

Pain Management: Nursing Interventions and Assessments

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Goals:

- To gain awareness of pain and its effects
- To gain knowledge of pain treatments
- To practice pain assessments and pain scales
- To discuss pain management in U.S. and in your country

What is Pain?

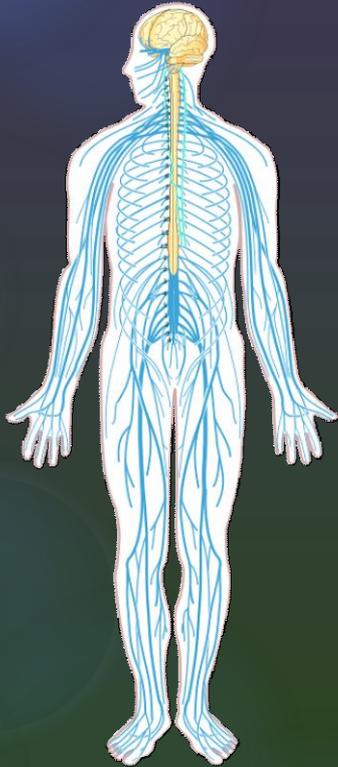
- The American Pain Society (2008) defined pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage...”
 - Pain can impact a person’s psychosocial, spiritual, emotional, and physical functioning
 - It “is whatever the person says it is”

Pain is a BIG Problem:



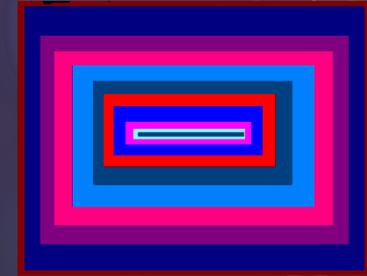
- Pain is costly, and may lead to loss of the ability to work
- Unrelieved pain causes many medical appointments and emergency room visits
- Under-treating pain can make other health problems worse, but treatment with opioids may lead to addiction
- Pain can be difficult to assess and manage

Understanding Pain:



- Pain reception is in the peripheral nervous system and spinal cord
- Pain messages are nerve impulses from sensory stimulation that travel to the brain

Pathology of Pain:



○ Causes of pain:

- Nociceptive (physiologic pain)
- Neuropathic (nerve pain)
- Psychogenic (emotional pain)

Nociceptive Pain:



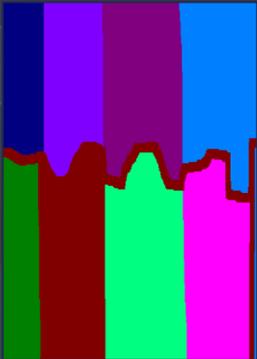
- Physiologic pain from tissue damage:
 - Somatic pain – Bones, skeletal muscle, skin, or connective tissue damage
 - Usually localized, often with aching or throbbing
 - Visceral pain – Body organs, smooth muscle, and the GI tract
 - Highly sensitive to distention, ischemia and inflammation

Neuropathic Pain:



- Nerve pain from damaged nerves
 - Neuropathy, abnormal changes in spinal cord processing, or hyper-excitable nerve endings
 - May feel like shooting/stabbing or burning
- People may have nociceptive, neuropathic, and psychogenic pain at the same time, making treatment more complex

Psychogenic Pain:

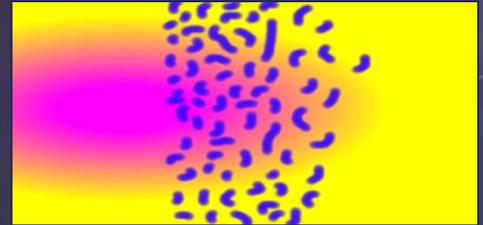


- Can be from emotions, stress, social problems, thoughts, or mental illness
- Past experiences can affect how people react to pain
- Nurses can help interrupt pain by being more aware of psychosocial and spiritual needs (and meeting those needs)

Pain Physiology Overview:

