PAINWEEK®

Successfully Reducing Opioids: The Critical Role of Psychology

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Title and Affiliation

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Disclosures

- Advisory Board Member:
  - Bicycle Health

Learning Objectives

- Delineate the components of interdisciplinary pain care
- Differentiate among the terms tolerance, dependence, and addiction as they relate to pain medication use
- Articulate the role of psychological interventions in the care of opioid dependent patients

Pain in Context

- IOM Report (2011)
  - Chronic pain affects approximately 100 million American adults
  - More than those affected by heart disease, cancer, and diabetes combined
  - Estimated annual cost of $500-600 billion in medical treatment and lost productivity

Does pain serve any function or purpose?


WARNING
BEWARE
OF HARM


Beware

Is All Pain the Same?

Acute Pain

- Hurt = Harm
  - Avoidance decreases damage
- Etiology:
  - Clear pathway
  - Often single cause
- Treatment Course
  - Fixed endpoint
  - Immobilization often essential for recovery
  - Medications

Chronic Pain

- Hurt ≠ Harm
  - Fear-avoidance cycle
- Etiology:
  - Many unknowns
  - Multifactorial
- Treatment Course
  - No fixed endpoint
  - Immobilization can worsen condition
  - Medications: caution

Management Approach to Pain

- Similar to other chronic health conditions lacking a cure
- Focus on quality of life & functioning

Example: Diabetes

- Regulate diet
- Check blood sugars
- Exercise regularly
- Take insulin/medications
- Monitor wounds

Chronic Pain Management

- Medical optimization
  - Physician, NP, PA
- Physical reconditioning
  - Rehabilitation provider (PT, OT)
- Behavioral/lifestyle modification
  - Pain psychologist

Interdisciplinary Management

Diabetes

- Regulate diet
- Check blood sugars
- Exercise regularly
- Take insulin/medications
- Monitor wounds

Chronic Pain

- Medical optimization
- Physical reconditioning
- Behavioral/lifestyle modification

Conceptualizing Patient Treatment: The Lack of Interdisciplinary Care

- Treatment ~~should~~ fails to focus on treating the whole person
  - ~~Optimization of~~ medical care
  - ~~Physical rehabilitation~~
  - ~~Lifestyle factors~~
  - ~~Psychosocial variables~~

Unimodal Care: The Evolution of a Problem

- Tolerance
- Physical Dependence
- Psychological Dependence
- Addiction

Prescription Opioids

- Approximately 3 million Americans meet criteria for opioid abuse or dependence (4x increase since 1999)
- 60% of overdose deaths in the US (2014) were attributed to opioids
- 80% of new heroin users initiated SUD by misusing prescribed medications

- U.S. Department of Health and Human Services (2016). HHS research on pain treatment and opioid misuse and overdose: translating science into action.
- U.S. Department of Health and Human Services (2015). The opioid epidemic: by the numbers. CDC, MMWR, 2015; 64; 1-5.
- U.S. Department of Health and Human Services (2016). HHS opioid initiative: one year later.

Prescription Opioids: A Day in the US

- 5,753 individuals misused rx opioids for the first time
- 116 opioid-related fatalities
- $1.38 billion in economic costs
- U.S. Department of Health and Human Services: https://www.hhs.gov/opioids/about-the-epidemic/index.html accessed March 2018.

Mission LISA Estimates

- 13.8 million individuals (12 and older) misused prescription opioids and heroin in 2017
- 12.5% increase in drug OD deaths from 2016-2017
- 89% of above increase secondary to opioids
- Highest numbers of individuals affected by opioid misuse (including abuse and death): Pennsylvania, Florida, California, Ohio, Texas

- Lumina Analytics: https://luminaanalytics.com/mission-lisa accessed October 2018.

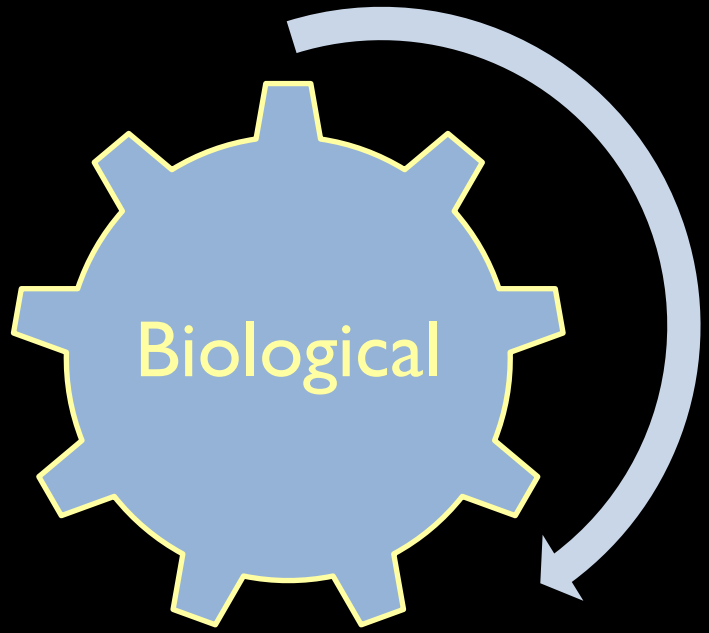
Prescription Opioids

- Opioid crisis declared a public health emergency

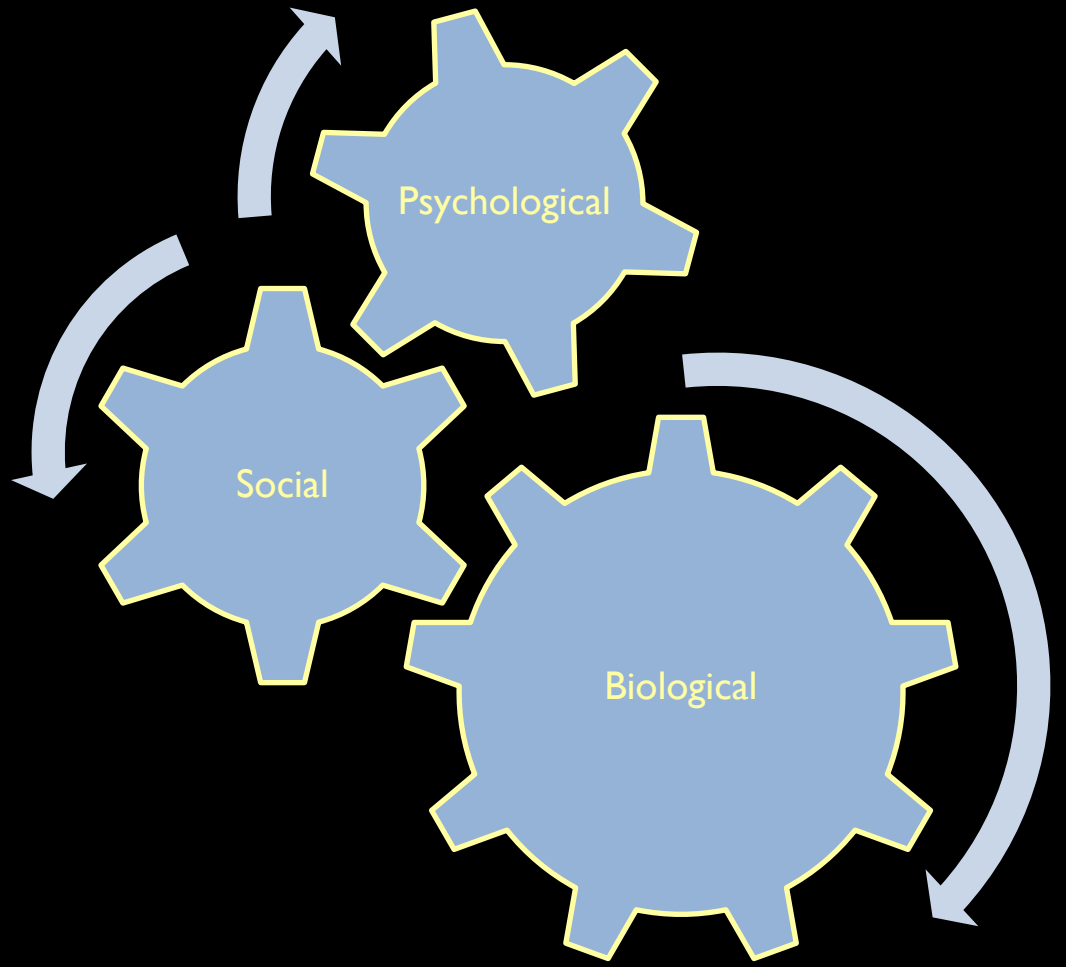
- HHS 5-point strategy
  - Better addiction prevention, treatment, and recovery
  - Better data
  - Better pain management (crisis = opportunity)
  - Better targeting of overdose reversing drugs
  - Better research

