

PSYCHOLOGICAL INTERVENTIONS FOR YOUTH WITH CHRONIC PAIN

Tonya Palermo, PhD

Interim Director, Center for Child Health, Behavior, &
Development, Seattle Children's Research Institute
Professor and Vice Chair for Research, Anesthesiology & Pain
Medicine, Adj. Psychiatry; Pediatrics, University of Washington

DISCLOSURES

Grant support: National Institutes of Health

Royalties: Oxford University Press

Consultation: TriveniBio

Delivering transformative action in paediatric pain: a Lancet Child & Adolescent Health Commission



Christopher Eccleston, Emma Fisher, Richard F Howard, Rebecca Slater, Paula Forgeron, Tonya M Palermo, Kathryn A Birnie, Brian J Anderson, Christine T Chambers, Geert Crombez, Gustaf Ljungman, Isabel Jordan, Zachary Jordan, Caitriona Roberts, Neil Schechter, Christine B Sieberg, Dick Tibboel, Suellen M Walker, Dominic Wilkinson, Chantal Wood

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

BELIEFS ABOUT CHILDHOOD PAIN THAT REINFORCE STIGMA AND DELAY TREATMENT

*“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

Wakefield et al., 2022. “There’s Nothing Wrong With You”: Pain-Related Stigma in Adolescents With Chronic Pain, *Journal of Pediatric Psychology*, 47: 456–468

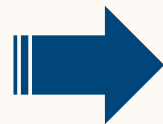
Long-term impact of adolescent chronic pain on young adult educational, vocational, and social outcomes

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



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)