- 1. Transduction:** Can be inhibited with anti-inflammatory medications
- 2. Transmission:** Can produce analgesia when opioids bind to opioid receptors in the spinal cord
- 3. Perception:** Can use mind-body therapies
- 4. Modulation:** Can use anti-depressants to help block pain receptors

Pain Physiology:



○ Transduction

- Conversion of a mechanical, thermal, or chemical stimulus into a neuronal action potential
- Moves pain along the pain pathway by releasing compounds (such as prostaglandins) that can start inflammatory responses and tissue swelling
- Can be inhibited with anti-inflammatory medications

Pain Physiology (continued):

○ **Transmission**

- Movement of pain impulses along the sensory fibers to the spinal cord
 - Processed by dorsal horn in the spinal column with neurochemicals
 - Transmitted to the (thalamus and the cortex of the) brain
- Can produce analgesia when opioids bind to opioid receptors

Pain Physiology (continued):



○ Perception

- Occurs when pain is recognized, defined, and responded to
- Includes awareness, emotions, and internal motivations
- Can use mind-body therapies to change pain perception (such as relaxation techniques, distraction, or imagery)

Pain Physiology (continued):

○ **Modulation**

- Activation of pathways affect the transmission of pain
- Involves many different neurochemicals at every level (from peripheral nerves to the brain's cortex)
- Can use antidepressants to block resorption of neurotransmitters (norepinephrine and serotonin) that can help block pain receptors
- Pain physiology information from Hinkle & Cheever (2014) Textbook of Medical Surgical Nursing

Gate Control Theory:

- Wall & Melzack developed this theory in 1965:
- Pain transmission goes through a “gate” in spinal cord where only 1 message can pass through at a time
- More activity in nerve fibers can decrease pain
 - Examples: Distraction, massaging, or stimulators
 - Pain physiology and this theory give hope for many ways to manage acute or chronic pain

Acute Pain:

- Has a sudden onset
- Lasts less than 3-6 months
 - Example: Tissue damage that is expected to heal in a short time
- Can be mild or severe
- Becomes less intense over time
- May have related signs and symptoms:
 - Elevated pulse, breathing, and blood pressure
 - Increased anxiety, agitation, and sometimes confusion

Chronic Pain:

- Is long-term pain that continues over 3-6 months
- May cause decreased physical and social activity
 - Often includes fatigue and sleep problems
 - Can lead to depression
- Is more complex to treat than acute pain
- Is more difficult to assess objectively when a physical “stress response” is no longer seen

Definition of Chronic Pain:

Persistent pain, either continuous or recurrent, that affects patients' well-being, level of function, and quality of life.

~ Lambert, M. (2010)

Case Study



- Rosa was a 42 year old woman. She had an injury while working, where she fell and injured her back. She was given strong pain medication for the acute pain when she was in the hospital and when she went home. But, 6 months later, she was still having pain in her back most of the time. And she was very tired.
- *Discussion: What types of pain was she having?*

Treatment of Chronic Pain:



