CHAPTER
PAIN MANAGEMENT
(1 CONTACT HOUR)

Learning Objectives
- Define pain.
- Differentiate between acute and chronic pain.
- Define various types of pain.
- Discuss the impact of pain.
- Describe the physiology of pain.
- Conduct a pain assessment.
- Describe treatment options for pain management.

Introduction
Pain is a complex phenomenon. It can warn us that we have gone, or are attempting to go beyond, what is safe for our bodies. It can indicate a pathophysiology that requires medical attention. However, sometimes pain can be an unreliable indicator of illness or injury. For example, sometimes damage is done to the body without any feelings of pain (e.g. with certain types of cancer) until damage is severe and widespread. At other times pain from some common conditions such as fibromyalgia and migraine headaches may have no specific, identifiable physical pathology but the patient is experiencing a significant degree of pain.

There are a number of conditions in which pain can provide misleading signals, such as when a patient feels pain in one part of the body, but the pathology is elsewhere. An example of this type of pain is when the pain of angina, occurring as a result of coronary artery insufficiency, is felt in the jaw or left shoulder instead of the chest. Another example is gall bladder disease, which can cause pain in the right shoulder or scapular area. Pain that is felt at a different area from that of an injury or diseased organ or body part is called referred pain.

Pain is experienced differently by different people. The experience of pain and how people react to it varies with culture, age, and co-existing medical or mental health conditions. To add to the complexity of the pain phenomenon is the way people respond to treatment of pain. Persons with the same diagnosis may receive nearly identical treatment but respond quite differently to such treatments. This makes it especially important to assess pain carefully and to develop an individualized plan of care for each patient.

Definitions
The International Association for the Study of Pain (IASP) defines pain as “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.” Note that this definition refers not only to the physical sensation of pain but the emotional experience as well. Pain causes not only physical discomfort but takes its toll on the emotional well-being of the sufferer as well. Note also that the IASP acknowledges that pain is associated with both actual damage and potential damage.

There are various types of pain. It is important for the nurse and other healthcare professionals to be able to define different types of pain and recognize the impact that each type has on physical and emotional well-being.

The two most general classifications of pain are acute pain and chronic pain. Acute pain is defined as pain of a limited duration that is associated with a specific event (e.g. trauma) or illness onset. Chronic pain lasts for weeks, months, or years and/or is linked to a pathological process that is ongoing or degenerative in nature. The following table shows some of the differences between acute and chronic pain.

<table>
<thead>
<tr>
<th>Acute</th>
<th>Chronic</th>
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<tr>
<td>Time limited.</td>
<td>Persists for weeks, months, or years. Can be an ongoing process that lasts a lifetime.</td>
</tr>
<tr>
<td>Associated with a specific physical trauma or acute illness.</td>
<td>Associated with an ongoing process that can be ongoing or degenerative in nature.</td>
</tr>
<tr>
<td>Acute pain is generally a signal that injury or illness is occurring. It is related to a specific event such as trauma.</td>
<td>Chronic pain is generally an ongoing problem that may have no specific explanation.</td>
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There are a number of other types of pain that can be related to either acute or chronic problems. These include:
- **Somatic pain**: Pain that is restricted to the body wall or to the musculoskeletal system. It is usually easy to locate and is increased by movement or direct contact.
- **Visceral pain**: Pain that originates from internal organs such as the bowel or gall bladder. It is described as dull and may be hard to locate since it is often diffuse in nature.
- **Neuropathic pain**: Pain that is due to present or past damage to peripheral and/or central nerves.
- **Nociceptive pain**: Pain that is associated with inflammatory and/or biologic processes.
- **Breakthrough pain**: A fleeting increase in pain that occurs in patients with baseline, persistent pain.

Impact of Pain
Pain has a significant economic and personal impact. Even acute pain that is self-limiting and from which the sufferer completely recovers can affect income and interpersonal relationships.

