Psychological Predictors of Athletic Injury
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Injury Vulnerability
- Before injury occurs, psychological and social factors have been implicated as affecting injury vulnerability
- Usually it is a combination of factors that create a situation in which sport injury is more or less likely to occur
- Sport and recreational injuries increase in rate with increasing age
- Boys are twice as more likely to have a sports-related injury as girls,
  - BUT when comparing comparable sports at the high school level, injury rates for girls are slightly higher than those for boys

Influences on Sport Injury Vulnerability

Person
- Physical
  - Technique biomechanics
  - Physical condition
  - Muscular imbalances
  - Overtraining
  - Fatigue
  - Maturational age
  - Poor sport experience
  - Female
- Psychological
  - Attentional focus
  - Mood state
  - Risk taking
  - Anxiety
  - Life stress
  - Coping resources
  - Body image

Environment
- Physical
  - Weather
  - Equipment
  - Playing surface
  - Facility hazards
- Social
  - Sport norm/ethic
  - Coaching quality
  - Officiating quality
  - Fan behavior
  - Sports med team
  - Rules of the sport

Revised Stress and Injury Model (Williams & Andersen, 1998)

**Model of Stress and Athletic Injury**
(Andersen & Williams, 1988; Williams & Andersen, 1998)

- **Cognitive appraisal**
  - Includes: demands of the situation, adequacy of our ability to meet those demands, & consequences of success/failure in meeting the demands
  - EX: View of competition: exciting & fun = eustress; threatening & scary = distress
  - Whether or not the cognitive appraisal is accurate is not important
  - Perceptions drive reality

- **Physiological & Attentional Changes**
  - Stress results in:
    - Generalized muscle tension- “bracing” results in greater muscle fatigue, reduced flexibility, coordination difficulties = greater risk for sprains, strains etc.
    - Narrowing of the visual field- do not attend to task relevant cues
    - Increased distractibility- obsessed with the stressful event or the negative consequences of not doing well; EX: a batter not responding quickly enough to an inside pitch
Model of Stress and Athletic Injury
(Andersen & Williams, 1988; Williams & Andersen, 1998)

- **Contributors to the pre-injury stress response:**
  - Personality - could increase or decrease the stress response & injury risk
  - History of stressors - usually related to increase in stress & injury risk
  - Coping resources - usually related to decreasing stress & injury risk

### History of Stressors

1. **Life stress** is the most researched aspect
   - Most support exists for the detrimental effects of the presence of negative major life events
   - Amount of change and upset that athletes experience in the year prior to a competitive season: 50-73% of athletes sustained an injury following a major life event
   - 2 to 5 times more likely to become injured when comparing high and low life stress individuals (18 of 20 studies found support)

#### History of Stressors: Life Stress

- Most common life stressors for children and adolescents: parents divorcing, moving to a new town, changing schools, illness or death of loved ones

#### History of Stressors: Daily Hassles

2. **Daily hassles**
   - Research has failed to show a link between daily hassles and injury rate
   - May have an accumulation affect - after a week of lots of hassles, stress increases, and ultimately, injury risk
   - Most common for children & adolescents: disagreements with parents and teachers, homework expectations, lack of transportation, and limited finances

### History of Stressors: Previous Injury

3. **Previous Injury**
   - Returning to play before they are ready = increase in stress = greater likelihood to become reinjured
   - Not mentally ready to return = fear of re-injury = higher stress = higher injury risk
   - Limited research in this area - need new ideas and studies to explore the role of previous injury
History of Stressors: Sport Ethic

4. The Sport Ethic

- Expectations under which young athletes train: toughness, mental and physical sacrifices, endurance, and fortitude
- These expectations could lead athletes to continue training even when pain and injury occur: “sport ethic”
- Learn from others how to cope with pain, those who play with pain and injury are rewarded and reinforced, and eventually these athletes will become the new role models for younger athletes