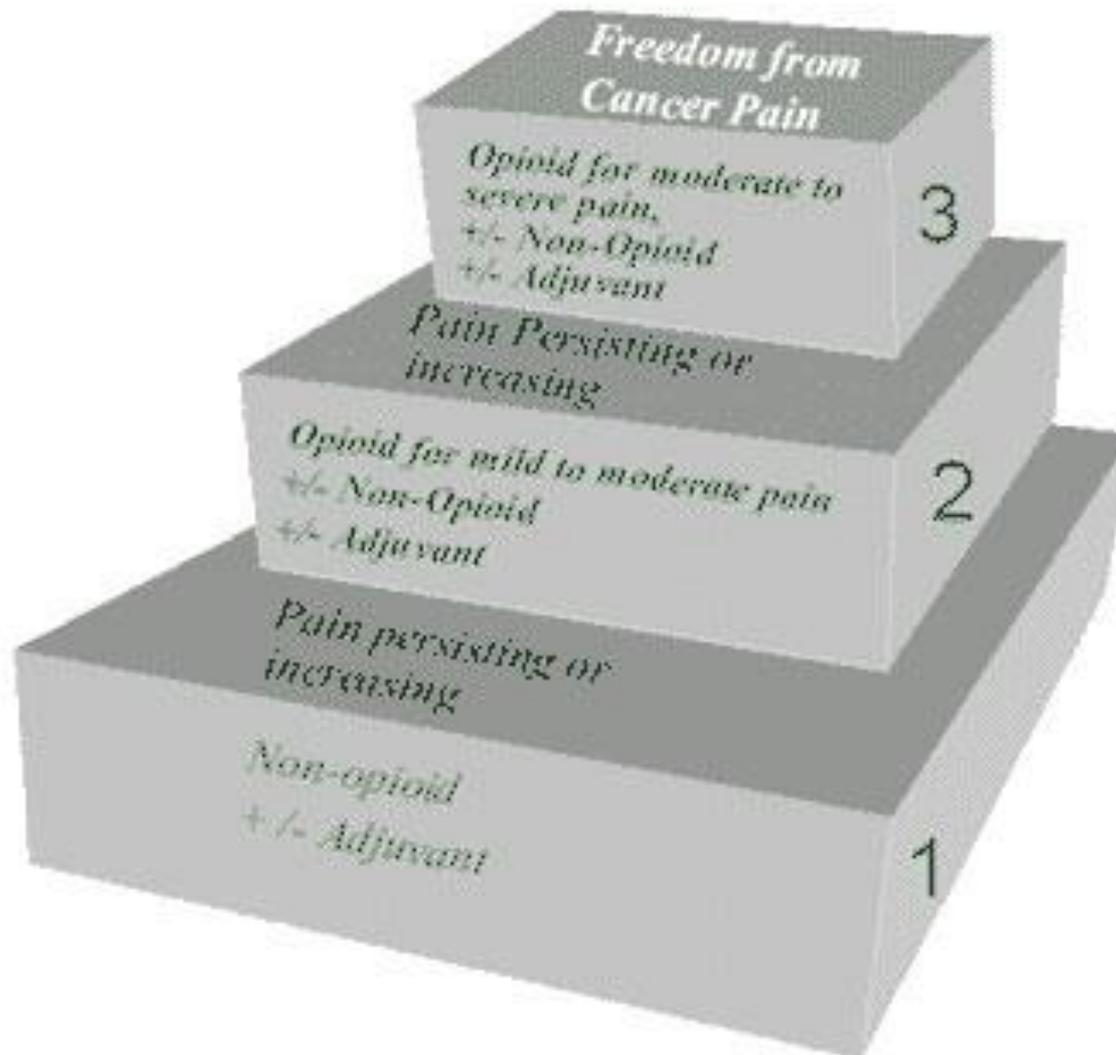
- Pharmacologic intervention
 - Analgesics
 - Adjuvants
- Non-pharmacologic
- Psychosocial interventions

WHO (World Health Organization) Three-Step Analgesic Ladder

Was developed for cancer pain relief in adults:

If pain occurs, there should be prompt oral administration of drugs in the following order: non-opioids (aspirin and paracetamol); then, as necessary, mild opioids (codeine); then strong opioids such as morphine, until the patient is free of pain. To calm fears and anxiety, additional drugs – “adjuvants” – should be used.

WHO's Pain Relief Ladder



WHO Analgesic Ladder:

Is a framework for providing pain relief. The three-step approach is inexpensive and 80-90% effective

By mouth	The oral route is preferred for all steps of the pain ladder
By the clock	Cancer pain is continuous - analgesics should be given at regular intervals (every three to six hours), not on demand
Adjuvants	Adjuvant drugs may be added at any step of the ladder

Retrieved from <http://www.who.int/cancer/palliative/painladder/en/>

Analgesics:

- For Mild Pain - Non-opioid analgesics
 - Acetaminophen (or paracetamol)
 - Non-steroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen (naproxen, disalcid, diclofenac) or aspirin
- For Moderate Pain -
 - Opioid combination analgesics, “weak opioid” combinations of acetaminophen and hydrocodone, oxycodone, or codeine are Lortab, Vicadin, Percocet, or Tylenol # 3
- For Severe Pain - “Strong opioids”
 - Oxycodone, morphine sulfate, fentanyl patch, or hydromorphone

