Psychology of Injured Athlete

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Outline

- Unit I: Psychological Aspects on Athletic Injury
  - Students Responsibility:
    - Read chapters 1-8
- Unit II: Counseling Athletes who are Injured
  - Students Responsibility
    - Read Chapters 9-15
    - Written Test (Final)
Unit I: Outline

- Introduction (Chapter 1)
- Pain in Sport (Chapters 2)
- Types of Injuries (Notes & Chapter 15)
- Ethical and Legal Issues (Chapter 3)
- Psychological Responses to Injury (Chapter 4)
- Assessing & Monitoring Injuries (Chapter 5)
- The Paradox of Injuries (Chapter 6)
- Personality Correlates to Psychological Processes During Injury Rehab (Chapter 7)
- The Malingering Athlete (Chapter 8)
Introduction (Chapter 1)

- Athletic injuries are increasing despite safer equipment and rule changes.
  - In secondary and collegiate levels in U.S. Athletic Injuries are estimated at:
    - 750,000 per year (Bergandi, 1985)
    - 850,000 or more (Noble, et al, 1982)

- The causes of athletic injury range widely.
  - Accident, Aggressive behavior, overtraining, high-risk sports, et al.
Introduction

- Psychodynamic dimension of sport injuries may explain why:
  - Some athlete become injured
  - Some athlete do not recover from an injury
  - Some athlete rehab is shorter than others.
  - Some athlete adhere to their rehab schedule and other do not.
Injury & Psychology

1. Personality traits in the athlete may dispose on to be injury prone.
2. There are psychological reasons why some athlete comply to rehab and others do not.
3. There is a relationship between one’s level of self-concept and predisposition of injury.
4. Total life stress, competitive anxiety, and coping resources are related to occurrence and severity of athletic injury.
Bio-Psychological Aspects of Pain

Chapter 2
Outline

- Biological Factors
- Psychological Factors
- Pain Assessment
- Pain Management
Biology of Pain

- Pain is a “sensory and emotional” experience (p.226; Merskey, 1986)
  - Medical community attempts to explain as either mental or physical
  - Medical community view is misleading for the athlete
  - One’s perception of their pain results in many cognitive-emotional experiences
Pain Experience

- Multistage process built on a complex anatomic network and chemical mediators that produce pain
- This multistage process of the nervous system is called Nociception.
Nociception

TRANSDUCTION

TRANSMISSION

MODULATION

PERCEPTION
TRANSDUCTION COMPONENT

- Noxious stimuli (injury) are translated into electrical activity at the sensory endings of the nerves (site of injury)

Pain triggers two sets of receptors:
  High threshold mechanoreceptor
  Polymodal receptors
Transmission Component

- The electrical activity (impulses) are propagated (sent) through out the sensory nervous system
Modulation Component

- Sensory impulses are modified (received, registered, and evaluated on severity and site) neurally involving the central cortical track and peripheral sensory inputs.
Transmission, transduction, and modulation culminates in a cognitive-emotional (perceptual) experience of pain.
The Transduction Component

How pain is triggered?
Sensitization of Pain
Persistent Pain Syndromes
How is pain triggered?

- Two sets of receptors are activated due to an injury
  - Mechanoreceptors
    - High threshold receptors (activated when high noxious signal) which sends signals with relative speed
  - Polymodal receptors
    - Respond to thermal, chemical and mechanical stimuli and are relatively slow in transmission
    - Continue to fire after cessation of painful stimuli
Sensitivity to Pain

- Unfortunately these receptors have a lower threshold of response with repeated exposed similar stimuli.
  - Higher sensitivity to pain-producing stimuli
  - Pain occurs in ordinarily nonpainful stimuli

- "This process is called Sensitization"
Types of Sensitization

- Occurs when there is a repeated exposure to severe pain over days and weeks.
  - Persistent pain syndromes
    - Myofascial and
    - Sympathetical
Persistent Pain Syndromes

- Myofascial pain syndrome
  - Musculoskeletal dysfunction
  - Indicated by points of tenderness when activated triggers pain (Fine & Petty, 1986)

- Sympathetical pain syndrome
  - Pain that occurs in the arms and legs
  - Characterized by hypersensitivity of the skin and burning pain (Roberts, 1986)
Transmission Component

- Pain is transmitted via peripheral nerves to the spinal cord
- Spinal cord acts as neurosensory switching station
- Information from periphery is received centrally (spinal cord) and from the brain via the descending track
- All this information converges using similar and common neurosensory pathways.
Gate Control Theory of Pain
(Melzack and Wall, 1965)

The processing center in the spinal cord may either decrease or increase the intensity of pain as a neuroelectrical phenomenon and so result in the perception of relatively lesser or greater pain than initially signed.
Importance of Gate Theory

- Explains why various therapeutic modalities ranging from cryotherapy to ultrasound to acupuncture to massage to control the efficacy of pain.
Modulation

- The pain signal in spinal cord ascends to the higher cortical centers of brain which evoke a emotional-reaction.

