

5-2019

# Chronic pain: a disease of the brain

Vanessa Patel



# Chronic Pain: a disease of the brain

Vanessa Patel, MD

Henry Ford Behavioral Health

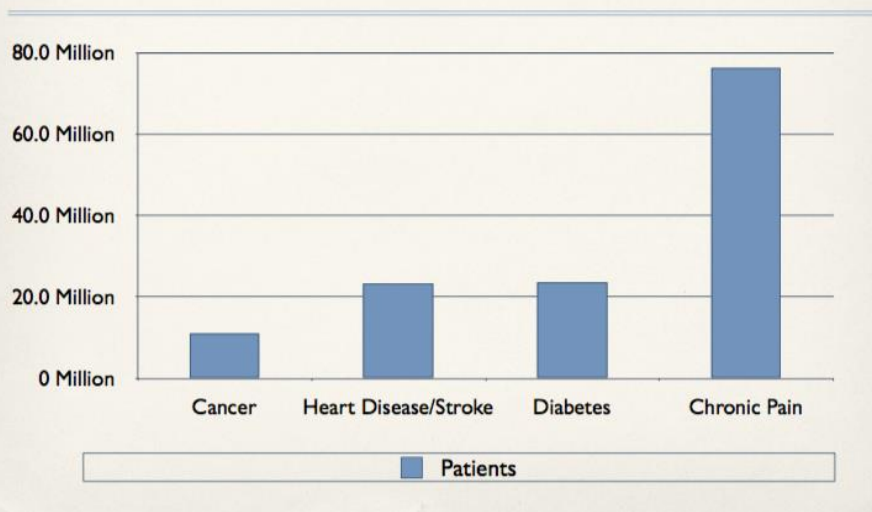
PGY 4- Psychiatry Resident

# Most common reason people go to the doctor: PAIN

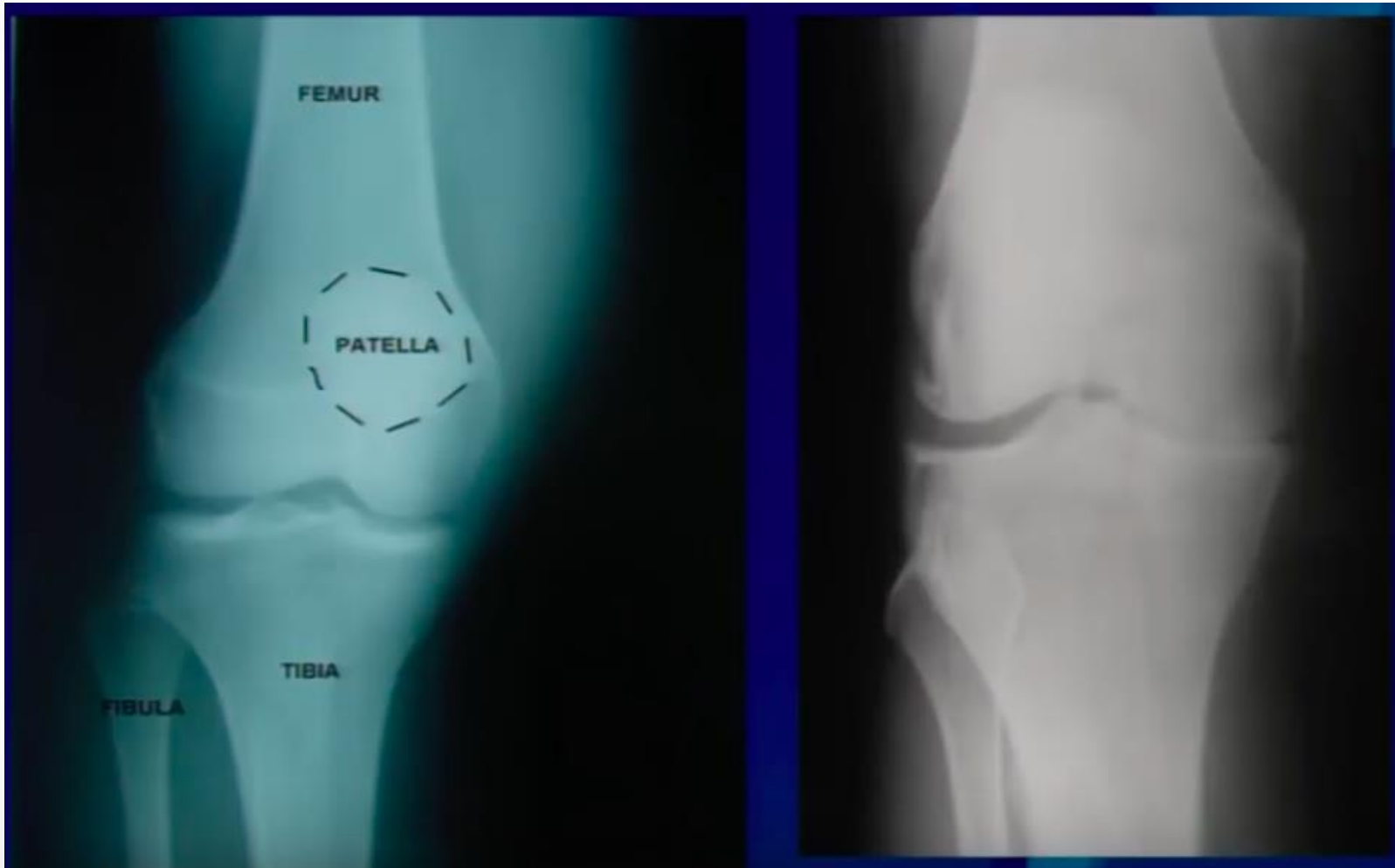


- **Pain** is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage
- **Acute Pain** - results from inflammation /injury to tissues; generally comes on suddenly and may be accompanied by emotional distress.
- **Chronic Pain** – 3 months+ duration of pain with environmental and psychological factors; resistant to most medical treatments

## Chronic Pain



# Which person has pain?



# How is pain perceived?

**SENSORY**  
Intensity,  
Localization,  
Discrimination

**CONTEXT**  
Pain Beliefs,  
Expectation,  
Placebo

**MOOD**  
Depression,  
Catastrophising,  
Anxiety

**COGNITIVE**  
Hypervigilance,  
Attention,  
Distraction,

**CHEMICAL & STRUCTURE**  
Neurodegeneration  
Metabolic  
(e.g. opioidergic,  
dopaminergic)  
Maladaptive Plasticity

**Nociceptive  
Modulation**

↓  
**A $\delta$  or C  
Nociceptive  
input**

# Burden of chronic pain:

## Financial Consequences

- Healthcare costs
- Disability
- Lost Workdays

## Psychological Problems

- Depression
- Anxiety
- Anger
- Loss of self-esteem

## Social Consequences

- Marital/family relations
- Intimacy/sexual activity
- Social isolation

## Functional Activities

- Physical functioning
- Ability to perform activities of daily living
- Sleep disturbances
- Work
- Recreation

# Natural History of Persistent Pain: A Patient's Perspective

**DEMORALIZED**

Awareness and Interpretation of Symptoms



Help/treatment-seeking



Diagnostic uncertainty



Patient  
frustration



Provider  
frustration?



Family/ Significant  
other frustration

Doctor shopping



Multiple costly, invasive diagnostic tests



Suggestion of psychological causation or malingering



Increased symptom reporting, pain behaviors, and help-seeking