Adjuvants:

- For Neuropathic pain
 - Anti-convulsants: gabapentin (Neurontin), pregbalin (Lyrica)
 - Anti-depressants: fluoxetine (Prozac), paroxetine (Paxil), amytriptyline (Elavil)
- Anti-anxiety: alprazolam (Xanax), diazepam (Valium), lorazepam (Ativan)
- Anti-emetic: ondansetron (Zofran), prochlorperazine (Compazine), dimenhydrinate (Dramamine)

Adjuvants:



- Anti-gas: simethicone or antacids
- Muscle relaxers: carisoprodol (Soma), baclofen
- Sleeping pills: zolpidem (Ambien)
- Steroids: prednisolone
- Antianginal for chest pain: Nitroglycerin

Routes for Pain Medication:

- Oral: Pill or liquid
- Sublingual or buccal/mucosal
- Rectal, nasal, transdermal, topical
- Intravenous: Bolus or PCA (patient-controlled analgesia) pump
- Intramuscular: Avoid if possible
- Epidural or intrathecal: Injections or pump
 - Nerve blocks or stimulators

Controlling Moderate to Severe Pain:

- For continuous “background” pain, use sustained release medication
 - Morphine (MS Contin), oxycodone (Oxycontin), or fentanyl (Duragesic)
- Dosing: Start low and go slow – (The full effect of the dosage changes takes time. Avoid overdose)
- For “breakthrough pain”, use short-acting opioids
 - Oxycodone, immediate release morphine, or combination analgesics PRN
- Avoid more than 1 long-acting or combination med
- Keep safe dose Tylenol (acetaminophen) over 24 hrs

Planning Care for Pain Management:

- Promote regularly scheduled analgesics or adjuvants to stabilize pain
 - During the day and at night for good sleep
 - With known pain that is unable to be expressed
- Use PRN medications:
 - When pain worsens
 - Prior to activity or painful treatments
- Use non-pharmacological interventions in addition to medication

Discussion:

- *What are some common concerns with opioid use?*
 - Sleepiness
 - Nausea
 - Constipation
 - Respiratory depression
 - Interactions with other medications
 - Dependence, and withdrawal (if opioids are stopped too quickly)
 - Tolerance
 - Addiction

Managing Side Effects:

- **Sleepiness** is usually temporary but it can increase risk of falls and accidents
 - To be safe, avoid driving and machinery until effects are known
 - Avoid alcohol, illegal or recreational drugs, anti-anxiety medication, sleep aids or muscle relaxants unless approved by doctor
- **Nausea** usually resolves within a week: Anti-emetics can be used
- **Constipation:** (is usually an ongoing problem, so) stool softeners or laxatives should be scheduled

Managing Side Effects:

- **Respiratory depression** slows breathing
 - Monitor breathing and heart rate
 - Change to a lower dosage if needed
 - Call for emergency services if needed
- **Interactions** with other drugs or alcohol
 - Doctor and pharmacist need to be told all prescription, herbal, or other medications taken, and any alcohol or recreational drugs used
 - Need to take medication **exactly as prescribed**

Managing Effects:

- **Physical dependence** is a normal body response to taking opioids for 2 or more weeks
 - There is no “high” from the opioids when used appropriately for pain
- **Withdrawal** can happen if opioids are stopped too quickly
 - If possible, taper slowly to prevent cravings, sweating, and general discomfort
- **Tolerance** can cause decreasing pain relief

Addiction:



- Is a compulsive disorder that includes:
 - A psychological “high”
 - Harm to the body
 - Negative personal, legal or medical consequences
 - Out-of-control usage
 - Obsession with obtaining a supply
 - Lower quality of life
- May need treatment by an addiction specialist
- May need a “contract” for opioid use (including pill counts, urine or blood tests, and frequent followup)

Guidelines to Decrease Addiction:

- Use non-opioid medication
- Set realistic goals for pain control
- Discuss whether benefits outweigh the risks
- Start with immediate-release instead of long-acting opioids
- Prescribe the lowest effective dose
- Prescribe limited amount of opioids and evaluate dose frequently
- Dowell, D., Haegerich, T.M. & Chou, R. (2016). Center for Disease Control (CDC) guideline for prescribing opioids for chronic pain.

