PSYCHOLOGICAL ASPECTS OF DELAYED AND FAILED RECOVERY AND UNNECESSARY DISABILITY

WHY DON’T SOME PATIENTS GET BETTER? WHAT CAN AND SHOULD WE DO ABOUT IT?

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OVERVIEW

• DFRUD refers to lag in or complete lack of expected recovery from a medical condition, and/or unnecessary resultant disability

• Occurs in small fraction of claims but has large effects

• Causation is complex, and there are many unrecognized contributing influences

• We are not doing well at treating this group of affected workers (AWs) with a classical biomedical (BM) model, and need to broaden our thinking and practice in managing these individuals
MY PERSPECTIVES AND DISCLOSURE

• Collaborating and supervising physician for JH/PepsiCo Onsite Worker Health and Wellness Program
• WC Medical Advisor AmTrust North America
• Complex disability file reviews and expert witness

• I have no potential conflicts of interest.
CAVEAT/RESOURCE OFFER

• This is a complex topic with a lot of material
• I have constructed a very detailed presentation with much supporting documentation to serve as resource (will only hit high points in the webinar presentations)
• Send me a request and your email address and I’ll forward a copy of PowerPoint and bibliography
• Most of my comments will be focused on WC system, but will also be applicable to personal injury and STD and LTD
PART I – CONCEPTS AND INFLUENCES

• Why DFRUD important
• Why we need biopsychosocioeconomic (BPSE) approach
• Cognitive Behavioral (CB) causation model; complex causation/integration; Work Related Illness/Injury (WRII) and Work Relevant Conditions (WRCs); and Symptom Escalation
• Contributing Influences:
  • Psychological Factors (PFs)
  • Medically Unexplained Physical Symptoms (MUPS)
  • Iatrogenicity (IAG)
• The Dilemma of WRCs, and why we aren’t addressing these concerns more completely
PART II - POTENTIAL INTERVENTIONS

• Understand: Develop enhanced knowledge base and comprehension
• Change Approach: Make conceptual and practical shifts
• Prevent: Alter or avert modifiable factors
• Improve Recognition: Earlier and better detection of problem cases
• Manage: More appropriate administrative and clinical conduct of claims
PART I
CONCEPTS AND INFLUENCES
WHY IS DFRUD IMPORTANT?

• Poor Outcomes for AWs
  • Preventable morbidity, disability, and mortality for claimants in benefits programs (Loisel 2013)
  • Worse outcomes in WC (Wickizer 2001)

• Excessive Costs and Inefficient Resource Allocation
  • Personal, enterprise, and societal costs
  • Pareto effect: 5-10% of claims incur 75-85% of costs (Wickizer 2001) and 78-80% of disability days (Hashemi 1997, 1998); 7% of physicians generate 70% of costs (Bernacki 2010; Wolfe 2013)
WHY IS DFRUD IMPORTANT?

• Difficult Management Process
  • Frustration and burnout for all stakeholders
  • “Heartsink patients” (Moscrop 2011; Nimmo 2013)

• Disability Creep
  • Gradual lowering of acceptability threshold (Aronoff 1989)
  • Increased entitlement (Eberstadt 2012)
  • Subtle encouragement of medical and benefit system dependence (Franklin 2015)
  • No escape (Prins 2013)
WHY THE BPSE APPROACH?

Classical BM or Disease Model:

- **DISEASE OR INJURY**
- **SYMPTOMS AND SIGNS**
- **IMPAIRMENT**
- **DISABILITY**

Therefore:

- **HISTORY, EXAM, AND TESTING**
  - Recognize pattern of symptoms and signs
- **OBJECTIVE DIAGNOSIS**
  - Infer underlying organic pathology
- **TREATMENT/REHABILITATION**
  - Apply known therapy to that pathology
- **CURE/RESIDUAL IMPAIRMENT**
  - Expect patient to recover

Waddell 2008
WHY THE BPSE APPROACH?

• BM or Disease Model makes multiple assumptions which may not be accurate:
  • All symptoms, signs, and illness primarily arise from underlying disease abnormality
  • Health is the absence of disease
  • Mental phenomena are separate from and unrelated to other disorders of bodily function (dualism)
  • Patient is a victim of circumstance with little or no responsibility for cause or presence of illness
  • Patient is passive recipient of treatment (although cooperation is expected)

Wade 2004
WHY THE BPSE APPROACH?

- **BM model does not include:**
  - Human psychology and behavior
    - Pre-existing and ongoing cognitive, affective (emotional), or behavioral attributes and influences (what AW perceives, believes, thinks, feels, and does), learning, or psychopathology
    - Neuroscience, especially neuroplasticity and psychobiology
  - MUPS
  - Administrative and clinical problems with health service delivery (IAG) *(WA State 2016)*
  - Environmental and contextual factors
    - Sociocultural influences, financial and legal incentives (and competing priorities), systemic and workplace elements
SIX DOMAINS OF INFLUENCE

PERSONAL
- Education and Literacy
- Family Influences
- Habits

SOCIOCULTURAL
- Popular Media
- Special Interests

PSYCHOLOGICAL
- Psychological
- MUPS

SYSTEMIC
- Compensation
- Economic
- Legislative

ADMINISTRATIVE AND MEDICAL
- Process/Practice
- Iatrogenicity

WORKPLACE
- Employer Approach
- Training
- Co-Workers/Unions

AFFECTED WORKER DISABILITY

Briand 2008; Caruso et al. 2011; Loisel et al. 2005
WHY THE BPSE APPROACH?

