Chronic pain in childhood: Prevalence and impact

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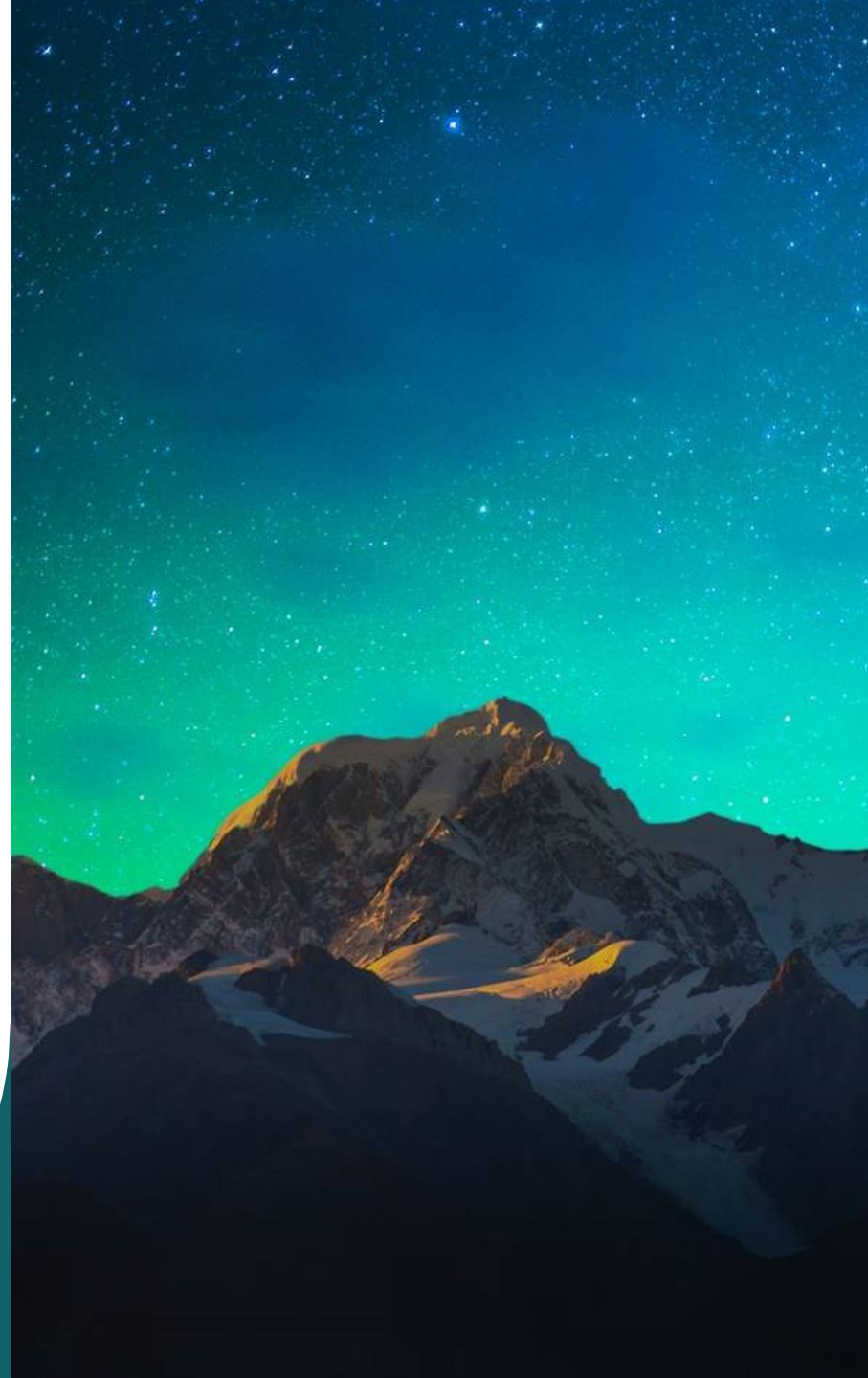

