



Syllabus

Questions may appear on any of the topics below:

I. Multidimensional Nature of Pain

A. Epidemiology

1. Pain as a public health problem with social, ethical, legal and economic consequences
2. Epidemiology with overview of statistics related to acute, recurrent and/or persistent (chronic) and cancer pain
3. Barriers to effective pain assessment and management: individual, family, health professional, society, political institutions

B. Development of pain theories

1. Historical development of pain theories and basis for current understanding of pain
2. Definition of pain and pain terms
3. Classification systems of pain
4. Differences between nociception, pain, suffering and harm
5. Pain and behaviour

C. Mechanisms

1. Anatomy and physiology to include neural mechanisms [peripheral pain mechanisms, dorsal horn processing, ascending and descending modulation and central mechanisms]
2. Multiple dimensions of pain to include physiological, sensory, affective, cognitive, behavioural, social/cultural/political
3. Pathological consequences of unrelieved pain, and implications of being a multidimensional experience (biological, psychological and social)
4. Factors influencing neurophysiology (e.g. genetics, age, sex, ethnicity)

D. Ethics

1. Ethical standards of care (provision of measures to minimize pain and suffering) for health care professionals
2. Ethical standards and guidelines related to use of analgesics (e.g. inadequate analgesic prescribing; over-medication; confusion regarding physical dependence, tolerance and addiction, abuse screening, use of placebos)
3. Inadequate pain management for specific groups including infants, children, elders, those with communication difficulties and/or learning disabilities
4. Legal issues related to disability, compensation
5. Political and societal issues related to access to pain management and attitudes to marginalized populations
6. Experimental pain issues related to appropriate and meaningful measures and methods

II. Pain Assessment and Measurement

A. Interprofessional and Multiprofessional Collaboration

1. Assessment of patient priorities as a team where possible (interprofessional) and/or communication of planning between individual health care professionals (multiprofessional) to ensure:
 - Comprehensive assessment especially when pain problems are complex e.g. pain sensory characteristics, treatment history, impact of pain on functional status, perception of self/relationships, and past pain experiences
 - Clear documentation of pain assessment and measurement data
 - Ongoing communication for comprehensive and consistent approaches
 - Monitoring of efficacy and effectiveness of management plan
 - Consideration of appropriate assessment and measurement approaches for people with special needs (e.g. infants, children, older adults, developmentally challenged, cognitively impaired)
 - Development of interprofessional consultant networks (informal/formal) when needed for adequate assessment with complex patients

B. Assessment

1. History
 - Pain location, onset and duration, severity, quality, alleviating and aggravating factors
 - Impact on mood, usual activities/function/quality of life/sleep
 - Previous pain and treatment history
 - Ongoing response to treatment, adverse effects
 - Comorbidities impacting pain (e.g. chronic disease, surgery, trauma, mood, cognitions, abuse history, medications)
 - Personal characteristics (e.g. age, sex, race, religion, culture, language)
 - Expectations of pain management and current understanding of the condition
2. Physical examination
 - Neurological and musculoskeletal assessment
 - Posture and range-of-motion evaluation
 - Focused according to the presenting condition
3. Review of clinical records
4. Investigations
 - Laboratory tests
 - Imaging studies, e.g.:
 - X-rays (flexion/extension views if needed)
 - Ultra Sound (U/S)
 - MRI, CT, Bone scan

C. Measurement

1. Approaches
 - Qualitative
 - Quantitative
2. Testing issues
 - Feasibility
 - Validity
 - Reliability
 - Sensitivity
 - Clinical utility
3. Tools (uni- and multi-dimensional)
 - Numerical Rating Scales (NRS)
 - Visual Analogue Scales (VAS)
 - Verbal/categorical scales
 - Faces scales
 - Pain drawings

- Comprehensive pain questionnaires
- Functional measures (e.g. pain-related disability, specific activities, health status)
- Measures of psychological status (e.g. depression, anxiety, beliefs)
- Measures for special populations (e.g. non-verbal, infants, cognitively impaired)

III. Management of Pain

A. Goals of Pain Management

1. Reduction of pain intensity
2. Enhancement of physical functioning
3. Improvement of psychological functioning
4. Reduction of healthcare utilization
5. Promotion of return to work/school and/or role within the family/society
6. Improvement of health-related quality of life

B. Pain Management Planning Decisions

1. Develop, monitor and modify the management plan as an interprofessional and/or multiprofessional team
2. Involve patient and family caregivers in establishing clear, realistic goals
3. Use combinations of methods where appropriate including physical, psychological, pharmacological and interventional
4. Provide patient information/education including: communication methods, management options, management of potential adverse effects
5. Develop transparent treatment plan with realistic goals

C. Treatment Considerations

1. Type(s) of pain
2. Multidimensional nature of pain (e.g. biological, psychological, social)
 - Use of combinations of pharmacological and non-pharmacological methods
3. Patient issues
 - Access to clinics, treatment centre, advantages of early intervention
 - Patient involvement/understanding of management plan/motivation to change
 - Cultural/societal limitations
4. Caregiver issues
 - Understanding of pain (false beliefs)
 - Fears and anxieties (e.g. drug addiction, side effects)
 - Understanding of patient goals/needs
5. Health professional issues
 - Understanding of pain (false beliefs)
 - Fears and anxieties (e.g. drug addiction, adverse effects)
 - Understanding of current evidence supporting management strategies
6. Political issues
 - Pain management as a human right
 - Access to clinics, treatment centres
 - Access to pain relieving medications
 - Access to interventional treatment
7. Substance abuse issues
 - Define aberrant drug-related behaviour and substance dependency (abuse)
 - Assessment/screening of risk of abuse