- U.S. Department of Health and Human Services: https://www.hhs.gov/opioids/about-the-epidemic/index.html accessed March 2018.
- U.S. Department of Health and Human Services (2017). HHS opioid research portfolio brief: translating science into action.

Biomedical vs. Biopsychosocial



Biomedical vs. Biopsychosocial



Interdisciplinary Management

Primary goal:

Help patients learn to live with pain

Learn to Live with Pain?

Learn to Live with Pain?

LIFE

Family Friends Work School

Sports Leisure Self-care Music

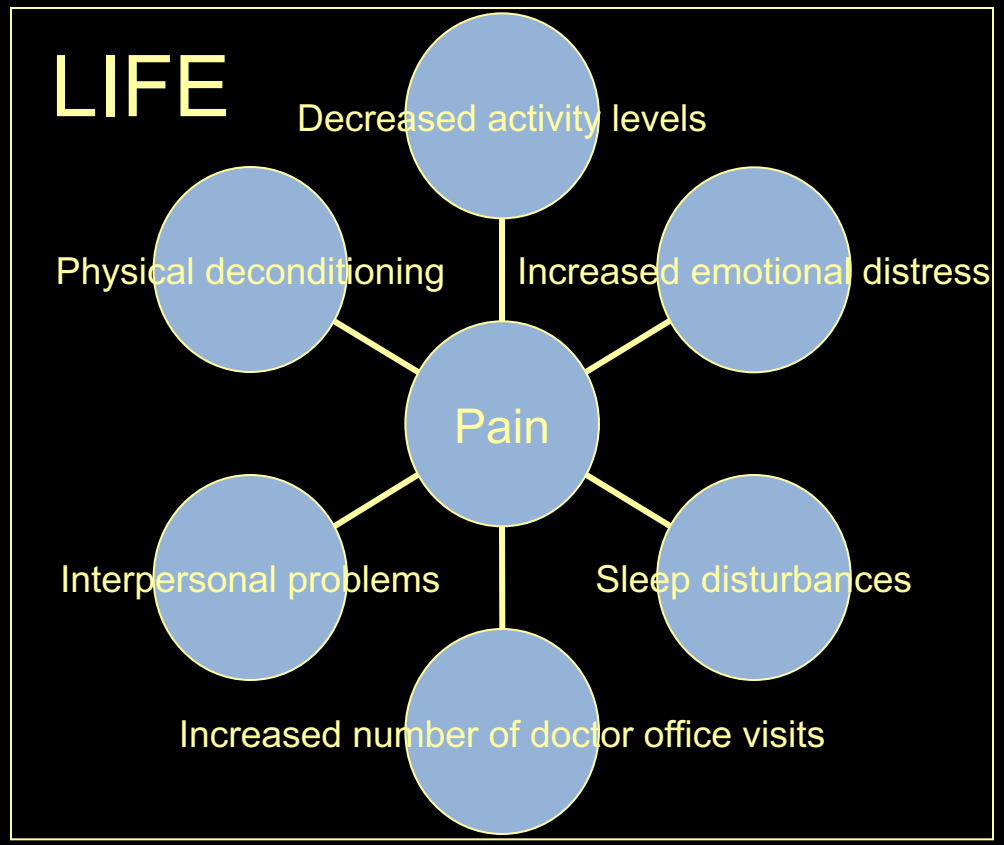
Vacations Hobbies Dining

Entertainment Socializing

Cooking Cleaning Errands

Learn to Live with Pain?

Learn to Live with Pain?



Yes, Learn to Live with Pain!

Common Pain Psychology Curriculum Components

- Overview of pain
- Pacing of activities
- Pain & stress physiology
- Relaxation training
- Sleep hygiene

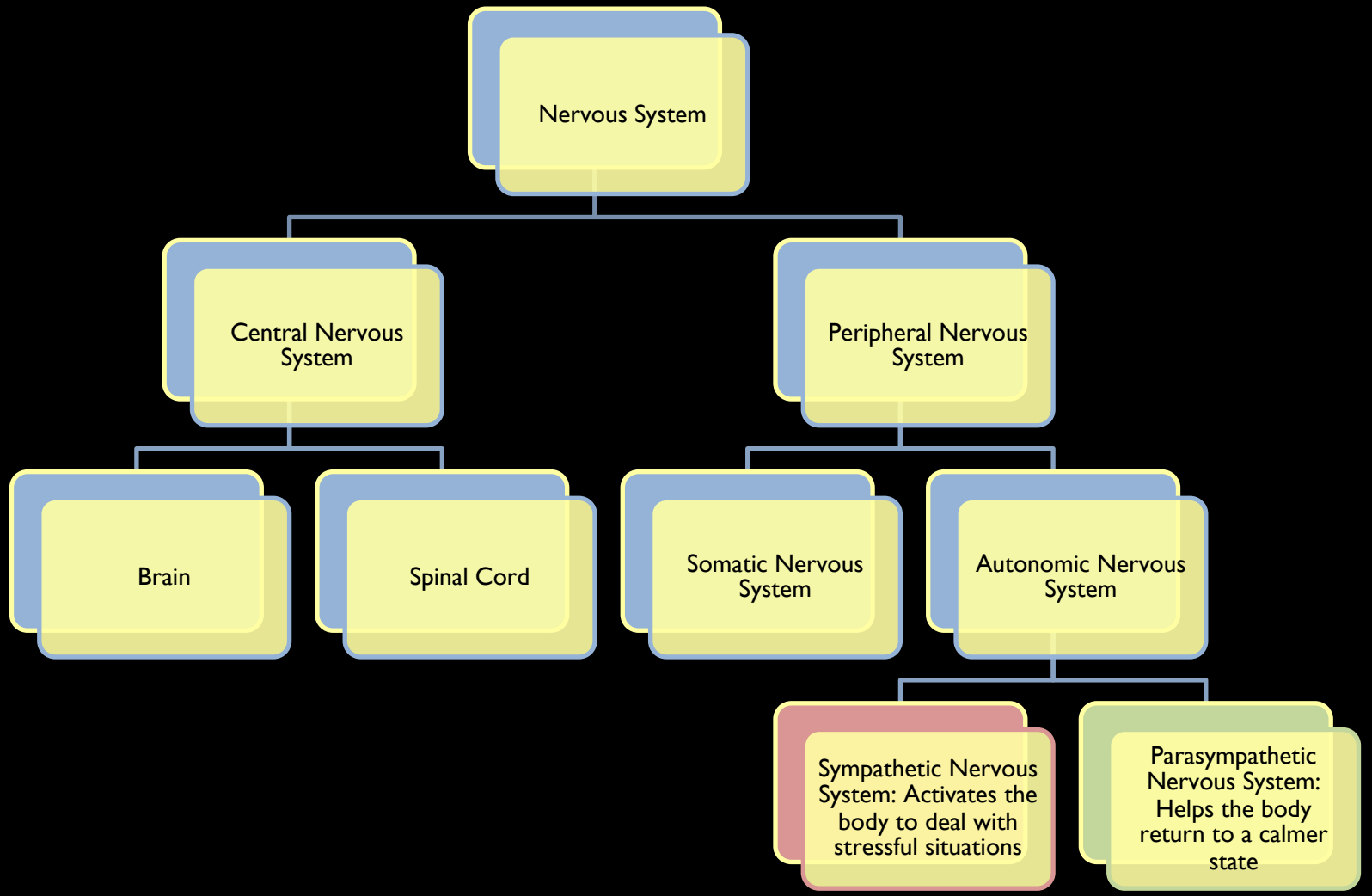
Common Pain Psychology Curriculum Components