One’s Perception of Pain
Perception of Pain

- Based upon summation of inputs
- Awareness of seriousness of injury
- Meaning of the injury
- Present state of mind

Once registered as perception, pain sets off a cascade of electromechanical events via feedback loop within the nociceptive system that influences pain transmission and psychological status.
Reaction to Pain is Mystery?

One reaction to pain can produce a wide ranging of psychological moods.

Sock..................Enhanced Mood

May be due to the role of:

endorphins (pain inhibitor),
serotonin (pain intermediary),
sensitization and,
pathways that transmit pain & mediators
Psychological Factors

- Goal of pain is to give it meaning (perception).

- Pain is interpreted due to:
  - Prior experience
  - Current context
Most Important Element

- Is the pain benign or a sign of injury.
  
  - No problem! This a routine pain.
  
  - Oh no! I’m really hurt!
Understanding Pain & Injury

Triggers:

- Psychological coping,
- Awareness of functional limits on athletic ability,
- Memory of similar painful events,
- Self-assessment of injury and,
- Social psychological reaction by teammates, coaches, etc.
**Pain Assessment**

- More complex and distressing the injury more comprehensive the approach.
  - Injury may only involve the primary level
  - Injury may involve primary, and secondary levels.
Proven Techniques in Assessing Pain

1. Have the athlete rate on a scale 0-10 the intensity of pain.
2. Have the athlete indicate the quality of pain (burning, stabbing, aching, etc)
3. Daily self-report “pain at its worst” and “pain at its least”
4. Identify specific situations that increase or decrease pain (specific movements or exercises)
Pain Management

- Common pain management treatments are:
  - Ice
  - Untrasound
  - Transcutaneous Electrical Neural Stimulation (TENs)
    - Stimulates the nerves (sympathetic) & produces endorphins production
  - Diathermy (deep heat in shortwave, microwave, or therapeutic ultrasound to simulate neural pathways)
  - Electrical Muscular Stimulation (EMS)
  - Acupressure,
  - Massage, and
  - *Mobilizing coping resources.*
Ethical Issues

Chapter 3
Why be ethical?

How we treat people influences how they will treat us.
Refusing to abide by the rules and to live up to agreements would produce chaos.
Behaving ethically advances goodness not evil.
Rendering a moral judgment

Rendering a moral judgment is part of the process called moral reasoning.

Moral reasoning occurs through a 5 step process.
5 Step Process

1. Obtain and clarify all the pertinent facts of the case or incident.
2. Identify the ethical moral principle, rule, law, or doctrine.
3. Time (time before the incident, time of the incident, consequences)
4. Identify and discuss extenuating or special circumstances
5. RENDER A JUDGMENT
Ethical Issues

- Athletes using steroids
- Athlete using nutritional supplements
- Coaches who expect the injured athlete to play in pain
- Coaches who insists anti-inflammatory drugs and cortizone are part of the training regimen
- Athlete needs to “make weight” to participate.
Ethical Status

- My belief is that if I had to take an estimate, about 65% of the top five, let’s say top ten in the world in every event, are doing something illegal. That is the growth hormones in the ballistic events and blood doping for distance events. (quote from athlete, Ungerleider & Golding, 1992)
Ethics

- Dr. Park Jong Sei, director of Olympic drug testing in Seoul stated that “as many 20 athletes at the games turned up positive but were not disqualified.”

