PAIN – 2021

- A universal experience
- Reason many patients seek health care
- Very costly to society
- Vital physiological warning system
- Effective pain treatment available
- Unrelieved pain has consequences
    - Unnecessary suffering, impaired recovery from illness/surgery, immunosuppression, and sleep disturbances
- Pain is:
    - A complex phenomenon with NO simple definition
    - Highly subjective
    - Individual
    - Personal
- International Association for the Study of Pain definition of pain:
    - Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or it is described in terms of such damage

- "Pain is whatever the patient says it is and exists whenever the patient says it does" (McCaffery)
    - Nurses must believe patient's pain experience
    - Pain is difficult to assess because we can neither see nor feel the patient's pain.
- Effective pain management is major aspect of nursing care
    - Promotes healing
    - Prevents complications
    - Reduces suffering
    - Prevents development of incurable pain states
    - Severe pain is an emergency.
- Normal function of pain
    - Pain serves as a mechanism to warn us about potential for physical harm
    - Body's protective mechanism
    - Serves as a warning of disease or threat to body

Classifications of Pain: Nociceptive vs. Neuropathic

- **Nociceptive Pain**
    - Intact, functioning nervous system
    - Sends signal that tissues are damaged
    - Requires attention and proper care

- Nociceptive Pain
    - Somatic Pain
        - Originates in skin, muscles, bone, tissue
        - Usually well localized
        - Character, intensity, and location match type and extent of injury

    - Visceral Pain
        - Activation of nerve fibers from organs or hollow viscera
        - Poorly localized
        - Cramping, throbbing, aching
        - Associated with "feeling sick"
            - Diaphoresis or nausea
- **Neuropathic Pain**
    - Damaged or malfunctioning nerves
    - Abnormal nerves due to illness, injury, undetermined cause

    - Difficult to treat
    - Burning, electric shock, tingling, dull, aching
- Neuropathic Pain
    - Peripheral Neuropathy
        - Pain felt along peripheral nerves
            - Examples: Diabetic neuropathy, post-herpetic neuralgia (Post shingles pain)
    - Central Neuropathic Pain
        - Caused by lesion or dysfunction of CNS
            - Post-stroke pain
            - Multiple Sclerosis
    - Sympathetically Maintained Pain
        - Abnormal connections between pain fibers and sympathetic nervous system
            - Phantom limb pain
    - Cancer Pain
        - Directly related to
            - Tumor
            - Specific pain syndromes
            - Treatment

Classifications of Pain: Acute vs. Chronic

Acute Pain

- Begins suddenly, Mild to severe
- Duration: **less than 3 months** or as long as it takes for normal healing to occur
- Relieved when underlying cause gone
- If unrelieved, may become chronic
- **Usually see changes in vital signs and behavior**

Chronic Pain

- Prolonged duration
    - Recurrent or **greater than 3 months**
    - Interferes with functioning
- Persists when injury has healed
- Mild to severe
- May have chronic pain without injury or evidence of body damage
- Accompanying behaviors **(VS normal)**

Intractable pain

- Resistant to relief
- Difficult to relieve
- Try multiple interventions
- Affects quality of life

Other ways to Classify Pain: Location

- Useful in determining underlying problem
    - Backache, headache, chest pain
- Can be deceiving…things not always as they seem
    - Radiating pain and Referred pain

Other ways to Classify Pain: Intensity

- Patient describes intensity of pain
- Descriptor Scale
    - Mild, moderate, severe
- Numeric Scale: 0 -10
- Other scales: Faces, Nonverbal

Concepts Associated with Pain

- Pain Threshold: least amount of stimuli for person to feel pain sensation

    - Vary slightly from person to person
    - Changes little in same individual over time
- Pain Tolerance: maximum amount painful stimuli person can withstand before seeking relief (this is there pain goal)
    - Varies considerably from person to person
    - Varies depending on situation

Physiology of Pain

- Physiological processes by which info about tissue damage is communicated to the CNS is known as NOCICEPTION
    - Nociception consists of four parts:

Transduction

- 1st step in experience of pain
- Nociceptors activated by exposure to noxious mechanical, chemical, or thermal stimuli
- Nociceptors spark electrical impulse that is conducted along nerve

Transmission

- Occurs in 3 segments:
    - Pain impulse travels from peripheral nerve (site of injury) to spinal cord
    - Spinal cord to brain stem and thalamus
    - Thalamus to cerebral cortex, where pain perception occurs.