- Identifying environmental stressors (work & home)
- Development of stress management techniques (e.g., cognitive restructuring)
- Assertiveness/communication skills development
- Flare contingency planning

Deconstructing Pain Psychology

- Relaxation training
- The role of cognitive processes

Stress, the Nervous System, and Pain



Stress, the Nervous System, and Pain

Sympathetic Activation

- Increased heart rate
- Increased blood pressure
- Increased muscle tension
- Constriction of blood vessels
- Release of stress hormones
- Pupil dilation
- Change in breathing patterns
- Additional systemic changes

Stress, the Nervous System, and Pain

Parasympathetic Activation

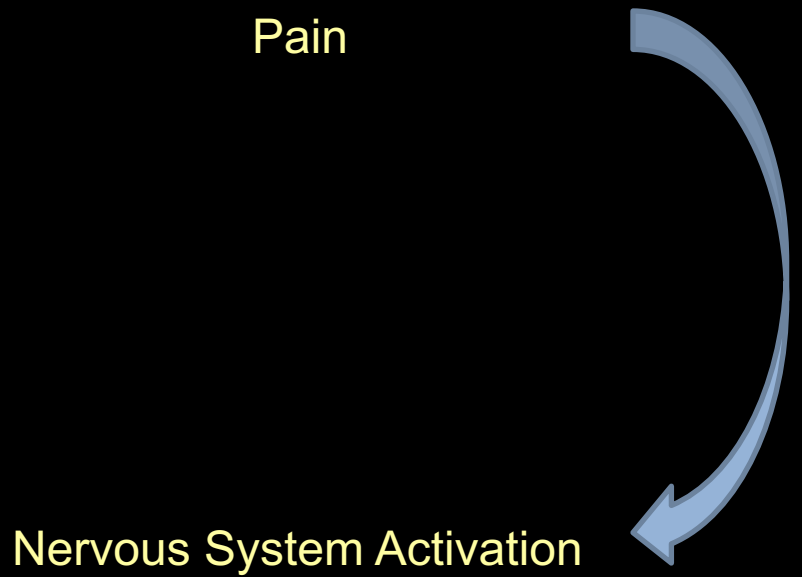
- Decreased heart rate
- Decreased blood pressure
- Decreased muscle tension
- Expansion of blood vessels
- Discontinuation of stress hormone release
- Pupil constriction
- Change in breathing patterns
- Additional systemic changes

Stress, the Nervous System, and Pain

Pain

Nervous System Activation

Stress, the Nervous System, and Pain



Stress, the Nervous System, and Pain

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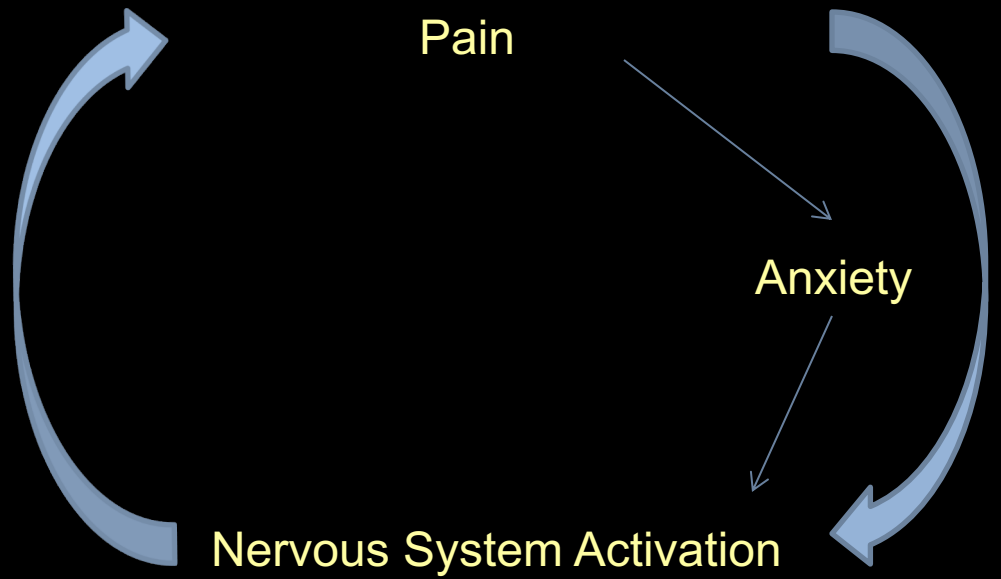

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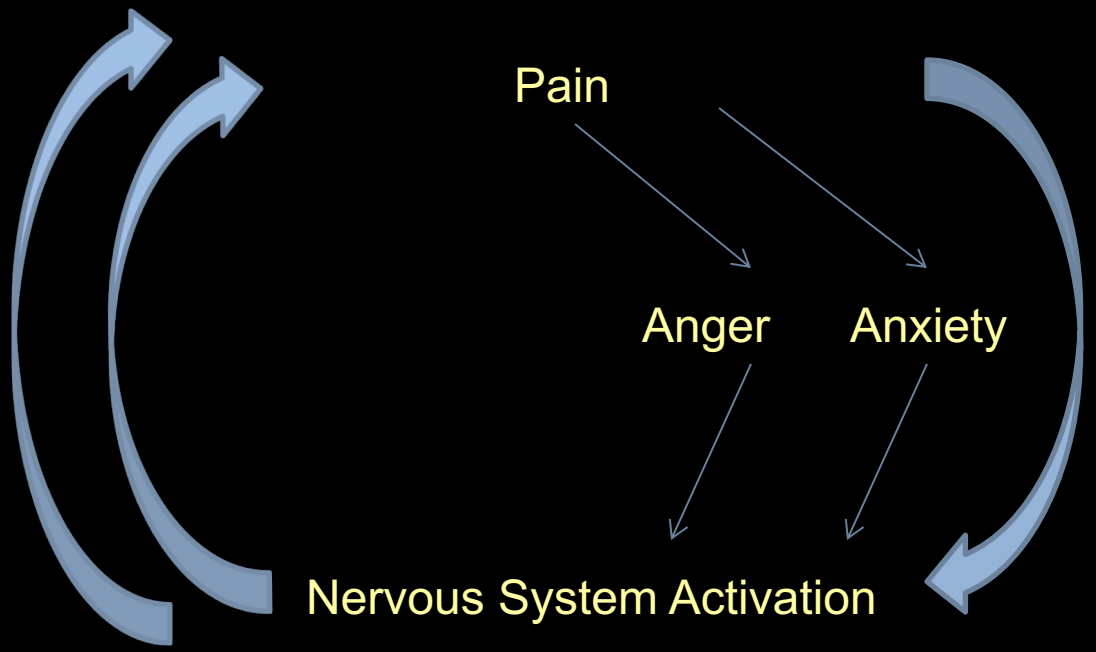