- Some coaches have been know to refuse to train athletes who are clean (Voy, 1991)
Legal Issues

- AT will regularly be confronted with evidence of illegal and unethical practices to enhance performance.
- AMA now recognizes AT as allied health provider.
  - With increase professional status increases vulnerability to lawsuits
  - With open-free standing clinics, AT are now expected to know more
  - Certification of AT was to protect the public from incompetent and unethical sports professionals.
Moral Decisions

- Need to have a solid personal value system

- Ask your self these questions:
  - Is my decision compatible with my values?
  - Does it feel right?
  - What is usually done in past when making a similar decision?
  - By doing this, what am I saying about myself? (Simon, Howe, & Kirschenbaum, 1974)

- These question will help you to establish consistency and clarity!!
## Decision-Making Matrix

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NATA Ethical Standards

1. Prevention
2. Recognition and Evaluation
3. Management/Treatment
4. Rehabilitation
5. Organization & Administration
6. *Education & Counseling*
TASK 3: NATA Education Domain

- Directs the athlete to professionals in order to receive consultation for social/and or personal problems by establishing a referral procedures.
  - Knowledge of situations requiring consultation
  - Knowledge of available professionals
  - Knowledge of referral procedures
NATA Code

- AT who engage in counseling athletes with social and/or personal problems would be considered incompetent by the NATA.

- AT are expected:
  - to have knowledge in the area of psychological readiness for the return to activity,
  - skill in evaluating the athlete’s psychological status,
  - And implication of unhealthy situations (e.g. substance abuse, eating disorders, victim of assault, abuse, etc.)
Penalty

- Violate the clients right of confidentiality is extreme.
  - Monetary damage
  - Loss of job
  - Loss of certification
- Loss of ethical breaches
  - Loss of certification
  - Censure to expulsion from AT organization
Psychological Response to Athletic Injury

- Chapter 4
Assessing & Monitoring Injuries

- Identify moderating variables that relate to athletic injury
  - Compare injured athletes to non-injured athletes
  - Use of psychological inventories as the primary tool
  - Severity of the injury
  - Effects of psychological factors on injuries
Effects of Psychological Factors on Injuries

- Area of life stress
  - Dealing with stress may affect the athlete likelihood to become injured.
  - Life stress results from both within and outside the athletic contest
- Level of life stress is associated with the injury
Psychological Reactions to Injury

- Stage Model
- Cognitive Appraisal Model
Stage Model

- Based on death and dying literature
- Relates to career ending injuries
- Most important aspects is individuals react differently across the stages.
- Many AT reject the stage model because each injured athlete act differently.
Stage Model & Catastrophic Injury

- Denial
- Anger
- Grief
- Depression
- Reintegration
Cognitive Appraisal Model

Identified 5 components relevant to psychological responses to athletic injury

Based on stress and coping process to athletic injury

Advantage of this model is it accounts for individual differences in response to athletic injury
Personal Factors

- Self-esteem
- Neuroticism
- Pessimism
- Anxiety
- Extroversion
- Injury History
- Sense of self
Sense of Self

- If someone has only one basis for a sense of self, if that sense of self is threatened (injury), so will the entire person. . . . Erikson, 1968

- If the athlete’s sense of self is threatened the athlete will view the injury as severe loss which results in anxiety, depression, or hopelessness (Brewer, 1993).
Overestimators

- Athletes in general perceive injury as more serious than it really is when compared to the AT perception (Crossman & Jamieson, 1985)

- A group of athletes are *overestimators* experience greater pain, more anger, withdrawal, and show *slow recover*. 
Situational Factors

- Post injury emotional adjustment is positively related to situational variables and social support.

AT needs to manipulate the situational factors and enhance social support.
Manipulating the Situational Factors

- Flexibility in rehab scheduling
- Communicate with the athlete about the seriousness of the injury
- Provide a rehab center so it accessible, safe, and friendly
- Explain the purpose of each protocol and goals of each rehab session
Response to Injury

- The athlete cognitive appraisal of the injury interacts with the personality of athlete and the situational factors surrounding the injury.
  - Perceived severity
  - History of Injury
  - Ability to Cope
Emotional Response

- After cognitive appraisal by athlete about their injury, an emotional response will follow
  - Perceived as threat the athlete will emotional vent, become anger, experience high anxiety, denial, disengagement, and depression
  - If pessimistic engage in negative self-talk, and self-blame.
  - If neurotic engage in loss of self, withdraw, and display changes in their personality.
  - If overestimator become irrational about the severity of injury.
Behavioral Consequences

- After the emotional response the athlete will engage in positive or negative coping responses.
  - Adopt healthy coping responses physically, emotionally or psychologically.
    - Learn new psychological skills and physiological exercise...use injury as personal growth
  - Adopt maladaptive coping responses
    - Career over, learned helplessness, blame others, use other as the excuses, non compliance of rehab
Recovery or Delay in Recovery

- Length and degree of complete recovery in reentry into the sport is dependent upon:
  - Severity and type of injury
  - Athlete’s cognitive appraisal and emotional response to the injury
  - Athlete’s coping resources
  - Interventions both psychologically and physiologically
Types of Injuries