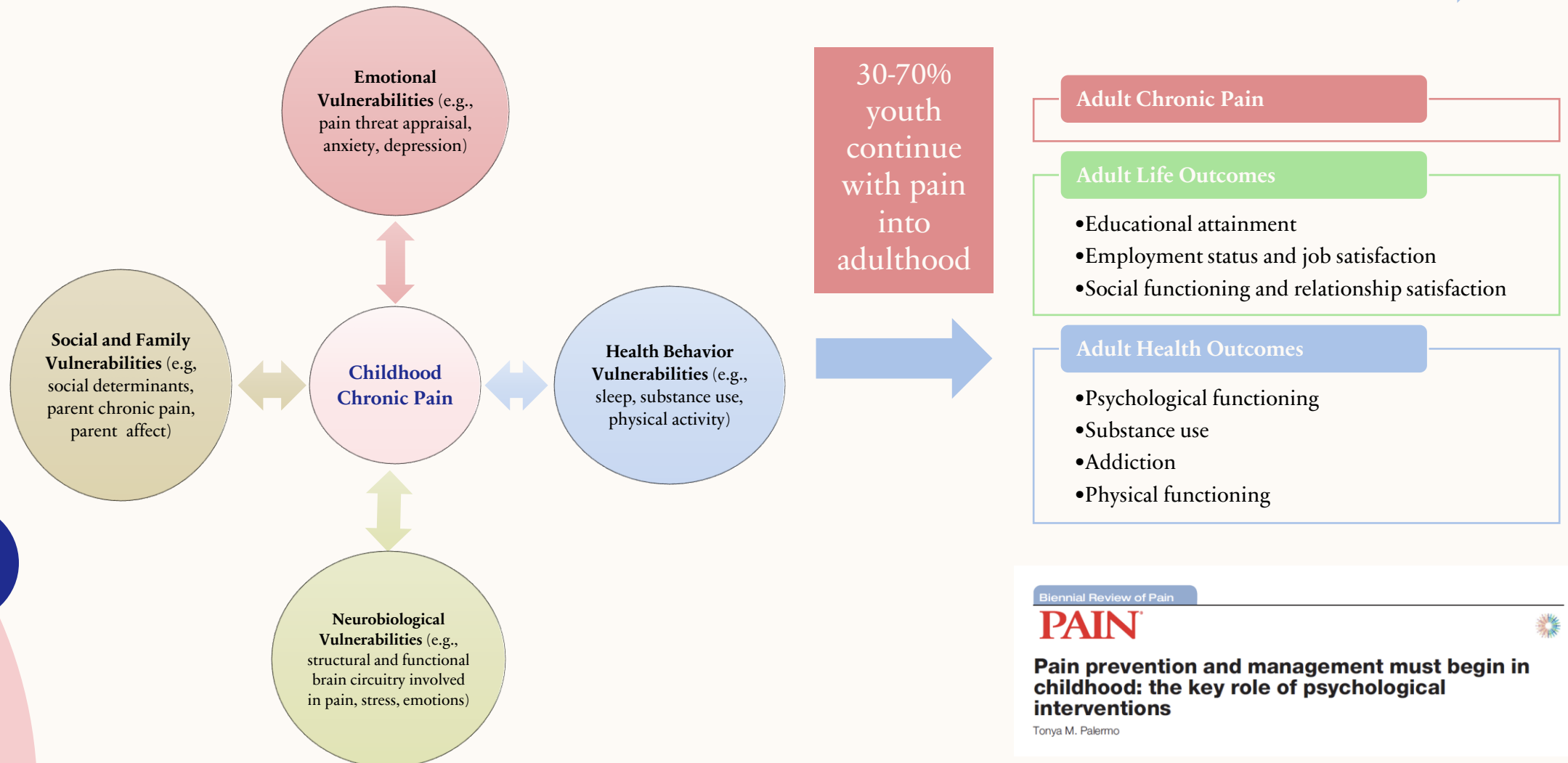


Time



Developmental Model of Chronic Pain from Childhood to Adulthood: Implications for Psychological Treatment

Lifespan/Time





MENTAL HEALTH COMORBIDITIES ARE COMMON

Prevalence:

Children and adolescents with chronic pain have 3x increased risk (compared to those without pain) of developing mental health conditions, including:

- anxiety and depressive disorders
- posttraumatic stress disorder
- Suicidality
- substance use

Possible mechanisms:

- Shared neurobiology (e.g., genes, hormones, brain networks)
- Mutually maintaining cognitive (e.g., attention and memory biases) and behavioral (e.g., sleep disturbance) factors



**Cochrane
Library**

Cochrane Database of Systematic Reviews

Psychological therapies for the management of chronic and recurrent pain in children and adolescents (Review)

Fisher E, Law E, Dudeney J, Palermo TM, Stewart G, Eccleston C

43 RCTs of psychological treatment (mostly cognitive-behavioral therapy, CBT) involving 2617 youth across many pain conditions

Small to moderate effects (mostly at post-treatment)

Psychological treatments have a promising evidence base for reducing chronic pain and disability

2018 Sep 29;9:CD003968.

BARRIERS TO TREATMENT

Only 5% of children and adolescents with chronic pain will receive psychological intervention



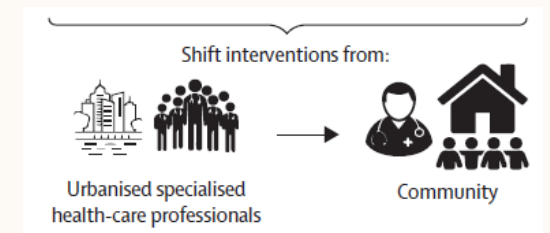
Shortage of dedicated interdisciplinary pediatric pain clinics and pain psychologists; geographic distance; stigma



Delayed referral to subspecialty care (average 21 months), long waiting lists for pain services (average 6 months); patient functioning often deteriorates



Take home: identify children earlier; need accessible options outside of clinics (community based, remote interventions, school-based)