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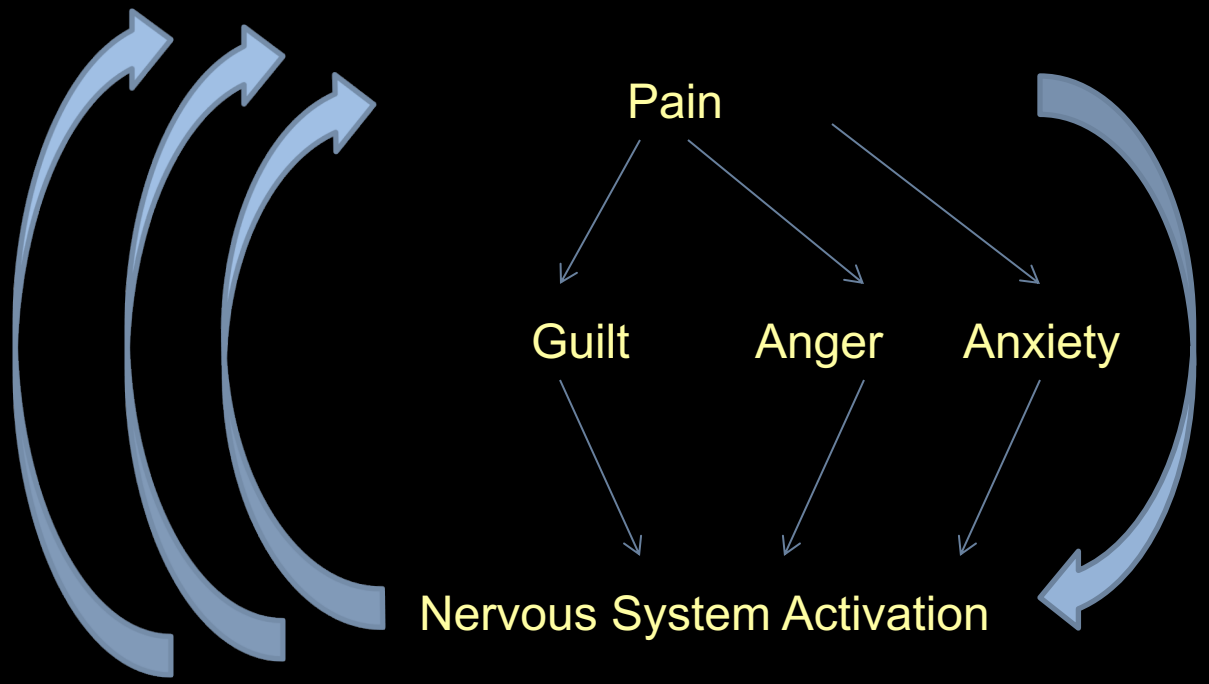

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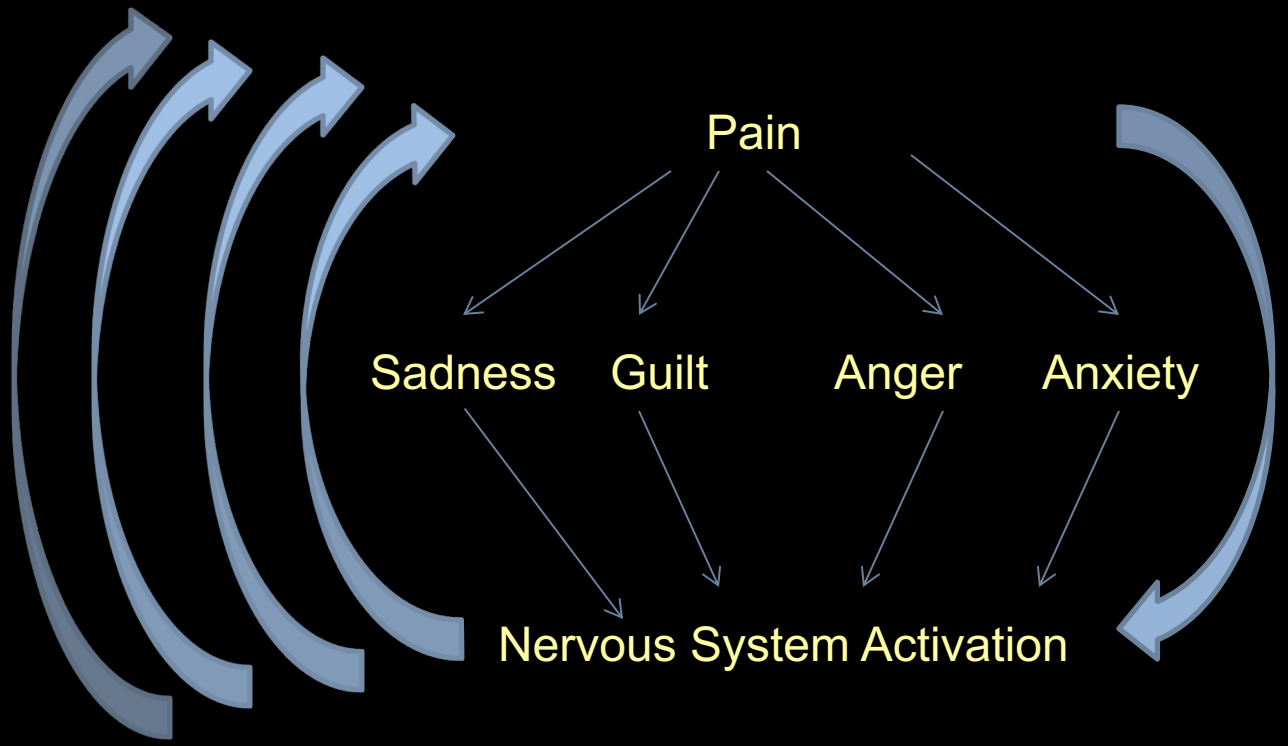

