Paediatric Pain Assessment

Pain ECHO Education Event (E3)

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Project ECHO®

Changing the world by connecting healthcare providers.

Faculty/Presenter Disclosure

- **Faculty:** Naiyi Sun

- **Relationships with commercial interests:**
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  - Speakers Bureau/Honoraria: None
  - Consulting Fees: None
  - Other: None

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Learning Objectives

By the end of this session, participants will be able to:

- Describe the context of chronic pain in children
- Describe the prevalence of chronic pain in children, and common pediatric pain presentations/diagnoses
- Describe the importance of assessing pain in children using a biopsychosocial model

Kate

- 15 yo girl with one year history of progressive worsening chronic LBP with occasional radiation to R leg.
  - Constant pain worse with any movement and prolonged sitting or standing.
  - Pain ranges from 8-10.
  - No preceding injuries.
  - MRI showed mild disc protrusion at L4-5 disc.
  - Seen by surgery and recommended non-surgical treatment with PT and core strengthening.

Definitions

Pain

- **An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.**
  - Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
  - Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
  - Through their life experiences, individuals learn the concept of pain.
  - A person's report of an experience as pain should be respected.
  - Although pain usually serve an adaptive role, it may have adverse effects on function and social and psychological well being.
  - Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experience pain.

SickKids®

Acute vs Chronic Pain

Acute Pain

- the normal, predicted, physiological, and time-limited response to an adverse chemical, thermal, or mechanical stimulus associated with surgery, trauma, or acute illness

Chronic Pain

- Pain that persists beyond expected healing time (>3 months), or recurrent pain that occurs at least three times throughout three month period

Pain Classifications

By Temporal profile

- Acute vs Chronic (persistent)

By Mechanism

- Nociceptive, neuropathic, nociplastic

By Cause (primary vs secondary)

- Diseases - sickle cell, cancer, IBD, arthritis
- Tissue damage – trauma, surgery, procedures
- Primary pain – headache, fibromyalgia, functional abdominal pain.

SickKids®

Common primary chronic pain diagnoses in Children?

Pain Sites	Prevalence (Range)	Age differences	Sex Differences
Headache	8-82.9%	Older>younger	Girls>boys
Abdominal pain	3.8-53.4%	Younger> older	Girls>boys
Back Pain	13.5-24%	Older>younger	Girls>boys
Musculoskeletal/limb pain	3.9-40%	Older>younger	Girls>boys
Multiple pains	3.6-48.8%	Unclear	Girls>boys
Other/general pain	5-88%	Unclear – possible age X sex interaction	Girls>boys

(King et al., 2012)

Barriers to Pediatric Pain Management:

Myth

- Babies do not feel pain
- Young children do not remember pain.
- Children are less sensitive to pain than adults.
- Children are unable to tell you when they hurt

Fact

- The CNS of a 24 wk old fetus can experience nociception.
- Babies as young as six months can show a strong pain response to subsequent pain situation.
- Younger children experience higher levels of pain than older children and adults.
- Using age-appropriate measures, pain assessment is possible.

Question:

- What percentage of kids with chronic pain become adults with chronic pain?

1. 1/4
2. 1/3
3. 2/3
4. 3/4

Furthermore…

- 2/3 of kids with chronic pain become adults with chronic pain
- Young adults experiencing pain in adolescence:
  - 34% less likely to attain a high school diploma.
  - 17% less likely to attain a college education.
  - Less likely to have a full time job.
  - More likely to receive public assistance.
  - Increased risk of prescription opioid misuse in early adulthood.
- By treating pain in youth, we can reduce the burdens of pain and addiction in adults

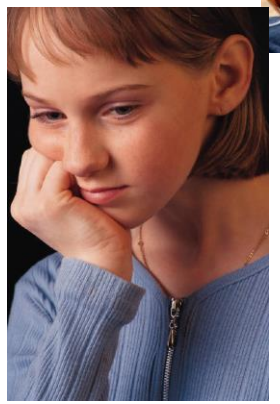
Murray CB et al. Long-term impact of adolescent chronic pain on young adult educational, vocational, and social outcomes. Pain. 2020;161(2): 439-45.

Groenewalkd CB et al. Associations between adolescent chronic pain and prescription opioid misuse in adulthood. The Journal of Pain. 2019;20(1):28-37.

