Patient-Centered Pain Care: Accessible Behavioral Health and Opioid Stewardship

Beth Darnall, PhD
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Stanford University School of Medicine
Anesthesiology, Perioperative and Pain Medicine
Psychiatry and Behavioral Sciences (by courtesy)
Wu Tsai Neurosciences Institute (affiliated faculty)
http://bethdarnall.com @BethDarnall




1

Contracts and Grants

- PCORI Patient-Centered Opioid and Pain Reduction
- NIH / NCCIH: Mechanisms & Efficacy of Pain Catastrophizing Treatment

Chief Science Advisor: AppliedVR
Board of Directors: Institute for Brain Potential

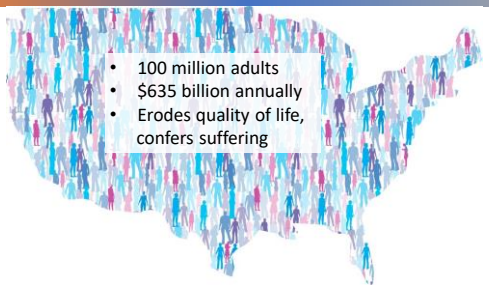
2

Expanding Access to Patient-Centered Pain Care

(1) Treat the full definition of pain
(2) Lowest risk treatments first
(3) Engage patients as **active participants** in their pain care
(4) Equip patients to control their experience of pain
(5) Enhance medical, surgical, and health outcomes

3

2011 IOM Report: *Relieving Pain in America*



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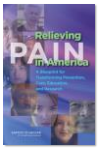
Behavioral Medicine for Pain Relief



- Institute of Medicine (2011)
- National Pain Strategy (2016)
- NASEM (2019)
- Center for Disease Control and Prevention (2019)
- HHS Interagency Task Force on Best Practices in Pain Management (2019)

5

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International Association for the Study of Pain
IASP
Working together for pain relief

Pain Definition: A noxious sensory **and emotional experience**

7

WORLD VIEW

A personal take on events

To treat pain, study people in all their complexity

Clinical research needs to investigate not simply drugs, but the psychology of why and how individuals experience pain, says **Beth Darnall.**

TOO OFTEN, PAIN IS TREATED AS A PURELY BIOMEDICAL PROBLEM.

Darnall B.
Nature 2018, May 3, Vol 557:7.

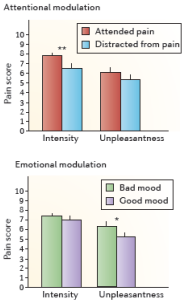
8

9

Pain is Complex

- Context
- Meaning
- Cognition
- Emotion
- Affect
- Mood
- Attention
- Social factors

Villemure C & Bushnell MC. Cognitive modulation of pain: how do attention and emotion influence pain processing? *Pain* (2002).



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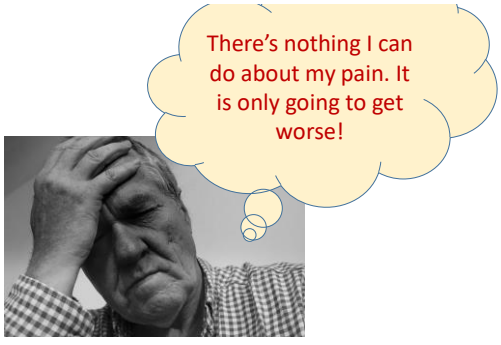

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Poor Descending Modulation / Pain Catastrophizing

- Pain intensity[1-2]
- Pain-related disability[1,3]
- Pain treatment efficacy[3-5]
- Development of chronic pain[6]
- Opioid misuse in people with SUD history[7]

1. Severeijns, et, Clin J Pain, 2001
2. Darnall, et al., *J Pain*, 2017.
3. Abbott, et al., *Eur Spine J*, 2011.
4. Burns et al., *J Consul Clin Psych*, 2003.
5. Spinhoven et al, *Eur J Pain*, 2004.
6. Wertli, et al, *Spine*, 2013.
7. Morasco et al, Drug Alc Dep, 2013.

