

RCS 6080
Medical and Psychosocial Aspects of
Rehabilitation Counseling

Orthopedic Impairments

Osteoarthritis

- A degenerative change seen in joints and is commonly associated with frequent and vigorous activity
- The affected joints may initially be painful intermittently
- Over time, the severity, frequency, and duration of painful episodes typically escalate, sometimes leading to persistent pain even when the joint is at rest
- Concurrent loss of range of motion may occur

Osteoarthritis

- Loss of mobility at a given joint may be the result of contracture of the soft tissues around the joint, fusion of bony structures, or mechanical blockage
- Pain may also prompt a functional restriction of movement, which may take place without conscious effort
- "Guarding" may also reflect apprehension or quests for secondary gain
- It is possible that trying to compensate for the original site of pathology might harm other joints or structures

Low Back Pain (LBP)

- The overall incidence of back pain is high - at least one debilitating episode affects 80% of Americans by age 55
- Most episodes resolve with conservative management
- Potential risk factors in the work setting include direct trauma, overexertion, repetitive stress, and postural factors

Low Back Pain (LBP)

- Different anatomical structures may be involved
 - Significant spasm and local tenderness may accompany acute muscle strains
 - Degenerative changes may affect the spine as well
 - Osteophytes - bone spurs that may compress critical structures
 - Facet joint arthritis may be a source of pain and can radiate down the lower extremities
 - An acute disk herniation may cause compression of the spinal cord or nerve roots
 - Osteoporotic vertebral body compression fractures may result in acute back pain

Low Back Pain (LBP)

- Chronic pain may follow orthopedic injury via a number of mechanisms
 - Direct nerve injury or indirect compression may lead to chronic burning pain or hypersensitivity in the sensory territory of that nerve
 - Reflex sympathetic dystrophy (RSD) involves pain and vasomotor instability and may result in skin changes, soft tissue atrophy, and osteoporotic changes

Idiopathic Low Back Pain

- Pertains to LBP without clear pathogenesis, or low back pain without recognizable cause, as of a spontaneous origin
- Many researchers have suggested that 85% of acute LBP cases in the general population lack a specific anatomically-designated cause
- Only 10-15% of the people who suffer acute LBP have not improved through spontaneous restoration over 3 months
- Of these 10-15%, a distinct structural diagnosis can be made in approximately 50% of people
- Restricted activity generally lasts 3 to 4 days

Degenerative Disc Disease

- Many studies have shown increasing degenerative disc disease, as evidenced by disc space narrowing and osteophytosis that begins in the person's twenties and increases with age
- The greatest degenerative changes are found at L4-5 and L5-S1, presumably secondary to the amount of stress, load-bearing, and degree of lordosis (abnormal anterior convexity of the spine) at these points
- It appears that LBP is more common in those with severe degenerative changes at several disc spaces

Prolapsed or Herniated Disc

- After acute or chronic/repetitive trauma, the nucleus pulposus of a disc may pass through an attenuated annulus, damage nerve roots, and thus cause neurologic changes
- The resultant symptoms of sensory change and radicular pain below the knee, together with such examination findings as a positive straight-leg raising test, reflex asymmetry, isolated muscle weakness, and nerve root tension signs
- The L5-S1 disc herniation has its peak incidence at age 30, whereas the L4-5 herniation increases with age
- Restricted activity after a documented disc herniation generally exceeds 2 weeks

Spinal Stenosis

- Stenosis is a constriction or narrowing of a passage or orifice
- Lateral recess stenosis commonly occurs as a result of facet joint hypertrophy
- Central spinal stenosis can be congenital or degenerative
- The more common degenerative type is associated with the insidious onset of nonradicular LBP, which is aggravated by changes in posture and exertion

Segmental Instability

- Otherwise known as degenerative spondylolisthesis - any forward slipping of one vertebrae on the one below it
- People with this condition frequently have had recurrent episodes of acute LBP

Congenital Spinal Disorders

- Congenital spinal disorders include spina bifida occulta, spinal segmentation abnormalities, spondylolysis, idiopathic scoliosis, and Scheuermann's disease
- Unfortunately, some individuals have been eliminated from consideration for a job because of the radiologic demonstration of these congenital anomalies that are now known to occur equally in those with and those without LBP

Spinal Fractures

- The bony elements of the spine are susceptible to acute mechanical perturbation with these resultant types of fracture:
 - Vertebral body fracture/dislocation
 - End-plate fracture
 - Posterior element fracture