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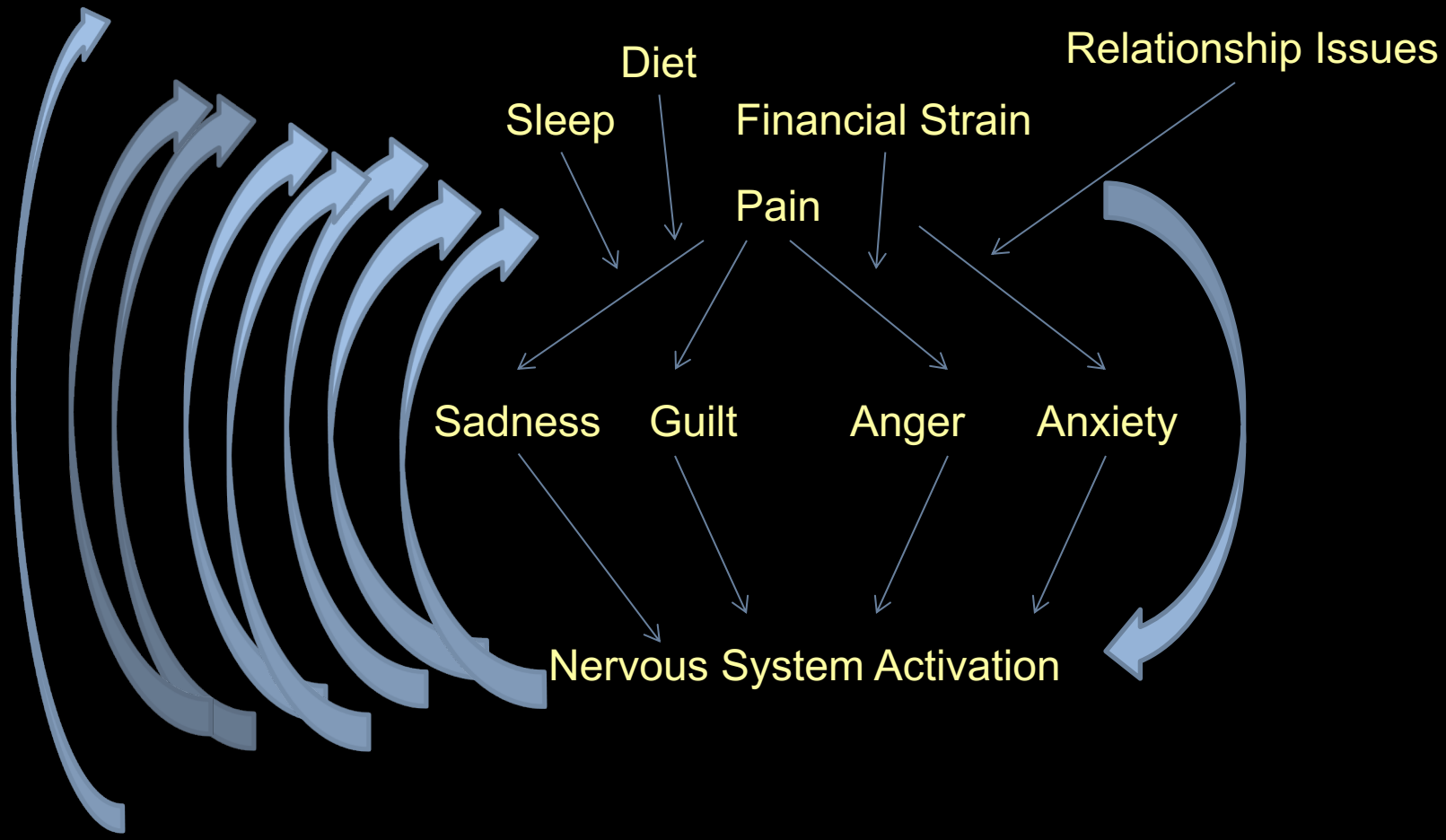
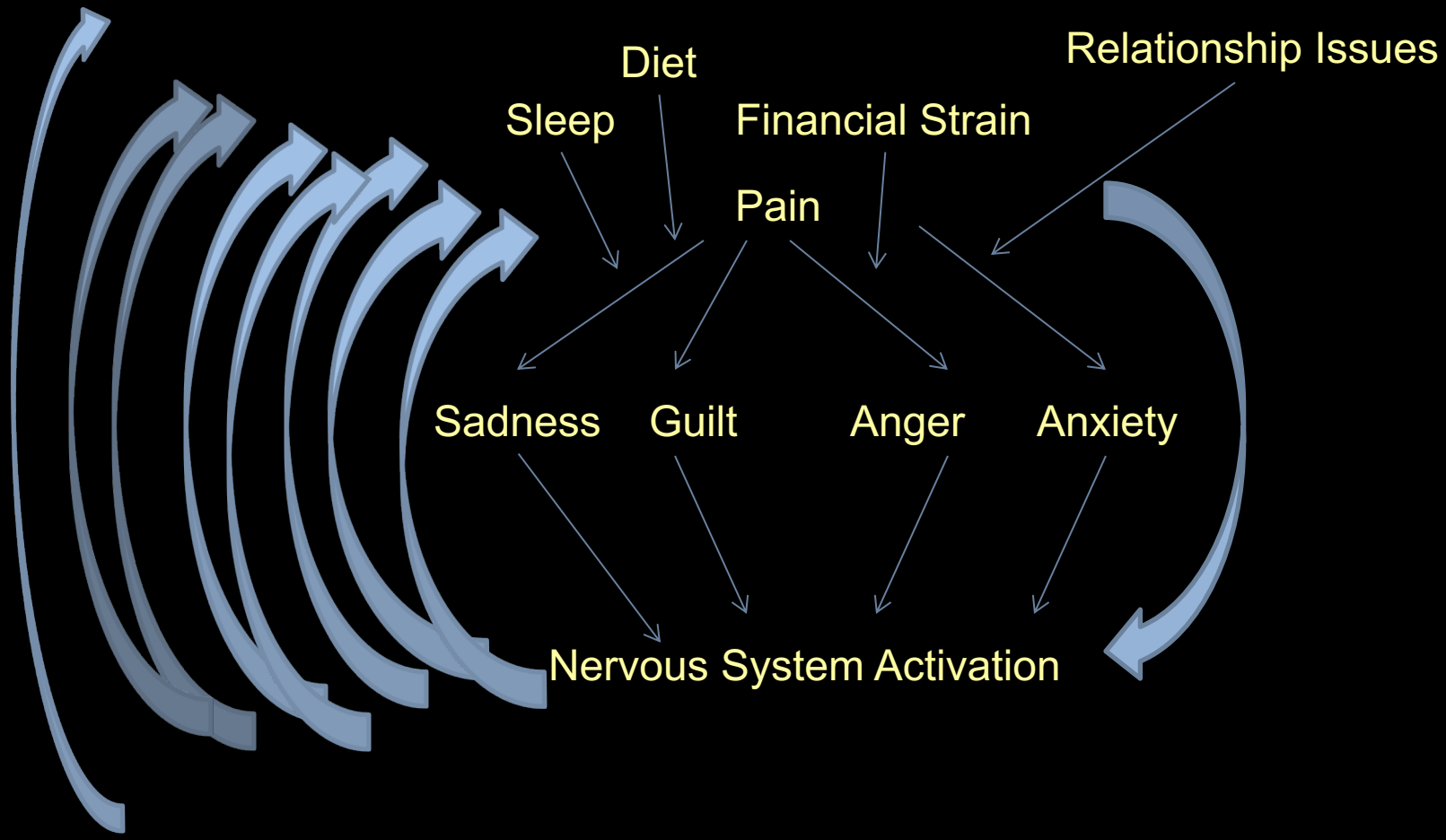