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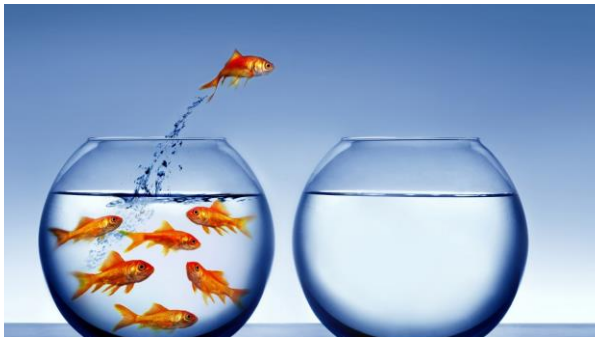

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THE LANCET
Volume 391, Issue 10137, 9–15 June 2018, Pages 2368-2383

Series

Prevention and treatment of low back pain: evidence, challenges, and promising directions

Prof Nadine E Foster DPhil a, Prof Johannes R Anema PhD b, Dan Cherkin PhD c, Prof Roger Chou PhD d, Prof Steven P Cohen MD e, f, Prof Douglas P Gross PhD g, Paulo H Ferreira PhD h, Prof Julie M Fritz PhD i, Prof Bart W Koes PhD j, Prof Wilco Peul PhD k, Prof Judith A Turner PhD l, Prof Chris G Maher PhD m, Lancet Low Back Pain Series Working Group†

Education: First-line treatment
CBT: First-line treatment

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Cognitive Behavioral Therapy for Chronic Pain

Topics and Skills

- Pain and the brain
- Mood and pain
- Sleep and pain
- Pleasant activities
- Goal setting
- Problem solving
- Movement
- Social connection
- Diaphragmatic Breathing
- Relaxation Response
- Cognitive Restructuring
- Mindfulness
- Meditation

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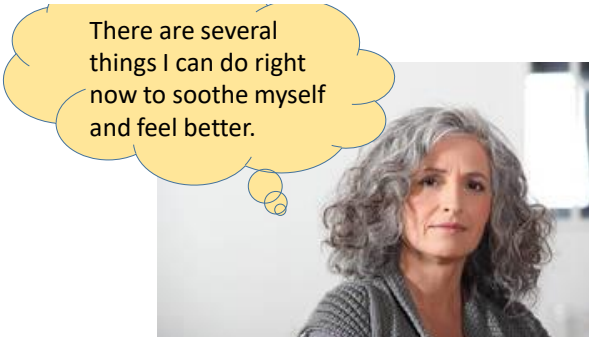

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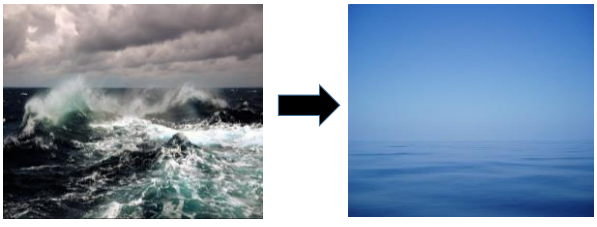

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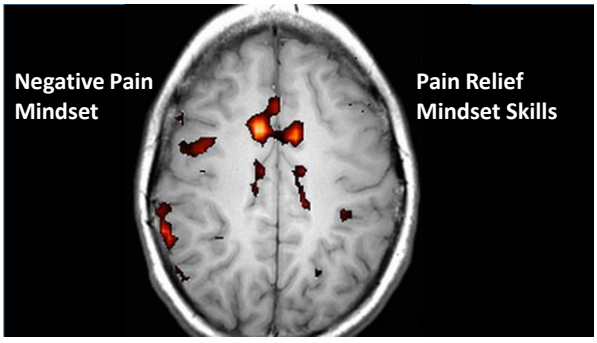

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Regular skills use:

- Dampens pain processing
- Reduces physiological hyperarousal
- Reduces cognitive and emotional responses that amplify pain
- Entrains positive neural patterns
- Facilitates movement, activation
- Increases self-efficacy, internal locus of control

22

Pain Catastrophizing and Efficacy of Cognitive Behavioral Therapy

- Increases prefrontal gray matter in patients with chronic pain

Seminowicz DA, Shpaner M, Keaser ML, Krauthamer MG, Mantegna J, Dumas JA, Newhouse PA, Filippi C, Keefe FJ, Naylor MR. *J Pain*. 2013 Dec; 14(12):1573-84