Personality

- Sensation seeking
  - Individual differences in optimal levels of arousal
  - High v. low
  - Lower sensation seeking was related to lower life stress events and lower time loss due to injury (Smith et al., 1992)

- Personality mood states
  - More positive mood states earlier in the season were related to fewer injuries during the season compared to those with less positive mood states (Williams et al., 1993)
  - Significant increases in mood disturbance immediately prior to injury (Fawker, 1995)

Personality: Perfectionism

- Perfectionism- self-imposed high standards of performance that often stem from adult expectations; pattern emerges by early adulthood
- Perfectionism has been shown to be related to the following among youth sport participants: anxiety, burnout, body image/social physique anxiety, and disordered eating
- **Future studies involving perfectionism need to distinguish between positive and negative perfectionism, as the consequence of each may be different (Owens & Haase, 1999)**

Personality: Anxiety & Fear

- Anxiety and fear associated with performing new and possibly even dangerous sport skills, however, seem intuitively to affect confidence and, in turn, actual attempts at performing these skills
- Having sustained a previous injury can be a source of fear
- Developmental studies of children and adolescents have revealed that normal fear (defined as a normal reaction to a real or imagined threat) decreases in frequency and strength with age and that specific fears are temporary in nature (Gullone, 2000)

Personality: Participation Motives

- The reasons why young children participate are different than adolescents or adults- see a shift in motives with increasing age
- In turn, these motives then influence perceptions of stress
  - EX: pursuing elite status and a college scholarship could render youth vulnerable to a heightened stress response (burnout, attention-related concentration difficulties), that in turn, increase their risks of injury
- Perceptions of competence and perceived ability
  - Coaches that berate and belittle young athletes could be increasing the risk of injury for that child- they will do anything to “please the coach” or may end up dropping out altogether

Personality: Risk-Taking

- Developmental phenomena and gender differences identified
- 6 year-olds identified fewer and were slower identifying the risk factors in play activities as compared to 10 year-olds
- By the age of 6, children already have differential beliefs about injury vulnerability for boys and girls
  - Perceive girls as being at greater risk of injury than boys even though the opposite is true
- Adolescent boys are more likely than girls to repeat injurious-risk taking behaviors, thus experiencing recurring injuries
Coping Resources

1. General coping behaviors
   - Sleeping behaviors, nutrition, taking time for oneself

2. Social support
   - Presence of others whom we know value and care for us, and on whom we can rely

3. Stress management techniques
   - Psychological skills that help control arousal-relaxation techniques; self-talk; goal-setting; imagery
   - **Coping Resources REDUCE THE RISK OF INJURY!!!!!!!

Coping Resources: Research

- The only predictor of injury occurrence among intercollegiate volleyball players was a low level of coping resources (Hanson et al., 1992; Williams et al., 1986)
- Athletes with higher levels of social support had lower incidence of injury, and those with lower levels of SS had higher incidence of injury (regardless of life stress) (Byrd, 1993; Hardy et al., 1990; Hardy et al., 1987)
- Petrie (1992): High social support seemed to protect athletes from injury, but low social support seemed to exacerbate the effects of negative life stress such that injury risk was increased significantly

CASE STUDY #1: Ginger

- I am 14 years old, in the 9th grade and just made the varsity basketball team
- I’m a straight A student, I am also president of several clubs at school. I am an accomplished saxophone player.
- I am concerned about the number of hours we are practicing- I seem to be having a hard time balancing sport, school, music, and my other activities.

CASE STUDY #2: Fred

- I’m 8 years old, I play football, and I’m good
- I am the toughest one on my team and I’m not scared of getting hit
- My big brother practices with me at home; I can’t wait to play against the big boys
- I’ve never had an injury before- I know it’s because I am too strong and smart

CASE STUDY #3: Carter

- I play soccer, I’ve been playing for about 6 years. I’m a senior in high school. I’ve signed my letter of intent.
- I’ve been a starter my whole life, even after my ACL injury.
- I look forward to moving away to go to college to meet new people and play at the next level.