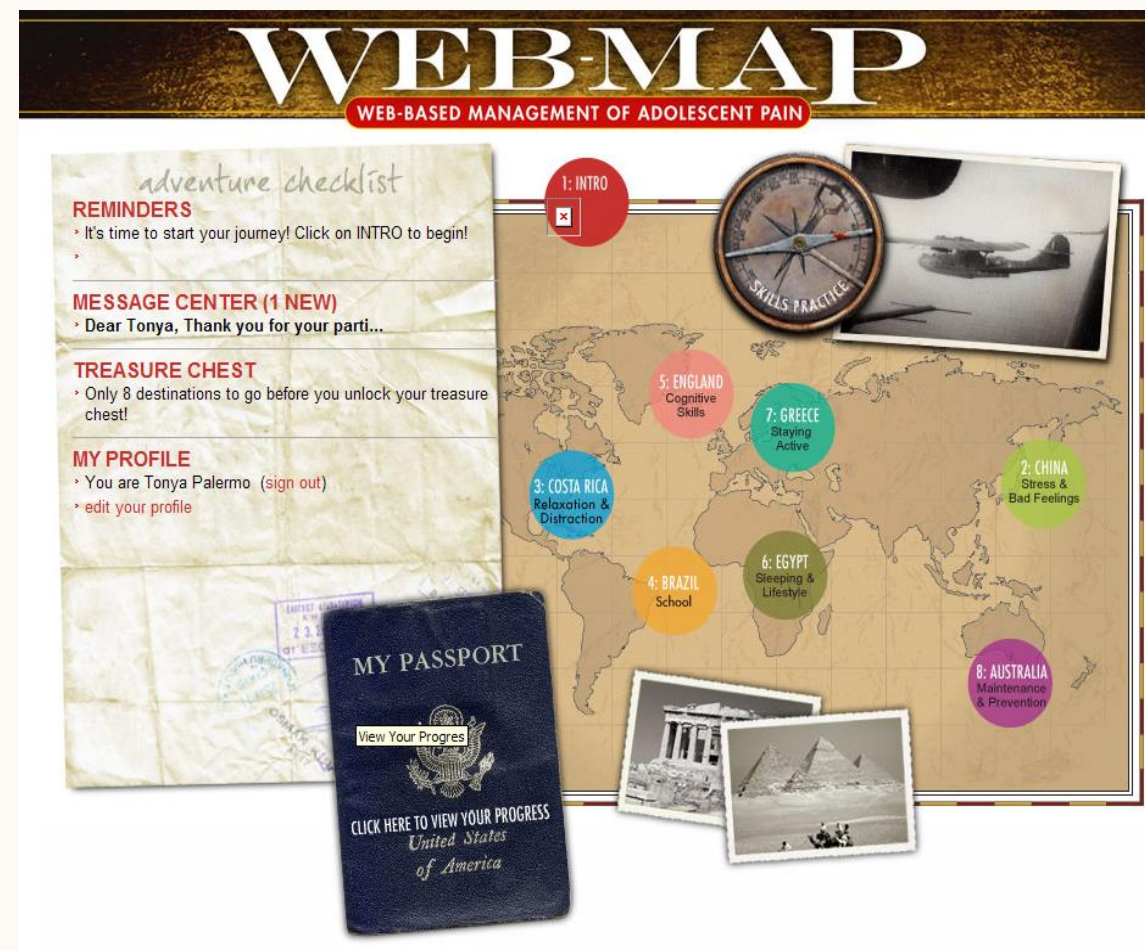


INTERNET CBT FOR PEDIATRIC CHRONIC PAIN

Small to moderate effects for internet CBT vs internet education in reducing:

- Pain-related disability
- Depression and anxiety symptoms
- Parent protective behaviors
- Parent perceived impact of chronic pain

Funded by NICHD, NIDDK

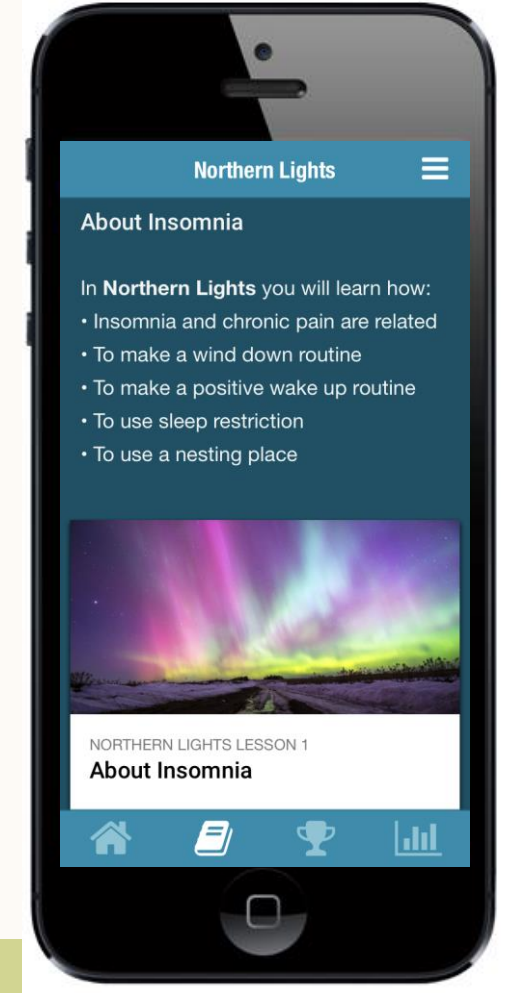
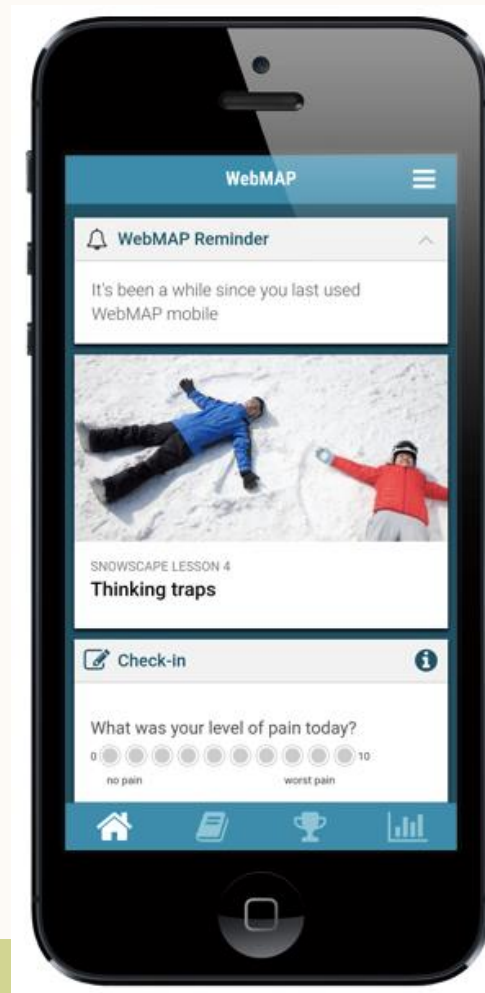