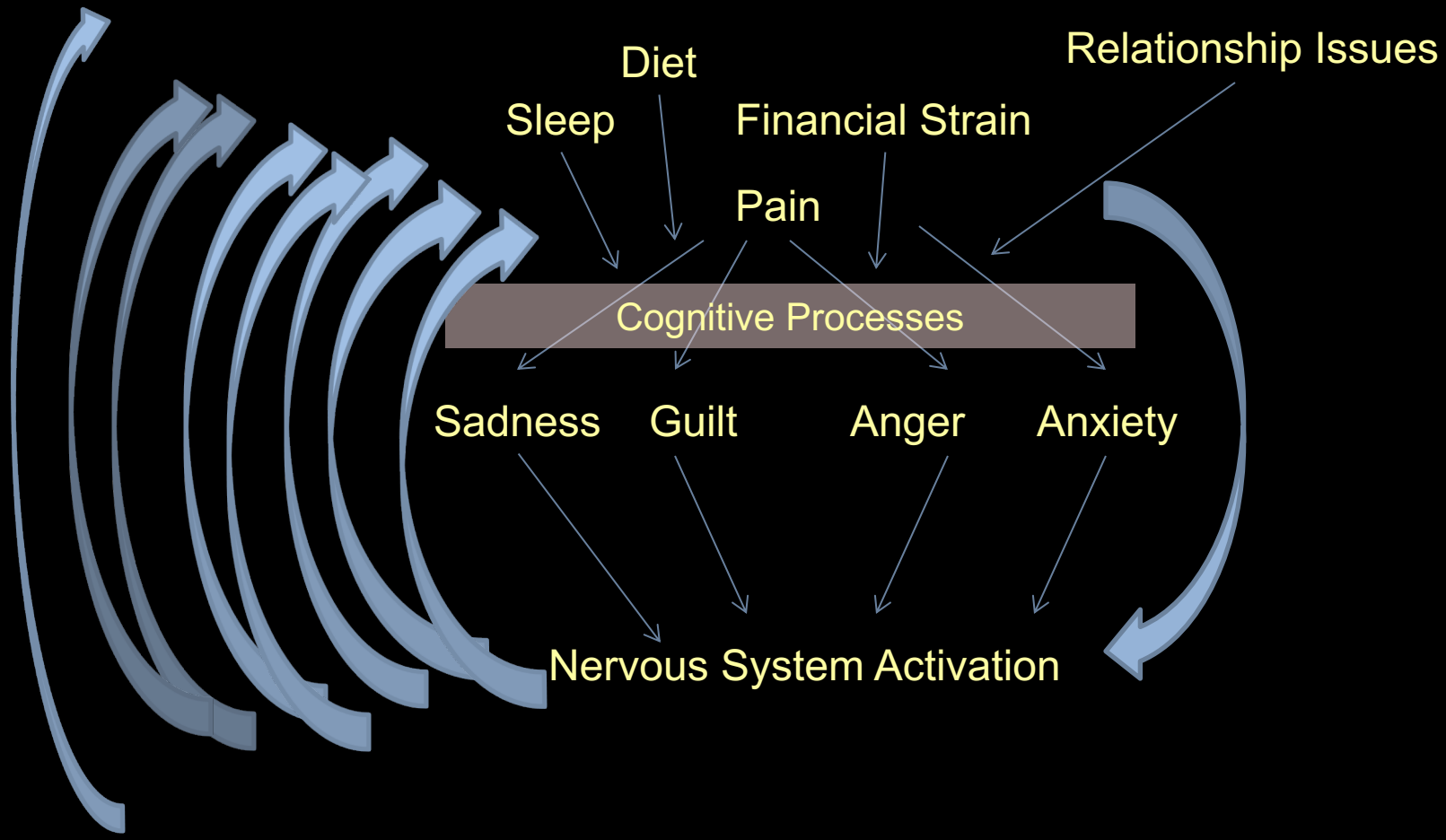
Relaxation Training

- Breathing exercises
  - Parasympathetic activity
  - Distraction

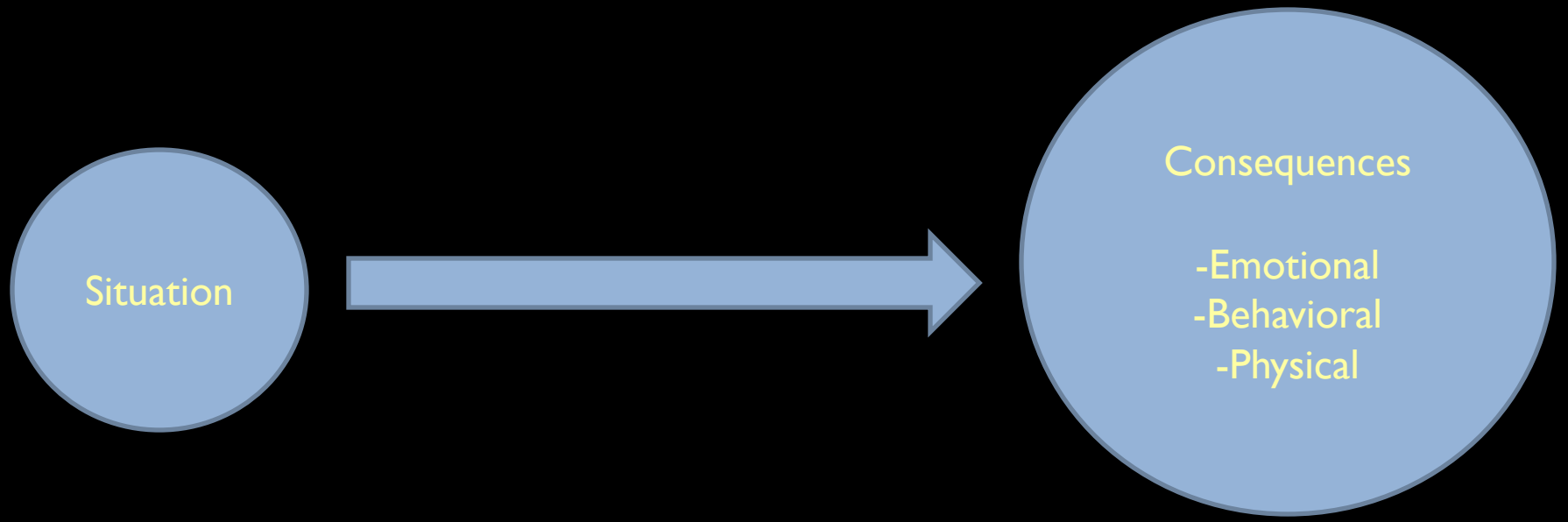
Stress, the Nervous System, and Pain



Stress, the Nervous System, and Pain



The Role of Cognitions



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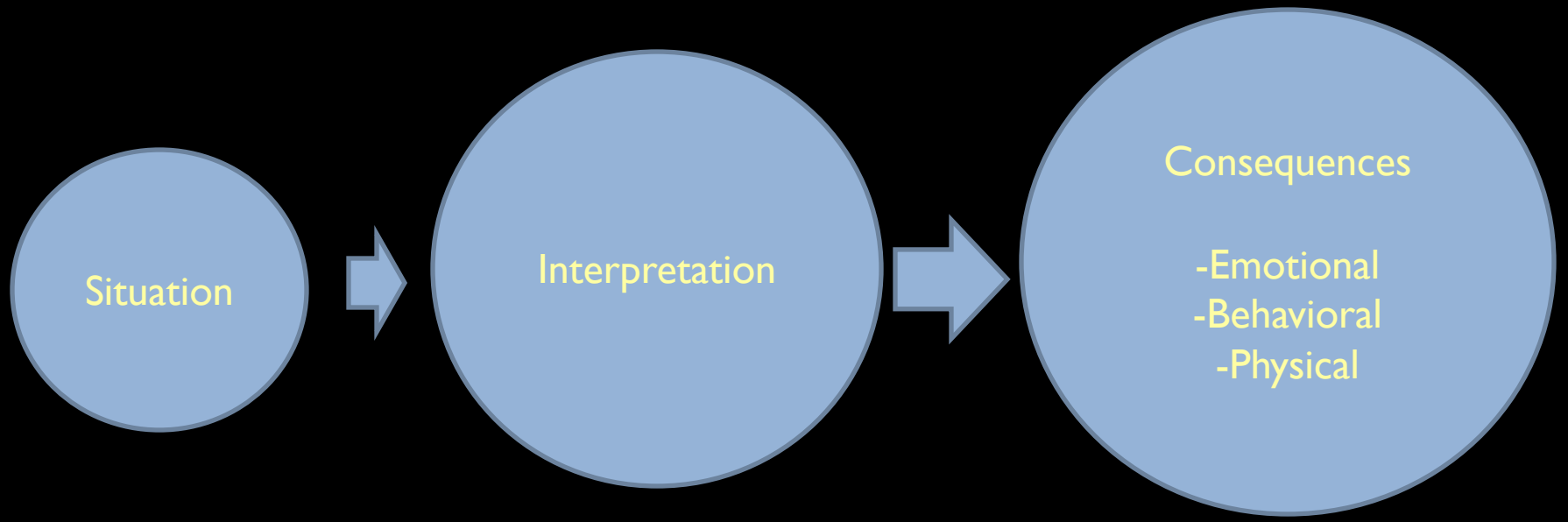


The Role of Cognitions

- Thought processes are often rooted in our core perception of ourselves and our roles in this world
- Usually shaped by early experiences
- Much of our maladaptive behaviors are rooted in dysfunctional thought patterns
- Can take a significant amount of time and work to alter our automatic thought processes