What Does a Child in Pain Look Like?






Pain Assessment

Pain History

Pain QuILT	Pain Impact	Response to treatment	Rule out red flags

Physical Exam

Guided by hx, focused MSK/neurological exam

Special Tests

90% diagnosis in Hx and P/E	Imaging, blood tests

Pain History (current)

- History of the current pain problem (QuILT)
  - Quality: pain descriptors
  - Intensity
  - Location / radiation
  - Timing – duration, variability
  - Aggrevating and relieving factors

Pain Intensity Measurement:

1. Self Reporting:
   - Pain should be self-reported whenever possible since pain is a subjective experience.

2. Observation (Behavioral):
   - Self report is not always available depending on the child's age and his/her ability to communicate

Young and Non-Verbal Children:

FLACC PAIN RATING SCALE for children 1 to 3 years of age

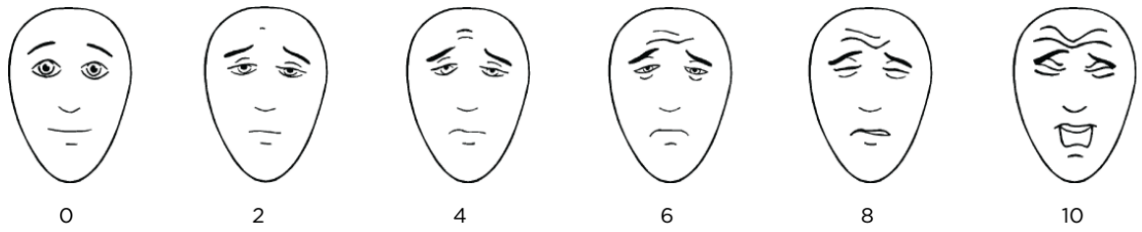
The **FLACC (Face, Legs, Activity, Cry, Consolability)** is a behavioral pain assessment scale for use for non-verbal or pre-verbal patients unable to self-report their level of pain. Rate your child in each of the five measurement categories, add together, and document total pain score (0 – 10).

	0	1	2
Face	No expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arches, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or "talking to"; Can be distracted	Difficult to console or comfort

Younger Children:

Faces PAIN SCALE – REVISED (FPS-R) for children over age 3

Point to the face that shows how much you hurt.



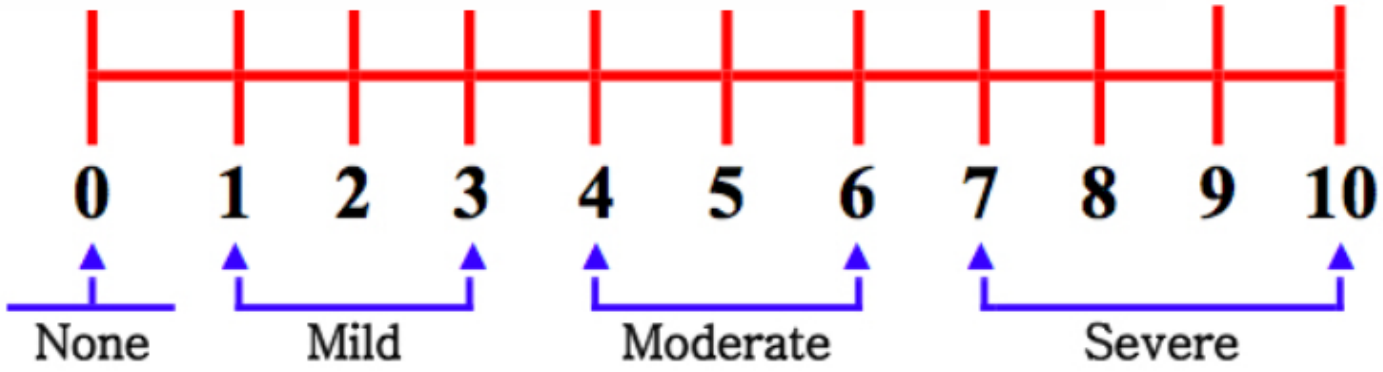
These faces show how much something can hurt.

The left-most face shows no pain. The faces show more and more pain up to the right-most face – it shows very much pain.

