Discuss the basics in pain assessment: A case-based approach

Brenda Poulton
Pain Management, Royal Columbian Hospital, Fraser Health
Adjunct Professor, UBC, School of Nursing

Rosemary Wilson
Assistant Professor, School of Nursing
Department of Anesthesiology and Perioperative Nursing, Queen’s University

February 27, 2014
Lisa Ashley, RN, CCHN(C), MEd
Senior Nurse Advisor,
Policy and Leadership
Canadian Nurses Association
Brenda Poulton, RN, MN, NP
Pain Management, Surgical Program
Royal Columbian Hospital, Fraser Health
Adjunct Professor School of Nursing UBC

Rosemary Wilson, RN (EC), PhD
Assistant Professor, School of Nursing
Department of Anesthesiology and Perioperative Nursing
Queen’s University
Pain is as diverse as man. One suffers as one can.
Victor Hugo
Topics for discussion

• Overview of pain and common misconceptions
• Comprehensive pain assessment is the foundation to providing appropriate management
• Practical pain assessment tools and clinical use
Patients in pain

Pain is one of the five most common reasons for seeking out medical attention and is one of the most disabling and costly conditions in North America.

- 11% of adults and 8% of children in the general population suffer from chronic pain. 
  (Harstall, C. Ospina, M. How prevalent is chronic pain? IASP: Pain Clinical Updates, 2003 11(2).)

- Recent Canadian studies indicate a prevalence of chronic pain of 18%–35%, 80% of which is moderate or severe. 

- In the United States, costs and incapacities due to low back pain alone among the age group of 18 to 55 years (the most active of the workforce) are greater than those associated with cancer, cardiovascular diseases, brain stroke, and AIDS together. 
  (Dagenais, S. A systematic review of low back pain cost of illness studies in the United States and internationally, Spine 2008; 8(1); 8-20.)
## Chronic Post-Surgical Pain

<table>
<thead>
<tr>
<th>Surgery</th>
<th>Incidence of chronic pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amputation</td>
<td>50-80%</td>
</tr>
<tr>
<td>Thoracotomy</td>
<td>30-40%</td>
</tr>
<tr>
<td>Coronary artery bypass surgery</td>
<td>30-50%</td>
</tr>
<tr>
<td>Total Knee Replacement</td>
<td>20-25%</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>10%</td>
</tr>
<tr>
<td>Inguinal hernia repair</td>
<td>10-30%</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>20-30%</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>17-32%</td>
</tr>
</tbody>
</table>

Classification of Pain

- Duration
  - Acute
  - Chronic
- Condition
  - Low Back Pain
  - Painful Diabetic Neuropathy
  - Cancer pain
- Physiology
  - Nociceptive
  - Neuropathic
Types of Pain

**Nociceptive pain:** Caused by activity in neural pathways in response to potentially tissue-damaging stimuli

- Fractures
- Surgical Pain
- Angina
- Cancer Pain

**Neuropathic pain:** Pain arising as a direct consequence of a lesion or dysfunction in the nervous system

- Headaches
- Arthritis
- Fibromyalgia
- Cancer Pain

**Incident/episodic pain:** Pain pathways are activated intermittently

- Crushed Nerve
- Spinal cord compression
- Herpes Zoster
- Cancer Pain
- Phantom Limb
- Diabetic Neuropathy
- Cancer Pain
Psychological
Social
Biological

Tissue injury, nociception, neurophysiological/chemical changes pre-existing health & pain issues Genetic predisposition

Beliefs, attitudes, expectations, coping, past experience, fear, anxiety, depression

Environmental stressors, ADL's, social supports, cultural factors, family & interpersonal relationships, life trauma

Myths and Fables in Pain Assessment

• The clinician is in the best position to judge the existence and severity of the patient’s pain
• Comparable stimuli produce comparable pain in different people
• Visible signs always accompany pain and can be used to judge its severity and existence
The clinician is in the best position to judge the existence and severity of the patient’s pain.

Self-report is the GOLD STANDARD
- Validation of pain experiences builds trust

- Problematic relationship between patient’s perceptions of pain and clinician perceptions
- Patient/nurse agreement 7% in severe, 51% in moderate and 82% in mild pain ratings
  

- Agreement with pain ratings in more empathetic nurses
  
Comparable stimuli produces comparable pain in different people


- Lack of uniform relationship between tissue damage and pain Loeser & Melzack: Lancet: 1999; 9164; 1607-1609

- Higher-than-expected pain reports warrant reassessment
Visible signs always accompany pain and can be used to judge its severity and existence

- Behavioural and emotional adaptation to pain does not necessarily mean absence of pain
- Stoic or exhausted response
- Physiologic adaptation toward homeostasis despite severe pain
- “Observations of behaviour and vital signs should not be used instead of self-report”

Clinical Practice Guidelines for Acute Pain Management: AHCPR
The “Why” of Comprehensive Pain Assessment

• Patients have the right to the best possible evidence-based pain assessment and management including relevant bio-psychosocial components (Guiding principles of BPG: RNAO, 2013. pp. 18)