However, chronic pain can have even more widespread consequences. It is estimated that 116 million Americans deal with chronic pain. Medical costs associated with such pain as well as lost job and personal productivity cost the United States as much as $635 billion annually.

The following findings from the 2006 Voices of Chronic Pain Survey help to show the impact of pain in this country:
- 51 percent of respondents reported that they felt they had little or no control over their pain.
- 60 percent of respondents reported that they experienced breakthrough pain.
- 77 percent of those surveyed reported feelings of depression.
- 59 percent of those surveyed reported a negative impact on their ability to enjoy life.
- 70 percent of respondents reported having difficulty concentrating.
- 74 percent of those surveyed stated that their energy level was negatively impacted by pain.

The American Productivity Audit, which is a computer assisted telephone survey of health and work of 28,902 working adults, was conducted to estimate lost work time due to musculoskeletal conditions such as back pain, arthritis, and headache. The data were expressed in hours per worker per week and calculated in American dollars.

- Over half of those surveyed reporting having headache, back pain, arthritis, or other musculoskeletal pain in the past two weeks.
- 12.7 percent of respondents lost productive time during a two-week period because of pain.
- Respondents lost an average of 4.6 hours per week of productive time because of pain.
- Age did not seem to be a factor in the findings of the audit.

The most common intervention for pain relief is some type of analgesic drug, often prescription medication. This is leading to another significant problem related to pain in this country: that of prescription drug abuse. These drugs are not only abused by those who suffer from pain. They are a source of drug abuse by children and teenagers as well.

The Office of National Drug Control Policy reports that:
- Prescription drugs are the second-most abused drug category in the United States. Only marijuana is abused more frequently.
- The number of substance abusers admitted for treatment who was aged 12 or older and who reported pain reliever abuse increased more than fourfold.
- About 2 million adults age 50 and older admitted using prescription drugs non-medically in the past year.

Pain also has a very personal impact on interpersonal relationships. The patient may not be able to contribute to the household income, be unable to assist in housework and childcare responsibilities, lose interest in and/or be unable to participate in sex, and may require physical care that places a burden on family and friends.

The Physiology of Pain
How does someone “sense” pain? The experience of pain is not easily explained and depends on not
only physical factors but cultural and emotional factors as well. Here is a brief overview of the physical sensation of pain.

Pain receptors are found throughout the body. They are especially prevalent in the skin, joints, bone, arterial walls, and some structures within the skull. There are three types of pain receptors: Mechanical, Thermal, and Chemical.

- **Mechanical:** Pain provoked by touch such as severe pressure or over-stretching a muscle.
- **Thermal:** Pain provoked by extreme heat or cold.
- **Chemical:** Pain provoked by chemicals such as acid or products produced by the body and released with inflammation or trauma.

Pain sensors respond to stimuli from the pain receptors. Messages are sent to spinal nerves and the brain warning the patient of a painful stimulus. The central nervous system responds by producing actions to reduce the pain such as removing your hand from a hot surface, taking aspirin for a headache, or seeking medical attention as warranted.

Chronic pain has additional complicating factors. Some theories as to the cause of chronic pain include:

- Some people experience pain from stimuli that are not normally painful, such as a light touch.
- The brain may have unusually strong reactions to pain signals.
- Psychosocial factors may influence the way people experience and react to pain.

Causes of chronic pain can include specific diseases such as:

- Arthritis.
- Cancer.
- Stomach ulcers.
- Multiple sclerosis.
- AIDS.

Chronic pain may also be due to factors that are, or could have been, controllable. Such factors include:

- Many years of poor posture.
- Being overweight, which places excess strain on the back and knees.
- Lifting and turning improperly.
- Long-term practice of carrying heavy objects.
- Wearing high heels.
- Sleeping on a mattress that does not offer proper support.

Causes of chronic pain that are not controllable include:

- Congenital abnormalities of the spine.
- Degenerative changes of the spine associated with the aging process.

In many cases, the exact source of chronic pain can be difficult to specifically identify. In some instances, a psychological facet of pain perception can develop even after an injury or illness has apparently been resolved.