Perception

- Becomes conscious of pain
- Occurs when pain is recognized, defined, and assigned meaning to individual
- Three key factors
    - Threshold: point which identifies pain
    - Distractibility: degree can ignore pain
    - Tolerance: point at which act to stop pain

Modulation

- "Descending system"
- Neurons in thalamus and brainstem send signals back down spinal cord
- Release substances that inhibit ascending pain impulses
    - Endogenous opioids, serotonin, norepinephrine

Gate Control Theory

- Peripheral nerve fibers carry pain signals to SC and then to brain
- Small diameter fibers carry pain stimuli
- Large diameter fibers "close the gate" and inhibit transmission of pain impulses to the brain
    - Heat, ice, massage, electrical stimulation, etc.
- When gate open, pain impulses go to brain, when closed, blocked from going to brain

Physiological Responses to Pain

- Sympathetic nervous system stimulation
- Initial response (fight or flight)
    - Rapid, shallow RR's
    - Increased HR
    - Increased BP
    - Diaphoresis/pallor
    - Anxiety, agitation, confusion
    - Urine retention
- **These responses are absent in patients with CHRONIC PAIN**
- Parasympathetic Nervous System
    - Body's adaption as pain continues
    - Decreased HR, BP, and RR
    - Weakness or exhaustion from expenditure of physical energy

- Untreated or persistent pain can lead to chronic pain syndromes

Pain management: Nursing priority

- Pain is the 5th vital sign
- Patients often don't voice pain until we ask!
- Pain affects every aspect of our lives
    - Sleep, concentration, appetite
    - Work, relationships, leisure activities
    - Emotional status

Barriers to Pain Management

- Nursing perspective
    - Personal biases
- Patient perspective
    - Fears, incorrect assumptions, poor communication
- Limited access to care

Pain Assessment

- Joint Commission Standards for Pain Assessment
    - All patients will be asked if have pain
    - Patients will be informed of right to have pain managed
    - Patients will be told about how pain managed
    - Detailed pain assessment done
    - Reassessment done based on hospital criteria
    - Healthcare professionals dealing with pain must be trained to do so

Pain Assessment

- Assess all factors affecting pain experience
    - Ethnic/Cultural
    - Developmental Stage
    - Past Pain Experiences
    - Meaning of Pain
- Identify etiology of pain
- Identify patient's pain goal
- (Attempt to) Understand patient's pain experience

Pain Assessment

- Pain assessment consists of two parts
- Pain history (subjective data)
    - Obtain patient's perception of pain
- Observation (objective data)
    - Behavioral and physiological responses

Subjective Data (**Nonverbal and Faces Pain Scales available on Edvance360)

- PQRST
    - **P**rovocative or **P**alliative
    - **Q**uality
    - **R**egion and **R**adiation
    - **S**everity
        - Also ask pain goal
    - **T**iming

Objective Data

- Physical Assessment
    - Vital signs
    - Related symptoms:
        - Nausea, vomiting

        - Anorexia
        - Withdrawal
    - Facial expressions
    - Verbal cues
    - Posture

Nursing Diagnoses

- Acute pain related to tissue manipulation secondary to total knee replacement AEB…
- Chronic pain related to inflammation secondary to rheumatoid arthritis AEB…

Other Diagnoses: Ineffective breathing pattern, Anxiety, Impaired physical mobility, Deficient Knowledge, and Imbalanced nutrition

Expected Outcomes

- Patient will have a pain level of <3 on a scale of 0 – 10 during my time of care.
- Patient will be able to ambulate 100 ft. in hallway and complete self-care with a pain level not greater than 4 on a scale of 0 –10 on post-op day 3.

Pain Management: A Nursing Responsibility

- Key Strategies to Pain Management
    - Acknowledge and accept pain
    - Assist patient, family/support persons
    - Reduce misconceptions about pain
    - Reduce fear and anxiety
    - Prevent pain from occurring

Nonpharmacologic Pain Management Techniques

- Massage, Exercise, Heat or Cold therapy
- TENS:
    - Transcutaneous Electrical Nerve Stimulation
    - Low voltage electrical current through electrodes on skin surface over painful area
    - Patient feels paresthesia (prickly, tingling, burning sensation)
    - Releases endogenous endorphins
        - Closes the “gate”
- Acupuncture
    - Insertion of needles or pressure at specific pressure points at varying depths to mobilize endogenous opiates
    - Closes the “gate”