Palermo et al., 2009; Palermo et al., 2016; Palermo, et al., 2020; Walker, et al., 2021

WEBMAP MOBILE APP

Successful Implementation in Specialty Clinics:

high adoption and
sustainability with provider
training and promotion
through clinic materials



Research Paper

PAIN

OPEN VIDEO

A digital health psychological intervention (WebMAP Mobile) for children and adolescents with chronic pain: results of a hybrid effectiveness-implementation stepped-wedge cluster randomized trial

Tonya M. Palermo^{a,b,c,*}, Rocio de la Vega^a, Caitlin Murray^a, Emily Law^{a,b}, Chuan Zhou^{a,c}

SCHOOL-BASED INTERVENTIONS



- School is ideal setting for implementation
- However, lack of standardized guidelines and resources for school personnel to effectively support students with chronic pain
- Few school-based clinical trials conducted to date
 - Most focus on pain knowledge (Marti, et al., 2021; Wager, et al., 2018)
 - School nurse delivered pain management interventions
- Opportunities to embed within other programs (mindfulness course, ACEs training)



ACCESSIBLE RESOURCES



Pain Management Apps and Online Resources

Symptom Tracking and Pain Self-Management



WebMAP

A cognitive-behavioral program where teens can learn about chronic pain, set goals for increasing physical activities, learn relaxation and imagery strategies.

App Store: <https://apple.co/3accaAvM>



Liv

Daily pain management and symptom tracker. Provides insight and pain education within the app as well.

App Store: <https://apple.co/2UzDd9I>



Cara Care

Daily food logging and tracking for a variety of symptoms and health concerns. Specifically designed for people with chronic gut conditions.

App Store: <https://apple.co/2UoinA5>

Google Play: <https://bit.ly/3dw85HR>



CareClinic

Daily symptom and medication tracking.

App Store: <https://apple.co/2QEWyII>

Google Play: <https://bit.ly/3biQuRE>

THE COMFORT ABILITY

A program that teaches kids and parents proven skills to manage chronic or persistent pain.

Developed and tested by pediatric psychologists at:

Boston Children's Hospital
Where the world comes for answers

HARVARD MEDICAL SCHOOL

WHAT IS THE COMFORT ABILITY?

This program is designed to help children with chronic or recurrent pain and their parents learn strategies to better manage pain and improve day-to-day functioning. The Comfort Ability teaches how pain functions in the body and introduces cognitive behavioral and biobehavioral strategies for improved pain management.

FIND A WORKSHOP

Adolescents ages 10-17 are eligible to sign up for The Comfort Ability Program with a parent. Find a location near you or a virtual program!

[ABOUT US](#) [FIND A LOCATION](#)

- SKIP (Solutions for Kids in Pain), <https://kidsinpain.ca/>
- Meg Foundation <https://www.megfoundationforpain.org/>
- Creative Healing for Youth in Pain, <https://mychyp.org/>
- Comfort Ability, <https://www.thecomfortability.com/>



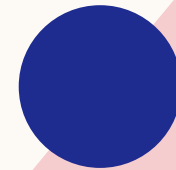
SUMMARY AND PRIORITIES

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

Beliefs about pain in childhood **contribute to stigma**
– **need for multilevel interventions**

Make low cost, low intensity technology interventions **universally available** to children with chronic pain; implement in **real world settings**

Early intervention and **prevention** may be key to **population level impact on pain** – **need for prevention research**



THANK YOU

- ✉ Tonya.Palermo@seattlechildrens.org
- 🌐 Pediatric Pain and Sleep Innovations Lab