Systematic Review and Meta-Analysis

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OPEN

The prevalence of chronic pain in children and adolescents: a systematic review update and meta-analysis

Christine T. Chambers[a,b,c,*], Justine Dol[a], Perri R. Tutelman[a,b], Charlotte L. Langley[a], Jennifer A. Parker[a], Brittany T. Cormier[a], Gary J. Macfarlane[d], Gareth T. Jones[d], Darlene Chapman[e], Nicole Proudfoot[a], Amy Grant[f], Justina Marianayagam[g]

Abstract

Chronic pain, defined as persistent or recurring pain or pain lasting longer than 3 months, is a common childhood problem. The objective of this study was to conduct an updated systematic review and meta-analysis on the prevalence of chronic pain (ie, overall, headache, abdominal pain, back pain, musculoskeletal pain, multisite/general pain, and other) in children and adolescents.

- Data pulled from across 119 studies representing >1,000,000 children
- 1 in 5 children and adolescents experience chronic pain (20.8%)
- Highest prevalence for headaches and musculoskeletal pain (25.7%)

Pediatric Pain

5-8% of children have moderate to severe impairment in function due to pain (similar to "high impact chronic pain")

Prevalence increases with age across childhood, peaks 14-15 years

Females > Males for most pain types

- Sex differences begin around puberty, persist into adulthood

Research Paper

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Health care expenditures associated with pediatric pain-related conditions in the United States

Cornelius B. Groenewald[a,b,*], Davene R. Wright[b], Tonya M. Palermo[a,b]

$11.8 BILLION

The Economic Costs of Chronic Pain Among a Cohort of Treatment-Seeking Adolescents in the United States

Cornelius B. Groenewald,[*,†] Bonnie S. Essner,[†] Davene Wright,[†,‡] Megan D. Fesinmeyer,[†] and Tonya M. Palermo[*,†,‡,§]

$19.5 BILLION

Pain persists across the lifespan

- Adults with chronic pain often report pain onset in childhood, and follow-up assessment of adolescents with chronic pain show pain problems persist well into adulthood (range 17 to >50%)
- Highest rates of persistence among children with high pain frequency and high pain interference
- Adults with childhood pain onset have higher pain-related disability compared to those with adult onset

Impact on Children

- Missed School
- Mood and Anxiety
- Social Function
- Physical Function
- Sleep Problems

…and Parents

- Missed work
- Financial Stress
- Emotional Distress
- Changes in family roles
- Stressful interactions with child