23

Original Research Article

Pain Medicine 2016; 17: 250–263
doi: 10.1093/pm/pnv095

Pain Psychology: A Global Needs Assessment and National Call to Action

Beth D. Darnall, PhD,*,a Judith Scheman, PhD,†,a Sara Davin, PhD,‡,b John W. Burns, PhD,‡,b Jennifer L. Murphy, PhD,§,b Anna C. Wilson, PhD,¶,b Robert D. Kerns, PhD,‖ and Sean C. Mackey, MD, PhD,*,a

*Stanford University School of Medicine, Department of Anesthesiology, Perioperative and Pain Medicine, Division of Pain Medicine, Stanford Systems Neuroscience and Pain Laboratory, Palo Alto, California; †Center for Neurological Restoration, Cleveland Clinic, Cleveland, Ohio; ‡Department of Behavioral Sciences, Rush University, Chicago, Illinois; §Chronic Pain Rehabilitation Program, James A. Haley Veterans' Hospital, Tampa, Florida; ¶Institute on Development & Disability, IDD Division of

Design. Prospective, observational, cross-sectional.

Methods. Brief surveys were administered online to six stakeholder groups (psychologists/therapists, individuals with chronic pain, pain physicians, primary care physicians/physician assistants, nurse practitioners, and the directors of graduate and postgraduate psychology training programs).

Results. 1,991 responses were received. Results revealed low confidence and low perceived competency to address physical pain among psychologists/therapists, and high levels of interest and need for pain education. We found broad support for pain psychology across stakeholder groups, and global support for a national initiative to increase pain training and competency in U.S. therapists. Among dir-

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A SOLUTION: Single-Session Pain Class Rapidly Equips Participants with Actionable Pain Management Skills

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https://empoweredrelief.com/

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Journal of Pain Research

Dovepress

ORIGINAL RESEARCH

From Catastrophizing to Recovery: a pilot study of a single-session treatment for pain catastrophizing

This article was published in the following Dove Press journal:
Journal of Pain Research
25 April 2014
Number of times this article has been viewed

Empowered Relief™

Beth D Darnall
John A Sturgeon
Ming-Chih Kao
Jennifer M Hah
Sean C Mackey

Division of Pain Medicine, Stanford Systems Neuroscience and Pain Laboratory, Stanford University School of Medicine, Palo Alto, CA, USA

Background: Pain catastrophizing (PC) – a pattern of negative cognitive-emotional responses to real or anticipated pain – maintains chronic pain and undermines medical treatments. Standard PC treatment involves multiple sessions of cognitive behavioral therapy. To provide efficient treatment, we developed a single-session, 2-hour class that solely treats PC entitled "From Catastrophizing to Recovery" [FCR].

Objectives: To determine 1) feasibility of FCR; 2) participant ratings for acceptability, understandability, satisfaction, and likelihood to use the information learned; and 3) preliminary efficacy of FCR for reducing PC.

Design and methods: Uncontrolled prospective pilot trial with a retrospective chart and

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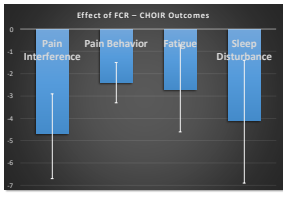
Single-session skills-based pain class reduced pain catastrophizing

N = 57

Time Point	PCS Mean (SD)
Baseline	26.1 (10.8)
Post-Treatment Week 2	16.5 (9.9)
Post-Treatment Week 4	13.8 (9.5)

Baseline to Post-Treatment Week 4: $d = 1.15$



Darnall BD et al (2014). *J Pain Res.*

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Clinical importance of post-class PCS changes

	Week 2		Week 4	
	N	PCS Change	N	PCS Change
Increased PCS	5	+19.8 (21.6)%	3	+41.3 (21.6)%
No Change (<15%)	15	-1.2 (2.8)%	5	-6.5 (2.7)%
Minimally Important Change (15-29%)	10	-23.3 (3.2)%	12	-22.4 (4.5)%
Moderately Important Change (30-49%)	13	-40.6 (4.9)%	16	-38.4 (4.7)%
Substantially Important (≥50%)	14	-61.3 (11.9)%	21	-67.2 (12.3)%

28

Darnall BD et al. Comparative Efficacy and Mechanisms of a Single-Session Pain Psychology: Protocol for a Randomized Controlled Trial in Chronic Low Back Pain. *Trials* 2018; **19**:165.