Wong-Baker FACES® Pain Rating Scale

Older Children > 7:

Numerical Rating Scale (NRS)



Pain Assessment in Patients with Cognitive Impairment: RFLACC

- FLACC can be revised with input from family caregiver.
- Add additional behaviors are indicators of pain of their individual child.

(REVISED) FLACC Scale SCORING			
Categories	**0**	**1**	**2**
Face	No particular expression or smile.	Occasional grimace or frown, withdrawn, disinterested, **Sad, appears worried.**	Frequent to constant quivering chin, clenched jaw, **distressed looking face, expression of fright/ panic.**
Legs	Normal position or relaxed; **usual tone and motion to limbs.**	Uneasy, restless, tense, **occasional tremors.**	Kicking, or legs drawn up, **marked increase in spasticity, constant tremors, jerking.**
Activity	Lying quietly, normal position, moves easily, **regular, rhythmic respirations.**	Squirming, shifting back and forth, tense, **tense/guarded movements, mildly agitated, shallow/ splinting respirations, intermittent sighs**	Arched, rigid or jerking, **severe agitation, head banging, shivering, breath holding, gasping, severe splinting.**
Cry	No cry (awake or asleep)	Moans or whimpers: occasional complaint, **occasional verbal outbursts, constant grunting**	Crying steadily, screams or sobs, frequent complaints, **repeated outbursts, constant grunting.**
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to: distractible	Difficult to console or comfort, **pushing caregiver away, resisting care or comfort measures.**
Each of the five categories (**F**) Face; (**L**) Legs; (**A**) Activity; (**C**) Cry; (**C**) Consolability is scored from 0-2, which results in a total score between zero and ten.			

References:

Merkel, S. et al. The FLACC: A Behavioural Scale for Scoring Postoperative Pain in Young Children, Pediatric Nurse 23(3): 293-297, 1997. Copyright: Jannetti Co. University of Michigan Medical Centre.

Malviya, S., Vopel-Lewis, T. Burke, Merkel, S., Tait, A.R. (2006). The revised FLACC Observational Pain Tool: Improved Reliability and Validity for Pain Assessment in Children with Cognitive Impairment. (Pediatric Anesthesia 16: 258-265).

Pain Descriptors

Nociceptive Pain Descriptors	Neuropathic Pain Descriptors
Aching	Burning
Cramping	Tingling
Throbbing	Shooting
Pressure	Electrical shock like
Sore	Freezing
Stiffness	Lancinating
Spasm	Numbness
Pulling	

Ask About Red Flags:

Abdominal Pain	Headaches	MSK Pain
• GI blood loss • Persistent Vomiting • RUQ or RLQ pain • Involuntary weight loss • Pain that wakes child from sleep • Difficulty swallowing • Severe diarrhea	• Focal neurologic signs • Persistent vomiting • Age < 3 years • Unexplained fever • Morning headaches • Headaches that awaken the child from sleep	• Joint redness, edema. • Pain/stiffness in the morning • Pain at rest, relieved by activity • Bony tenderness • Weight loss

Pain Interference

- Sleep time and quality
- Physical Functioning
  - Decreased activity levels
  - Impact on pursuit of life goals
- School Functioning
  - Absenteeism
  - Stress and anxiety related to missed academic work
  - Bullying
  - Isolation from peers
- Emotional functioning
  - Anxiety and depressive symptoms

Influencing Factors

- Pain Belief:
  - Belief that chronic pain is harmful or disabling
  - Diagnostic uncertainty
  - Expectation on passive pain management
- Coping Style:
  - High pain catastrophizing
  - Internalizing behavior
  - Fear avoidance behavior
- Parent factors:
  - Parental depression and anxiety disorders
  - Parent history of chronic pain

Common Parental Misconception

My child needs more rest because he has pain.

The more I do for my child, the faster she will recover.

My child should not be expected to resume normal activities until her pain is completely gone.

I should always know how much pain my child is experiencing.