Key Pediatric Assessment Domains

Research Paper

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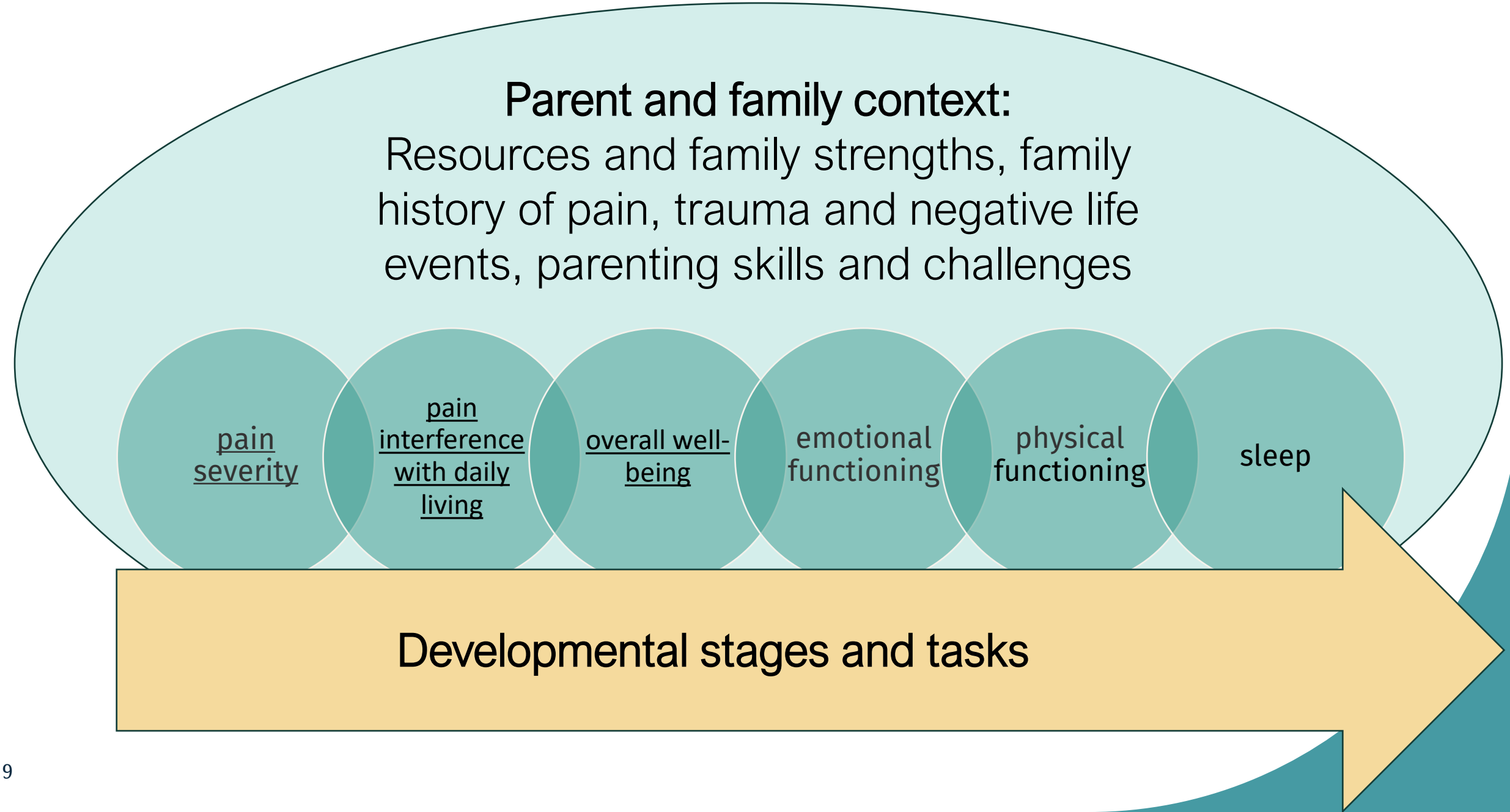
Core outcome set for pediatric chronic pain clinical trials: results from a Delphi poll and consensus meeting

Tonya M. Palermo[a,b,*], Gary A. Walco[b], Unmesha Roy Paladhi[c], Kathryn A. Birnie[d], Geert Crombez[e], Rocio de la Vega[f], Christopher Eccleston[e,g], Susmita Kashikar-Zuck[h,i], Amanda L. Stone[j]