• BPSE influences have important effects:
  • Fear, psychological distress, and self-efficacy mediate relationship between pain and disability (Lee 2015)
  • Predict positive or negative outcomes of treatment, e.g., spine surgery (Bruns 2009 and 2018; Wheeler 2012)
  • More important determinant of eventual disability than physical disease (Bigos 1991 and 1992; Burton 1995; Carragee 2004 and 2005; Fordyce 1992; Ormel 1994)
  • Healthcare funding based on diagnoses but service costs more related to impairment and/or disability ⇒ BPSE approach may give better information on cost generators and guide improvement (Wade 2017)
  • BPSE approach reduced costs in CO (Bruns 2012)
COGNITIVE BEHAVIORAL/PPP MODEL

• Predisposing Factors
  • Diathesis or vulnerability that individual brings to situation
  • May be intrinsic to individual (genetic/physiologic) or acquired (developmental/environmental)
  • Physiologic factors include nociception, tendency towards neuroplasticity
  • ACEs, PI, psychological influences (low self-efficacy, coping capability, and resilience; PDs and other psychopathology)
  • Diathesis-stress and differential susceptibility (Belsky 2009)
COGNITIVE BEHAVIORAL/PPP MODEL

• Precipitating Factors
  • “Proximate cause” of DFRUD
  • May be physical or psychological circumstances (work related stress) or events (minor or major trauma or other painful conditions)
  • Individual’s perception may be more important than actual condition or incident (Main 2008)

• Perpetuating Factors
  • Maintain, exacerbate, or prolong symptoms, distress, or disability after they occur
  • Large role for psychological, behavioral (learning), and social influences and IAG

Deary 2007
COMPLEX CAUSALITY/INTEGRATION

• Complex, multifactorial causation occurs in each individual (Melhorn 2005)

• Some elements have strong negative or positive valence and may be maladaptive or adaptive
  
  • Appraisals of own condition; attitudes towards employer, work, and health system; expectations of recovery

• Influences may aggravate or attenuate each other and be countervailing and compensating
  
  • External health locus of control (HLOC) vs. self-efficacy
  
  • Low vs. high resilience and coping capability
COMPLEX CAUSALITY/INTEGRATION

• Some psychological factors apply to other stakeholders

• Clinicians, insurers, employers, and attorneys all have and act on health beliefs which interact with those of AWs

• Overall outcome in a given case is an integral of many influences and balance of many forces (Melloh 2013)
COMPLEX CAUSALITY/INTEGRATION
COMPLEX CAUSALITY/INTEGRATION
WORK RELATED/WORK RELEVANT

• Work Related Illness or Injury (WRII)
  • Directly or indirectly caused, exacerbated, or aggravated by work activity ⇒ BM approach appropriate for most

• Work Relevant Condition (WRC)
  • Valid WRII complicated by pre-existing, co-incident, or consequent non-work related influences (CB/PPP)
    • OA; alcohol, opioid, tobacco dependence; chronic pain syndromes
    • Psychological influences, MUPS, and IAG
  • May adversely affect recovery and RTW regardless of etiology and causation
SYMPTOM ESCALATION

• **Amplification**: increase in intensity of existing complaints (worse instead of better with time and treatment)

• **Expansion**: development of new complaints, e.g., experience of paresthesia, numbness and tingling, and weakness in addition to pain

• **Extension**: spread to new body regions on same or contralateral side

• **Potential mechanisms:**
  - Psychoendocrine or –immunologic mechanism
  - Psychological mechanisms, including expectancies, learning, loss aversion, and somatization (Silver 2012)
  - Central sensitization
PSYCHOLOGICAL FACTORS (PFS)

**PREDISPOSING**
(Diathesis)

**PRECIPITATING**
(usually with WRII)

**PERPETUATING**

**DOMAINS**

ADMINISTRATIVE AND MEDICAL

PSYCHOLOGICAL
- Psychophysiology
- Health Cognitions
- Motivation/Learning
- ACEs
- Perceived Injustice
- Psychopathology
- Workplace Aspects

PERSONAL

SOCIOCULTURAL

SYSTEMIC

WORKPLACE

MUPS/CHRONIC PAIN

DFRUD

IATROGENICITY

CNS SENSITIZATION?

