



Pain in Childhood Matters: Improving Equity to Reduce the Life-long Impact of Pain

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Overview

1

Epidemiology and impact of pediatric chronic pain

2

Myths that reinforce stigma about childhood chronic pain

3

Impact of developmental transitions on chronic pain

4

Special populations: Growing up with disease-related pain



Epidemiology of Pediatric Chronic Pain

20.8% of children have **chronic pain**

5-8% have moderate to severe **disability**

Most **common types**: headache, musculoskeletal, abdominal

Girls > Boys

Peak rise: ages **14-15 years**

Multi-site pain common (21%)





Impact of Pain in Childhood



Pain Also Impacts Parents/Families

- Parental burden
- Depression, anxiety, anger/hostility
- Feelings of being blamed
- Isolation/lack of support
- Financial burden



Pain in Children has not Mattered Enough

Exclusion from narrative
regarding the public health
impact of pain



Absence of **children's voice**
and **stigma**

**Inadequate or
inappropriate pain relief** in
clinical practice



Inequities in access to
evidence-based pain care



Pain in Children is Often Ignored. For Children of Color, It's Even Worse.

Racial differences in medical care are part of a theme experts are seeing “over and over” again.

Give this article    139



Mikyung Lee

By Rachel Rabkin Peachman

Published Aug. 16, 2022 Updated Aug. 23, 2022

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Judith McClellan, a social worker who lives in Salisbury, N.C., knows what it's like to see her child in pain. Her daughter Kyarra, 15, has sickle cell disease, an inherited red blood cell disorder that

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ORIGINAL CONTRIBUTION

CME



Disparities in the emergency department management of pediatric migraine by race, ethnicity, and language preference

Emily A. Hartford MD, MPH¹  | Heidi Blume MD, MPH² | Dwight Barry PhD³ | Jessica Hauser Chatterjee MD, PhD² | Emily Law PhD⁴

Children from underrepresented racial/ethnic groups and whose parents had non English language of care were:

Less likely to receive best practice migraine treatment in the emergency department



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Myths about Childhood Pain that Reinforce Stigma

Children will grow out of painful conditions

*“Oh, it’s nothing. It’ll go away. There’s **nothing wrong with you.**”*

Adolescents with chronic pain often experience **symptom disbelief** and **social rejection** by others secondary to “**medically unexplained**” symptoms



Every child experiences pain. But pain is too often silenced and appropriate relief too infrequently given.

It is time for action.

Make pain **matter**

We need to improve equity, eliminate stigma, and make pain matter to everyone—health professionals, policy makers, funders, researchers, clinicians, and society at large.



Make pain **understood**

We need to improve our knowledge of all types of pain across the life course through investment in research. Our understanding must integrate biological, psychological, and social elements.

Make pain **visible**

We need standardised and reliable assessments for pain. Pain status should be determined in every child and treatment decisions driven by a person-centred approach.



Make pain **better**

We need to avoid unnecessary pain and prevent the transition from acute to chronic pain. We must strive for universal access to effective pain treatments for all children and adolescents.



For full details, read the Commission: *Delivering transformative action in paediatric pain*

THE LANCET **Child & Adolescent Health**

The best science for better lives

Eccleston C, et al. (2021). Delivering transformative action in paediatric pain: a Lancet Child & Adolescent Health Commission. *Lancet Child Adolesc Health*. 2021 Jan;5(1):47-87.



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Myth Busting: Children do not “Grow Out” of Pain

- In long-term follow-up, pain symptoms **continued into adulthood** (35-58%)
- Many individuals developed **additional sites** of chronic pain
- Increased risk for **anxiety and depression** in adulthood



PAIN® 150 (2010) 568–572

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www.elsevier.com/locate/pain

Functional abdominal pain in childhood and adolescence increases risk for chronic pain in adulthood

Lynn S. Walker^{a,b,*}, Christine M. Dengler-Crish^{a,b}, Sara Rippel^a, Stephen Bruehl^c

^aVanderbilt University School of Medicine and the Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN, USA

