The Significance of Pain

- Obvious significance
  - Pain hurts and so it disrupts our lives
- Pain is critical for survival
  - Minor pains provide low-level feedback
    • Shift posture, uncross legs
    • Roll over when asleep
- Medical consequences
  - Pain is the symptom most likely to lead an individual to seek treatment

The Significance of Pain

- Psychological significance
  - Depression and anxiety worsen the experience of pain
  - Patients fear pain when undergoing treatments
  - Inadequate relief from pain is the most common reason for euthanasia requests
The Elusive Nature of Pain:
Overview

• Pain is a psychological experience
• Interpretation of the pain influences
  – The degree to which it is felt
  – How incapacitating it is
• Beecher’s study of WWII injuries
  – To soldiers, pain means, “I’m alive”
  – To civilians it interrupts activities
• Pain is influenced by
  – Context, culture, and gender

The Elusive Nature of Pain:
Measuring Pain - Verbal Reports

• Large informal vocabulary
  – Throbbing pain? Shooting pain? Dull ache?
• Questionnaires
  – Nature of pain (throbbing, shooting, dull)
  – Intensity of pain
  – Psychosocial components
    • Fear
    • Degree to which it has been catastrophized

McGill Pain Questionnaire:
Examples from Figure 10.1
The Elusive Nature of Pain: Measuring Pain - Verbal Reports

- Pain Behaviors are behaviors that arise as manifestations of chronic pain
  - Distorted gait or posture
  - Facial/audible expressions of distress
  - Avoidance of activities
- Pain Behaviors are observable
  - Help define characteristics of different pain syndromes

The Elusive Nature of Pain: Physiology of Pain

- Pain is protective
  - Brings into consciousness the awareness of tissue damage
- Pain doesn’t feel protective
  - It is accompanied by motivational and behavioral responses
    - Crying
    - Fear
    - Withdrawal

The Elusive Nature of Pain: Physiology of Pain

- Pain perception is called Nociception
- Three kinds of pain perception
  - Mechanical nociception
    - Mechanical damage to body tissue
  - Thermal nociception
    - Damage due to temperature exposure
  - Polymodal nociception
    - General category
    - Pain triggers chemical reactions from tissue damage
The Elusive Nature of Pain: Physiology of Pain

- Nociceptors in peripheral nerves first sense injury
- In response, release chemical messengers which travel to spinal cord and brain
- Brain regions identify the site of the injury and send messages back down spinal column
- Leads to muscle contractions, helps block pain
- Changes in other bodily functions, such as breathing

The Elusive Nature of Pain: Physiology of Pain

- Two major types of peripheral nerve fibers
  - A-delta fibers – small, myelinated fibers that transmit sharp pain
  - C-fibers – unmyelinated fibers transmit dull, aching pain

The Elusive Nature of Pain: Neurochemical Bases of Pain

- Landmark Study: D. V. Reynolds 1969
- SPA: Stimulation-Produced Analgesia
- Electrical stimulation of a rat’s brain produced a high level of analgesia
  - The rat did not feel the pain of surgery
- Conclusion: The brain can control the amount of pain experienced
The Elusive Nature of Pain: Neurochemical Bases of Pain

How can the brain have this effect?

• 1972: Endogenous opioid peptides are discovered
• Opioids are substances like heroin or morphine, but they are produced by the body
• These substances constitute an internal pain-regulation system

The Elusive Nature of Pain: Box 10.2 Phantom Limb Pain

• Nerve injuries of the shoulder
  – More common due to motorcycle accidents
• Case Study: C. A.
  – No sensation in his paralyzed right arm which hung limp at his side
  – But a “phantom” arm was felt across his chest with nails digging into his palms

Clinical Issues in Pain Management: Acute Pain

• Typically results from a specific injury
  – Wound or broken limb
• Disappears when damaged tissue is repaired
• By definition, acute pain goes on for six months or less
• During acute pain, there is an urgent search for relief
Clinical Issues in Pain Management:
Chronic Pain