**Pain Assessment**

Assessing pain is the first step in developing an effective pain management program. It is of the utmost importance to maintain an objective, non-judgmental attitude. Never ridicule the patient or show amusement or disapproval.

Start by obtaining a thorough health history. Questions to ask include:

- Do you have any current health problems? Include both physical and mental health disorders.
- What medications are you taking? Be sure to ask about not only prescription drugs but non-prescription drugs, vitamins, herbal preparations, minerals, and weight loss products, which can also interact with other drugs and cause side effects.
- When did your pain start?
- How often do you have pain? For example, is it at specific times during the day? How many times a day? Do you have trouble sleeping because of pain?
- How long have you been having pain?
- Where is the pain? Is it in a specific spot or is it diffuse?
- What makes the pain worse?
- What makes the pain better
- Describe your pain. Different types of pain have different characteristics. Words such as throbbing, stinging, aching can provide clues to injuries or illnesses.
- Have you seen doctors or other healthcare providers about your pain? If so what kinds of doctors and healthcare providers have you seen? (e.g. physicians, chiropractors, acupuncturists). What have they prescribed as treatment? How effective have these treatments been?
- Does your pain interfere with your job? If so, how does it interfere? Have you had to take sick time or other time off work because of your pain? How often has this happened?
- Does your pain interfere with being able to perform household tasks? If so how has it interfered?
- Has your pain affected your relationships with family and friends? If so, how has it affected them?
- Has your pain affected your ability to enjoy your life? If so, how has it affected it?
- Has your pain affected your sex life? If so, how has it affected it? Note that questions about a patient’s sex life must be initiated tactfully. This is a sensitive area and should be explored by healthcare professionals who have developed a professional, trusting relationship with the patient.

The answers to the preceding questions will indicate what types of diagnostic tests, such as ultrasounds, X-rays, etc., are needed. The results of diagnostic tests may indicate specific treatment needs such as surgery or medication.

The patient should be asked to rate his pain. There are a number of pain-rating scales that can help a patient tell you about the severity of his/her pain. Examples of such scales include:

- **Numeric scale:** The patient identifies his pain by choosing a number from 0-10, with 0 meaning no pain to 10 indicating the worst possible pain. This is generally most effective with adults. The scale can be represented as a ruler with numbers drawn in.

- **Wong Baker Faces scale:** A face scale is drawn with numbers accompanying each face. The 1st face is “happy” with a smile. The faces are progressively more “sad” indicating discomfort, with a face showing a frown and tears representing the most pain.

- **Verbal response:** The patient, usually an older teenager or adult is asked to rate his/her pain. For example, “On a scale of 0 to 10, with 0 being no pain and 10 being the worst pain you can have, how bad is your pain?”

- **Thermometer pain scale:** This visual scale is a picture of a thermometer with numbers ranging from 0 to 10. Each number has a word beside it to describe pain, such as: 0: no pain; 1 slight pain; 8 terrible pain, etc.

When assessing pain it is also important to keep in mind cultural influences on the pain experience. For example, in Asian cultures it is not uncommon for patients to avoid verbal expressions of pain. Offer pain medication when conditions warrant it. Don’t wait for the patient to ask for it.

Patients from Hispanic and Middle Eastern cultures may be loudly expressive about their pain and when experiencing grief.

Cultural sensitivity is important to understanding a patient’s perception and his ability to deal with pain. Learn what you can about the various cultures represented among your patient populations. However, don’t assume that all patients from a specific culture will behave in the same way. For example, a patient who appears Middle Eastern in appearance may be a fifth generation American and have more of the cultural characteristics of an American patient than a Middle Eastern patient. Treat all patients as individuals and with respect.

**Overview of Treatment**

Before beginning a discussion of treatment it is important to dispel some myths regarding pain control in older adults.

- **Myth:** Pain is a normal consequence of aging. Pain is not a normal part of growing old. Older patients need adequate pain management programs as much as children and younger adults.