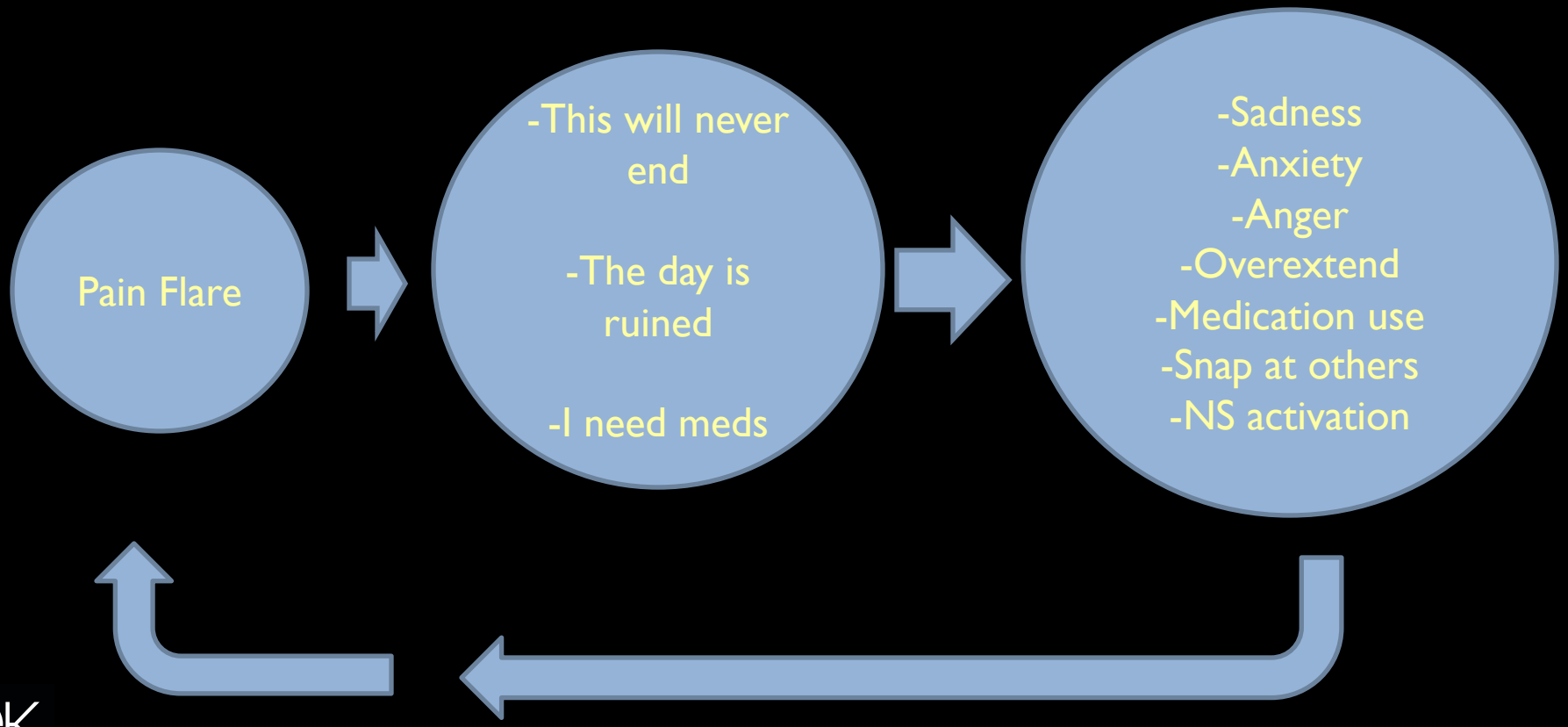
Catastrophization

- Exaggerated perception of a situation being worse than it actually is
  - Magnification
  - Rumination
  - Helplessness

Catastrophization

- Implications
  - Pain expectations → affective distress
  - Somatic hypervigilance/attention → increased pain perception
  - Activity reduction coping strategy → fear-avoidance cycle
  - Persistent symptoms
  - Disability

Using CBT: Pain Flare Example



Cognitive Restructuring

- Is this helpful?
- Is this accurate?

Cognitive Restructuring

Previous Thoughts

- This will never end
- The day is ruined
- I need meds

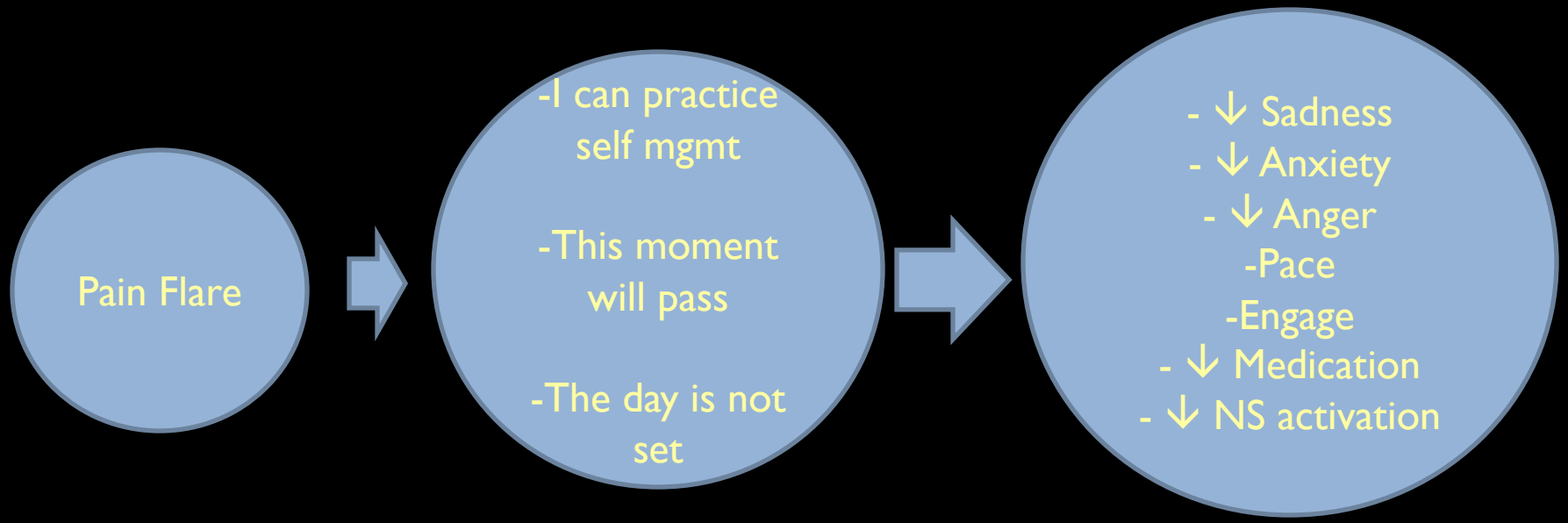
Modify Thoughts

- Are these statements helpful?
- Are these statements accurate?

Cognitive Restructuring

Previous Thoughts	Modified Thoughts
▪ This will never end	▪ My pain condition may be chronic but I know that this flare will eventually subside
▪ The day is ruined	▪ I don't know what the rest of the day will be like but I will make the most of it by pacing
▪ I need meds	▪ I can use behavioral tools to influence my pain rather than reaching for more medication