Increased emotional distress





# Burnout in pain medicine physicians

- There is limited research on burnout in pain medicine physicians who provide care for patients with chronic pain.
- Recent research suggests 60% of pain medicine physicians in the United States may have high rates of emotional exhaustion
- Purpose of our study:
  - Determine whether or not treating this demoralized population of patients is contributing to pain medicine physician burnout
  - Determine whether or not fostering confidence in managing the psychological profiles of patients and decreasing their perceived burden of difficult encounters would protect against pain medicine physician burnout



	Low	Moderate	High
Emotional Exhaustion	79 (26.8%)	82 (27.8%)	<b>129 (43.7%)</b>
Depersonalization	124 (42.0%)	81 (27.5%)	<b>83 (28.1%)</b>
Personal Accomplishment	<b>46 (15.6%)</b>	70 (23.7%)	166 (56.3%)



Outcomes	Predictors	B	SE B	$\beta$	<i>p</i>	<i>R</i> <sup>2</sup>
Emotional Exhaustion	Age	0.016	0.071	.013	.822	<b>.232**</b>
	Marital Status	-2.904	2.173	-.073	.183	
	Hours worked per week	0.150	0.064	.129	<b>.019</b>	
	Months of BH training	0.397	0.184	.122	<b>.032</b>	
	Confidence/interest in $\Psi$ (PMI)	-0.119	0.056	-.123	<b>.034</b>	
	Burden of difficult patient encounters	1.360	0.171	.439	<b>.000</b>	
Depersonalization	Age	-0.052	0.034	-.080	.134	<b>.310**</b>
	Marital Status	-1.531	1.053	-.076	.147	
	Hours worked per week	-0.003	0.030	-.005	.918	
	Months of BH training	0.103	0.089	.062	.250	
	Confidence/interest in $\Psi$ (PMI)	-0.076	0.027	-.152	<b>.116</b>	
	Burden of difficult patient encounters	0.815	0.083	.514	<b>.000</b>	
Personal Accomplishment	Age	0.030	0.037	.048	.413	<b>.208**</b>
	Marital Status	2.182	1.101	.112	<b>.049</b>	
	Hours worked per week	0.043	0.031	.077	.174	
	Months of BH training	-0.015	0.093	-.010	.870	
	Confidence/interest in $\Psi$ (PMI)	0.183	0.029	.381	<b>.000</b>	
	Burden of difficult patient encounters	-0.278	0.088	-.180	<b>.002</b>	