^bVanderbilt Kennedy Center for Research on Human Development, Nashville, TN, USA

^cDepartment of Anesthesiology, Vanderbilt University School of Medicine, Nashville, TN, USA

Research Paper

PAIN

Long-term outcomes of adolescents with juvenile-onset fibromyalgia into adulthood and impact of depressive symptoms on functioning over time

Susmita Kashikar-Zuck^{a,b,*}, Natoshia Cunningham^{a,b}, James Peugh^{a,b}, William R. Black^b, Sarah Nelson^{c,d}, Anne M. Lynch-Jordan^{a,b}, Megan Pfeiffer^b, Susan T. Tran^e, Tracy V. Ting^{a,f}, Lesley M. Arnold^g, Adam Carle^{a,h}, Jennie Nollⁱ, Scott W. Powers^{a,b}, Daniel J. Lovell^{a,f}

Developmental Transitions influence Chronic Pain Onset

Trends in
Neurosciences



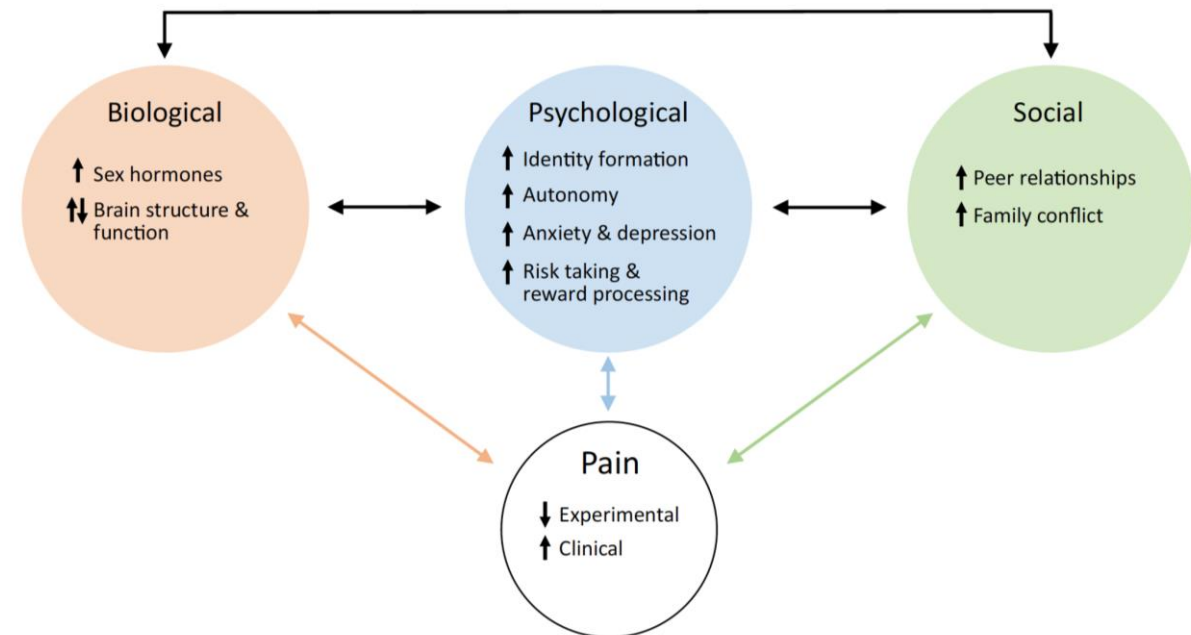
Review

Alterations in pain during adolescence
and puberty

5



Hadas Nahman-Averbuch,^{1,*} Rui Li,² Katelynn E. Boerner,³ Christopher Lewis,^{4,5} Sarah Garwood,⁵
Tonya M. Palermo,^{2,6,8} and Abbie Jordan^{7,8}