D. Pharmacological Methods

1. Include for each analgesic selected the following:
 - Mechanisms of action
 - Indications for use

- Pharmacokinetics including mechanisms of toxicity where appropriate
 - Adverse effects and their management
 - Equianalgesic dosing
 - Interactions with other drugs
 - Formulations (short and long acting)
 - Administration routes
 - Age-specific therapies (including, neonate, infant and elderly)
 - Disease, surgery, cancer and/or trauma pain-specific strategies
2. Clarify tolerance, physical dependence and psychological dependence
 3. Utilize combinations of analgesics and adjuvants where appropriate:
 - Over the counter medications (acetaminophen/paracetamol)
 - Non-steroidal anti-inflammatory drugs (NSAIDS)
 - Opioids
 - Antidepressants
 - Anticonvulsants
 - Local anaesthetics
 - Topical agents
 - Other
 4. Knowledge of legislative requirements and current guidelines regarding controlled drugs

E. Non-pharmacological Methods

1. Utilize combinations of physical and psychological strategies, where appropriate:
 - Clinician therapeutic use of self (e.g. active-listening, being empathic)
 - Physical strategies to support home and occupational function and activity (e.g. heat, cold, positioning, exercise, massage, wound support, exercise, mobilization, manipulation, reach devices, other comprehensive rehabilitation approaches)
 - Psychological and behavioural strategies (e.g. cognitive-behavioural strategies, coping strategies, biofeedback, patient-family education and counselling)
 - Neuromodulation (e.g. transcutaneous electrical nerve stimulation [TENS], acupuncture, brain and spinal cord stimulation)
 - Neuroablative strategies (e.g. neurolytic nerve blocks, neurosurgical techniques)
 - Procedural/Interventional (e.g. injections)
 - Surgery
 - Complementary alternative medicine (CAM)
 - Palliative radiotherapy (e.g. cancer pain)
 - Information and communication technologies (e.g. virtual reality, computer-assisted interventions, smartphones)

F. Evaluation of Outcomes

1. Monitor management outcomes related to pain severity and function levels, adverse effect management, and impact on mood, family and quality of life issues
2. Utilize an interprofessional and multiprofessional team approach to insure integration and coordination of care
3. Consider barriers related to treatment availability and costs at the patient-family, institution, society and government levels

IV. Clinical Conditions

The following list includes suggestions under each to help with decisions about the selection of patient cases for interprofessional small group learning. The choice of clinical condition and detail will depend on the students and specific patient populations to be studied.

A. Taxonomy of Pain Systems

1. Distinction between acute, recurrent, incident, and or persistent (chronic) pain (may have combination of more than one type)
2. Distinction between nociceptive (somatic, visceral) and non-nociceptive (neuropathic) pain (may have both nociceptive and neuropathic pain)
3. Distinction between commonly used pain terms in clinical practice (e.g. allodynia, analgesia, dysesthesia, hyperalgesia, paraesthesia, pain threshold, pain tolerance)
4. Involvement of biological, psychological and social factors influencing the perception of pain

B. Pain in Special Populations

1. Pain in infants, children and adolescents
2. Pain in older adults
3. Pain in individuals with limited ability to communicate
4. Pain in pregnancy, labour, breast feeding
5. Pain with psychiatric disorders
6. Pain in individuals with substance abuse

C. Acute Time-Limited Pain

1. Surgery
2. Trauma
3. Infection
4. Inflammation
5. Burn

D. Cancer Pain

1. Primary pain
2. Local invasion
3. Metastatic spread
4. Treatment-related
5. End-of-life

E. Visceral Pain

1. Referred patterns
2. Cardiac and non-cardiac chest pain
3. Abdominal, peritoneal, retroperitoneal pain
4. Pelvic pain (male and female)
5. Sickle cell crisis

F. Headache and Facial Pain

1. Headache
2. Orofacial pain
3. Trigeminal neuralgia

G. Neuropathic Pain

1. Primary Lesion Central
 - Multiple sclerosis
 - Post-stroke
 - Spinal cord injury
 - Traumatic brain injury
 - Syringomyelia
2. Primary Lesion Peripheral
 - Degenerative disc disease with radiculopathy in neck and low back
 - Peripheral neuropathies (diabetes, cancer, alcohol, hiv)
 - Post herpetic neuralgia
 - Acute disc herniation with radiculopathy
 - Complex regional pain syndrome ii (crps ii) (causalgia)

- Phantom limb
- 3. Mixed or unclear origin
 - Complex regional pain syndrome I (CRPS I) (reflex sympathetic dystrophy)
 - Irritable bowel syndrome
 - Fibromyalgia
 - Other

H. Musculoskeletal

1. Rheumatoid arthritis, osteoarthritis
2. Neck pain, whiplash and referred pain
3. Low back pain and referred pain
4. Injuries from athletics
5. Myofascial pain syndrome