SOMATIZATION?
PSYCHOLOGICAL FACTORS

- Psychophysiology
- Health Cognitions
  - Appraisals, Attitudes, Beliefs, and Expectations
  - Catastrophization (CAT) and Fear Avoidance (FA)
  - Health Locus of Control (HLOC)
  - Fallibility of Human Thought
- Motivation, Reward, and Gain (MRG)
- Learning and Memory (LM)

Loisel 2005; Turner 2008; Laisne 2012
PSYCHOLOGICAL FACTORS

• Adverse Childhood Experiences (ACEs)
• Perceived Injustice (PI)
• Psychopathology
  • Adjustment, Mood, and Personality (PDs) Disorders
• Workplace Aspects

Loisel 2005; Turner 2008; Laisne 2012
PSYCHOPHYSIOLOGY (PPH)

• Psychobiologic characteristics and processes due to individual’s genetic and epigenetic attributes
  • Neural function and pain perception (Young 2012); tendency towards neuroplasticity (Navarro 2007)
  • Psychoendocrine and psychoimmune function (Rief 2005), particularly the roles of stress and inflammation (Irwin 2011)
    • Neuroendocrine (Chapman 2008) and immunologic (Austin 2010) mechanisms may upregulate nociception
    • Altered immune response to exercise in patients with Chronic Fatigue Syndrome (CFS) (Nijs 2014)
  • Epigenetic modification in transition from acute to chronic pain (Buchheit 2012)
  • May influence symptom clustering (Kelly et al. 2016) and escalation
HEALTH COGNITIONS

Appraisals, Attitudes, Beliefs, and Expectations

• **Beliefs**: mental configurations and internalized convictions about reality

• Developed through experience and learning and shaped by cultural and societal factors, but usually unconscious (Damasio 2000)
  - Personal construct theory (Kelly 1963; Harder 2003)

• Substrates for perception, feeling, thinking, and behavior
  - May be source of many biases (e.g., attribution)

• May be single most important influence on DFRUD (Halligan 2006)
HEALTH COGNITIONS

• “Biomedical thinking” (Baird 2013)
• “Hurt = harm” and “More hurt = more harm”
• Work activity caused illness or injury and will make it worse
• AW too ill or injured to return to work (RTW), and cannot recover without work activity abstention
• Beliefs of significant others (SOs), clinicians (Kilgour 2015a) and other stakeholders, e.g., WC adjusters (Kilgour 2015b), also influential and may be iatrogenic
HEALTH COGNITIONS

• Beliefs are basis for:
  • **Appraisals**: perceptions and judgments (e.g., about own health, WRCs, medical care, and nonmedical treatment)
  • **Attitudes**: set feelings and mental predispositions to act (e.g., about self, work and employer, and WC and healthcare systems) (Halligan 2006)
  • **Expectations**: anticipation of future events (e.g., nature, quality, and quantity of health care delivery)
  • **Self-efficacy expectancy**: one’s own capacity to influence events or produce a given result (Bandura 1997)
  • **Outcome expectancy**: given behavior or course of action will lead to a specific result (e.g., compliance)
HEALTH COGNITIONS

• Negative appraisal is better predictor of **low pain tolerance, depressed mood,** and disability than disease or impairment (Keefe 1989)

• Attitudes strongly shape **motivation for recovery and RTW** (Berglind 2015; Franche 2005)

• Response expectancy strong component of placebo effects (Colloca 2011; Kirsch 2018)

• Recovery expectations are strong and persistent predictor of pain, **RTW outcomes and disability** (Carstens 2014; Laisne 2012)
CAT AND FA

• CAT is irrational belief that anticipated or actual pain will result in both severe effects and overall negative outcome (Quartana 2009)
  • Strong anxiety component (Woo 2010)
  • Pain-related fear more disabling than pain itself (Crombez 1999)

• FA is behavioral manifestation of CAT (Vlaeyen 2012)

• CAT/FA strongly associated with delayed recovery and eventual disability (Chou 2010; Ramirez-Maestre 2017; Soderlund 2017; Wertli 2014)
CAT-FA MODEL

Vlaeyen 2012
HEALTH LOCUS OF CONTROL

• Extent to which AW attributes their health to environmental factors and other external agents or their own actions (self-efficacy)

• External locus associated with sense of helplessness, which may be learned (Maier 2016) and worse functional outcomes (Iles 2008; Wagner 2014), and predicts poor outcome in chronic LBP rehabilitation (Keedy 2014)

• Self-efficacy associated with better physical function and lower disability (Keedy 2014) and RTW with ORs up to 5.3 (Black 2017)
FALLIBILITY OF HUMAN THOUGHT

• Many AW beliefs (e.g., causation) likely results of misconception, popular conviction and/or low health literacy (e.g., “wear and tear”) (Briggs 2010)
  • Cognitive misattribution or “expectation as etiology” (Mittenberg 1992)
  • May be influence of cyberchondria (Starcevic 2017)
• Misrecall of health history (Carragee 2008, 2009) and level of premorbid function (Lees-Haley 1996, 1997)
  • “Good old days” bias (Iverson 2010)
MOTIVATION, REWARD, AND GAIN