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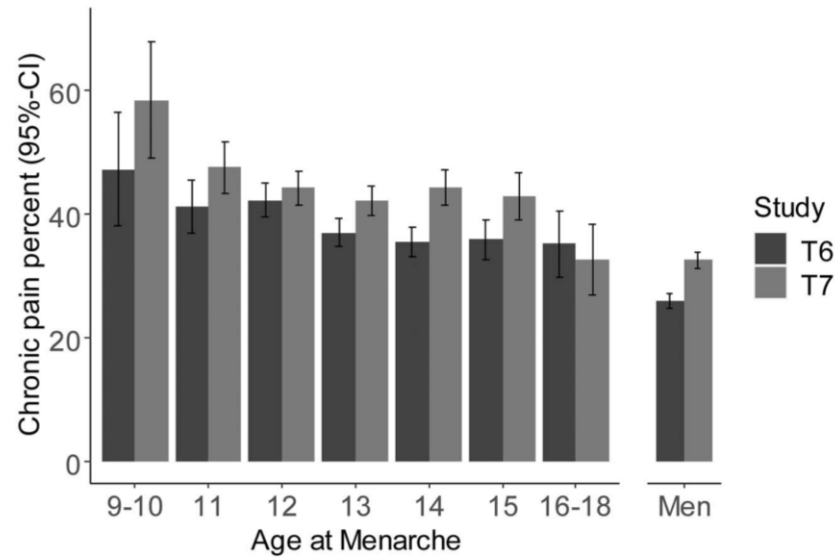
Age at Menarche and Adult Pain

Research Paper

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The association between age at menarche and chronic pain outcomes in women: the Tromsø Study, 2007 to 2016

Charlotte I. Lund^{a,b,*}, Bo Engdahl^c, Leiv A. Rosseland^{a,b}, Audun Stubhaug^{b,d}, Guri Grimnes^{e,f}, Anne-Sofie Furberg^{g,h}, Ólöf A. Steingrimsdóttir^{a,c}, Christopher S. Nielsen^{c,d}



	Women (age at menarche)							Men
Sample size	9-10	11	12	13	14	15	16-18	N
N (Tromsø 6)	112	526	1259	1826	1575	850	301	5854
N (Tromsø 7)	106	542	1281	1624	1231	634	263	5480