Darnall BD et al. Development and Validation of a Daily Pain Catastrophizing Scale. *J Pain*. 2017 Sep;18(9):1139-1149.

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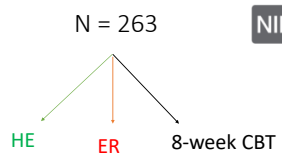

Darnall BD et al. Comparative Efficacy and Mechanisms of a Single-Session Pain Psychology: Protocol for a Randomized Controlled Trial in Chronic Low Back Pain. *Trials* 2018.

Darnall BD et al. Comparison of a Single-Session Pain Management Skills Class ("Empowered Relief") vs. Cognitive Behavioral Therapy or Health Education for Chronic Low Back Pain: A Non-Inferiority and Combined Superiority Randomized Trial (in review)

30

The U.S. HHS Inter-agency Pain Management Task Force specifically identified "Empowered Relief" as a promising and scalable behavioral treatment

https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf (2019)

See Darnall et al 2014 citation in the report

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Certification Workshops for Healthcare Clinicians

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https://empoweredrelief.com/

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Empowered Relief™

Scalable
Accessible
Low cost
Open to all patients

- Pain education + CBT and mindfulness based principles and skills
- Any clinician may become certified
- Protocolized, manualized, research-grade materials
- Up to 100 people can be treated at once (only limited by size of the room)
- Family members may attend
- Online delivery

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MASSACHUSETTS GENERAL HOSPITAL

Intermountain® Healthcare

KAISER PERMANENTE®

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Dr. Maisa Ziadni
NIDA K-23

35

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Meta-analysis 15 studies (N = 5046):

PC best predicts postsurgical chronic pain

Theunissen M et al. *Clin J Pain* 2012

PC best predicts prolonged opioid use after surgery

Helmerhorst GTT et al. *J Bone & Joint Surg* 2014.

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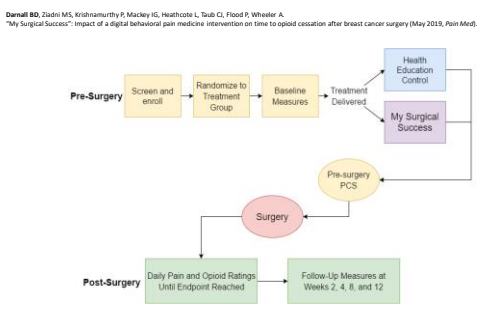

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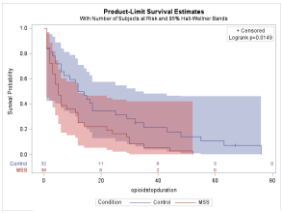

N = 68 (MSS, n = 36; HE, n = 32)

Effects of My Surgical Success (MSS) vs HE Control in Unadjusted and Adjusted Model on Opioid Cessation

Model	Effect	HR Estimate	Lower 95% CI	Upper 95% CI	z Value	Pr > |z|
Unadjusted Model						
	MSS versus HE	1.8623	1.1205	3.0952	2.40	0.0164
Adjusted Model						
	MSS versus HE	1.7405	1.0276	2.9478	2.06	0.0393
	PROMIS Anger	0.9734	0.9374	1.0107	-1.4	0.1601
	PROMIS Fatigue	1.0081	0.9749	1.0426	0.47	0.6357
	PROMIS Physical	0.998	0.9575	1.0403	-0.09	0.9256

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Spine Surgery

Cleveland Clinic

La Tour Medical Group
Switzerland

Stanford MEDICINE | Department of Orthopaedic Surgery

42

Long-Term Use of Daily Prescription Opioids

Mojtabai R. *Pharmacoepidemiol Drug Saf.* 2018;27:526-534.

43

Fewer new starts is the best way to decrease opioid prescriptions

Patients taking long-term prescription opioids require careful considerations

- Reducing opioid doses creates **new risks**
- Right methodology can be applied to **minimize iatrogenic risks** from de-prescribing
- **Apply patient-centered principles**

Credit: Celi

44

- New starts
- Provided benchmarks of caution for increasing dose

Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49.