- Economy of gains and losses in motivation for recovery and RTW (Choi 2016; Worzer 2009)
  - **Primary**: effect and benefit are internal (e.g., relief from conflict, satisfaction of internal psychological demand)
  - **Secondary**: effect is external but benefit is internal (e.g., drugs, financial gain, avoidance of unwanted activity or responsibility)
  - **Tertiary**: effect and benefit are external (financial support of family members with compensation benefits)
• **Moral hazard of compensation and benefits systems** (Waddell 2010)
  - Participation in compensation system changes behavior
  - Disability compensation exerted moderate effect sizes on experience and treatment of chronic pain (Rohling 1995) and mTBI (Binder 1996)
  - Higher rate of symptom exaggeration in compensation systems (Aronoff 2007; Iverson 2007)
  - May also relate to symptom escalation and dependence on healthcare system

• **Recognition of Free Will** (Waddell 2010)
  - Personal responsibility and conscious choice of action
LEARNING AND MEMORY

• Classical and operant conditioning in chronic pain (CP) (Flor 2011, 2013)

• Pain and other behaviors reinforced by positive (personal attention, psychoactive medications) and negative (sanctioned release from unwanted responsibilities) contingencies

• AWs learn to shape their behavior contingent upon positive and negative rewards specific to the individual (e.g., financial compensation) and in response to perceived expectations of others (includes placebo and nocebo effects) (Petersen 2014)
LEARNING AND MEMORY

• Claimants learn from interaction with healthcare and insurance personnel and WC system (Kosny 2006)
  • “Learned helplessness” (Maier 2016) operative in WC (Harder 2003; Walker 1992)
  • “Self-talk”: history of illness and treatment becomes script, belief becomes fixed, and story takes on a life of its own (Aurbach 2015)
  • Self-talk may relate to symptom escalation, fallibility of human thought, and critical nature of time

• Memory is basis of expectation and has strong influence on pain experience (Main 2010)
ADVERSE CHILDHOOD EXPERIENCES (ACES)

• Abuse, neglect, and being raised in stressful household (mental illness, substance abuse, criminal behaviors, relational conflict and domestic violence)

• May have multiple neurobiological effects (Anda 2006) and permanently alter HPA axis (Chang 2011)

• High ACE exposure in 20% of adults without and 37% with disability; RR for poor physical health 4.3, mental health 4.7 (Austin 2016)

• Strong graded relationship (1 = 1.3 to 7-8 = 5.8) between ACEs and self-reported adult disability (Schussler-Fiorenza 2014)
PERCEIVED INJUSTICE

• Apparent poor treatment of AW by clinician, employer, or insurer; unfulfilled expectations of entitlement; or general disgruntlement and embitterment

• (May include workplace factors like low workplace support)

• Associated with slower recovery from mTBI (Iverson 2018)

• Predicts adverse pain outcomes, e.g., greater severity and chronicity (Rodero 2012; Yakobov 2014), and more pain behavior, reduced function, and prolonged work disability (Ferrari 2015; Scott 2016)
PSYCHOPATHOLOGY (PPA)

• Adjustment Disorders

• Anxiety and Depressive (Mood) Disturbances
  • Generalized anxiety (GAD) and panic disorders and post-traumatic stress disorder (PTSD)
  • Dysthymia and major depressive disorder (MDD)

• Personality Disorders

  • (Somatization and Somatic Symptom Disorders [SSDs] discussed under MUPS)

• Prevalence up to 20% in general population

• Causation complex and multifactorial and rarely attributable to one setting or event (Warren 2018)
ADJUSTMENT DISORDERS

• “Emotional or behavioral symptoms in response to an identifiable stressor(s)” (APA 2013)

• Both nonwork and work-related variants

• May be the most common BH disorders seen by OEM physicians (van der Klink & van Dijk 2003)
  • Cause of recurrent sickness absence (Koopmans et al. 2011)
  • 20% of patients did not RTW within 1 year, leading to loss of employment (Schroer 1993)
  • Chirico (2015, 2016) made a case for adjustment disorder as a chronic occupational disease

• Van der Klink et al. (2003) reduced LT sickness absence with focused intervention
ANXIETY AND DEPRESSED MOOD

• Associated with DFRUD but causality not clear

• May contribute to PPP factors, MUPS, or DRFUD
  • Depression 7% in population, 10-30% in chronic pain (Howe 2015)
  • Anxiety, panic, and PTSD, and dysthymia and MDD => chronic pain, physical and work disability, health care costs, and mortality (Byers 2014; Edwards 2016; Hees 2012)
  • Laisne (2012) found no effect on DFRUD

• Chicken vs. egg
  • Spine injury predated psych disorder (Dersh 2007); diathesis-stress/mental deconditioning (Gatchel 2014)
  • Stress modulates pain perception (Geva 2014); anxiety and depression worsen pain (Woo 2010)
PERSONALITY DISORDERS

• Ways of thinking, feeling, and behaving that deviate from cultural expectations, cause distress or problems functioning, and last over time (APA 2013)

• General population 10-13%; chronic pain 31-64% (Weisberg 2000) and spine disorders 70% (Dersh 2006)

• Associated with sick time, compensation-seeking, workplace “stress disorders”, and chronic disability (Tyrer 2014); deliberate job loss (Sansone 2013); and disability pension (Beckwith 2014; Gjerde 2013, 2014)