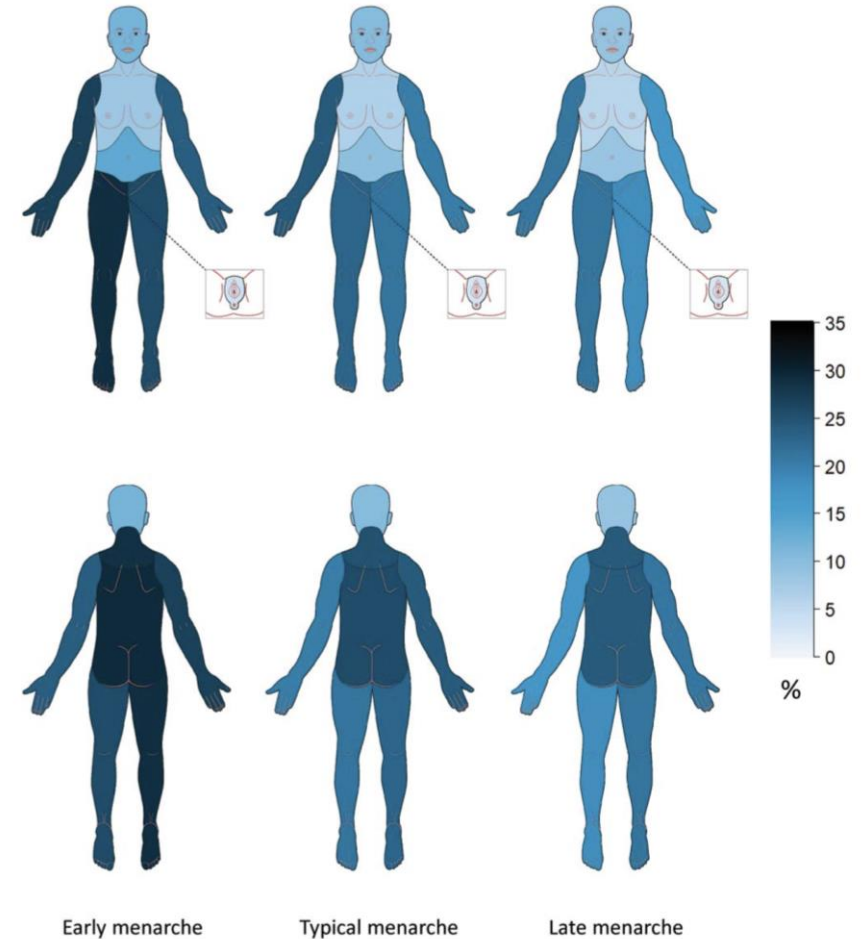


Figure 3. Prevalence of chronic pain across 10 body regions in women with early (age 9-11 years), typical (age 12-14 years) and late (age 15-18 years) menarche. Color scale 0 to 35 is used; darker body areas present higher prevalence of chronic pain.





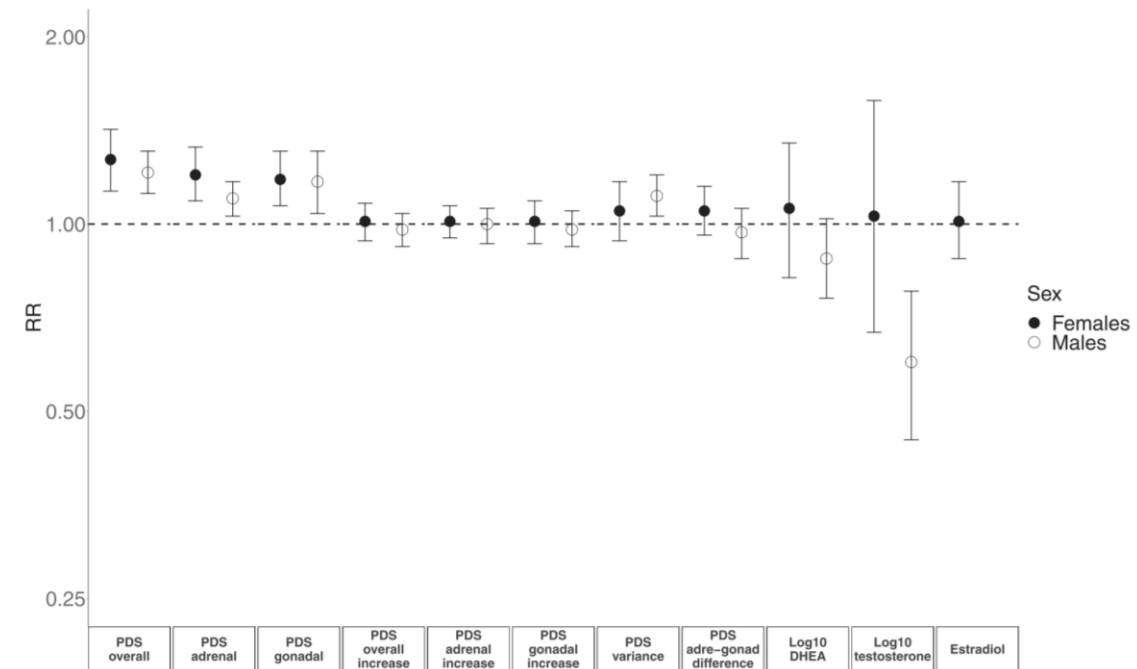
Pubertal development and pain incidence and characteristics in children: a 1-year prospective cohort study of a national sample

Rui Li^{a,*}, Daniel A. Lopez^b, Meenal Gupta^c, Tonya M. Palermo^{a,d}

Sample: 6631 children who were pain-free at Y1

- Average age of 10.9 years (range, 9.7-12.3 years) at Y1 and 12.0 years (range, 10.6-14 years) at Y2

Both sexes: Higher pubertal development scores were associated with greater risk of pain onset one year later





► Pain Rep. 2020 Aug 13;5(5):e839. doi: [10.1097/PR9.0000000000000839](https://doi.org/10.1097/PR9.0000000000000839) [↗](#)

Adverse childhood experiences and chronic pain among children and adolescents in the United States

[Cornelius B Groenewald](#)^{a,b,*}, [Caitlin B Murray](#)^a, [Tonya M Palermo](#)^{a,b}

Table 2

Cumulative exposure to adverse childhood experiences (ACEs) and associated prevalence rates of chronic pain.