Use a Variety of Interventions:

- Combine medications with non-pharmacological interventions to:
 - Help patients function better
 - Decrease the feeling of dependence
 - Give a sense of empowerment and control
 - Help to avoid addiction and tolerance
- Expect pain to be complex, with emotions and perceptions that are unique to the individual
- Teach patients coping and relaxation skills

Quote:



- Think of pain like a wall. Instead of a brick wall that is not flexible, think of a wall of water. Ride it like a surfer, making many small adjustments. Allow for setbacks.

~ Mary
Atwater

- Atwater, M. (2013). Acceptance of chronic pain: Our dis-ease with pain. Presentation at ACBS Conference

Non-pharmacologic Pain Interventions:



- Positioning/Posture
- Education/Anticipatory guidance
- Touch – Use gentle pressure or massage
- Warm/Cold treatments
- Distraction/Music/Pet Therapy
- Relaxation/Meditation/Guided imagery
- Aromatherapy
- Acupuncture/Acupressure
- Mobility aids/Supports

Discussion:



- Promote the idea of a “tool kit”
- Use the Pain Tools Handout
- *Discussion:*
 - *What did you learn from the handout?*
 - *Which interventions have you seen used?*
 - *Which would you like to use?*
 - *How do you see pain being managed in your country?*

Role of Nurse in Pain Management

- Assess pain
- Provide timely pain interventions
- Report concerns to medical providers
 - Doctors can adjust doses based on pain rating (using pain scales) or other signs of pain
 - Reminder: Wait a few days before increasing long-acting opioids (to see the true effect of the current dose, and to prevent overdose)
 - Providers can use equianalgesic dosing tables to change routes or formulations

Pain Assessments:

- Help nurses effectively manage pain
- Can optimize comfort, sleep, and activity
- Help decrease anxiety and promote recovery
- Include a current self-report of pain to be done:
 - During initial contact with patient
 - At future contacts to track changes in pain
 - When pain worsens
 - Before and after pain interventions

Initial Pain Assessment Includes:

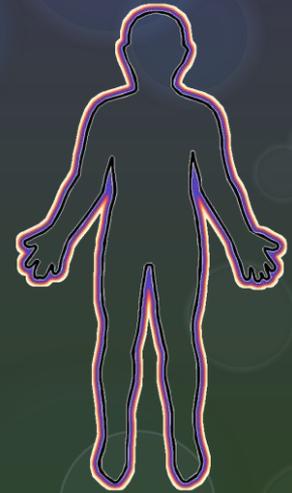
- *Location of Pain (*Observe any physical findings*)
- *Description (Quality of pain - *How does it feel?*)
- Timing and Frequency
- Aggravating and alleviating factors (*What makes it better or worse?*)
- Analgesic history (*What helped in the past?*)
- Goals and expectations for pain control (*What amount of relief would the patient be satisfied with?*)
- *Intensity (*How would you rate it on pain scale?*)

“Quality” of Pain:

- Somatic Pain - from bone/connective tissue with localized **aching, gnawing, or stabbing**
 - Arthritis, muscle, tendon or bone injuries
- Visceral Pain - Deep pain like **cramping, gnawing, pressure, or squeezing**
 - Pancreatitis, kidney stones, surgery
- Referred Pain - Felt in a different body part
 - Angina (pain in jaw or arm) or gallbladder (pain in shoulder blade)
- Neuropathic Pain - **burning, numb, touch sensitive, radiating, shooting, or tingling**
 - Herpes zoster, neuropathy, phantom pain

Location of Pain:

- Pain can be anywhere on the body
- Ask the patient to verbally describe or point to where it hurts
- Pain can be in more than one body part, or it can be generalized (such as in fibromyalgia)
- Chest pain, and pain radiating to arm or jaw may be a **medical emergency** if it is from a heart attack (myocardial infarction)
- For chest pain, get medical help promptly



Description and Timing:

- May be important to help find the cause of pain
- Note (and report) the patient's own words:
 - "Sharp pain like a knife twisting when I move"
 - "A painfully cold numbness when I am trying to sleep"
 - "Throbbing in my head that comes and goes"
 - "Shooting pain that goes from my back down my leg when I sit too long"

“Intensity” of Pain:

- Is the patient’s report of **how much** pain
- The patient’s level of pain should be believed
- Pain scales are tools to track pain in individuals
- Goal is timely relief from pain
 - It may not be possible to have “no pain”, but the patient can set a goal
 - Example: “I want my pain to be <3 out of 10”
 - Be alert for nonverbal signs of pain

Nonverbal Signs of Pain:



- Can be seen by watching for changes in behavior:
 - Crying, moaning, calling out
 - Agitated or aggressive behavior
 - Increased frustration or irritability
 - Changes in sleep or eating habits
 - Withdrawal from friends, family, or favorite activities

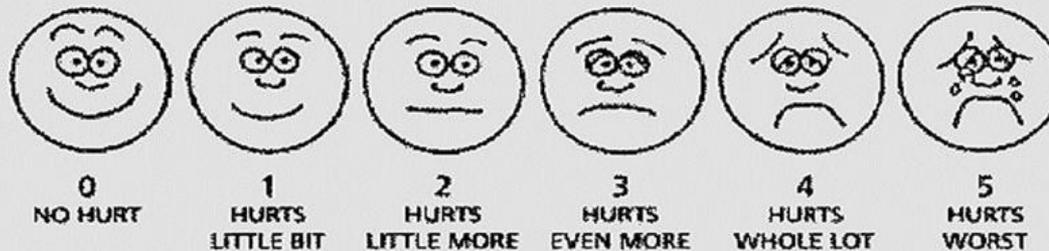
Pain Management in Children:



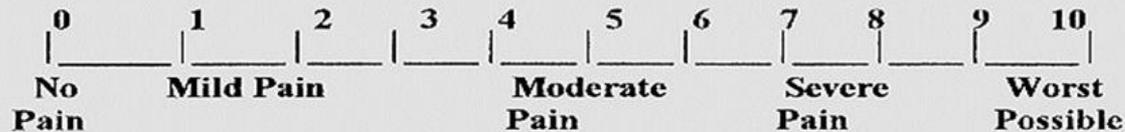
- Is challenging because pain assessments may be based on only nonverbal signs
- Is important because patients who are unable to express pain feel it just as intensely
- Can include distraction and play to help them cope
- Keeps parents informed, as part of the “team”
- Can include the Faces pain scale for children or patients who don’t read

Faces Pain Scale:

Wong-Baker FACES Pain Rating Scale



0-10 Numeric Pain Intensity Scale



<https://creativityandcompassion.files.wordpress.com/2015/04/wb-faces.jpg>

Pain Management in Elderly:



- May be complicated by slower metabolism
 - Increased risk of toxicity and interactions from medications
- Keeps family members and caregivers involved
- May include dementia, which may prevent verbal expression of pain
- Can use a nonverbal pain scale such as FLACC (Face, Legs, Activity, Cry, Consolability) assessment tool (See Pain Assessment Guide)

Other Considerations:



- **Mental illness** affects perception and interpretation of pain
 - Pain can lead to depression and anxiety
 - Depression or anxiety tends to increase pain
 - Depressed patients may be more quiet/stoic
 - Psychogenic pain may cause non-verbal pain behaviors without having physical pain

How to Use Pain Scales:

- Explain to patient/family why pain scales are used
 - To understand their pain
 - To discuss goals for pain relief
 - As a reminder to report pain when it starts to get worse
- Document pain rating numbers and the range of the scale
- Example: Patient had constant dull ache in left lower back rated 6 out of 10

