Pain assessment: When self-report conflicts with observation or context

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www.usask.ca/childpain/pubs/

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This version of the presentation has been edited for online distribution.

Selected references:


For further information please see [www.usask.ca/childpain/pubs/](http://www.usask.ca/childpain/pubs/) or contact [carl.vonbaeyer@med.umanitoba.ca](mailto:carl.vonbaeyer@med.umanitoba.ca)
1. Quick background on assessment of pain
2. Self-report and observer estimates of pain intensity often don’t agree
3. Case example for discussion
4. Current ‘slogans’ in pain assessment
5. Integrating self-report, observation, and knowledge of context
Sources of information about pain

• Self-report
  • Observational
  • Physiological
Aspects of pain to assess

P = Provocation and Palliation
Q = Quality
R = Region and Radiation
S = Severity and Scale
T = Timing and Type of Onset
Aspects of pain to assess 2

- Coping
- Interference: school, work, family
Measurement of pain intensity: A necessary oversimplification

- Necessary to titrate & evaluate analgesics

**BUT**

- Measuring pain by its intensity alone is like describing music only in terms of its loudness

\[ pp - p - mp - mf - f - ff \]

von Baeyer, 2006
The meaning of self-ratings is relative, not absolute

Hypothetical post-operative pain trajectories
# Pain intensity scales 1

**Self-report:**

**Numerical Rating Scale (NRS)**

<table>
<thead>
<tr>
<th>No pain</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Worst pain</th>
</tr>
</thead>
</table>

Works best to show it on paper, eg, laminated
Pain intensity scales 2

Self-report:

Faces Pain Scale – Revised (FPS-R)

www.iasp-pain.org/FPS-R
Pain intensity scales 3

Other self-report scales

• Wong-Baker FACES Pain Rating Scale
• Visual Analog Scale (VAS)
• …
Observational scales

- FLACC
- COMFORT-B (includes physiological)
- 40+ scales for neonates and infants
Concordance between self-report and observation

Pearson correlation

- Index of the association of two variables
- Ranges from -1 to +1
- $r$
Pearson correlation $r = +1$
Pearson correlation $r = -1$
Pearson correlation $r = 0$
Pearson correlation $r = .6$
- Pectus excavatum repair, pain at post-op day 1, 08:00
- \( n = 28 \), age 9-17, 66% male
- With thanks to Mark Connelly, Children’s Mercy Hospital
Data from Goodenough & al, Pain 1999;80:179
Meta-analysis: child/parent, child/nurse & parent/nurse correlation

In adults

- Typical correlation between self-report & observer score: $r \approx 0.5$

- Lower in chronic pain and with elderly patients

- Higher if pain is acute / provoked
Pain behaviour over time

- Pain
- Time
- Self-report
- Observation

[Graph showing pain behaviour over time with self-report and observation lines]
Self-report of pain intensity often differs from observers’ estimate.

So what do we do about pain assessment?
“Catch phrases” or slogans

1. Very helpful in drawing attention to pain management.

2. Realistic and accurate for some patients.

3. For others, slogans encourage oversimplification and discourage comprehensive assessment.
“Catch phrases”

Self-report: The **Gold Standard**

Pain scale: “Valid and Reliable”

Analgesic decision by algorithm

Pain: The **Fifth Vital Sign**
All are helpful in highlighting the importance of assessment and of self-report.
But … all imply that pain assessment is simpler than it really is.
A gold standard score

... is a score which, in the presence of contradictory information, must be taken as the true score.
Pain is whatever the experiencing patient says it is, existing wherever and whenever the patient says it does.

Margo McCaffery
1968 onward
• 9-year-old boy admitted to Observation Ward from Emergency with bruising and lacerations from low-speed fall off scooter

• No loss of consciousness, no bone injury
• Wounds have been cleaned under nitrous oxide
• Marked facial expression of pain
• Crying and whimpering, avoiding touch
No analgesic yet.

Would you give analgesic?

Discuss in pairs or threes
Self-reported pain score on a “valid and reliable” pain scale: 0 / 10
Self-reported pain score on a “valid and reliable” pain scale: 0 / 10

Discuss again.