No. of ACEs	No. of participants	No chronic pain		Chronic pain	
		Weighted %	95% CI	Weighted %	95% CI
0 ACE	26,724	95.2	94.6–95.7	4.8	4.3–5.4
1 ACE	11,204	91.3	90.0–92.4	8.7	7.6–10.0
2 ACEs	5087	86.8	84.2–89.1	13.2	10.9–15.8
3 ACEs	2545	86.9	84.5–89.0	13.1	11.0–15.5
4+ ACEs	3007	81.6	78.8–84.1	18.4	15.9–21.2



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Long-term impact of adolescent chronic pain on young adult educational, vocational, and social outcomes

Caitlin B. Murray^{a,*}, Cornelius B. Groenewald^{a,b}, Rocio de la Vega^a, Tonya M. Palermo^{a,b}



Add Health
The National Longitudinal Study
of Adolescent to Adult Health



Adolescents (ages 11-17)



AYA (ages 24-32)



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Adolescent chronic pain (Wave I & II, 11-17 years)

N = 3174 youth with chronic pain
N = 11,610 without chronic pain



Young Adult Outcomes (Wave IV, 24-32 years)

Educational:

- Less likely to receive high school diploma (OR = 0.68)
- Less likely to receive bachelors' degree (OR = 0.83)

Vocational:

- Less likely to receive employer-provided insurance benefits (OR = 0.80)
- More likely to receive public assistance/disability (OR = 1.31)

Social:

- More likely to have earlier pregnancy/parenthood (OR = 1.28)
- More likely to have lower relationship satisfaction (b = -.08)



Healthcare Engagement

Young adult pain needs

42%

were not engaged in any form of healthcare for pain management

RESEARCH ARTICLE | VOLUME 23, ISSUE 8, P1358-1370, AUGUST 2022

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Healthcare Transition Among Young Adults With Childhood-Onset Chronic Pain: A Mixed Methods Study and Proposed Framework

Caitlin B. Murray   • Lexa K. Murphy • Abbie Jordan • Michele Tsai Owens • Dorothy McLeod • Tonya M. Palermo

Published: March 14, 2022 • DOI: <https://doi.org/10.1016/j.jpain.2022.02.010>

 Check for updates



Barriers: low preparation and negative patient-provider relationships



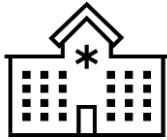
Facilitators: improved self-efficacy and acceptance of pain



Growing up with Pain: Sickle Cell Disease



Provider bias and **stigmatizing language** leads to the **underassessment** and **under-management** of pain in Black Americans



Direct and indirect consequences of stigma on **social, psychological, and physiological health** in SCD