45

Associations between stopping prescriptions for opioids, length of opioid treatment, and overdose or suicide deaths in US veterans: observational evaluation

Mortality After Discontinuation of Primary Care–Based Chronic Opioid Therapy for Pain: a Retrospective Cohort Study

Opioid Taper Is Associated with Subsequent Termination of Care: a Retrospective Cohort Study

General Hospital Psychiatry

JAMA Network Open.

Suicidal ideation and suicidal self-directed violence following clinician-initiated prescription opioid discontinuation among long-term opioid users

Original Investigation | Substance Use and Addiction

Association Between Opioid Dose Variability and Opioid Overdose Among Adults Prescribed Long-term Opioid Therapy

Jason M. Glanz, PhD; Ingrid A. Binswanger, MD; Susan M. Shetterly, MS; Komal J. Narwaney, PhD; Stan Xu, PhD

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Growing Outcry Against Iatrogenic Opioid Reduction Risks and Harms

International Stakeholder Letter publishes

Darnall BD, Juurlink D, Kerns R, et al.
- Reuters Wire service
- >20 news outlets worldwide

Human Rights Watch

Declares the issue a "human rights violation"
- Laura Mills

HP3 Letter

Kertesz, Satel, et al.
- 300+ signatories
- 3 former U.S. Drug Czars
- AMA signs support

FDA

Clarifies labeling and cautions against abrupt discontinuation

CDC

Dowell et al. Clarification of opioid prescribing guidelines publish in *NEJM*.

47

HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics

October 2019

Avoid insisting on opioid tapering or discontinuation when opioid use may be warranted (e.g., treatment of cancer pain, pain at the end of life, or other circumstances in which benefits outweigh risks of opioid therapy). ***The CDC Guideline for Prescribing Opioids for Chronic Pain does not recommend opioid discontinuation when benefits of opioids outweigh risks.***[2,4,13]

Individualize the taper rate

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Tapering Opioids

Patients' number one concern/fear?

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SPECIAL TOPIC SERIES

Opioid Cessation and Multidimensional Outcomes After Interdisciplinary Chronic Pain Treatment

Jennifer L. Murphy, PhD, Michael E. Clark, PhD,*† and Evangelia Banou, PhD**

Clin J Pain • Volume 29, Number 2, February 2013

Outcome Variables	OP (n = 221) Mean (SD)	NOP (n = 379) Mean (SD)
Pain intensity		
Admission	7.01 (1.77)	6.91 (1.58)
Discharge	6.46 (1.74)	6.14 (1.79)

51

Community-Based Solutions are Needed

- Low-cost
- Low-risk
- Scalable
- Effectively reduce health risks
- Provide education and support
- Structured
- Address anxiety of patients and prescribers alike
- Promote patient trust and a good doctor-patient bond
- **Enhance patient willingness to try a gentle opioid taper**

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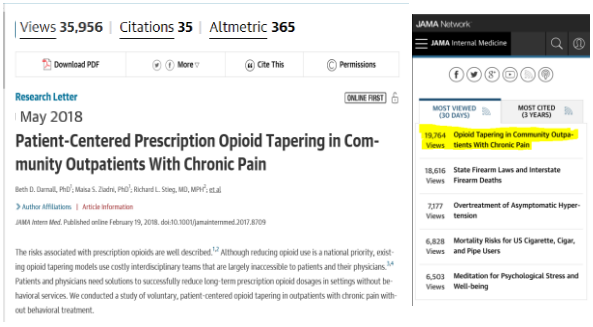

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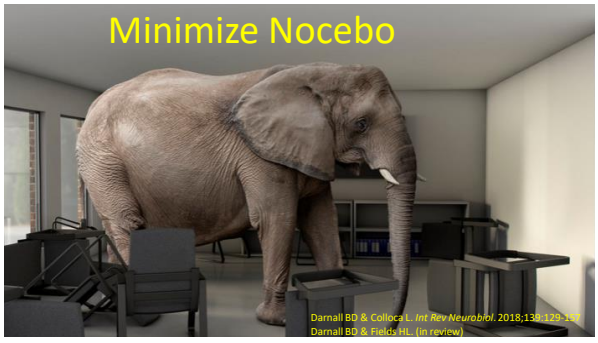

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Opioid Cessation vs. Opioid Reduction

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We Optimized Patient Choice and Control in Their Taper