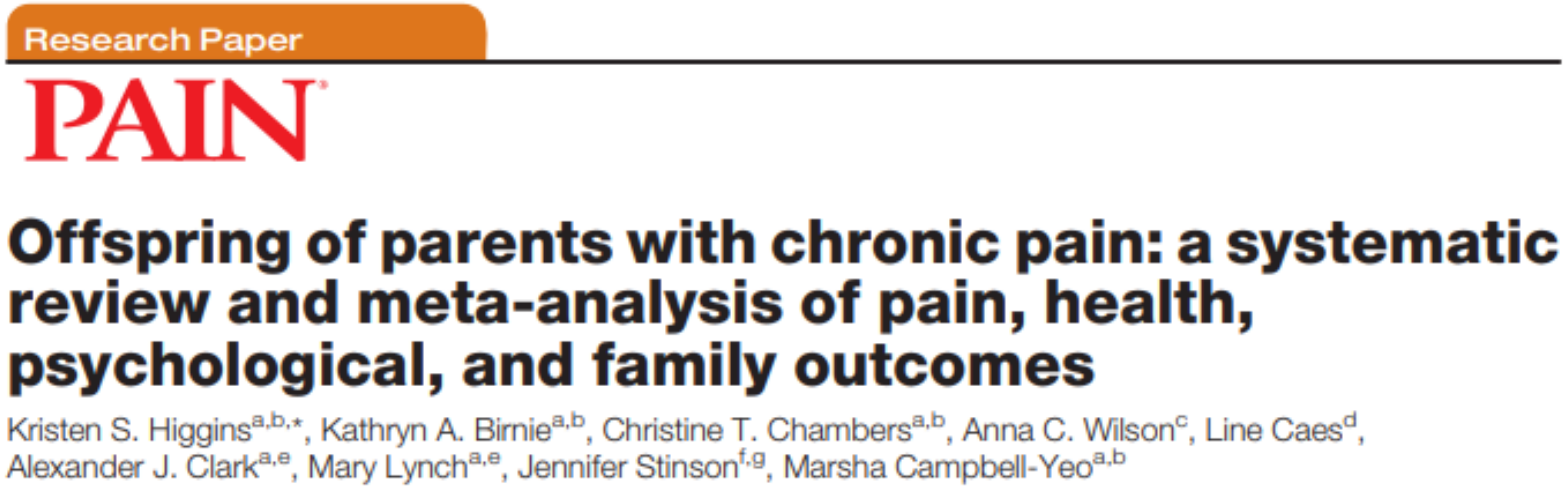
Children with chronic pain, their parents, and providers:

"It was determined, by unanimous vote, that **pain severity, pain interference with daily living, overall well-being, and adverse events,** including death, would be considered mandatory domains to be assessed in all trials of any type of intervention. Emotional functioning, physical functioning, and sleep were important but optional domains."


Parent and family context:
Resources and family strengths, family history of pain, trauma and negative life events, parenting skills and challenges
pain severity
pain interference with daily living
overall well-being
emotional functioning
physical functioning
sleep
Developmental stages and tasks

Intergenerational risk for pain, impact on parenting

- Children with pain highly likely to have at least 1 parent with chronic pain
- Offspring of parents with chronic pain have higher pain, and higher internalizing and externalizing problems
- Both genetics and shared environments play a role


Research Paper

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Offspring of parents with chronic pain: a systematic review and meta-analysis of pain, health, psychological, and family outcomes

Kristen S. Higgins[a,b,*], Kathryn A. Birnie[a,b], Christine T. Chambers[a,b], Anna C. Wilson[c], Line Caes[d], Alexander J. Clark[a,e], Mary Lynch[a,e], Jennifer Stinson[f,g], Marsha Campbell-Yeo[a,b]

Maternal Chronic Pain Study

Variable	*n* = 400 *M* (*SD*) or %
Maternal age (years)	40.15 (5.81)
Pain duration (years)	15.74 (10.21)
# of pain locations (body map 0-25)	10.57 (6.57)
Usual pain intensity (0-10 NRS)	5.0 (3.25)
# of pain diagnoses Most common: fibromyalgia, back or neck pain, migraine	Median=2 (M=2.3)