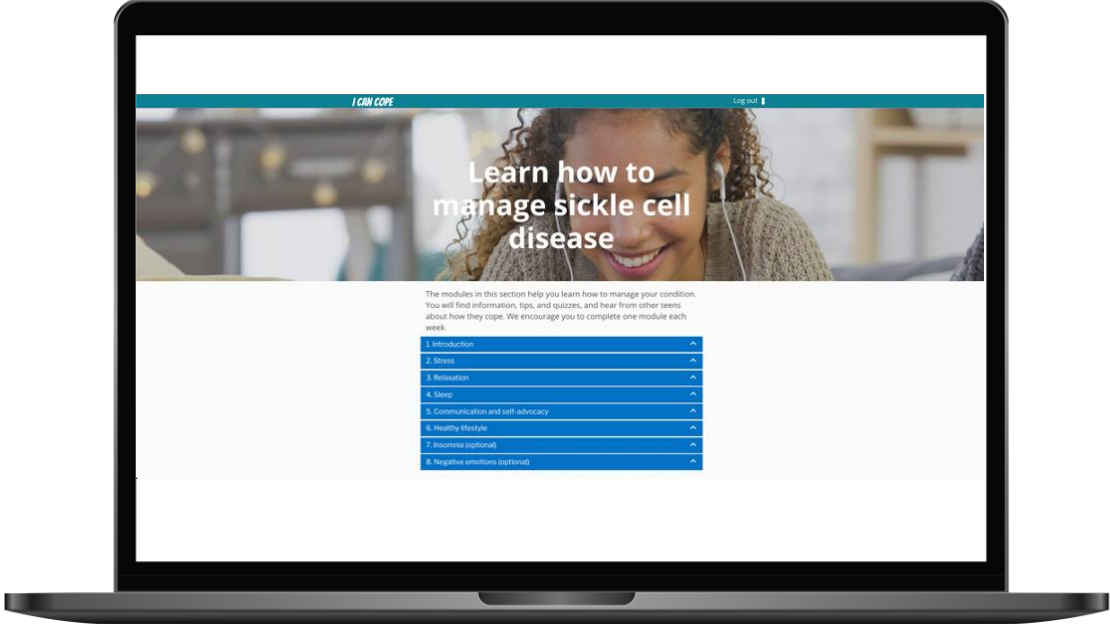
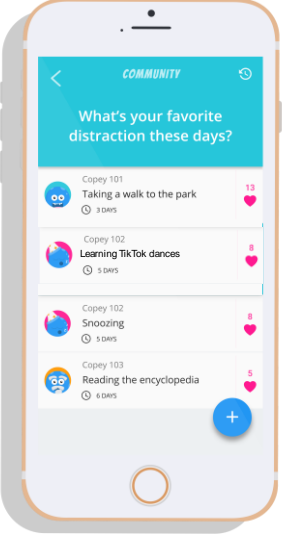
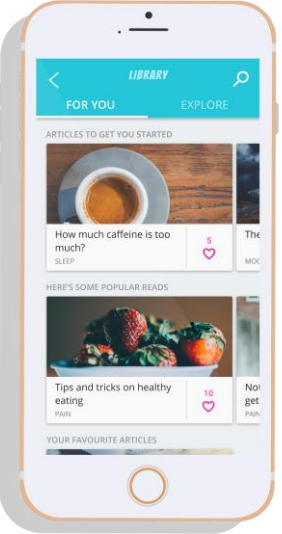
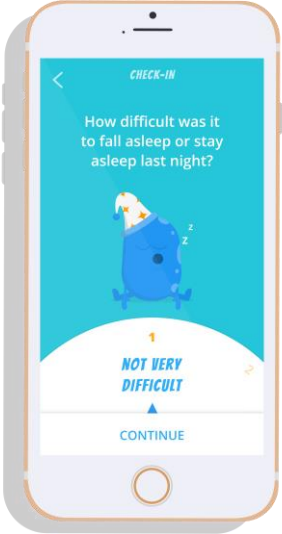
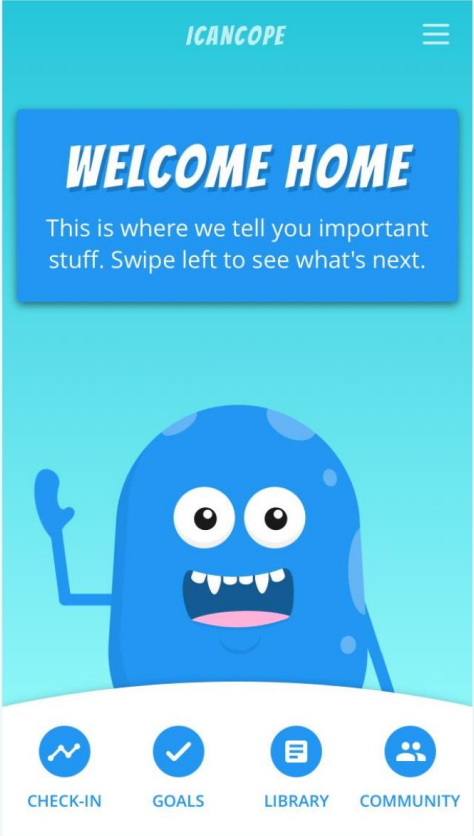


Directly relate to **inequity of resources** for **patients with SCD**.