- **Myth:** Older adults don’t feel pain as much as younger adults. Actually, older adults experience painful stimuli in much the same way as do younger patients.

- **Myth:** Older adults are not reliable self-reporters of pain. Most older adults can use simple numeric pain scales to report pain accurately. Never assume that because someone is old they are not able to be an accurate source of information.

Remember that all patients, regardless of aging should be treated with respect and dignity and should play an active role in the management of their pain.
Pain Medications
There is a number of pain medications used to deal with both acute and chronic pain. Opioids such as morphine, codeine, methadone, and fentanyl can be extremely safe when used appropriately at the correct dosage. There is a risk of tolerance and dependence with opioids. Also, there are some common side effects associated with these drugs such as decreased reaction time, constipation, cognitive decline, and sexual dysfunction.\textsuperscript{5,16}

Antidepressants may be prescribed not only to relieve symptoms of depression but to alleviate pain as well. It is thought that antidepressants may be able to inhibit some pain pathways. Amitriptyline is generally the first antidepressant prescribed for chronic pain.\textsuperscript{16}

Anticonvulsants can be effective when used to treat neuropathic pain. They are believed to work by stabilizing neuron membranes, making them less likely to send stimuli erratically.\textsuperscript{5,16}

The preceding are only a few of the broad categories of drugs used in pain management. Specific drugs are available to treat pain caused by specific disorders such as arthritis and gastric ulcers. Whatever the drug prescribed it is important that patients and their families be educated about how the drugs work, the appropriate dosage, side effects, and what to do if side effects occur.

Non-Medication Treatment Options
Most persons who deal with chronic pain incorporate both medication and non-medication strategies into their treatment regimen.

Some general strategies include:\textsuperscript{9,11}
\begin{itemize}
  \item \textbf{Weight loss as needed}: As previously mentioned excess weight places additional strain on the back and the knees.
  \item \textbf{Maintain proper posture}: Avoid slouching when sitting or standing. Shoulders should be back and relaxed and the spine straight. When standing the abdominal and gluteal muscles should be slightly contracted. When sitting feet should be flat on the floor with the knees level with the hips. Chairs should have backs that provide firm support for the spine. Avoid sleeping on the stomach.
  \item \textbf{Proper body mechanics}: Lift objects using the thigh muscles and avoid bending over and arching your back. Do not twist when lifting heavy objects. If patients must stand for long periods of time teach them to shift their weight frequently and rest one foot on a low stool to decrease spinal stress.
  \item \textbf{Moderate exercise}: Patients should work with their physicians and other members of the healthcare team such as nurses and physical therapists to develop an appropriate, moderate exercise program. Walking and water exercises have been found to be helpful for patients with a variety of types of pain. However, it is important that patients not initiate any exercise program without the knowledge and approval of their physicians.
\end{itemize}

Pain diaries can help patients acquire a sense of control over their pain and their lives. A pain diary is a personal record, written by the patient, of their pain. Documentation should include when the pain occurs, its intensity, what, if anything triggered the pain, what was done to relieve the pain, and how effective the pain-relief actions were. Patients report that as they documented their findings they were able to identify patterns and trends in their pain. They discovered factors that exacerbated the pain and what interventions were the most successful in controlling the pain. Many patients using pain diaries report that they were able to improve pain management and their quality of life.\textsuperscript{1}