• Chronic Pain
  – Typically begins with an acute episode
  – Pain does not decrease with treatment
  – Pain does not decrease as time passes

• Three types of chronic pain
  – Chronic benign pain
  – Recurrent acute pain
  – Chronic progressive pain

Clinical Issues in Pain Management:
Chronic Pain

• Chronic benign pain
  – Persists more than 6 months
  – Varies in severity
  – Example: Chronic low back pain

• Recurrent acute pain
  – Intermittent episodes of acute pain
  – Chronic because the condition lasts more than 6 months
  – Example: Migraine headaches

Clinical Issues in Pain Management:
Chronic Pain

• Chronic progressive pain
  – Increases in severity over time
  – Persists longer than 6 months
  – Typically associated with malignancies or with degenerative disorders
  – Example: Rheumatoid arthritis
Clinical Issues in Pain Management: Acute vs. Chronic Pain

- Acute and chronic pain present different psychological profiles
  - Chronic pain often produces depression
  - Pain present in 2/3 of patients seeking care from physicians with primary symptoms of depression (Bair et al)
- Pain control techniques work well with acute pain but less successfully with chronic pain
- Chronic pain involves more secondary gain

Clinical Issues in Pain Management: Who Become a Chronic Pain Patient?

- All chronic pain patients were once acute pain patients
  - Patients for whom pain interferes with life activities make the transition to chronic pain
- Chronic pain may result from a predisposition to respond to a bodily insult with a specified bodily response

Clinical Issues in Pain Management: Lifestyle and Relationships

- Lifestyle of chronic pain
  - Can entirely disrupt a person’s life
  - Little social or recreational life
  - Difficulty performing simple tasks
  - Goals are set aside; self esteem suffers
- Toll on relationships
  - Communication is inadequate
  - Sexual relationships deteriorate
- Chronic pain behaviors emerge
Clinical Issues in Pain Management: Pain and Personality

- Pain-Prone Personality
  - Constellation of personality traits predisposing a person to experience chronic pain
- This hypothesis is simplistic because
  - Pain alters personality
  - Individual experiences of pain are too complex to be explained by a single personality profile

Clinical Issues in Pain Management: Pain and Personality

- Profiles of Pain Patients
- MMPI – Chronic pain patients show elevated scores on
  - Hypochondrias subscale
  - Hysteria subscale
  - Depression subscale
- Patients with neurotic disorders also score high on these 3 factors

Pain Control Techniques: Overview

- Pain control can mean a person
  - No longer feels anything in an area that once hurt
  - Feels sensation but not pain
  - Feels pain but is no longer concerned about it
  - Is hurting but is able to stand it
Pain Control Techniques:
Pharmacological Control of Pain

• Most common method of controlling pain – through drugs
  – Morphine has been the most popular painkiller for decades
• Any drug that influences neural transmission is a candidate for pain relief
Main concern with using drugs: Potential for addiction
This threat is lower than once thought

Morpheus: Greek god of sleep

Pain Control Techniques:
Surgical Control of Pain

• Cutting pain fibers at various points so pain sensations can’t be conducted
  – Effects are often short-lived
  – Regenerative powers of the nervous system mean that blocked pain impulses reach the brain through different neural pathways

Pain Control Techniques:
Sensory Control of Pain

• Counterirritation
  – Inhibiting pain in one part of the body by stimulating or mildly irritating another area
  – Example: Scratching a part of the body near the part that hurts
• Dorsal Column Stimulation
  – Electodes near the nerve fibers from the painful area deliver a mild electrical stimulus, thus inhibiting pain
Pain Control Techniques: Biofeedback

• A method whereby an individual is provided with
  – Ongoing specific information about a particular physiological process by a machine
  – So that s/he can learn how to modify that process
• Once patients can control this process, they can usually make the changes on their own without the machine

Pain Control Techniques: Relaxation

• Relaxation techniques
  – Enable patients to cope with stress and anxiety, reducing pain
• What is relaxing?
  – A person shifts his/her body into a low state of arousal
  – Progressively relaxing different parts of the body
  – Controlled breathing using long, deep breaths
  – Meditation – focusing attention fully on a very simply, unchanging stimulus

