Unit VIII
Pain
the Fifth Vital Sign

Napa Valley College
Associate Degree Nursing 141

What is pain?
• Whatever the person experiencing the pain says it is, existing whenever the person says it does

• An unpleasant sensory & emotional experience associated with actual or potential tissue damage, or it is described in terms of such damage

What is pain?
• State in which an individual experiences and reports the presence of severe discomfort or uncomfortable sensation
Nature of Pain

- Involves physical, emotional, and cognitive components
- Physical and/or mental stimulus
- Is exhausting and demands energy
- Interferes with relationships

Physiology of Pain

<table>
<thead>
<tr>
<th>Transduction</th>
<th>Transmission</th>
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</thead>
<tbody>
<tr>
<td>Perception</td>
<td>Modulation</td>
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Types of Pain

<table>
<thead>
<tr>
<th>Acute/transient pain</th>
<th>Chronic/persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective, identifiable, short duration</td>
<td>Is not productive and has no purpose or may not have identifiable cause</td>
</tr>
<tr>
<td>Chronic episodic</td>
<td>Cancer</td>
</tr>
<tr>
<td>Occurs sporadically over an extended duration</td>
<td>Can be acute or chronic</td>
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<tr>
<td>Infected physiological</td>
<td>Idiopathic</td>
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<tr>
<td>Musculoskeletal, visceral, or neuropathic</td>
<td>Chronic pain without an identifiable physical or psychological cause</td>
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Pain Types

- Somatic
- Visceral
- Neuropathic
- Phantom (neurologic pain, follows amputation, may result from entrapment of a regenerating nerve, may originate in the spinal cord or brain)
  - Referred
- Organic vs. Functional (somatogenic vs. psychogenic)
- Acute
- Chronic

Pain types

- Somatic
  - Causes: Bone/soft tissue metastases, muscles
  - Description: Aching, stabbing, throbbing
- Visceral
  - Causes: Capsular distension (liver, bowel, ureteral)
  - Description: Gnawing, cramping, aching, sharp, diffuse
  - Site can change
  - Can be referred to shoulder

Pain types cont.

- Neuropathic
  - Central or peripheral afferent neural pathways
  - Causes: Tumor invasion of neural plexus, infection, spinal cord compression, surgical interruption of nerve
  - Descriptions: Sharp, burning, shooting, parasthesias
Acute Pain

• Occurs abruptly after an injury or disease
• Persists until healing occurs
• ↑ anxiety or fear
• Consistently ↑ during wound care, ambulation, C & DB
• If not managed → chronic pain

Characteristics: Acute Pain

• Recent onset
• Short duration (< 6 mo.)
• ↑ HR, stroke volume, BP, pupillary dilation, muscle tension
• ↓ gut motility, salivary flow
• Anxiety

Chronic Pain

• Lasts for a prolonged period of time
• Cause not amenable to specific treatment
• Associated with prolonged tissue pathology or pain that persists beyond the normal healing period for an acute injury or disease
• Leading cause of disability in the U. S.
Chronic pain can:

- Be recurrent (episodic)
- Be ongoing (daily)
- Be intractable (unending)
- Have breakthroughs
- Less able to confirm with V.S. & nonverbals

Believe the client's complaint of pain!

Chronic Pain
Life revolves around the pain

- Pain experience
- disturbed sleep
- musculoskeletal pain
- depression
- disturbed sleep
- increased pain
- increased fatigue

withdrawal
- increased aggression
- increased fear
- increased dependency
- decreased movement
- increased meds and 'hangovers'

Comparison

- Acute pain
  - Sudden, severe
  - Predictable (subsides)
  - Less than 6 months
  - Associated with objective signs (pallor, BP)

- Chronic pain
  - Prolonged (6 months or more)
  - Difficult to describe
  - Rarely associated with other objective signs
  - Accompanied by changes in lifestyle and personality
Theories of Pain

• Specificity
  – Pain is a separate sensory modality with its own sensory apparatus
    • Independent of other sensations
  – Specific pain receptors, pain fibers, and tracts project pain sensation to specific pain centers in the forebrain

Gate Control Theory

• Presence of neural gating mechanisms at the segmental spinal cord level to account for interactions between pain and other sensory modalities

• Example: Transcutaneous electrical nerve stimulation (TENS). Stim of skin relieves pain due to activation of larger A-beta sensory nerve fibers
  – Pain tran thru small-dia A-delta and C fibers
  – Synaptic gates close to the transmission of pain impulses

• Pain relief interventions such as touch & massage help to close the gate to block pain impulses

Neuroregulator Theory

Neurotransmitters

• Substance P
  – Needed to transmit pain impulses from the periphery to higher brain centers
  – Causes vasodilation and edema

• Prostaglandins
  – Increases sensitivity to pain

• Serotonin
  – Inhibits pain transmission
Neuroregulators (Cont.)