• Comorbid with somatization (Heinrich 2004); neuroticism (negativity) $\Rightarrow$ MUPS (Rosmalen 2007)

• Often detected but ignored at neuropsychological testing
WORKPLACE ASPECTS

• Psychosocial demands, e.g., low decision latitude and high demand and stress (Golubovich 2014; Stansfeld 2006)
  • Karasek Demand-Control imbalance (Theorell 1986)
  • Siegrist Effort-Reward imbalance (Siegrist 1986)
  • Edwards Person-Environment Fit (Edwards 1998)
  • May increase risk of WRMSDs by 15-59% (Hauke 2011)

• Work organization aspects, e.g., low social and managerial support (White 2013)

• Low job satisfaction (Schultz 2016)
PFS, MUPS, IAG, AND DFRUD

**DOMAINS**
- **ADMINISTRATIVE AND MEDICAL**
- **PSYCHOLOGICAL**
  - Psychophysiology
  - Health Cognitions
  - Motivation/Learning
  - ACEs
  - Perceived Injustice
  - Psychopathology
  - Workplace Aspects
- **PERSONAL**
- **SOCIOCULTURAL**
- **SYSTEMIC**
- **WORKPLACE**

**PREDISPOSING**
(Diathesis)

**PRECIPITATING**
(usually with WRII)

**PERPETUATING**

MUPS/CHRONIC PAIN

DFRUD

IATROGENICITY

CNS SENSITIZATION?

SOMATIZATION?
MUPS

• “... physical symptoms persisting for more than several weeks and for which adequate medical examination has not revealed a condition that adequately explains the symptoms” (olde Hartman 2013a, p. 2)

• SPADE: Sleep disturbance, Pain, Anxiety, Depressed mood, Energy lack/fatigue (Kroenke 2016)

• Primary care 16-53% (Kroenke 2014) and specialty care 30-52% (Creed 2011a)

• Symptoms are real, not primarily psychiatric, and may cause considerable distress and suffering
MUPS – CONTINUUM

COMMON HEALTH PROBLEMS (CHPs)

• MOST HEADACHE
• MUSCULOSKELETAL ACHES AND PAINS
• NONSPECIFIC NEUROLOGIC SYMPTOMS
• MOOD FLUCTUATIONS

SEVERE SYNDROMIC ILLNESS

• MIGRAINE
• ATYPICAL CHEST PAIN
• ABDOMINOPELVIC PAIN
• ACUTE/CHRONIC BACK PAIN
• CHRONIC FATIGUE

• IDIOPATHIC ENVIRONMENTAL INTOLERANCE
• TEMPOROMANDIBULAR
• FIBROMYALGIA
• FAILED BACK SURGERY

• Waddell 2004b
FUNCTIONAL SOMATIC SYNDROMES

• Share common “core” of symptoms
  • Diagnosis largely dependent upon the specialty of the evaluating physician, i.e., may be an artifact of medical specialization (Buchwald 1994)
  • Increasing number of complaints predicts nonorganic nature (Kroenke 1994) and lower likelihood of unifying diagnosis

• Argument for one
  • Overlap in case definitions of specific syndromes
  • Patients with different disorders share nonsymptom features (e.g., gender, history of ACEs, association with emotional and psychiatric disorders)
  • Patients frequently meet multiple diagnostic criteria
  • Conditions respond to similar therapies

• Argument for many
  • Single disorder suggests psychogenesis and \(\Rightarrow\) dualism
  • Eliminates differential specificity of treatment and prognosis
MUPS – CAUSATION/MECHANISMS

• **CB/PPP Model** (Deary 2007)

• “...pathophysiological responses to prolonged or severe mental and/or physical stress in genetically susceptible individuals” (Budtz-Lilly 2015)

• Symptoms not from specific disease process but interaction of various etiologic factors in distinct domains (Creed 2011b; Fink 2015)

• Dynamic process, with variable and waxing and waning symptoms
MUPS – CB/PPP MODEL

PREDISPOSING FACTORS
PSYCHOLOGICAL/PSYCHOPHYSIOLOGIC
PERSONAL
SOCIOCULTURAL
SYSTEMIC

PRECIPITATING FACTORS
PSYCHOLOGICAL
ILLNESS OR TRAUMA
CNS SENSITIZATION

PHYSIOLOGICAL SENSITIZATION AND DISTRESS INTOLERANCE

PHYSICAL SYMPTOMS AND GENERAL DISTRESS

PERPETUATING FACTORS
PSYCHOLOGICAL
PSYCHOPHYSIOLOGIC: AROUSAL/ATTENTION, HYPOCORTISOLISM, ABNORMAL FILTER
COGNITIVE: HEALTH BELIEFS/ASSUMPTIONS, ATTRIBUTIONS, RUMINATION
BEHAVIORAL: CONDITIONING AND LEARNING, PAIN BEHAVIOR, SYMPTOM AVOIDANCE