The National Center for Complementary and Alternative Medicine (NCCAM) has reported on a number of additional strategies that have been helpful in managing pain. These include:\textsuperscript{7,18}
\begin{itemize}
  \item \textbf{Body based therapies}: These include the use of heat, massage, cold, and acupuncture.
  \item \textbf{Cognitive-behavioral approaches}: These approaches include relaxation, guided imagery, meditation and biofeedback. For example, guided imagery involves having the patients use all of their senses to imagine being in a place that is comfortable, pleasant, and safe. They can see, hear, and smell the components of a summer garden, for instance. Biofeedback involves using a physiologic monitor (such as heart rate) to evaluate relaxation. As the patient focuses on relaxing the heart rate should decrease. Using these types of approaches when experiencing pain helps to control the pain and diminish its unpleasant effects.
  \item \textbf{Nutrition, vitamins, and herbs}: Foods that increase heart rate and agitation, such as caffeine, may increase the adverse effects of pain in some patients. Patients should work with the healthcare team, particularly the dietician, to identify foods that have positive and negative influences on pain control. Some herbal preparations such as ginkgo, cloves, and cinnamon, have been used in pain relief as have some vitamin supplements. It is imperative, however, that patients consult with their physicians before adding any nutritional, herbal, or vitamin supplements to their pain management regimen. These substances can cause harmful interactions with each other and other drugs and can also produce side effects.
\end{itemize}

Finally, remember that any effective pain management program depends on an interdisciplinary approach. Even though specific disciplines have specific areas of expertise, everyone must work together. For example, a physical therapist cannot facilitate the most effective exercise regimen until he/she has consulted with the nurse about the patient’s medication regimen. A dietician cannot help develop a weight reduction diet unless he/she has discussed the appropriateness of losing weight with the physician.

Working in isolation can be dangerous to the patient. The social worker who is coordinating outpatient services should recognize and report medication side effects observed during a patient interview and not simply assume that the nurse and other members of the healthcare team are aware of them.

Remember, too that the patients and their families are the most important members of the team! If they do not agree with and support the plan of care compliance will be poor. Patients may not take prescribed medications unless they understand why they are taking them. They need to know that certain side effects should be reported so that doses can be adjusted. If they do not know this they may simply stop taking necessary medications without informing their healthcare providers.

Effective pain management can only be achieved by the coordinated efforts of the entire team!

Additional Resources
\begin{itemize}
  \item \textbf{American Chronic Pain Association (ACPA)}
  ACPA@pacbell.net
  http://www.theacpa.org
  Tel: 916-632-0922 / 800-533-3231
  Fax: 916-632-3208
  Provides self-help coping skills and peer support to people with chronic pain. Sponsors local support groups throughout the U.S. and provides assistance in starting and maintaining support groups.
  \item \textbf{American Pain Foundation}
  info@painfoundation.org
  http://www.painfoundation.org
  Tel: 312-274-2650
  888-NHF-5552 (643-5552)
  Fax: 312-640-9049
  Non-profit organization dedicated to service headache sufferers, their families, and the healthcare practitioners who treat them. Promotes research into headache causes and treatments and educates the public.
  \item \textbf{Arthritis Foundation}
  help@arthritis.org
  http://www.arthritis.org
  Tel: 800-568-4045 404-872-7100
  404-965-7888
  Fax: 404-872-0457
  Volunteer-driven organization that works to improve lives through leadership in the
prevention, control, and cure of arthritis and related diseases. Offers free brochures on various types of arthritis, treatment options, and management of daily activities when affected.

References

PAIN MANAGEMENT
Final Examination Questions
Choose the best answer for questions 1 through 10 and then proceed to www.elitecme.com to complete your final examination.

1. Pain that is felt at a different area from that of a disease organ or site of injury is referred to as somatic pain.
   True   False

2. Acute pain is associated with a specific physical trauma or acute illness.
   True   False

3. Pain that is due to present or past damage to peripheral and/or central nerves is referred to as neuropathic pain.
   True   False

4. Medical costs associated with such pain as well as lost job and personal productivity cost the United States as much as $635 billion annually.
   True   False

5. Prescription drugs are the most abused drug category in the United States.
   True   False

6. Pain provoked by touch is chemical pain.
   True   False

7. A controllable cause of chronic pain is degenerative changes of the spine.
   True   False

8. Evaluating the impact of pain on the patient’s sex life is an appropriate part of pain assessment.
   True   False

9. Older adults don’t feel pain as much as younger adults.
   True   False

10. Guided imagery involves having the patients use all of their senses to imagine being in a place that is comfortable, pleasant, and safe.
    True   False