- Neuromodulators
  - Bradykinin
    - Binds to receptors on peripheral nerves
    - Increases pain stimuli
  - Endorphins and Dynorphins
    - Body's natural supply of morphine-like substances
    - Cause analgesia when they attach to opiate receptors
    - Activated by stress and pain
- Pharmacological therapy for pain is largely based on the influence that select medications have on neuroregulators
- Distraction, counseling, and exercise are ways to release endorphins (a neuromodulator)

Major Functions of Pain

- Signal ongoing or potential tissue damage
- Can be a protective mechanism to prevent further injury (positive effect)
- Unrelieved pain can
  - Inhibit the immune system
  - Increase oxygen demand
  - Increase respiratory dysfunction
  - Decrease GI motility
  - Increase confusion

Dimensions of Pain

Affective (Emotions, Suffering)
Physiological (Transmission of stimuli)
Sensory (Pain Perception)

Behavioral (Behavioral Responses)
Cognitive (Beliefs, Attitudes Evaluations, Goals)
**Sensory Component of Pain**
- Recognition of the sensation as painful
- Sensory pain elements:
  - Location
  - Intensity
  - Quality
  - Pattern

**Affective Component of Pain**
- Feelings & emotions that affect the experience of pain

**Cognitive Component of Pain**
- Meanings, beliefs, attitudes, past experiences & expectations about the illness, disease, or injury
- Client’s goal for & expectations about pain relief & treatment outcomes
  - Goals must be realistic & attainable
Behavioral Component of Pain

- Actions & posturing of a client to express the pain or to control the pain
- Pain control behaviors are those that:
  - Reduce pain
  - Prevent pain onset
  - Reduce pain duration
  - Help the client to tolerate the pain

Summary of Factors Affecting Normal Pain Function

Definitions

- Pain Threshold
  - Least intense stimuli needed to perceive pain
  - Persons from different racial or cultural backgrounds are consistent about level of stimulus that is perceived as painful
- Pain Tolerance
  - Maximum intensity/duration willing to endure
  - Varies tremendously among different individuals
Definitions Related to Opioid Use in Pain Treatment

- Physical Dependence
  - Abrupt cessation results in a withdrawal syndrome
  - Is an expected occurrence
  - Does not imply addiction
  - A tapering regimen is recommended
- Physical Tolerance
  - A form of neuroadaptation indicated by the need for increasing or more frequent doses to achieve the initial effects of the drug

Opioid Use in Pain Treatment (cont.)

- Addiction
  - A persistent pattern of dysfunctional opioid use that may involve:
    - Psychological dependence
    - Adverse consequences
    - Loss of control over the use
    - Preoccupation with obtaining opioids despite the presence of adequate analgesia
- Pseudoaddiction
  - Drug seeking behavior similar to addiction, but is due to unrelieved pain
  - Behavior stops once pain is relieved, often through an increase in opioid dose

Factors that Influence the Pain Experience

- Coping style
- Age
- Sex
- Previous experience
- Anxiety
- Culture
- Attention
- Meaning of pain
Pain and Well-Being

Physical Well-being
- sleep
- nausea
- constipation
- appetite
- activity

Psychological Well-being
- anxiety
- depression
- fear
- decreased enjoyment
- cognition
- attention

Social Well-being
- caregiver burden
- affection
- sexual function
- appearance
- roles
- relationships

Spiritual Well-being
- suffering
- meaning of pain
- religiosity

Principles of Pain Management

1. Ask about the presence of pain
2. Believe the client’s report
3. Pain Assessment:
   - source, location, quality, intensity (scale)
   - what makes it better or worse?
   - Effect on daily living
   - Effectiveness of current treatment
4. Complete physical exam
5. Treat while evaluating
6. Determine cause
7. Specific therapy
8. Discuss with client goals and limitations of pain therapy
9. Reassess
   - Re-examine
   - Re-adjust
   (until pain is) Relieved

Pain Questionnaire
Pain Ratings above 3

- Significantly Interfere with a Client’s Activities and Mood
- Non-verbal indicators of pain
  - grimacing, groaning, guarded posturing, favoring one limb, social avoidance behavior, irritability, fatigue, anorexia, or use of pain relief methods
- Confirm that these are the individual’s signs of pain
The Language of Pain

Verbal Descriptor and Numeric Scales

Wong-Baker FACES Pain Rating Scale
A Combined Pain Rating Scale

Pain Ratings Above 3 (0-10 scale)

- Significantly interfere with a client’s activities and mood
- Use physiological measures (e.g., HR & BP) only as adjuncts to self-report and behavioral observation, especially for chronic pain

