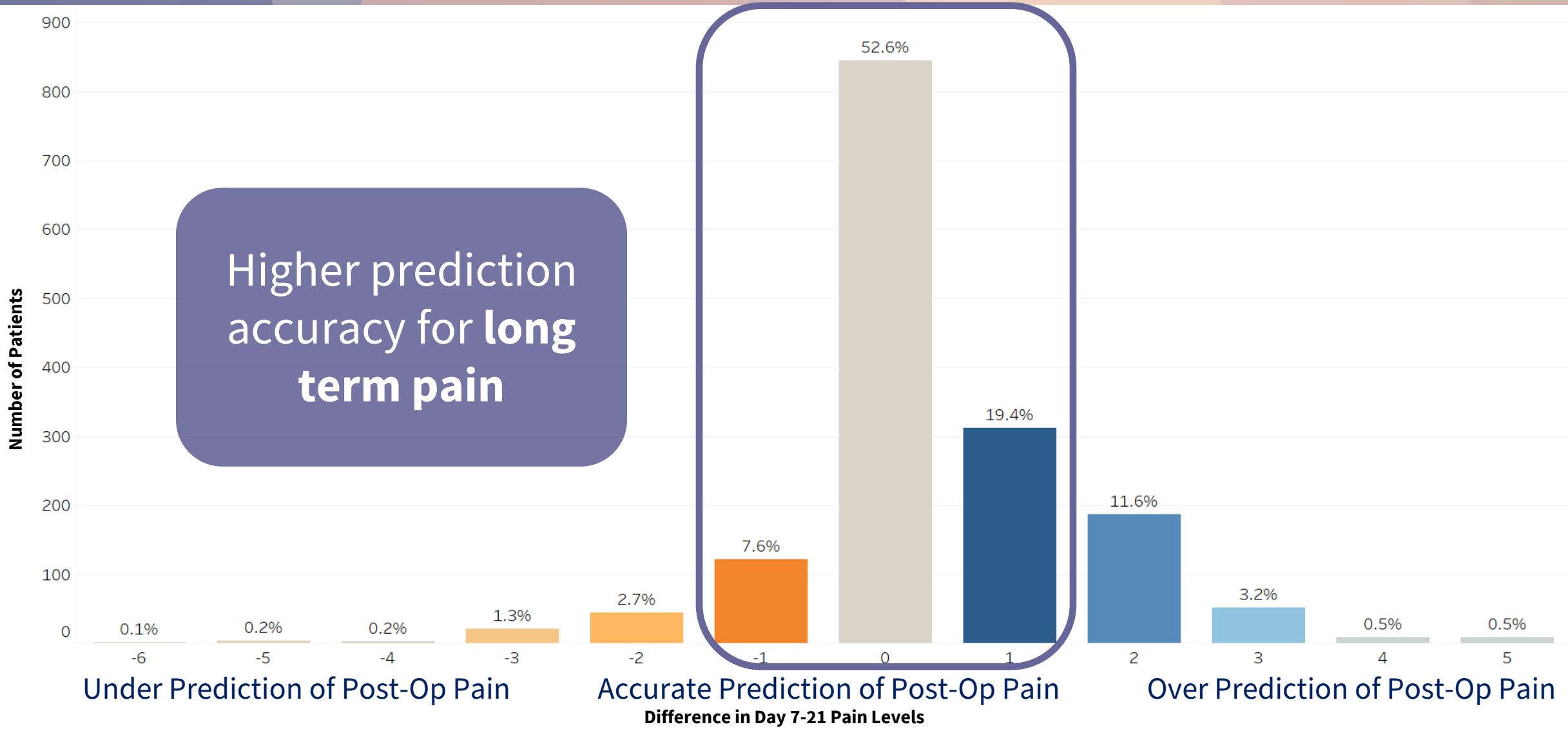
Day 1 Post-Op Pain Predicted by Dentists vs Pain Reported by Patients



Day 1 Post-Op Pain Predicted by Dentists vs Pain Reported by Patients



Days 7-21 Post-Op Pain Predicted by Dentists vs Pain Reported by Patients



**How were the
mHealth platform and patient
reported outcomes (PROs)
used in practice?**

How PROs and the mHealth Platform Were Used in Dental Practices

How it Was Used



Triage



Medication changes



Direct messaging



Anticipatory guidance

What Patients Messaged About



Clinical concerns



Information seeking



Care coordination



Emotional needs



Clinical guidance

Bringing PROs Into Practice: Facilitators and Barriers

What Helped



Actionable data



Patient reassurance



Smart alerts



Team support

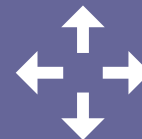
What got in the way



No EHR integration



Fixed 21-day schedule



Need for flexible follow-up



The National Dental Practice-Based Research Network

The nation's network

**The National Dental PBRN and the POPS Study are supported by
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Please visit our website at NationalDentalPBRN.org

Thank you!

Questions?

Email: Sayali.Sunil.Tungare@uth.tmc.edu

Breakout Questions

1. Based on the data from the POPS study, what insights do you find most surprising or informative?
2. How would the study results impact your approach to post-operative pain management?
3. How do you think utilizing a platform like FollowApp.Care could inform your approach to prescribing pain medication after dental procedures?
4. What are some additional research questions related to post-operative pain management that you are interested in exploring?