H.E.A.D.S.S Assessment – Adolescent Interview

- **H**ome & Environment
- **E**ducation & Employment
- **A**ctivities
- **D**rugs
- **S**exuality
- **S**uicide/Depression

3 Types of ACEs

ABUSE

Physical

Emotional

Sexual

NEGLECT

Physical

Emotional

HOUSEHOLD DYSFUNCTION

Mental Illness

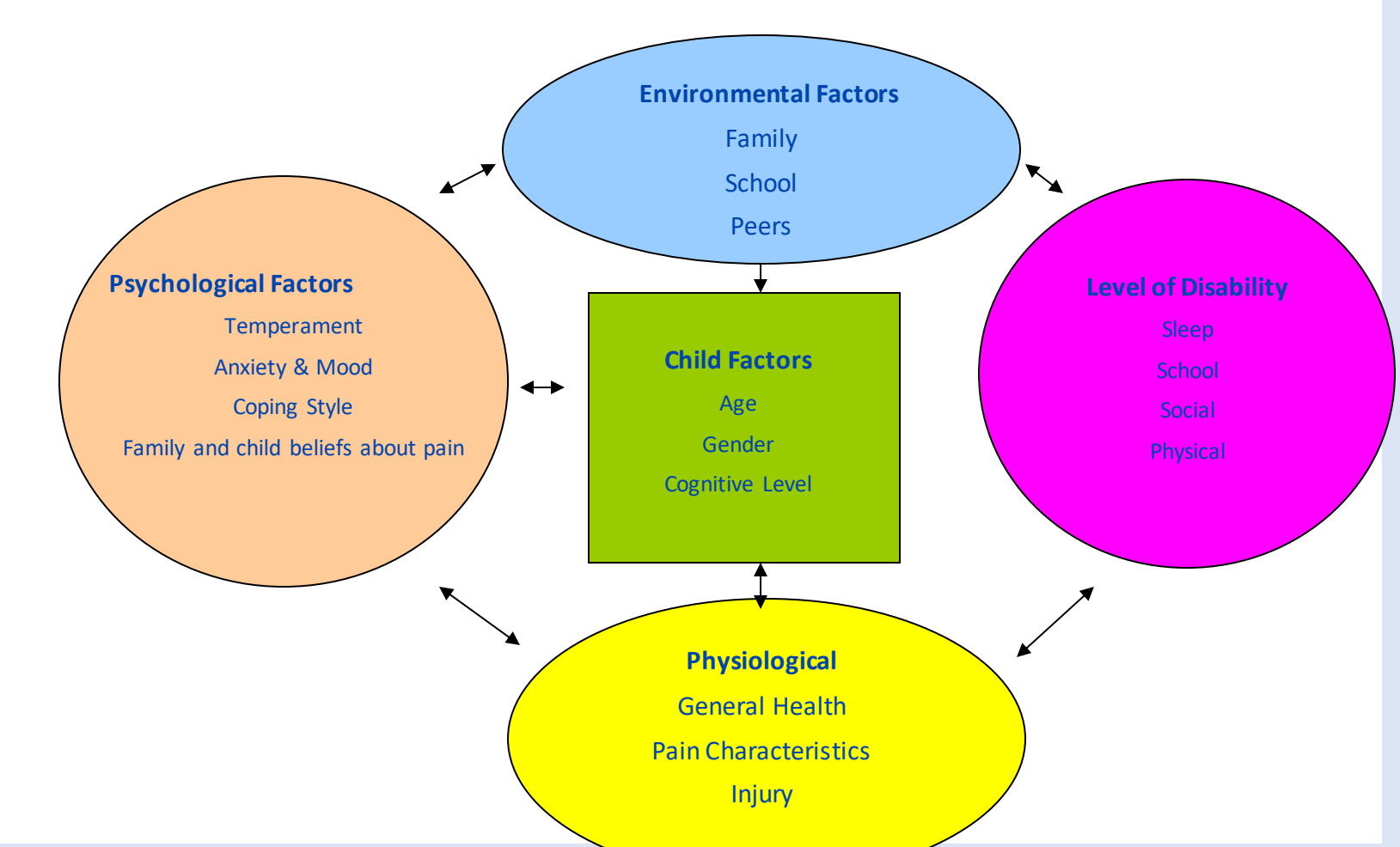
Incarcerated Relative

Mother treated violently

Substance Abuse

Divorce

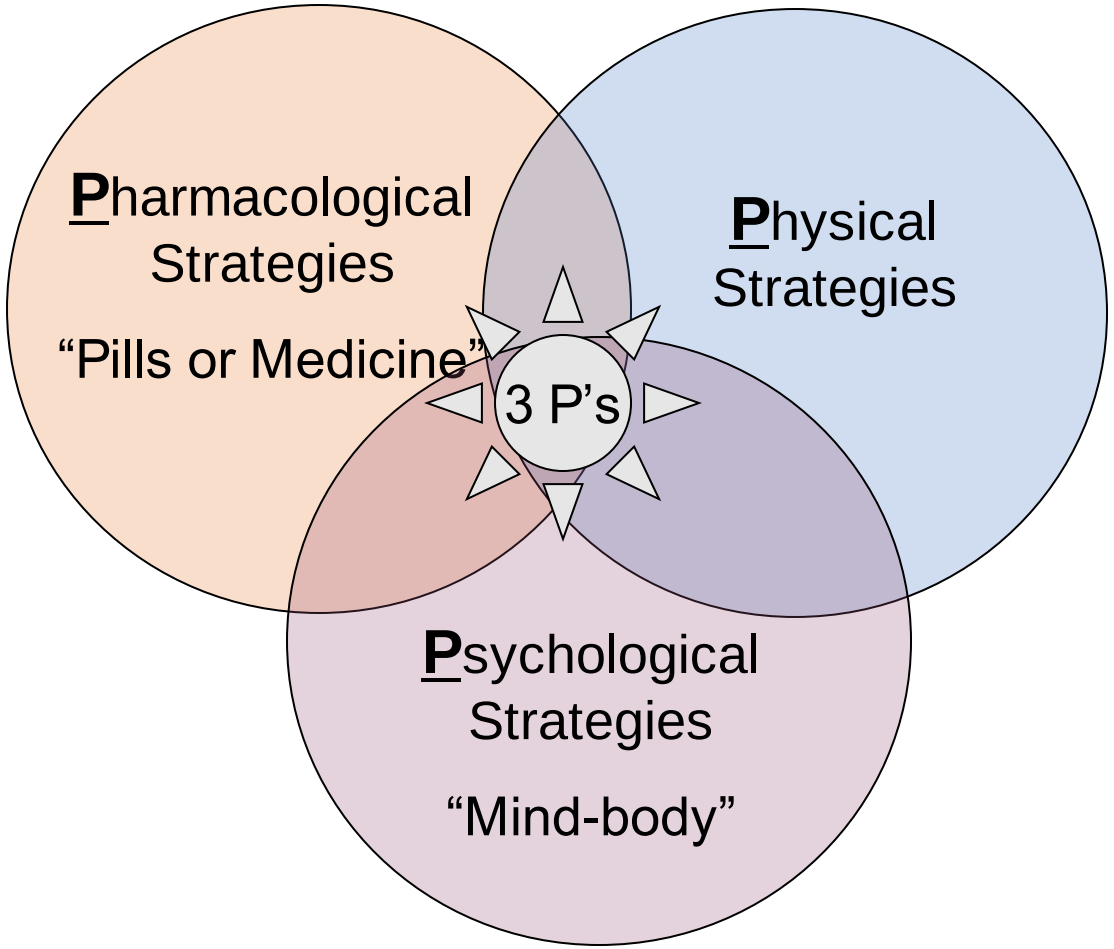
Biopsychosocial Model



Kate – continued..

- **Pain Education**
- **Pharmacological:**
  - Started pregabalin to help with sleep and pain.
  - Received lumbar epidural steroid injection which helped with the radiating leg pain.
  - Added fluoxetine for mood and anxiety
- **Physiotherapy:**
  - Provided a graded walking program – increase by 10% every 5 days.
  - Home exercise program with stretches and core strengthening.
- **Psychology:**
  - Psychology session to learn mind body pain strategies and CBT for anxiety.
  - Parent therapy to help with parent coping.

Comprehensive Pain Treatments



- **Pain education**
- Medical care
- Graded physical program
- Mental health support
- Health behavioral change
- Family Support

Kate – continued

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IT'S GOING TO BE A LOT OF WORK
BUT WE'RE IN THIS TOGETHER

Key Take-away Messages

- Pain in children in common and undertreated
- Undertreated pain is associated with long-term impact on HRQL
- Thorough pain assessment using biopsychosocial model matters.

Questions?

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