*Note.* \* $p < .05$ , \*\* $p < .001$ , B = unstandardized beta-coefficient, SE B = standard error of the unstandardized beta-coefficient,  $\beta$  = standardized beta-coefficient

# Goals of chronic pain treatment



- What is at the joint vs. what is from the brain?
- Narcotics are not for long term use
- Functional status is important for determining next steps
- Antidepressants play a role in treating chronic pain

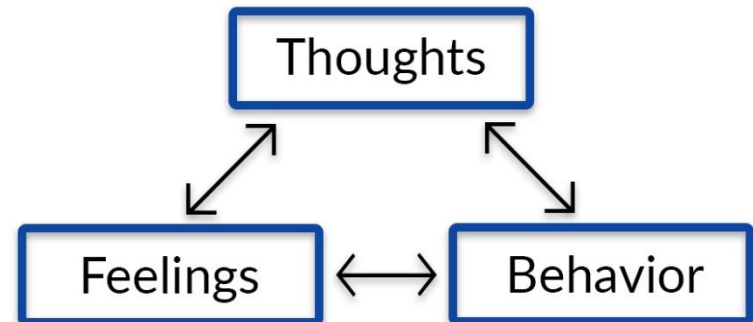


# Psychological treatments:

- **Acceptance and Commitment Therapy (ACT)**
  - Observe thoughts and feeling as they are
  - Behaving in ways consistent with valued goals and life direction
- **Cognitive-behavioral therapy (CBT)**
  - Cognitive:
    - Re-conceptualization of pain as problem to solve
    - Coping skills training
  - Behavioral:
    - Relaxation training (progressive muscle relaxation; autogenic training)
    - Altering pain-relevant communication
    - Behavioral activation via contingency management

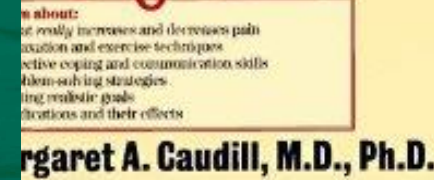
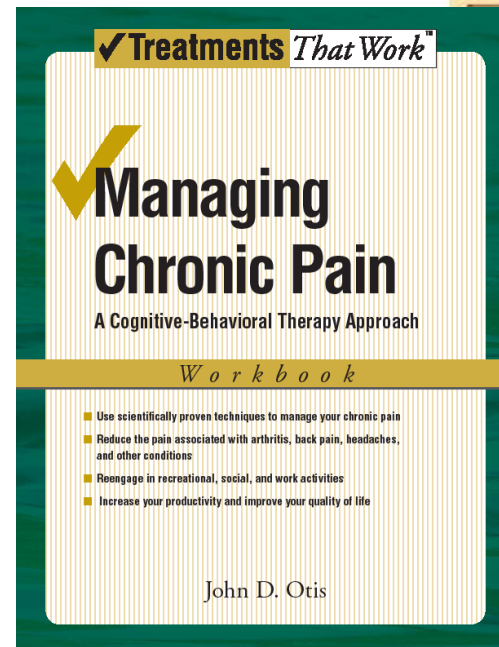
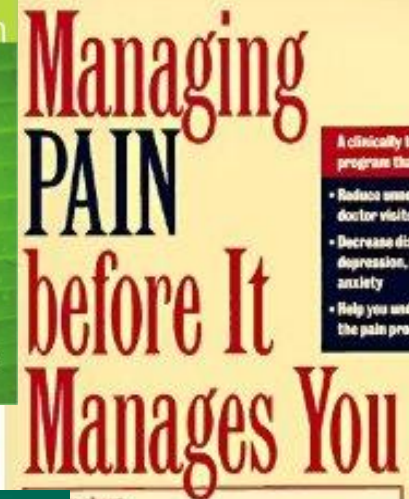
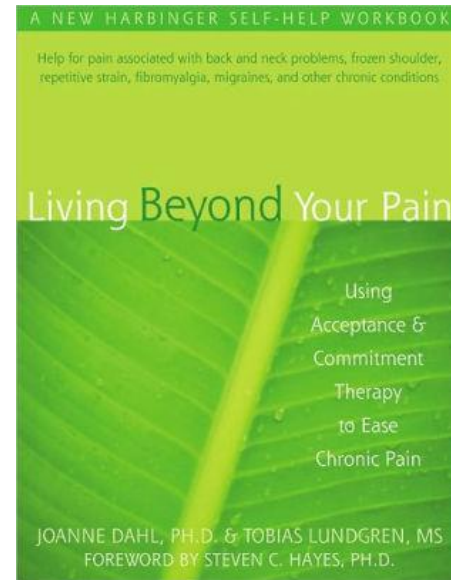