• Establishes trust and improves satisfaction with care

• Individualized pain management plan, which include the patient, family and interdisciplinary team (if indicated)

• Patient-specific evaluation of interventions provided
Case Study

Evelyn

- 70 years old, retired teacher, married with two grown sons
  - Slipped on ice 3 days ago: right femoral neck fracture
  - Right total hip arthroplasty late last night
  - Post-operative analgesics: Hydromorphone 1-2mg PO q3h PRN pain; acetaminophen 650mg PO q6h; celecoxib 100mg PO q12h
- History includes: breast cancer (stage IV), chronic low back pain, osteoarthritis (knees, hips hands), and chronic insomnia.
Comprehensive Pain Assessment

- **Screen for the presence or risk of any type of pain**
  - Each encounter
  - Change in medical condition
  - Prior to, during and after procedure

- **Comprehensive Pain Assessment on persons with pain**
  - Previous pain history
  - Current pain symptoms & characteristics
  - Functional impact
  - Psychosocial impact

The Adapted Pain Assessment Acronym

O - onset
P – provokes, palliates
Q – quality
R – region, radiation
S – severity
T – timing/treatment
U – understanding/impact
V – values

.....and C – for communication!

IMMPACT Recommendations

Core domains for clinical trials of chronic pain efficacy and effectiveness

- Pain: MPQ, BPI, VAS/NRS
- Physical functioning: HRQoL, BPI, disease specific (e.g.: WOMAC)
- Emotional functioning: POMS, BDI
- Participant ratings of global improvement: PGIC
- Symptoms and adverse effects
- Participant disposition

www.immpact.org

Measures of Pain Intensity: Uni-dimensional tools

• Quick and easy assessment of intervention efficacy

• Common metric of 0-10 adopted by many centres

• Standard tools – reliability/validity well documented
  – Visual Analogue Scale (VAS)
  – Numeric Rating Scale (NRS): 0 to 10
  – Verbal Rating Scale (VRS): No pain, mild, moderate, severe, very severe
    • Present Pain Intensity (PPI): No pain, mild, discomforting, distressing, horrible, excruciating
  – Faces Pain Scale – revised (FPS-R)
On a scale of 1 to stepping on a lego, how much pain are you in?
Multidimensional tools: Brief Pain Inventory

- 7 interference items; 4 intensity items; 2 items assessing pain treatment effectiveness
  - 0-10 on most items
  - 24 languages
  - Useful in the assessment of impact on ADLs
  - 5-8 minutes to complete


Cleeland CS, (1991)
Short Form Brief Pain Inventory

**Brief Pain Inventory (Short Form)**

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?
   1. Yes
   2. No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.

3. Please rate your pain by circling the one number that best describes your pain at its worst in the last 24 hours.
   0 = No Pain
   1 = Pain a little bit
   2 = Pain some of the time
   3 = Pain most of the time
   4 = Pain all of the time
   5 = Pain as bad as you can imagine

4. Please rate your pain by circling the one number that best describes your pain at its least in the last 24 hours.
   0 = No Pain
   1 = Pain a little bit
   2 = Pain some of the time
   3 = Pain most of the time
   4 = Pain all of the time
   5 = Pain as bad as you can imagine

5. Please rate your pain by circling the one number that best describes your pain on the average.
   0 = No Pain
   1 = Pain a little bit
   2 = Pain some of the time
   3 = Pain most of the time
   4 = Pain all of the time
   5 = Pain as bad as you can imagine

6. Please rate your pain by circling the one number that tells how much pain you have right now.
   0 = No Pain
   1 = Pain a little bit
   2 = Pain some of the time
   3 = Pain most of the time
   4 = Pain all of the time
   5 = Pain as bad as you can imagine

7. What treatments or medications are you receiving for your pain?

8. In the last 24 hours, how much relief have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received:
   - 0% No Relief
   - 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% Complete Relief

9. Circle the one number that describes how, during the past 24 hours, pain has interfered with your:

   - **A. General Activity**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **B. Mood**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **C. Walking Ability**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **D. Normal Work (includes both work outside the home and household)**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **E. Relations with other people**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **F. Sleep**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

   - **G. Enjoyment of life**
     - 0 = Does not interfere
     - 1 = Slightly interferes
     - 2 = Moderately interferes
     - 3 = Markedly interferes
     - 4 = Completely interferes

Copyright 1991 Charles S. Cleeland, PhD
Pain Research Group
All rights reserved.
Used by permission.
Multi-dimensional tools: Short-Form McGill Pain Questionnaire

Developed in 1984, revised in 2009

- **SF-MPQ**: 15 + 2 items (VAS, PPI)
  - Many languages
  - None, mild, moderate severe
  - Recall – current time

- **SF-MPQ-2**: 22 items
  - 14 languages
  - Rated on intensity scale 0-10
  - 2-5 minutes to complete
  - Recall - during the past week


Short-Form McGill Pain Questionnaire:

I. Pain Rating Index (PRI):

The words below describe average pain. Place a check mark (✓) in the column that represents the degree to which you feel that type of pain. Please limit yourself to a description of the pain in your pelvic area only:

<table>
<thead>
<tr>
<th>Term</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throbbing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Shooting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Stabbing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sharp</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cramping</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Gnawing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hot-Burning</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Aching</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Heavy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Tender</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Splitting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Tiring-Exhausting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sickening</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fearful</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Punishing-Cruel</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

II. Present Pain Intensity (PPI)–Visual Analog Scale (VAS). Tick along scale below for pelvic pain:

No pain | Worst possible pain

III. Evaluative overall intensity of total pain experience. Please limit yourself to a description of the pain in your pelvic area only. Place a check mark (✓) in the appropriate column:

<table>
<thead>
<tr>
<th>Evaluative</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No pain</td>
</tr>
<tr>
<td>1 Mild</td>
</tr>
<tr>
<td>2 Discomforting</td>
</tr>
<tr>
<td>3 Distressing</td>
</tr>
<tr>
<td>4 Horrible</td>
</tr>
<tr>
<td>5 Excruciating</td>
</tr>
</tbody>
</table>

IV. Scoring:

<table>
<thead>
<tr>
<th>l-a</th>
<th>S-PRI (Sensory Pain Rating Index)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>l-b</td>
<td>A-PRI (Affective Pain Rating Index)</td>
<td></td>
</tr>
<tr>
<td>l-a+b</td>
<td>T-PRI (Total Pain Rating Index)</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>PPI-VAS (Present Pain Intensity-Visual Analog Scale)</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Evaluative overall intensity of total pain experience</td>
<td></td>
</tr>
</tbody>
</table>
Q1: Is the pain:
   Burning?       Yes / No
   Painful cold?  Yes / No
   Electric shocks? Yes / No

Q2: Is the pain associated with:
   Tingling?       Yes / No
   Pins and needles? Yes / No
   Numbness?       Yes / No
   Itching?        Yes / No

Q3: Is the pain localized in an area where:
   -Hypoesthesia to touch? Yes / No
   -Hypoesthesia to pinprick? Yes / No

Q4: Can the pain be caused or increased by:
   -Brushing?   Yes / No


Yes = 1 point  No = 0 points
Score ≥4/10 neuropathic pain
Sensitivity 83% Specificity 90%
Evelyn’s comprehensive pain assessment

• Risk?
• Previous pain history
• Current pain symptoms & characteristics
  – OPQRSTUV and C
  – Uni-dimensional and multi-dimensional tools
  – Effectiveness of interventions
• Functional impact
  – BPI-I, sleep quality, engagement in postoperative activities
• Psychosocial impact
  – Useful tools: PHQ-9 (screening for depression), GAD-7 (anxiety) PGIC, IEQ
Goals of Pain Management

- Deep breath & cough
- Mobilization
- Function
- Sleep
- Appetite
- Mood
Empathy is really the opposite of spiritual meanness. It’s the capacity to understand that every war is both won and lost. And that someone else’s pain is as meaningful as your own.

Barbara Kingsolver
## Guide to measurement tool acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Tool</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPQ</td>
<td>McGill Pain Questionnaire</td>
<td>Pain intensity, quality</td>
</tr>
<tr>
<td>BPI</td>
<td>Brief Pain Inventory</td>
<td>Pain intensity, interference</td>
</tr>
<tr>
<td>NRS</td>
<td>Numerical rating scale</td>
<td>Pain intensity</td>
</tr>
<tr>
<td>HRQoL (SF 12, 36)</td>
<td>Health related quality of life</td>
<td>Quality of life: physical, mental</td>
</tr>
<tr>
<td>POMS</td>
<td>Profile of mood states</td>
<td>Mood state</td>
</tr>
<tr>
<td>BDI</td>
<td>Beck Depression Inventory</td>
<td>Depression severity</td>
</tr>
<tr>
<td>PGIC</td>
<td>Patient global impression of change</td>
<td>Overall change in pain</td>
</tr>
<tr>
<td>PHQ-9</td>
<td>Patient health questionnaire</td>
<td>Depression screening</td>
</tr>
<tr>
<td>GAD-7</td>
<td>Generalized anxiety disorder scale</td>
<td>Anxiety screening</td>
</tr>
<tr>
<td>DN-4</td>
<td>Neuropathic pain diagnostic questionnaire</td>
<td>Presence of neuropathic type pain</td>
</tr>
</tbody>
</table>
On-line Resources

RNAO – Assessment and Management of Pain
http://rnao.ca/bpg/guidelines/assessment-and-management-pain

Canadian Pain Society

PainBC - Resources for healthcare providers
http://www.painbc.ca/resources-for-health-care-providers
For more information:

Brenda Poulton
Brenda.Poulton@fraserhealth.ca

Rosemary Wilson
rosemary.wilson@queensu.ca

Photo credits: iStock
Upcoming Webinar

Make Changes to palliative and end-of-life care in Canada

March 10, 2014, 12-12:45 pm ET
Thank you!