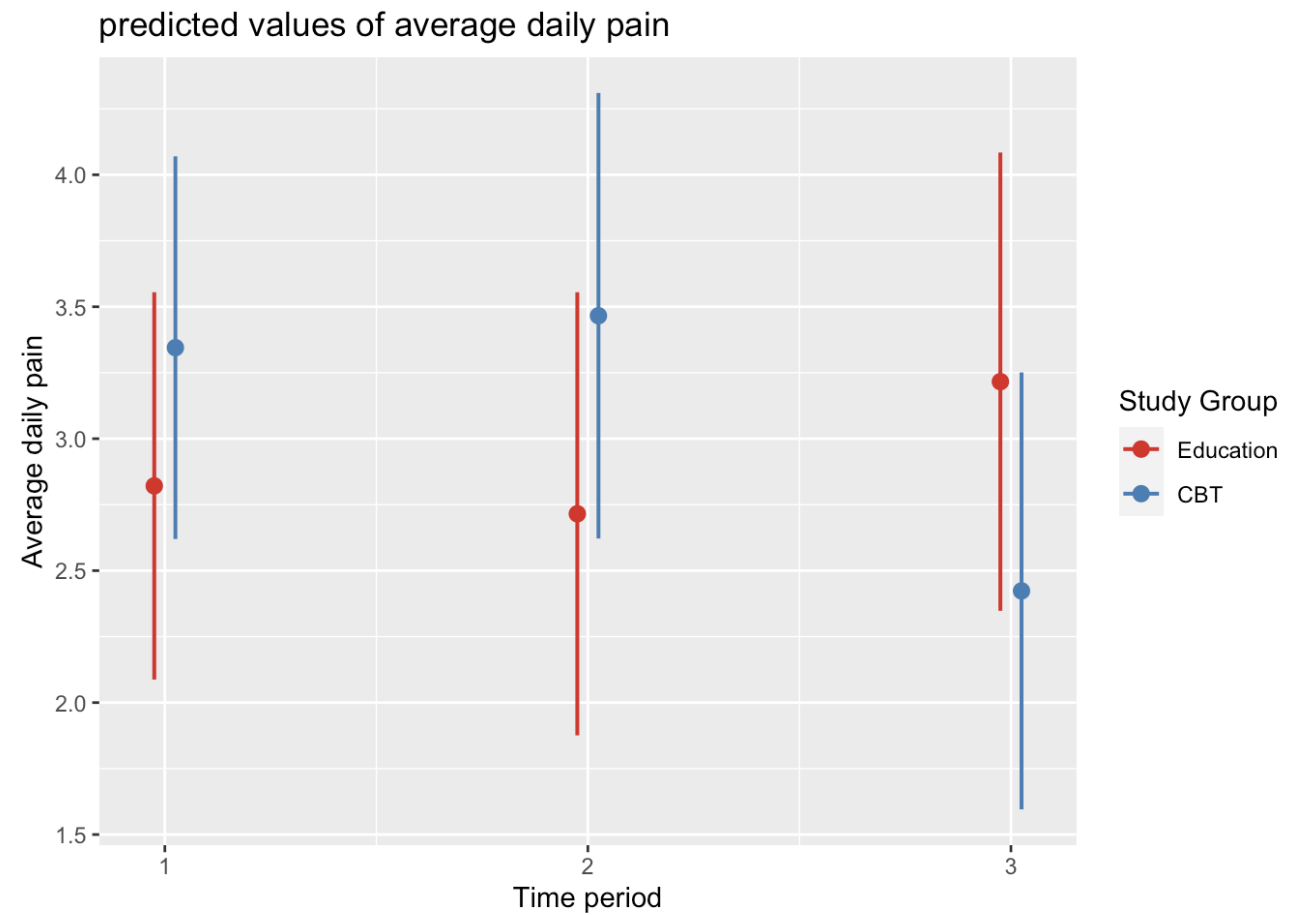
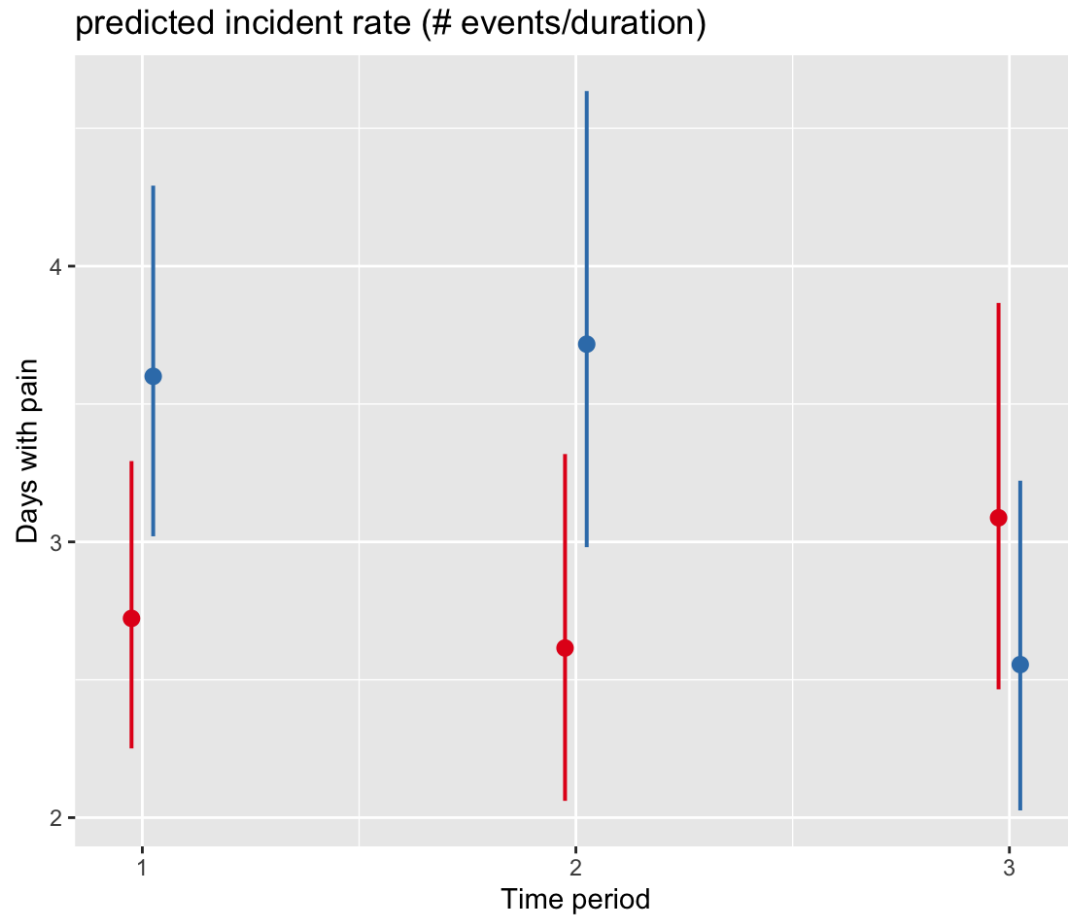
- **Limited evidence base to support treatment recommendations for SCD pain in adolescents**



Childhood provides opportunity to learn lifelong pain management skills



Digital CBT Led to Significant Reductions in Pain Days and Pain Intensity (n=111 youth)



Summary

1

Chronic pain is a **common problem in children** and adolescents, often continues, and can have a significant and lasting **impact into adulthood**

2

Myths about pain in childhood **contribute to stigma**

3

Transitions occurring in adolescence (puberty) and young adulthood are critical periods that **influence pain onset and management**

4

Early intervention and **prevention** opportunities in childhood may be key to **chronic disease and pain management**





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