## The Cognitive Triangle



# In conclusion:

- At the heart of the problem of chronic pain remains the complex psychosocial aspects associated with living with chronic pain
- Treatment of chronic pain and comorbid mental health issues requires a multidisciplinary approach
- Treating this subset of patient population contributes to a large percentage of burnout in pain medicine providers
- Addressing the psychiatric needs of chronic pain patients remains challenging



# References:

- Alarcon GM: A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior* 2011, 79: 549-62.
- Balch, C.M., Shanafelt, T.D., Sloan, J.A., Satele, D.V., & Freischlag, J.A. (2011). Distress and career satisfaction among 14 surgical specialties comparing academic and private practice settings. *Annals of Surgery*, 254, 558-68.
- David K, Anuj D, & Nabil S: Violence towards chronic pain care providers: A national survey. *Pain Medicine*, 2015 Oct; 16(10): 1882-96.
- Dixon et al. (2007). Psychological interventions for arthritis pain management in adults. *Health Psychology*, 26, 241-250.
- Dyrbye LN, Shanafelt TD: Physician burnout: A potential threat to successful health care reform. *JAMA*. 2011, 305(19):2009-2010.
- Flor et al. (1992). Efficacy of multidisciplinary pain treatment centers: A meta-analytic review. *Pain*, 49, 221-230
- Hoffman et al. (2007). Meta-analysis of psychological interventions for chronic low back pain. *Health Psychology*, 26, 1-9.
- Jensen, M.P., Nielson, W.R., & Kerns, R.D. (2003). Toward the development of a motivational model of pain self-management. *Journal of Pain*, 4, 477-492.
- Kerns et al. (2011). Psychological interventions for chronic pain. *Annual Review of Clinical Psychology*, 7, 1-7.
- Kroll HR, Macaulay T, Jesse M: A Preliminary Survey Examining Predictors of Burnout in Pain Medicine Physicians in the United States. *Pain Physician*. 2016 Jul;19(5):E689-96.
- Maslach C, Jackson SE: The measurement of experienced burnout. *Journal of Occupational Behavior* 1981, 2:99-113.
- Maslach C, Schaufeli WB, Leiter MP: Job Burnout. *Annual Review of Psychology*. 2001, 52: 397-422.
- Matthias et al., 2013
- Miller-Matero LR, Dykuis KE, Albujoq K, Martens K, Fuller BS, Robinson V, Willens DE: Benefits of integrated behavioral health services: The physician perspective. *Families, Systems and Health*. 2016; 34 (1): 51-55.
- Passik S & Squire P: Current Risk Assessment and Management Paradigms: Snapshots in the Life of the Pain Specialist, *Pain Medicine*. 2009, 10 (2): S101–S114.
- Schaufeli WB, Leiter MP, Machlach C: Burnout: 35 years of research and practice. *Career Development International* 2009, 14(3): 204-20.
- Shanafelt, T.D., Balch, C.M., Bechamps, G.J., Russell, T., Dyrbye, L., Satele, D., et al. (2009). Burnout and career satisfaction among American surgeons. *Annals of Surgery*, 250, 463-71.
- Shanafelt, TD, Dyrbye, LN, Sinsky, C, et al. *Mayo Clin Proc*. 2016;91:836–848.
- Sinsky C, Colligan L, Li L, Prgomet M, Reynolds S, Goeders L, Westbrook J, Tutty M, Blike G: Allocation of Physician Time in Ambulatory Practice: A time and motion study in 4 specialties. *Annals of Internal Medicine*. 2016; 165(11): 753-760.
- Wasan AD, Wootton J, Jamison RN: Dealing with difficult patients in your pain practice. *Regional Anesthesia Pain Medicine*. 2005, Mar-Apr;30(2):184-192
- Wolter, Tilman: Spinal Cord stimulation for neuropathic pain: current perspective. *Journal of Pain Research*. 2014; 7: 651-663.
- Wong WS, Chen PP, Yap J, Mak KH, Tam BK & Fielding R: Chronic Pain and Psychiatric Morbidity: A Comparison between Patients Attending Specialist Orthopedics Clinic and Multidisciplinary Pain Clinic, *Pain Medicine*. 2011, 12(2) 246–259.