Pain Ratings

- Non-verbal indicators of pain
  - Grimacing
  - Groaning
  - Guarded posturing
  - Favoring one limb
  - Social avoidance behavior
  - Irritability
  - Fatigue
  - Anorexia
  - Use of pain relief methods
- Confirm that these are the individual’s signs of pain
Developmental Considerations

Children’s Self Report Tools
- If at least 3 years old & able use words:
  - “Here are five faces. Show me the face that hurts as much as you do now”
  - “Face 0 is very happy because there is no hurt. Face 2, a little hurt, and so to the last face, which would show as much hurt as you can imagine, although you don’t have to have to be crying to feel this bad”

Children’s Numeric Self Report
- Have the child choose the no. that best describes own pain
- Recommended for children as young as 5 years
  - Able to count
  - Have a concept of numbers and their values in relation to other numbers

Variables Affecting Child’s Response to Pain
- Developmental level
- Past experiences
- Culture
- Parent’s anxiety level
- Understanding of the event
- Child’s anxiety level
Chronic Pain with Children

- Two variables affecting assessment
  - Expression of pain (hurt)
  - Experience of pain
- Nursing implications
  - Differs with each developmental stage

Pain Assessment

- Tailor to developmental level, personality style and situation
- Obtain pain Hx & reports of pain from child and parents
- Elicit culturally determined beliefs about pain and medical care
- Measure pain using self-report: Age 3 - picture, age 5 - numeric or behavioral observation tools
- Behavioral observation
  - With preverbal & nonverbal children
  - Include vocalizations, verbalizations, facial expressions, motor responses, body posture, activity, and appearance

Elderly and Pain

Barriers to detecting pain in the elderly
- Those with chronic pain may not exhibit outward physiological or behavioral signs of pain
- Believe a normal part of growing old
- Fear illness worsening and closer to dying
- Fear addiction
- Reporting is a sign of weakness and they are a burden
- Fear cost of expensive Rx on a fixed income
Health Provider Misconceptions

- Pain sensation ↓ with age
- Cognitively impaired don’t feel pain
- If sleeping not in pain
- Self evaluate for myths
- Assess effects on functional level
  - “Is there any activity you could do before but can’t do now because of the pain?”
  - “Can you shop, cook, or work as you have in the past?”

Pain Considerations

- Cognitively intact adults, use a self-report scale
- Culturally diverse - translate into language
- Children: Happy to sad FACES scale more appropriate
- Elderly relate best to
  - Scales which include word scales like “mild, moderate, or severe”
  - 0-10 scale
  - FACES scale for those with aphasia and dementia
- Comatose - clues may be subtle
  - Agitation, restlessness, discoordinate ventilation, pupil dilatation, and sweating may be clues
  - Vocalizations or withdrawal movements when repositioning

Barriers to Pain Management

AHCPR Guidelines (Agency for Health Care Policy and Research)

- Client Barriers
  - Reluctance to report pain
  - Reluctance to take meds
  - Fears/Misconceptions
  - Altered LOC
  - Knowledge deficit
  - Cultural values
  - Communication
- Provider Barriers
  - Inadequate knowledge
  - Poor assessment
  - Addiction fears
  - Concern for side effects
  - Concern for tolerance
  - Nurses values
  - Dominant cultural values - “No pain, No Gain”
**JCAHO**

- Joint Commission of Accreditation of Healthcare Organizations
- Only accredit HCI that assess and manage pain appropriately
- Includes
  - A M of pain intensity, and quality (characteristics, F, location, duration)
  - Regular reassessment and follow-up
- Requirement for compliance will have the most profound effect on improving pain management
- Most litigation on pain related to end of life care/issues
- Can sue for failure to provide adequate pain medication

**American Pain Society**

- In California, pain as the fifth vital sign became law as a condition of health care facilities' licensure
- Pain must be assessed at the time vital signs are taken and noted in the client's chart with other vital signs

**American Pain Society Standards**

- Recognize & treat pain promptly
  - Chart and display pain intensity & relief
  - Survey client satisfaction
- Make information about analgesics available
- Promise attentive care
- Define pain policies
- Monitor adherence to policies
Questions for the Caregiver

- Can you describe the client’s pain?
- What is it like for you having someone you love in pain?
- What things do you do related to the pain meds?
- What could doctors and nurses do to better manage pain?
- Do you have any questions or concerns in managing pain?