SOCIAL
DEPENDENCY
MEDICAL UNCERTAINTY
LACK OF GUIDANCE

IATROGENICITY
MUPS – SOMATIZATION

• Normal, unconscious expression of mental phenomena, especially distress, as physical (somatic) symptoms (Heinrich 2004)
  • Not mental disorder per se, but rather mechanism for communicating via somatic complaints rather than emotional or verbal interactions
  • Not pathological unless involves significant distress or social or occupational dysfunction
  • Like PDs, also often detected but ignored at neuropsychological testing
MUPS – CENTRAL SENSITIZATION (CS)

• Increased sensitivity to painful (hyperalgesia) and nonpainful (allodynia) stimuli

  • May result from neuroplastic “wind-up” changes in peripheral and central (both spinal and supraspinal) nerve function

  • Increased activity in afferent (ascending/activating) and decreased activity in efferent (descending/inhibitory) pathways

• Associated with generalization to other senses (Phillips 2011); cognitive deficits (Yunus 2007); emotional distress (Curatolo 2006); and sick role behaviors (Meeus 2007; Weiseler-Frank 2005)
MUPS – WC/DISABILITY

• General population → WC/disability population
  • Some presumed WRII actually represent CHPs/MUPS with coincidentally associated work event (Waddell 2004b)
  • May develop after WRII by CB/PPP (Myrveit 2012)
• Examples
  • Pain (may explain many CP syndromes for which clinician has no better term, e.g., “chronic sprain/strain”, “cumulative trauma”, “repetitive stress”, “failed back surgery syndrome”)
  • Radicular symptoms without objective signs, e.g., paresthesia, numbness, tingling, weakness
  • SPADE (many syndromic illnesses)
MUPS – WC/DISABILITY

• Sickness absence in Norway increased 65% 1997-2003; anxiety, palpitations, sleep problems, and “tiredness” (Ihlebaek 2007)

• MUPS in 15% sick listed Dutch employees, with low recognition by OEM physicians (Hoedeman 2009)

• Increased rates of LT sickness absence and leave, unemployment, and new disability pension awards (Loengaard 2015; Rask 2015)

• Linear correlation between increasing number of MUPS and sick leave days (Aamland 2012)
MUPS – WC/DISABILITY

• May be more influential at subclinical and clinical levels than recognized or accepted

• May be intermediate step or “steppingstone” in eventual DFRUD

• Persistence of symptoms beyond known natural history (NH) of disorders despite time and proper treatment suggests factors in WC/disability context artificially prolonging MUPS:
  • Learning and gain issues
  • Administrative and medical iatrogenicity
  • Adversarial relationships, and involvement in the vortex of disability determination, including contests of causation and consolidation (Hadler 2005)
PFS, MUPS, IAG, AND DFRUD

**PREDISPOSING**
(Diathesis)

**PRECIPITATING**
(usually with WRII)

**PERPETUATING**

**DOMAINS**

- ADMINISTRATIVE AND MEDICAL
- PSYCHOLOGICAL
  - Psychophysiology
  - Health Cognitions
  - Motivation/Learning
  - ACEs
  - Perceived Injustice
  - Psychopathology
  - Workplace Aspects
- PERSONAL
- SOCIOCULTURAL
- SYSTEMIC
- WORKPLACE

**MUPS/CHRONIC PAIN**

**DFRUD**

**IATROGENICITY**

CNS SENSITIZATION?

SOMATIZATION?
IATROGENICITY

- Iatrogenic: caused by diagnosis, manner, or treatment of a physician
- Extended to all stakeholders, any and all of whom have particular ABEs, and may contribute (Batavia 2004)
- Three major forms in DFRUD
  - Medicalization
  - Focus on Symptom Relief vs. Function
  - Time Delays in Management
IATROGENICITY

• Five major facets
  • Advocagenicity
  • Medicalization
  • Fear of Missing Organic Disease
  • Focus on Symptom Relief vs. Functional Restoration
  • Critical Nature of Time

• May involve Administrative and Medical, Systemic, and Workplace domains

• Patients with MUPS may be particularly susceptible (Page & Wessley 2003)

• All stakeholders may contribute (Warren 2018, Ch. 3)
ADVOCAGENICITY

- Improper bias towards perceived needs and/or wants of AW

- **Attorneys** (Lynch et al. 1998, 1999)
  - May be due to direct suggestion, coaching, and/or prolonged exposure to adversarial claims process
  - Strongly associated with poorer physical and mental health in accident victims (Harris 2008; MacKenzie 2005)

- **Clinicians**
  - Very difficult to achieve proper balance in evaluation and treatment in AWs with persistent symptoms (Gawande 2015; Loeser 1997)
  - Encourage “sick” role with unnecessary or prolonged restrictions
  - May involve unconscious or conscious collusion (Salmon 2006)
ADVOCAGENICITY

• May contribute to inappropriate learning and conditioning during claims process
• Ignores or subverts autonomy and free will of AW
  • Conscious choice and personal responsibility play central role in disability
• “...true patient advocacy involves promoting what is in the best health interest of the patient, which also means declaring MMI whenever further recovery is unlikely, so that the patient can return to life that is as productive as possible within any necessary activity restrictions.” (Kertay 2016, p. 31)
MEDICALIZATION

• Assumption that bodily condition, behavior, or psychic state represents (or defined as) medical disorder and merits or needs medical treatment