- Participation was VOLUNTARY
- Patients could control the pace of their taper
- Patients could pause their taper
- Patients were free to drop out of the study at any time
- The taper goal was not zero unless the patient chose that goal
- The taper was NOT to a pre-defined opioid dose
- Patients partnered with their doctor to achieve their *lowest comfortable dose* over 4 months
- The taper was NOT unidirectional

- Darnall BD & Colloca L. Optimizing Placebo and Minimizing Nocebo to Reduce Pain, Catastrophizing, and Opioid Use. *Int Rev Neurobiol*. 2018;139:129-157.2018;139:129-157.
- U.S. HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics (2019)

56

Study Variables

- Demographics (Gender, Age)
- Pain Treatment History (Pain Dx, Duration of Opioid Use)

- Opioid Dose (MEDD)
- Average Pain Intensity (0-10)
- Pain Catastrophizing Scale
- PROMIS Measures
- Marijuana use (Y/N)

→ 16 Weeks

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Sample Characteristics (N=51)

- 55% female
- 52 years of age (range = 25 – 72)
- 6 years on opioids (range = 1 – 38)
- Moderate pain intensity
- Marijuana: 37% (18)
- Opioid MEDD = 288 (60, 1005)

Darnall BD, Ziadni MS, Mackey IG, Kao MC, Flood P (FEB 2018; *JAMA Int Med)*

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	Baseline	16 weeks	
Variable	Median (IQR)		P-val
Opioid Dose (MEDD)	288 (153, 587)	150 (54, 248)	0.002
Pain Intensity (NRS)	5.0 (3.0, 7.0)	4.5 (3.0, 7.0)	0.29
PCS (catastrophizing)	22 (10, 30)	15 (7, 23)	0.04
Fatigue	61 (54, 65)	59 (51, 65)	0.64
Anxiety	60 (53, 64)	54 (46, 62)	0.06
Depression	56 (49, 64)	55 (48, 61)	0.31
Sleep Disturbance	59 (54, 70)	56 (50, 64)	0.13
Pain Interference	63 (58, 67)	63 (57, 67)	0.44
Pain Behavior	60 (57, 63)	59 (56, 64)	0.47
Physical Function	39 (34, 41)	39 (34, 43)	0.78

Kruskal-Wallis rank sum test

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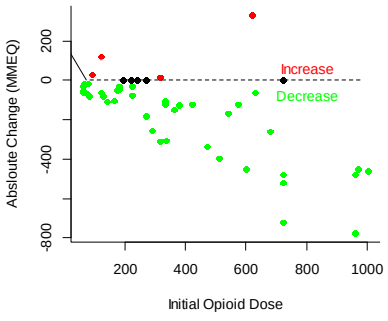

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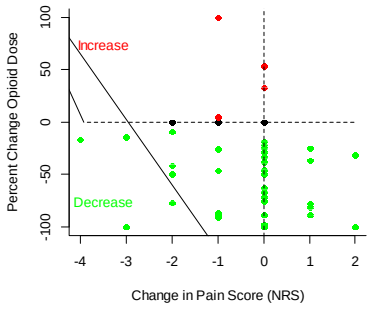

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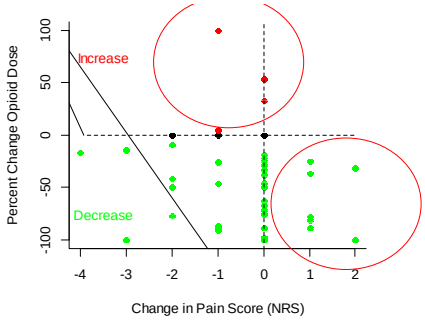

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Comparative Effectiveness of Pain Cognitive Behavioral Therapy and Chronic Pain Self-Management Within the Context of Voluntary Opioid Reduction

Darnall BD (PI)

https://empower.stanford.edu/

EMPOWER

EFFECTIVE MANAGEMENT OF PAIN AND OPIOID-FREE WAYS TO ENHANCE RELIEF

Funded by the Patient-Centered Outcomes Research Institute®

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1365 patients taking long-term opioids for chronic pain

- Stanford Pain Management Center (CA)
- Stanford Primary Care (CA)
- Kaiser Permanente (Oakland, CA)
- Intermountain Health (Utah)
- Veterans Affairs (Phoenix, AZ)
- MedNOW Primary Care (Denver, CO)