Pain Control Techniques: Hypnosis

• An old and misunderstood technique
• How does it work?
  – Hypnosis involves relaxation, reinterpretation, distraction, and drugs
• Hypnotherapy has successfully controlled
  – Irritable bowel syndrome
  – Acute pain due to surgery, childbirth, dental procedures, burns, headaches
  – Pain due to laboratory procedures
  – Chronic pain, such as pain due to cancer
Pain Control Techniques: Acupuncture

• Technique of healing developed in China over 2,000 years ago
• Long, thin needles are inserted into designated areas of the body
  – To reduce discomfort in a target area of the body
• How acupuncture controls pain is unknown
  – Sensory method?
  – Expectations? Relaxation?
  – Endorphins released?

Pain Control Techniques: Distraction

• Attention is redirected in order to reduce pain
  – May involve focusing on some stimulus irrelevant to the pain
    Example: Saying the Pledge of Allegiance backwards while the dentist drills
  – May involve reinterpreting the pain experience
    Example: I’m a secret agent and the dentist is trying to get me to reveal secrets!
• Effective for acute pain and low-level pain

Pain Control Techniques: Coping Techniques

• Coping skills training is used to help chronic pain patients manage pain
• Is any particular coping technique more effective for managing pain?
  – It depends on how long the patient has had the pain
  – Recent Onset: Avoidant styles work
  – Chronic Pain: Attending directly to the pain is effective
Pain Control Techniques: Guided Imagery

• Person conjures up a picture and holds it in mind during painful experiences
  – Used to induce relaxation
  – Controls slow-rising pains
• May be used as aggressive imagery
  – Chemotherapy treatment was a cannon blasting the “cancer dragon” apart
• What does guided imagery do?
  – Relaxing or aggressive imagery both induce positive mood states (relaxation or excitement)

Pain Control Techniques: Additional Cognitive Techniques

• Reconceptualize the problem from overwhelming to manageable
• Enhance expectations that this training will be successful
• Client’s role is to be active, resourceful, and competent (not passive)
• Clients monitor maladaptive cognitions and stop negative self-talk

• How and when to employ overt and covert behaviors that are adaptive responses to pain
  – Example: Biofeedback
  – Example: Relaxation
• Attributions
  – Success is due to the client’s own efforts
• Relapse prevention is a part of pain control
Pain Management Programs: Initial Evaluation

- Assessment of the pain
  - Location
  - Sensory qualities
  - Severity
  - Duration
  - Onset
  - History
- Functional status: How has life been impaired?
- Coping style, emotional and mental functioning

Pain Management Programs: Individualized Treatment

- Treatment is structured and time-limited
- Treatment has
  - Concrete aims
  - Rules
  - Endpoints
- Patient has specific goals to achieve
  - Accepting the role of self-management may be helpful in reducing pain severity and interference with lifestyle

Pain Management Programs: Components of the Programs

- Patient education
  - Complete information about condition
  - Day-to-day management issues
- Training
  - Relaxation
  - Exercise/Stretching
- Group Therapy
  - Gain control of emotional responses
- Target maladaptive cognitions
  - That arise in response to chronic pain
Pain Management Programs: Involvement of the Family

• Many programs intervene at family level
  – Chronic pain patients often withdraw from families
  – Families try to be supportive but may inadvertently reinforce pain behaviors
• Programs work with families to reduce counterproductive behaviors

Pain Management Programs: Relapse Prevention

• Nonadherence to pain regimens is a common problem
• Incidence of relapse after initial successful treatment ranges from 30% to 60%
  – For some pains, relapse is directly related to nonadherence

Pain Management Programs: An Evaluation

• Behavioral interventions
  – Reduce reports of pain disability
  – Reduce reports of psychological distress
• Improvement on psychosocial dimensions
  – Commonly found as a result of pain management
• Programs offer the dignity that comes from self-control of one’s pain