R01 HD082200: Maternal Chronic Pain, PI Wilson

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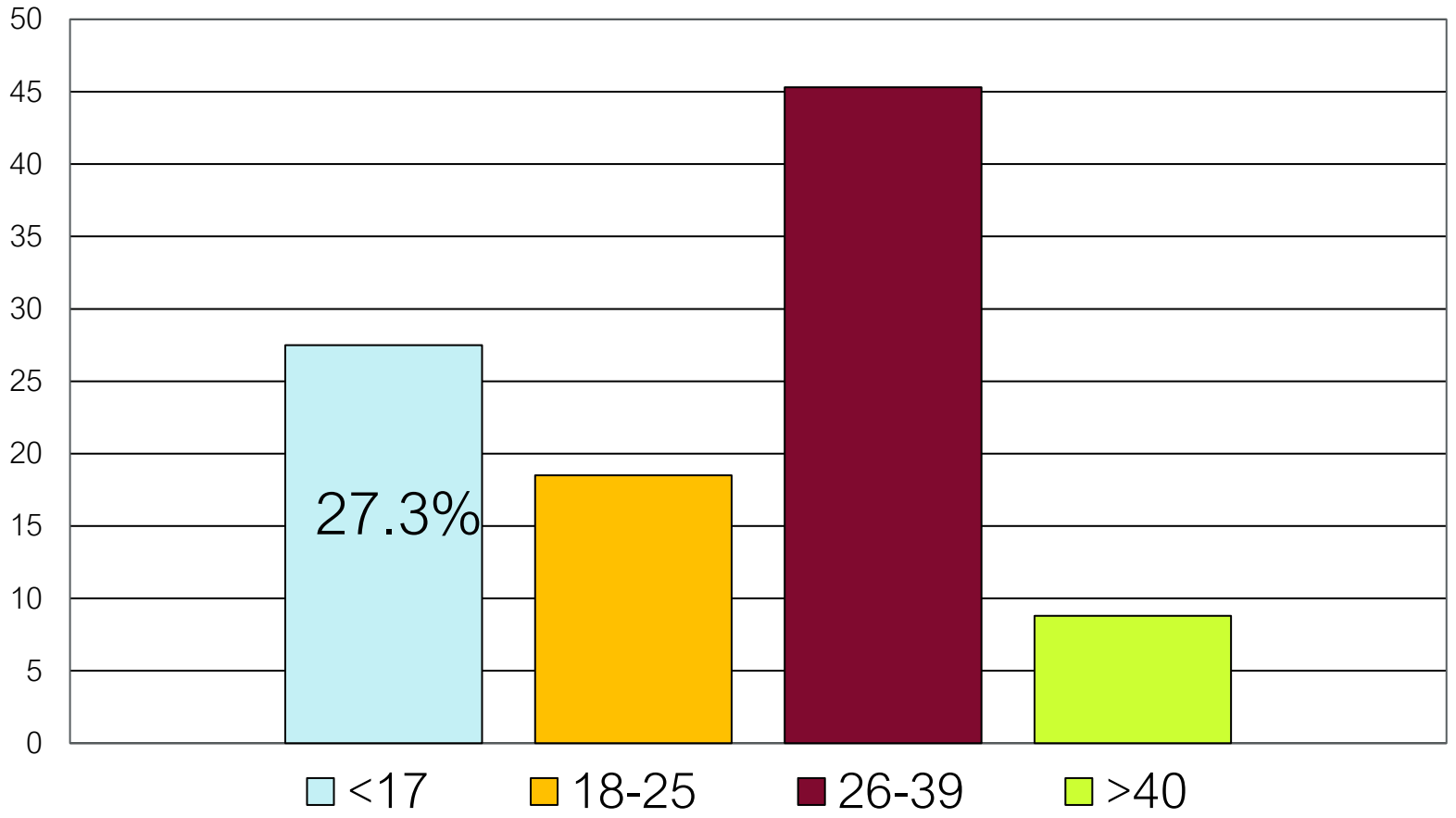
Maternal Age at Pain Onset