- Macrotrauma (acute trauma)
- Microtrauma (breakdown over time)
- Different psychological reaction to the type of injury
Macrotrauma

- Rehab proceeds immediately
- Usually results in clean progression of healing
- AT and PT have clear cut rehab protocol
- Athlete most certainly knows the injury could not be prevented and it was caused by a situation usually out of their control.
- Athlete will bring closure to cognitive appraisal and assume rehab as their rectifying the situation.
Micotrauma

- Usually results from biomechanical overloading
- Recovery may be much longer with relapses more frequent
- Athlete experiences a great deal of distress (frustration, anxiety, etc), second guessing, and detachment for the sport is gradual.
- Athlete will question the AT or PT skills and protocol.
Counseling Athletes with Permanent Disabilities

- Chapter 15
Permanent Injuries Causes

- Loss of sport identity which may or may be troublesome (Ogilvie & Howe, 1986)

- Cessation of reinforcement (Henschen, 1992)

- Loss of recognition and status.
General Reaction to Permanent Injury

- Denial
- Anger
- Grief
- Depression
- Reintegration
Psychological Rehab

- Athlete enter counseling ASAP
- Positive support from all especially family.
- Continuity of care by the same counselors.
Preoperative Stage

- Fear of surgery associated with providing explanations of the surgical experience.

- It is wise to involve a sport psychologist if dealing with an athlete.
Postoperative Stage

- Immediate return of all bodily functions with exception of motor activity.

- Again sport psychologists should be guiding the athlete.
Long Term Stage

- Learning to deal with the disability and reintegration into society.
  - Challenge to channel abilities and skills towards successful rehab. …counseling is key!!

- Athletes who are resigned to the fact of retirement will experience a shift in values (Ogilvie & Howe, 1986).
  - Redirect their values placed on family and friends.
Athletic Injury

- Being sport related
- Results in a player’s inability to participate on day after injury
- Requires medical attention
Injury Frequency

\[
\text{Injury Rate} = \frac{\text{Definition of Injury}}{\text{Population-at-risk}}
\]
Severity of Injury

- No universal definition exists
- Based on AMA Standards Nomenclature of Injuries (1968)
  - Depends on the time-loss
  - Depends on functional consequences of participation or not participation
A proactive approach

- Periodic monitoring to assess one’s level of life stress is necessary.
  - Established psychological inventories
  - Interviews
- With athletes who experience distress
  - A need to reduce the stress to facilitate restoration of psychological and physiological states
Paradox of Injuries

- Chapter 6
Paradox of Injuries

- “The injury made me a lot more mature. I have a better grasp of reality in life......I’m so much stronger emotionally. (Lieber, 1991, p.44)

- Are there ways to facilitate these positive consequences with athlete injuries?
Stress & Positive Consequences

- Little research on how athletes come to view their injuries in a positive manner.
- One recently study by Udry et al (1997) did involve 21 elite athletes on US Ski Team
  - 95% of the athletes reported more positive consequences from their injuries
  - 80% reported personal growth, psychological skill enhancement, & physical-technical enhancement from being injured
Adversity & Stress

- General Adaptation Syndrome (GAS) by Selye (1974)
  - Alarm - injured person resists any additional stressors
  - Exhaustion - additional stressors cause injured person to succumb to stress
  - Adaptation phase - injured become stronger and stressor acts as catalysts for higher levels of functioning
Recommendation

- Recognize that deriving positive consequences takes effort
  - Injured athletes must not passively assume positive consequence will occur

- Recognize different problem-solving strategies can be used
  - Use reversal strategies

- Avoid Secondary victimization
  - AT should not trivialize the experiences of the injured athlete
Personality Correlates During Injury Rehabilitation

- Chapter 7
Personality Correlates During Injury Rehabilitation

- Neuroticism
- Explanatory Style
- Dispositional optimism
- Hardiness
Maladaptive Behavior & Neuroticism

- Selective attention to the negative emotions to injury
  - Anger is exhibited ("I was not a nice person when I was injured")

- Tendency to rely on inefficient coping strategies
  - Denial, withdrawal, self-blame, emotional venting, disengagement
Explanatory Style

- Pessimistic explanatory style
  - Personality caused: “It’s my own fault”
  - Stable over time: “I’m never going to play”
  - Global: “the rest of my life”

- Health effects
  - Immune system function
  - Poorer health
Dispositional Optimism