• Common health problems (CHPs), e.g., MSK pain (esp. LBP)

• Normal human responses to WRII and WRCs (e.g., anxiety, depressed mood, “stress”, sleep disturbance)

• Administrative or personnel issues

Conrad 2007, 2010; Lantz 2009
MEDICALIZATION

• Use of questionable or wrong diagnostic labels has multiple implications
  • Illness assumed to be due to defined pathology (chronic sprain/strain, cumulative trauma, repetitive motion)
  • Illness thus capable of being independently confirmed (⇒ excessive investigation)
  • Illness has specific treatment that medicine can provide (⇒ excessive and/or serially ineffective therapy)
• In AW, medicalization may shape:
  • Illness beliefs, e.g., “something is really wrong”
  • Appraisals of condition and situation
  • Expectations of medical care and recovery
  • Attitudes towards treatment and situation (entitlement)

Conrad 2007, 2010; Lantz 2009; Wade 2004
MEDICALIZATION

• In WC, open Pandora’s Box to ineffective and expensive therapy, time delay, and DFRUD

• May lead to “Type II Medical Malpractice”: “doing something to patients very well that was not needed in the first place” (Hadler 2008, p. 20)

  • Lumbar fusion (Mannion 2013 and 2014)

• Estimated to have accounted for $77B or almost 4% of direct health care costs in US in 2005
FEAR OF MISSING ORGANIC DISEASE

- Basic to medical training and clinician motivation and thus often drives intensive investigations
- In MUPS, may be based on Slater (1965): over 50% of patients had neurologic or psychiatric conditions at follow up
- Not supported by more recent investigations:
  - 3/64 had received a new neurologic diagnosis at six year follow up (Crimlisk 1998)
  - Physical disorder that could explain symptoms in 5/284 at one year follow up (Kooiman 2004)
  - Organic disease unsuspected at original encounter in 4/1030 (0.4%) neurology patients (Stone 2009)
FEAR OF MISSING ORGANIC DISEASE

• Extensive and unproductive investigation and treatment is a particular problem in WC
  • Assumption of biomedical etiology and organic disease
  • Sincere motivation to help AW
  • Nonmedical drivers
    • Claimant health beliefs, especially expectations
    • Clinician and attorney advocagenicity
    • Relative lack of medical sophistication of employers and insurance adjusters
  • Relatively ineffective cost and other constraints
  • Little appreciation of iatrogenicity of excessive workup, serially ineffective therapy, and prolonged case duration (including unnecessary activity restriction)
SYMPTOM VS. FUNCTION FOCUS

• **Symptom Focus:**
  • May reinforce PFs (e.g., health beliefs) leading to chronic pain states and disability
  • Contributes to and used to justify excessive medical care (opioids, pain intervention)
  • Does not strongly contribute to meaningful functional improvement, e.g., RTW (Peat 2008)

• **Functional Restoration Focus**
  • Physical, psychological, social, and work benefits
  • Improved outcomes in pain, function, healthcare utilization and cost, medication use, insurance claims, and work factors (Gatchel 2006, 2014)
CRITICAL NATURE OF TIME

Disability = f(time)

Cheadle 1994; Crook 1994; Waddell 2004; Iglesias 2017
CRITICAL NATURE OF TIME

• Physical deconditioning
  • Often result of FA and/or unnecessary activity restriction

• Psychological deconditioning
  • Loss of identity and social relationships (Bartley 1994)
  • May affect appraisals and expectations (e.g., development of hopelessness and disability ‘mindset’)

• Brain undergoes large scale neuroplastic changes in shift from acute to chronic pain at 7-29 wk (Hashmi 2013)

• Longer care and work disability durations predict increased claim costs and worse outcomes (Mathers 1998) and recurrence of original condition (Wasiak 2004)
PFS, MUPS, IAG, AND DFRUD

**PREDISPOSING**
(Diathesis)

**PRECIPITATING**
(usually with WRII)

**PERPETUATING**

**DOMAINS**
- ADMINISTRATIVE AND MEDICAL
- PSYCHOLOGICAL
- PERSONAL
- SOCIOCULTURAL
- SYSTEMIC
- WORKPLACE

**MUPS/CHRONIC PAIN**

**DFRUD**

IATROGENICITY

CNS SENSITIZATION?

SOMATIZATION?
PFS, MUPS, IAG, AND DFRUD

**PREDISPONING**
(Diathesis)

**PRECIPITATING**
(usually with WRII)

**PERPETUATING**

**DOMAINS**

- Administrative and Medical
- Psychological
- Personal
- Sociocultural
- Systemic
- Workplace

**MUPS/CHRONIC PAIN**

**DFRUD**

**IATROGENICITY**

**CNS SENSITIZATION?**

**SOMATIZATION?**
PFS, MUPS, IAG, AND DFRUD

**DOMAINS**

**ADMINISTRATIVE AND MEDICAL**
- Psychological
  - Psychophysiology
  - Health Cognitions
  - Motivation/Learning
  - ACEs
  - Perceived Injustice
  - Psychopathology
  - Workplace Aspects

**PERSONAL**

**SOCIOCULTURAL**

**SYSTEMIC**

**WORKPLACE**

**PREDISPOSING**
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PFS, MUPS, IAG, AND DFRUD

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**PREDISPONING** *(Diathesis)*

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**IATROGENICITY**
PFS, MUPS, IAG, AND DFRUD

DOMAINS

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PSYCHOLOGICAL
Psychophysiology
Health Cognitions
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CNS SENSITIZATION?