Maternal chronic pain: Impact on parenting and function

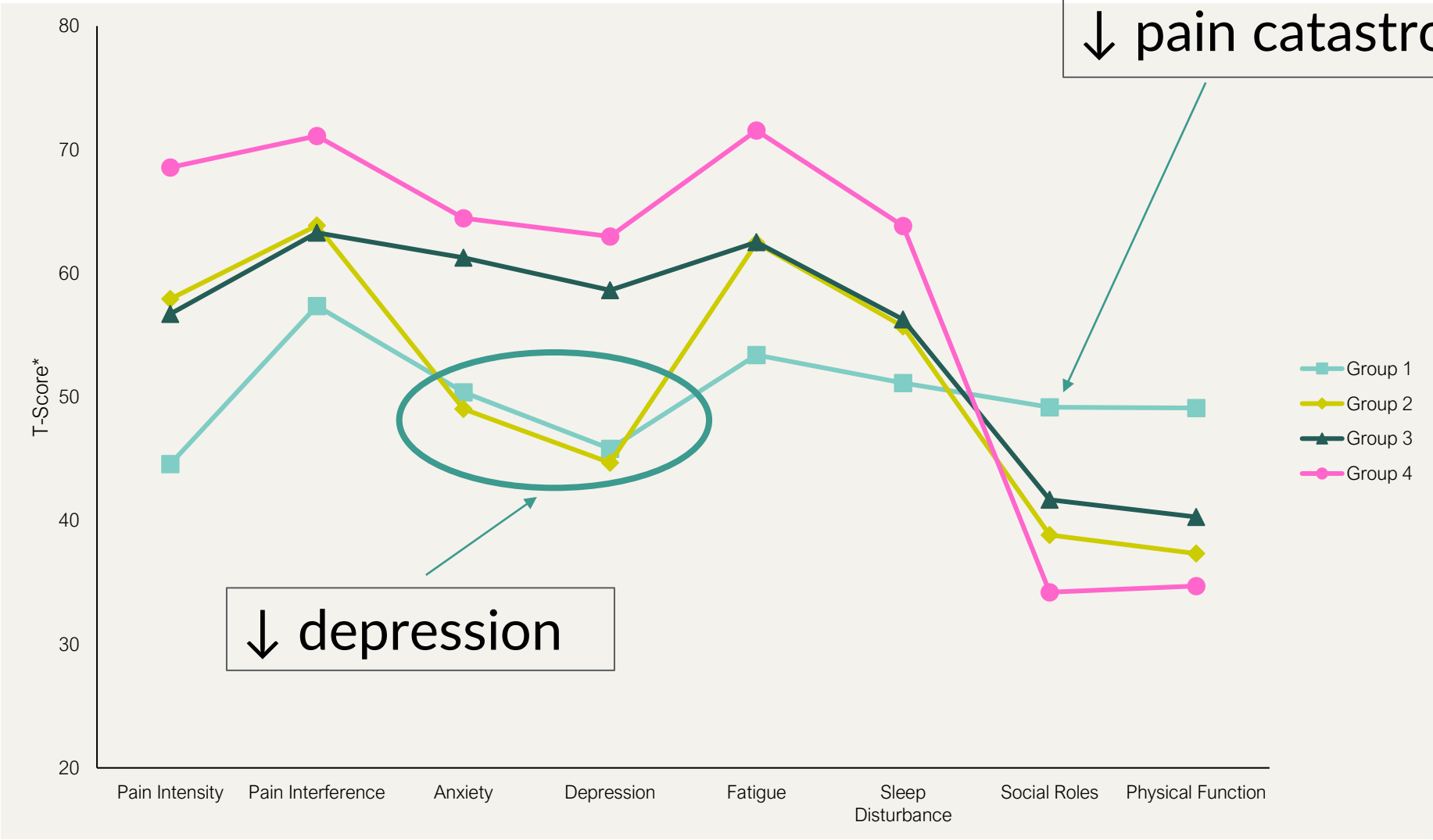
Qualitative experiences of mothers with chronic pain

- Impacts physical aspects of parenting, involvement in child activities, and emotions related to parenting
- "Parenting is hard. Pain just makes it harder."

Assessment of pain and pain impact across domains of functioning

- Use of PROMIS measures
- Pain Grades
- Latent profile analysis
- Daily diaries

PROMIS-29 Profile Subgroups in Mothers with Chronic Pain



Stone, A.L., Holley, A.L., Dieckmann, N.F., and Wilson, A.C. (2019). Use of PROMIS-29 to Identify Subgroups of Mothers with Chronic Pain. *Health Psychology, 38,* 422-430.

Take Aways

Chronic pain is prevalent and costly in childhood and adolescence, and persists into adulthood

Childhood treatment provides an opportunity to prevent chronic pain in adulthood

Chronic pain has intergenerational, parent and family impacts: Childhood pain is distressing and challenging for parents and families, and parental chronic pain creates parenting challenges and increases child risk for pain

Assessment should consider multiple domains, including pain interference: Domains should be relevant to the child's social situation and stage of development

Thank you!

Anna C. Wilson, PhD

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