- Investigations are consistent
  - Cardiovascular and,
  - Immunological function is associated with optimism (Peterson et al., 1991; Scheiver & Carver, 1987)
- Optimism mitigates the stress-illness relationship
- Link between optimism and recovery
Hardiness

“Constellation of personality characteristics that function as a resistance resource in the encountering of stressful life events”-Kobass, et. al. 1982. P. 169

Components are
- Commitment—strong beliefs in one’s own value
- Challenge—views difficulties to overcome
- Control—sense of personal power
Hardiness Link

- Kobasa (1979) linked hardiness to physical health.
- Mechanism underlying hardiness seems to be cognitive appraisal and coping processes (Florian et al, 1995; Gentry & Kobasa, 1984)
Studies with Athletes

- Athletes who are high in neuroticism and pessimistic explanatory style display maladaptive behavior which results in longer rehab or incomplete recovery
  - Grove, Stewart & Gordon (1990) with athletes with ACL damage
  - Grove & Bahnsen (1997) with 72 injured athletes
Formal Assessment Procedures

- Neuroticism
  - Eysenck Personality Questionnaire (EPQ-N)-Eysenck & Eysenck, 1975

- Explanatory Style
  - Attributional Style Questionnaire (ASQ)-Peterson et al., 1982
Informal Assessment

- One-to-one visit & pay attention to the athlete comments
  - Fear, sadness, embarrassment, guilt & anger, feelings of being over whelmed by the demands of rehab—signs of neuroticism

- Ask the “why” statement....
  - Insight into athlete’s explanatory style
Implications

“the person that I wanted to talk to the most was the person that was going to help me get better….We had the best relationship. He/she knew what I was thinking; he/she knew what I was going through. He/she was my athletic trainer.” (Quoted from elite skier, injured athlete)
Personality information helps AT to provide a more complete service.

- Highly neurotic athletes are prone to overreact, denial, disengagement, and emotional venting.

AT need to:
- model rational behavior
- have well planned treatments
- Maintain records of progress
- Develop psychological skills of cognitive appraisal, coping, and stress management.
Implications

- Injured Pessimistic Athletes feel helplessness and depressed.
  - These athlete fail to follow recommended treatment programs (especially unsupervised aspects).
  - Demonstrate a lack of persistence in the face of poor or slow progress.
- AT trainer should offer advise in how to cope, prevent athletic isolation, & provide emotional support.
Implications

- Injured athlete low in hardiness worry, experienced depressed moods, & overgeneralize negative aspects of their character.

- AT need to communicate clearly with the athlete about the severity of injury, get them actively involved in setting rehab goals, use feedback of progress through charts or graphs, and provide self-monitoring strategies such as logs.
Malingering Athlete

- Chapter 8
Malingers

- Athlete who lie about an injury to avoid practice or competition
- Pathological avoidance behavior
  - Cling to their symptoms and disabilities
  - Mimic disorders
  - Show pain and suffering on a moment’s notice
- Need for attention and fear of getting caught
- Is the degree to which the drama is overdone
What is the cause?

- Behavior has been learned, adopted as acceptable, rewarded and is done willfully or habitually (Ogilvie & Tutko, 1966).
  - History (I.e. spoiled at an early age)
  - Learned at an early age that the parent would always intervene or rescue them from trouble.
  - Modeling (I.e. parent, coach, another athlete)
  - Very fearful of being exposed and is always on guard; clings to dishonesty at all cost.
Interventions

- Give strictly defined boundaries of behavior and detail the consequences when stepping outside those boundaries.
  - Three strikes and your out!
- Establish and record specific rehab goals.
  - Agree upon times for treatment
  - Agree on the length of the program
  - Agree on the athlete’s responsibility
- Provide rewards early in rehab then once they comply vary the frequency of giving the reward.
Psychological Perspective of Athletic Injuries Summary

- Stress X Injury relationship needs to assessed.
- Once athlete are identified with high stress levels there is need for proactive Approach
- Injuries do have positive consequences if the athlete has experienced a successful rehab.
- Athlete’s personality is related to length and degree of recovery.
- Assess the athlete level of neuroticism, explanatory style, optimism, and hardiness
Summary (continued)

- Athlete’s response to career ending injuries reflect the stage model.
- Cognitive appraisal model provide AT why some athlete behave differently when injured.
- Athlete’s respond differently when they have macro versus microtrauma injuries.
- Malingerer is due to the need of attention and fear of being caught; first identify the behavior through observing the athlete then develop a strategy to change the behavior.