Inflammatory Cause

- Approximately 0.5% of people who have had a disc excision develop a postoperative disc space infection
 - Usually, these people have an underlying disease, such as diabetes
- The back pain that results from such an infection is severe and unrelenting, unaffected by position change, and associated with ongoing radiologic changes in the disc space over a relatively short period

Inflammatory Cause

- Spondyloarthropathy (inflammation of the joints of the vertebrae) not only may cause ongoing LBP, but also may limit motion
- Some forms are:
 - Ankylosing spondylitis - rheumatoid arthritis of one or more vertebrae - has a tendency to cause spinal flexion deformity, and thus people with this condition are frequently unable to perform work that requires spinal flexibility
 - Arthritis of ulcerative colitis - arthritis resulting from an ulceration of mucosa of the colon
 - Psoriatic arthritis - arthritis resulting from psoriasis
 - Reiter's syndrome - syndrome consisting of urethritis, arthritis, and conjunctivitis

Metabolic Spinal Disease

- Osteoporosis is the single most important metabolic cause of LBP
- Its prevalence is high among women in their forties and older
- Nachemson and Wiltse (1976) found that the lifetime incidence of LBP associated with osteoporosis rose from 62% in earlier adulthood to 81% by the seventh decade in women; it remained approximately 68% across all age groups in men
- Iskrant and Smith (1969) showed that 50% of women they studied over the age of 45 had radiologic evidence of osteoporosis and of this number, 60% were symptomatic

Spinal Tumor

- Metastatic cancer to the spine, primary spinal tumor, or multiple myeloma are infrequent causes of LBP in the working population

Hip Fractures

- Typically affect the geriatric population
- Osteoporosis and increased risk of falling are the main risk factors
- Deep vein thrombosis (DVT; blood clot) is a special concern after hip fracture
- There are problems with mobility and self-care performance

Joint Replacement

- Total Hip Replacement
 - People who undergo elective hip replacement face some of the challenges as people with hip fractures
- Total Knee Replacement
 - Failure to achieve adequate range of motion is a major issue
 - DVTs are also a concern
- Replacement of Other Joints
 - Much less common than hip or knee
 - Similar concerns as that of the other joint replacement surgeries

Vocational Implications

- Individuals with similar orthopedic impairments may have very different levels of physical disability
- Disability evaluations should take into account appropriate goals for each person
 - Vocational and avocational interests, family supports, social roles, and environmental factors must be noted
 - Key factors include:
 - Ability to travel, including car transfers, the use of public transportation, and the possibility of telecommuting
 - Accessibility of the work site, including architectural barriers outside and inside of building
 - Specific tasks performed
 - Need to attend medical appointments

Vocational Implications

- In people with back pain, return-to-work may result in recurrent symptoms if preventive measures are not taken
- Repetitive lifting, carrying, bending, driving, and heavy equipment operating are difficult physical activities on the back

Vocational Implications

- The person risks a recurrence of injury if allowed to return to work without physical reconditioning and education on care of the spine
 - Work hardening can be used to assist in physical reconditioning
 - "Back schools" were begun to educate individuals with back injuries in the mechanics of back injury - taught exercises and the proper way to use and stabilize the back at work and in daily activities
 - "Pain clinics" were created in an attempt to address the symptoms that prevent return to work - goal is to eliminate dependence on medical treatment, including medication, need for therapy, and visits to physicians

Vocational Implications

- The more physically arduous and unskilled the employment, the more difficult it is to alter the job duties and the easier it is for the employer to replace the worker
- With more skilled and trained workers, it is less difficult to modify or accommodate aspects of the job duties - there are usually more possibilities for reasonable accommodation in positions of responsibility, such as allowing an employee who is injured to take more frequent rest breaks, work irregular hours, or delegate some job duties

Vocational Implications

- Disc herniation in the neck or lumbar region can cause nerve damage
 - Movements of the arm and hand are more skilled and delicate as compared with the foot; therefore, any neurological defects of the upper extremities have more profound effects
 - An accompanying loss of manual dexterity is often evident - this occurs not only from the weakness or sensory loss, but also from loss of precise and complex coordination responses in the hand
 - Such loss makes skills tasks such as typing difficult, as well as activities involving use of hand or power tools

Vocational Implications

- Deconditioning is common from injury and inactivity
- It can prevent return-to-work and contribute to repeat injuries

Possible Accommodations???

Additional Resources and Information from the Web

- JAN's Accommodating Individuals with Back Impairments (www.jan.wvu.edu/media/Back.html)
- Back.com (www.back.com)
- International Academy of Orthopedic Medicine (www.iaomed.com)
- American Academy of Orthopaedic Surgeons (www.aaos.org)
- Spine Universe (www.spineuniverse.com)