CHOIR Collaborative Health Outcomes Information Registry

EMPOWER

EFFECTIVE MANAGEMENT OF PAIN AND OPIOID-FREE WAYS TO ENHANCE RELIEF

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Eligibility

- ≥ 10 MEDD daily for 3 months
- Pain for 6 months

Exclusions:

- Active suicidality
- Unable to participate in behavioral groups
- **Moderate to severe Opioid Use Disorder**

  Screening: 3 items from the TAPS + DSM-V OUD

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EMPOWER

We must create a caring and safe system that makes patients want to join and remain in EMPOWER

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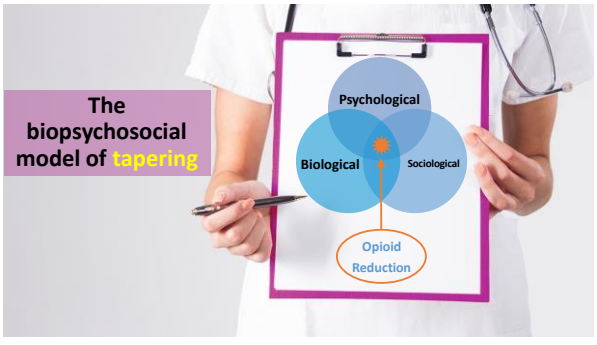

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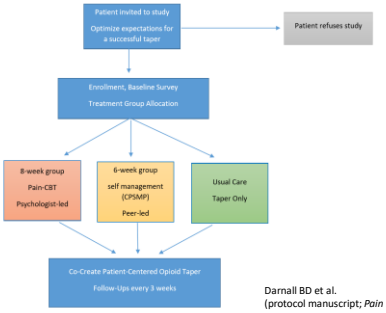

Darnall BD et al.
(protocol manuscript; *Pain Med.* DEC 2019)

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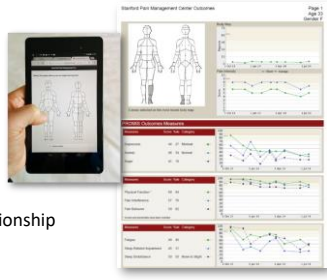
CHOIR Collaborative Health Outcomes Information Registry

Psychosocial factors (PROMIS)
Opioids
Substance use
Degree of choice
Readiness to taper
Taper beliefs
Satisfaction with clinician relationship
Comments



http://choir.stanford.edu

Google Cloud

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Close Monitoring of Patient Response to Opioid Reduction

WEEKLY surveys for withdrawal symptoms, mood, comments
MONTHLY surveys for mood, suicidality, opioid dose, satisfaction, comments

- Alerts are sent to prescribers in real time
- Patients receive tailored messages

We track patients over 12 months

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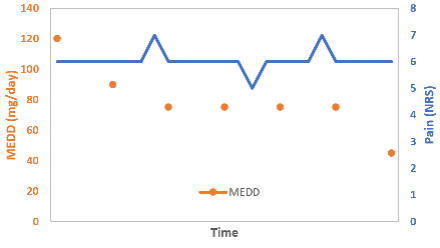

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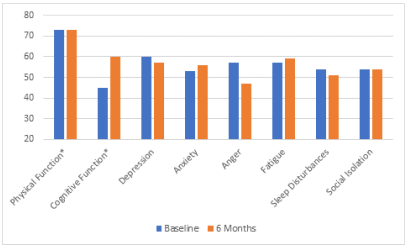

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Opioid Taper Choice

1-item Scale: 0=no choice (felt forced), 10=completely my decision

Mean ± SD	6.55 ± 3.76
Median (IQR)	**8 (0-10)**
Low (0-3)	51 (24.52%)
Moderate (4-6)	32 (15.24%)
High (7-10)	125 (60.10%)

Readiness to Taper Opioids

1-item Scale: 1=not ready, 5=very ready

Mean ± SD	3.76 ± 1.18
Median (IQR)	**4 (1-5)**
Low (1-2)	32 (15.24%)
Moderate (3)	51 (24.29%)
High (4-5)	127 (60.48%)

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Patient-Centered Opioid Stewardship

- Voluntary
- Enhance choice and control
- During and after taper, increase follow-up and communication
- Track closely with PROs, adjust care plan

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