Practice Pain Scales:

- **FLACC**
 - **Wong-Baker FACES**
 - **Numeric pain scale**
-
- See the Pain Assessment Guide handout
 - Practice pain assessment in pairs
 - Use a pain scale of your choice to rate pain
 - Read scenarios and rate the patient's pain

Discussion:

- *What is an advantage or disadvantage of using pain scales?*
- *How does this compare with how pain assessments are done in your country?*
- *Who works with nurses in pain management teams in your country?*

Work Together as a Pain Team:

- Multidisciplinary pain teams may include:
 - Physicians or other medical providers
 - Pain specialists
 - Nurses
 - Social workers
 - Physical therapists or occupational therapists
 - Pharmacists
 - Counselors, and spiritual care providers
- A pain team also includes the patient and family

Case Study:

- Rosa's back injury had healed, but 6 months later, she still had nearly constant aching and some severe sharp pain her lower back. She was not able to go back to work.
- Sometimes, she couldn't even do her housework or cooking. That was very distressing for her and her family as roles and expectations changed.
- Support from family and friends was important to her as she tried to adjust and find tools for pain management and coping.

Case Study:

- Rosa was sad, tense and anxious because she wanted to work and pay her bills. With a counselor, she expressed anger toward life changes and the persistent pain.
- With prayer and meditation, she believed that her pain had meaning. She was better able to help ease suffering of others.
- She used relaxation skills when tense. She did some sewing to make money. She took care of her family the best she could, and allowed other family members to help when needed.

Culture Care:

- Includes holistic treatment for mind, body, and spirit
- Maintains cultural rituals as much as possible
 - Uses herbs, salves, or essential oils along with medication (after discussing with doctor)
- Promotes learning about different cultural and religious beliefs
- Discusses options with patient and family
- Uses mutually agreed upon interventions

Responses to Pain:

- Various cultures and personalities respond differently when they or family members have pain
- Volunteers will read the lines of role plays to show some pain responses
- Knutson, M. (2015). Reading lines: Responses to pain. Retrieved from <http://www.healthvista.net/health-resources/nursing-education-resources/>

Discussion:



- *What are your usual beliefs and responses to pain?*
- *How should you react if you don't believe patients have as much pain as they say they have?*
- *How does the information in this presentation compare to pain management in your country?*
- *What are your hopes after participating in this class?*

Global Management of Pain:

- Can be even more effective as part of a multidisciplinary effort to return individuals to functioning as productive members of their societies
- Policy and political approaches are important because chronic pain is associated with poverty
 - Rice, A.S.C., Smith, Blair, B.H. & Blyth, F.M. (2016). Pain and the global burden of disease. International Association for the Study of Pain. pp, 791-796 in www.painjournalonline.com

Conclusion:

- **Ask** your patients about pain
- Thoroughly **assess** (and reassess) pain using your assessment tools and pain scales
- Use a variety of medications and non-pharmacological interventions
- Work with the patient, family and medical providers as a pain team
- Improve the quality of life of your patients by **managing pain effectively!**



Optional Resources:

- Mindfulness in 3 Minutes by Yolanda Calvo Gómez at <https://www.youtube.com/watch?v=0eiQQL4cWIM>
- Passive Muscle Relaxation to Manage Anxiety and Stress (12:40 minutes) by Joanne D'Amico at <https://www.youtube.com/watch?v=xcjTF5BxKdo>
- Watch video Explain pain in less than 5 minutes (5:00 minutes)
- Watch Lorimer Moseley video TEDxAdelaide - Lorimer Moseley - Why Things Hurt (14:32 minutes) at <https://www.youtube.com/watch?v=gwd-wLdIHjs&t=196s>
- Butler, D.S. & Moseley, G.L. (2003, 2014). Explain Pain. NOIgroup: Adelaide, Australia.

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This presentation was created in 2004 with Carrie Lapham, NP and revised 9-12-17 by Mary Knutson. Included some edits by Kelsey Strey, RN