Would you give analgesic?

Is this a “gold standard” score?
Why did he indicate zero pain?

• He might misunderstand the scale (due to distress or language difficulty).

• He might believe that reporting no pain will lead to going home sooner.

• He might not want to worry his parents.

...
Why did he indicate zero pain?

- He might fear that reporting pain will lead to another needle poke.
- Expressing distress may be discouraged in his culture.
- He might have good skills for coping with pain, but is experiencing fear, guilt or worry about the accident.
10 / 10 not accepted

- Common concern
- Pain behaviours don’t match caregiver’s expectations for 10/10
- Absence of evident cause
- Attributed (rightly or wrongly) to drug-seeking
How do health care providers feel when a patient says 10/10 but this doesn’t match what they see?
Frequently this claim is made on minimal evidence (eg, correlating one pain scale with another in 1 sample).

• **Scales** aren’t valid or not valid.

• **Scores** may be valid or not valid.
• Validation is a process that is never complete.

• May be helpful to consider the probability that a score is valid in a particular case.
Sample standardized order for adults post-op

<table>
<thead>
<tr>
<th>Pain score (out of 10)</th>
<th>IV morphine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 3</td>
<td>2 mg</td>
</tr>
<tr>
<td>4 to 6</td>
<td>4 mg</td>
</tr>
<tr>
<td>7 +</td>
<td>6 mg</td>
</tr>
</tbody>
</table>
Increased adverse events – oversedation, death.

Relationship between pain score and dose is not linear and not the same for all patients.
• Excellent slogan for increasing frequency of pain assessment.

• Implies pain assessment is a simple measurement task like taking temperature.

• Implies that a single box on the chart with other vital signs is enough assessment.
Oversimplified decision tools

Self-reported pain intensity score

Algorithm

Pain management decision
Integrating self-report with other sources of information on pain
Knowing the context

"... if a child has an elevated temperature, flushed face, or rapid breathing, one needs to know the context in which the behavior arises before one can determine its meaning.

" (PJ McGrath, 1998, p. 94).
Knowing the context

"… if a child has an elevated temperature, flushed face, or rapid breathing, one needs to know the context in which the behavior arises before one can determine its meaning. If the child has been lying in bed and feeling sick and has a stiff neck, one would draw different conclusions than if the child has just run up five flights of stairs" (PJ McGrath, 1998, p. 94).
Self-report is the starting point

#1

- Obtain whenever possible.
- Use established scales consistently.
- If self-report is not possible or not trusted...
2. Consider probable sources of pain.

3. Observe patients’ behaviour.

4. Compare pain scores with patients’ goals for their comfort and function.

5. Try relieving pain: assess the effects of trials of pharmacological, physical and/or psychological intervention.

Adapted from Pasero & McCaffery, 2011
More realistic (but more complex)

Pain management decision

- Self-reported pain score
- Observation (behaviour, physiology)
- Knowledge of context
  - Known painful event
  - Previous response to pharm and non-pharm analgesia
  - Expectations

#1
Self-reported pain score
1. Self-report.

2. Probable sources of pain.

3. Observe.

4. Comfort and function goals.

5. Trial of pain relief.

Adapted from Pasero & McCaffery, 2011
The challenge

• To make those steps simple enough to carry out routinely

• Yet rich enough to reflect the multifaceted reality of pain.

• This is a clinical skill. It does not have to take a lot of time, but does take thought and practice.
#1 Self-reported pain? 0/10

*Discuss how you would interpret this pain score and reach a decision about pain management*
#1 Self-reported pain? 0/10

#2 Probable source? Yes

#3 Behaviour – note apparent distress

#4 Goals – inquire later, once settled

#5 Analgesic trial? Yes (eg, acetaminophen PO 15 mg/kg & reassess in 1 hour)
“It remains a clinical art to combine patients’ reports, behavioral observation, and physiologic measurement with the history, physical exam, laboratory information, and overall clinical context in guiding clinical judgments and therapeutic interventions.”

Thanks!

Pain Research Unit

Research Group on Pain in Childhood

Chris Pasero, RN, MSc