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PFS, MUPS, IAG, AND DFRUD

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  - Psychopathology
  - Workplace Aspects
- **PERSONAL**
- **SOCIOCULTURAL**
- **SYSTEMIC**
- **WORKPLACE**

**PREMONITATING**
(usually with WRII)

**PREDISPOSING**
(Diathesis)

**PERPETUATING**

- CNS Sensitization?
- Somatization?

**MUPS/CHRONIC PAIN**

**DFRUD**

**IATROGENICITY**
THE DILEMMA – WRCS

• The “grand bargain” in WC calls for the employer (and insurer) to ameliorate WRII (Fishback 2000)

• Many or most of these AWs are experiencing complex BPSE syndromes with nonwork and work-related contributing elements (WRCs)
  • Many diathesis factors predate and unrelated to WRII (PPH, HC, MRG, ACEs, PPA, WP)
  • MUPS have many of same nonwork etiologic factors
  • Many work-related elements may contribute (LM, PI, WP, IAG)
  • Interactions of various contributors are unknown
THE DILEMMA – IMPLICATIONS

• These AWs are not going to get better unless we address these WRCs

• We are already paying for these WRCs, e.g., “chronic sprain and strain”, “cumulative trauma”, “repetitive motion”, and “failed back surgery syndrome” (Goldberg 2017)

• We can deal with them more efficiently and effectively by treating them like what they are
  • Recognizing and coping with psychological influences
  • Managing MUPS
  • Decreasing deleterious effects of IAG
THE DILEMMA

• Industrial causality/apportionment become extremely problematic for employers and payors
  • If we accept some PFs and MUPS as having a partial causative relationship to WRCs (especially CS), to what degree are the PFs, MUPS, and CS compensable?
  • How far can and should the employer and/or insurer be expected to go – and actually go – in these cases?
  • What type and degree of treatment is appropriate for the AW?
  • Who determines apportionment, and how?
THE DILEMMA

• So how to deal with WRCs in current systems?
  • We cannot address every AW PF or MUPS, but rather need to find common meeting ground (“sweet spot”) for effective management for AW and fair liability for employers and payors
  • Need best practices focused on DFRUD and appropriate for compensation systems, with efficient management of relevant issues
  • IAG is pretty clear – should be actively working to reduce these influences
  • Likely to be more administratively and clinically effective, and possibly cost-effective
WHY AREN’T WE ADDRESSING THIS?

• Lack of widespread awareness and knowledge of PFs, MUPS, and IAG (and general application of BPSE model)
  • Many PFs are subclinical or occult, unrecognized and/or unadmitted by the AW, and/or at least partially compensated
  • Most stakeholders have or show no clue about IAG or MUPS
  • No effective mechanism for dealing with MUPS

• Fear of psychology
  • Lack of knowledge of dealing with PFs in acceptable, practical, and sustainable ways ⇒ much less familiar/comfortable than BM
  • Payors’ legitimate concern of “buying” pre-existing, long-term psychological conditions
WHY AREN’T WE ADDRESSING THIS?

• Rigid belief in and adherence to BM approach, with or without scientific denialism and dualism
  • Persistent stigma for BH concerns

• Inertia and comfort with business as usual (both administrative and medical)
  • Fear of change and uncertainty (⇒ loss of control)
  • Need to work across existing boundaries (⇒ share and trust)

• Practical concerns
  • Lack of resources, e.g., geographically available, focused, and high quality BH services (CBT)
  • Perceived or real cost
    • May be illusory – cost-utility of BPSE approach may be higher
SUMMARY OF PART I

• Why DFRUD important
• Why we need BPSE approach
• CB/PPP causation model; complex causation and integration; WRII vs. WRCs
• Contributing influences, including PFs, MUPS, and IAG
• The Dilemma of WRCs, and why we aren’t addressing these concerns more completely
PART II - POTENTIAL INTERVENTIONS

• Understand: Develop enhanced knowledge base and comprehension

• Change Approach: Make conceptual and practical shifts

• Prevent: Alter or avert modifiable factors

• Improve Recognition: Earlier and better detection of problem cases

• Manage: More appropriate administrative and clinical conduct of claims
THE BASIC LIBRARY

- Occupational Musculoskeletal Disorders
  - Third Edition
  - Nortin M. Hadler

- Hidden from View
  - Allan Ablass, MD
  - Howard Schnitzer, MD

- AMA Guides® to the Evaluation of Disease and Injury Causation
  - Second Edition
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- AMA Guides® to the Evaluation of Work Ability and Return to Work
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  - J. Mark Melton, MD
  - Mark H. HUMAN, MD
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