Cognitive Pain Relief Techniques

- Distraction
- Hypnosis
- Relaxation Strategies
    - Guided Imagery
    - Music Therapy
    - Relaxation, meditation, deep breathing

Surgical Interventions

- Nerve block – drug injected into nerve pathway to block transmission of impulse
- Neuroablation – Nerves are destroyed to interrupt pain transmission
    - Last resort for intractable pain

Control of Painful Stimuli

- Smooth wrinkled bed linens
- Not lying on tubing
- Loosen anything constrictive
- Change wet dressings, linens, gowns, etc.
- Position of comfort
- Keep skin clean & dry

Pharmacologic Pain Management: Medication Therapy

- *Drug Therapy: Non-opioids*
  - Mild to moderate pain
  - Often available OTC
  - Do not produce tolerance or dependence
  - Examples: aspirin, acetaminophen (Tylenol), ibuprofen, (Advil, Motrin)
- *Drug Therapy: Opioids/Narcotics*
  - Moderate to severe pain
  - Controlled substances
  - Addictive and may be abused
  - Acts on higher centers of brain
  - Modifies perception and reaction to pain
  - *Monitor <u>respiratory</u> status*
  - **Naloxone (Narcan)** used to reverse effects of narcotics – Antidote.
  - Examples:
    - Weak Opioid Drugs
      - codeine (Codeine)
      - tramadol (Ultram)
    - Combination of opioids and non-opioids
      - Percocet = Oxycodone + Acetaminophen (Tylenol)
      - Vicodin = Hydrocodone + Acetaminophen (Tylenol)
    - Strong Opioid Drugs
      - Morphine
      - Hydromorphone (Dilaudid)
      - Fentanyl
- Drug Therapy: Adjuvant drugs (Coanalgesics)
  - Not classified as pain medication
  - Has properties that reduce pain or other discomforts
  - Potentiates the effects of other pain meds
    - Antidepressants
    - Anticonvulsants
    - Anti-anxiety meds

Routes for Opiate Delivery

- Oral
- Nasal
- Transdermal
- Rectal
- Subcutaneous
- Intramuscular
- Intravenous
  - PCA
- Epidural

PCA (Patient-controlled analgesia)

- Medication delivery system that allows clients to self-administer safe doses of opioids
- Good candidates
  - Post-op
  - Chronic disease
  - Labor & delivery
  - Patients who are alert & can follow directions
- Poor candidates
  - History of respiratory conditions
  - History of drug abuse
  - Mentally confused or history of dementia

- Benefits
    - Less lag time between need for & admin of medication
    - Increases sense of control
    - Decreases amount of med they need
- Safeguards/settings in place to prevent overdosing
- Client is *only* person who should push the button
- Patient should alert RN if not controlling pain
- Protocols in place to treat side effects (i.e. respiratory depression, itching)

PCEA (Patient-controlled epidural analgesia)

- Drug administered via catheter into epidural space around the spinal cord
- Binds to nerve roots
- Blocks sensory impulses
- Anesthesiologist places – Assess but don't touch ☺
- Bupivicaine
    - Medication in first PCEA bag
    - Causes nerve block
    - No feeling in feet & legs
    - Maintain strict bedrest until 4 hours after bupivicaine is discontinued

Common Side Effects of Opioids

- Constipation, Nausea and vomiting, Sedation, Respiratory depression, Pruritus, Urinary retention

Nursing Actions

- <u>Believe the patient</u>
- Clarify responsibilities in pain relief
- Collaborate with the patient
- Respect the patient's response to pain
- Be supportive & check on patient frequently

Evaluation of Pain Control

- Patient best resource for evaluating pain relief
- Use pain scale for consistency
- Observe verbal and non-verbal cues

Documentation of Pain Control

- Essential component of care
- Document ongoing assessment of pain
- Document both subjective and objective data
    - How patient describes pain in quotes
    - Pain level on pain scale
    - Physiological signs of pain (BP, vitals, etc.)
- Document pain intervention provided
- Re-evaluate patient after intervention and document new pain level
- If pain not improved, document next intervention
    - Comfort measures (Ex. Back rub, massage, repositioning, rest period, ice therapy, warm blanket)
    - Notified healthcare provider
- Pain documentation is ongoing even if denies pain of first assessment

Last Note:

- Pain assessment and management is a nursing priority!
- The nurse must work with the patient to ensure that his/her goals for pain management are achieved.
- Remember that measures other than just giving analgesics go a long way to decrease pain.
- Always be caring and compassionate when dealing with pain.