Recommendations

- Interdisciplinary pain clinic consultations
- Educate family & include in plan
- Initiate exercise program (PT)
- Social recreational activities
- Work on life-style habits (smoking, nutrition)
- Scheduled meds vs. PRN
- Use of non-drug modalities
- Use of adjuvants:
  - Antidepressants
  - Anticonvulsants

Non-drug Pain Management

- Anticipatory guidance
- Positioning
- Menthol (ointments)
- Distraction
  - music
  - humor
- Biofeedback
- Therapeutic Touch
- Relaxation therapy
  - Imagery, hypnosis, breathing
- Dermal Stimulation
  - Massage
  - hand massage
  - vibration
  - acupressure
  - Cold
    - cloths, wraps
    - gel packs, legs
    - ice massage
  - Heat/hot tub
  - Cautions: bleeding area, radiation area, BP med
  - TENS (transcutaneous electrical nerve stimulation)
**Analgesics: Three-step Analgesic Ladder**

**Step 1 Drugs** (mild pain)

- Examples of Step 1 Drugs
  - Non-opioid drugs
  - ASA & other salicylates
  - Nonsteroidal anti-inflammatory drugs (NSAIDs)
  - Acetaminophen

**Step 2 Drugs** (pain moderate or mild but persistent)

- Examples of Step 2 Drugs
  - Codeine
  - Propoxphen hydrochloride (Darvon)
  - Hydrocodone (in combo drugs Vicodin, Lortab...
Step 3 Drugs
(moderate to severe pain)

- Examples of Step 3 Drugs
  - Morphine
  - Meperidine (Demerol)
  - Hydromorphone (Dilaudid)
  - Methadone (Dolophine)
  - Oxymorphone (Numorphan)
  - Oxycodone (in combo drugs Percocet, Tylox, Percodan)

Side Effects of Step 2 & 3 Drugs

- Constipation
- Sedation
- Nausea & vomiting
- Respiratory depression

Dose Escalation
Escalate by Percent

- For moderate pain: 50-100%
- For mild pain: 25-50%
- Dose increases of < 25% are usually meaningless
Principles of Pain Management

**ASSESSMENT**
- Establish pain type
  - somatic, visceral, neuropathic or mixed
- Determine cause
- Measure it

**PRINCIPLES**
- Dose escalation (<25% is meaningless)
- Adjuvant drugs
- Non-drug therapies in conjunction with drugs.

Appropriate Nursing Diagnoses

- Pain, Acute
- Pain, Chronic
- Comfort, Altered
- Anxiety
- Hopelessness
- Mobility, impaired physical
- Self-care deficit
- Sexual dysfunction
- Sleep pattern disturbance

Ethical/Legal Issues

- Placebo
- Withholding medication ordered
A terminally ill woman in obvious pain refuses meds to ease it because she believes that suffering “strengthens the soul.” What would you do?

- Contact her spiritual advisor and review any religious reference that the patient may be using as a basis for her decision.
- Tell her how pain can negatively affect the whole self.
- Respect the woman’s wishes, but explain that you would continue to assess her pain and offer pain medication.

Remember, Pain is:

“Whatever the experiencing person says it is and it exists whenever the person says it does.”
Pain Assessment

Ask the following questions:
1. When did the pain begin?
2. How long does the pain last?
3. What causes the pain?
4. What eases the pain?
5. What increases the pain?
6. How does the pain affect your daily activities?
7. What non-drug pain measures have you tried and how effective are they?
8. Identify any client barriers to pain management:
9. What could I do to help you better manage your pain?

10. How would you rate the effectiveness of your current pain treatment (Check one)?

- Highly effective
- Not very effective
- Somewhat effective
- Not effective at all
- Effective

11. Rate/describe pain using combination pain scale:
12. Quality of pain (check all that apply)/ Nonverbal indicators of pain

- Dull
- Sharp
- Throbbing
- Tender
- Burning
- Shooting
- Constant
- Intermittent
- Occasional
- Agitation
- Tingling
- Movement
- Internal
- External
- Grimacing
- Guarding
- ↑ Agitation
- ↑ Movement
### Pain Assessment

1. Impact on activity level?  
   - Significant  
   - Some  
   - A little  
   - None

2. Impact on sleep?  
   - Significant  
   - Some  
   - A little  
   - None

3. Impact on food intake?  
   - Significant  
   - Some  
   - A little  
   - None

4. Other symptoms?  
   - Headache  
   - Nausea  
   - Dizziness  
   - Drowsiness  
   - Constipation  
   - Diarrhea

Nursing Diagnosis: _________________________________

### Study Guide

- Differentiate between tolerance, dependence, addiction and pseudoaddiction of pain medications
- Evaluate nonverbal indicators of pain when verbally denies pain
- Evaluate intensity of pain objectively
- Devise a list of objective signs indicative of a client’s pain
- Apply pain interventions based on one of the pain theories

### Study Guide

- Apply the nursing process to pain management.
- Apply the appropriate pain scale based on developmental level.
- Know the level that pain begins to significantly interfere with a patient’s activities and mood.
- Identify indicators of appropriate, excessive, and insufficient pain control.