Using CBT: Pain Flare Example



Cognitive Restructuring

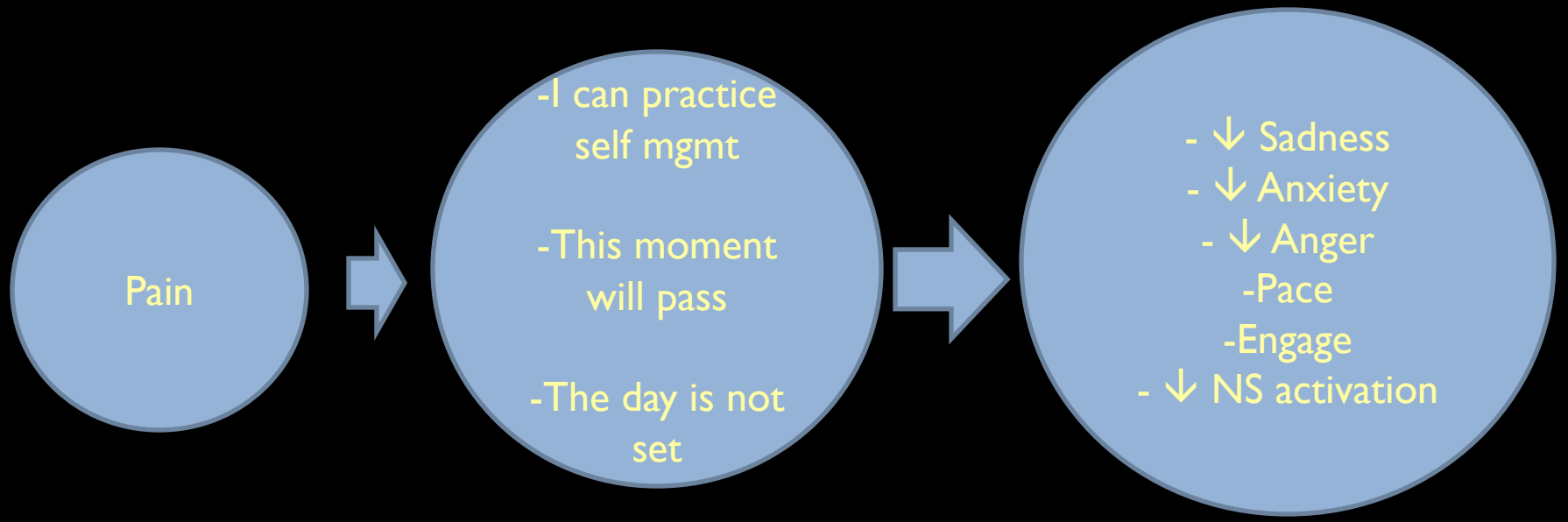
Previous Thoughts

- There is nothing I can do to control this
- Life is terrible
- Nothing will get done today

Modified Thoughts

- I can practice self-management skills
- Life may feel terrible now, but I know this flare will end
- I don’t know what the rest of the day will be like but I will make the most of it by pacing

The Role of Cognitions



Empirically Validated Treatment: Self-Management Education

- Lambeek, Van Mechelen, Knol, Loisel, Anema (2010)
- Buchner, Zahlten-Hinguranage, Schiltenwolf, Neubauer (2006)
- Linton & Ryberg (2001)
- Flor, Fydrich, Turk (1992)

Empirically Validated Treatment

- Linton & Andersson (2000)
  - Randomized control trial (n=213)
  - All patients received regular primary care tx + Minimal Treatment (information pack, pamphlet) or 6-session CBT treatment.
  - Assessments administered at pretest and 12-month follow-up
  - Risk for developing long-term sick absence decreased 9x in CBT group
  - CBT participants had decreased medical utilization compared to increase in other groups

Empirically Validated Treatment

- Linton & Nordin (2006)
  - 5-year follow-up of Linton & Andersson (2000) study, also used supplemental records from the National Insurance Authority
  - 97% completed follow-up questionnaire
  - CBT group had significantly less pain, higher activity, better quality of life, and better general health compared to Minimal Treatment Group
  - Risk of long-term sick leave 3x higher in the non-CBT group
  - CBT group had significantly less lost productivity costs

Empirically Validated Treatment

- Gatchel, Polatin, Noe, Gardea, Pulliam, Thompson (2003)
  - Patients deemed HR for development of chronic disability were randomly assigned to an early intervention FR group (n=22) or a non-intervention group (n=48). Low risk non-intervention subjects also evaluated (n=54).
  - Patients tracked at 3 month intervals over the course of a year
  - HR patients in the early intervention group had significantly lower rates of healthcare utilization, medication use, and self-report pain variables

Empirically Validated Treatment

- [continued] Gatchel, Polatin, Noe, Gardea, Pulliam, Thompson (2003)
  - HR non-intervention group displayed more symptoms of chronic pain disability compared to low risk subjects
  - Greater cost savings associated with early intervention ($12,721) vs no intervention group ($21,843). Cost variables included healthcare visits, medication, lost wages, early intervention program cost.

Cochrane Review of Multidisciplinary Programs for Pain

- 41 studies, 6858 participants
- LBP > 3 months with some prior treatment
- MDP vs unimodal care focused on physical factors, standard care with GP
- Moderate quality evidence for improvements in pain and daily functioning
- Increased likelihood of RTW in 6-12 months

Kamper SJ, Apeldoorn AT, Chiarotto A, Smeets RJ.E.M., Ostelo RWJG, Guzman J, van Tulder MW. Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. Cochrane Database of Systematic Reviews 2014, Issue 9.

Other Literature Findings

- 373 CPRP participants (3 week)
- ~57% on opioids at admission
- Assessments at admission, discharge, and 6-month (70% return rate; pain severity, depression, psychosocial functioning, health status, pain catastrophizing)
- Pain severity and depression higher in opioid users at admission
- Significant improvement on all variables at discharge, 6-month follow-up regardless of opioid status

Townsend, CO, Kerkvliet, JL, Bruce, BK, Rome, JD, Hooten, WM, Luedtke, CA, Hodgson, JE. (2008). A Longitudinal Study of the Efficacy of a Comprehensive Pain Rehabilitation Program with Opioid Withdrawal: Comparison of Treatment Outcomes Based on Opioid Use Status at Admission. Pain, 140(1): 177-189.

Other Literature Findings

- 705 (600 completed) outpatient interdisciplinary program participants
- Opioid group tapered with cocktail
- Opioid group improved same as more than non-opioid group (pain severity, catastrophizing, sleep, treatment satisfaction, pain-related functioning domains)

Murphy, JL, Clark, ME, Banou, E (2013). Opioid Cessation and Multidimensional Outcomes After Interdisciplinary Chronic Pain Treatment. Clin J Pain, 29(2): 109-17.

Annals of Internal Medicine

ORIGINAL RESEARCH

Literacy-Adapted Cognitive Behavioral Therapy Versus Education for Chronic Pain at Low-Income Clinics

A Randomized Controlled Trial

Beverly E. Thorn, PhD; Joshua C. Eyer, PhD; Benjamin P. Van Dyke, MA; Calia A. Torres, MA; John W. Burns, PhD; Minjung Kim, PhD; Andrea K. Newman, MA; Lisa C. Campbell, PhD; Brian Anderson, PsyD; Phoebe R. Block, MA; Bentley J. Bobrow, MD; Regina Brooks; Toya T. Burton, DC, MPH; Jennifer S. Cheavens, PhD; Colette M. DeMonte, PsyD; William D. DeMonte, PsyD; Crystal S. Edwards; Minjeong Jeong, PhD; Mazheruddin M. Mulla, MA, MPH; Terence Penn, BS; Laura J. Smith, BA; and Deborah H. Tucker, MBA*

(2018) Ann Intern Med. 168(7):471-480. doi:10.7326/M17-0972
http://annals.org/aim/fullarticle/2673506/literacy-adapted-cognitive-
behavioral-therapy-versus-education-chronic-pain-low?guestAccessKey=80fd617a-8806-454f-884f-4df3a51d7ee6

Why Simplify?

- Reducing the cognitive demands of treatments is a good idea for most patients

- Medical/psychological jargon is confusing
- Chronic illness/pain erodes cognitive reserve
- Medications interfere with cognitive capacity
- The aging process reduces cognitive capacity

Reducing the Cognitive Demands of Treatments: A Must for Disadvantaged Patients

- Education
- Primary literacy & health literacy
- Minority
- Stress of poverty
- Underserved

→ Simplify materials and methods

Characteristics of Sample

- 290 participants who had on average:
  - Pain in > 6 sites
  - > 4 pain etiologies
  - Pain >15 year duration
- These participants were
  - 67% Black/African American
  - 72% at or below the poverty level
  - 36% reading below the 5th-grade level
  - 83% living on or seeking disability benefits
  - 43% no health insurance

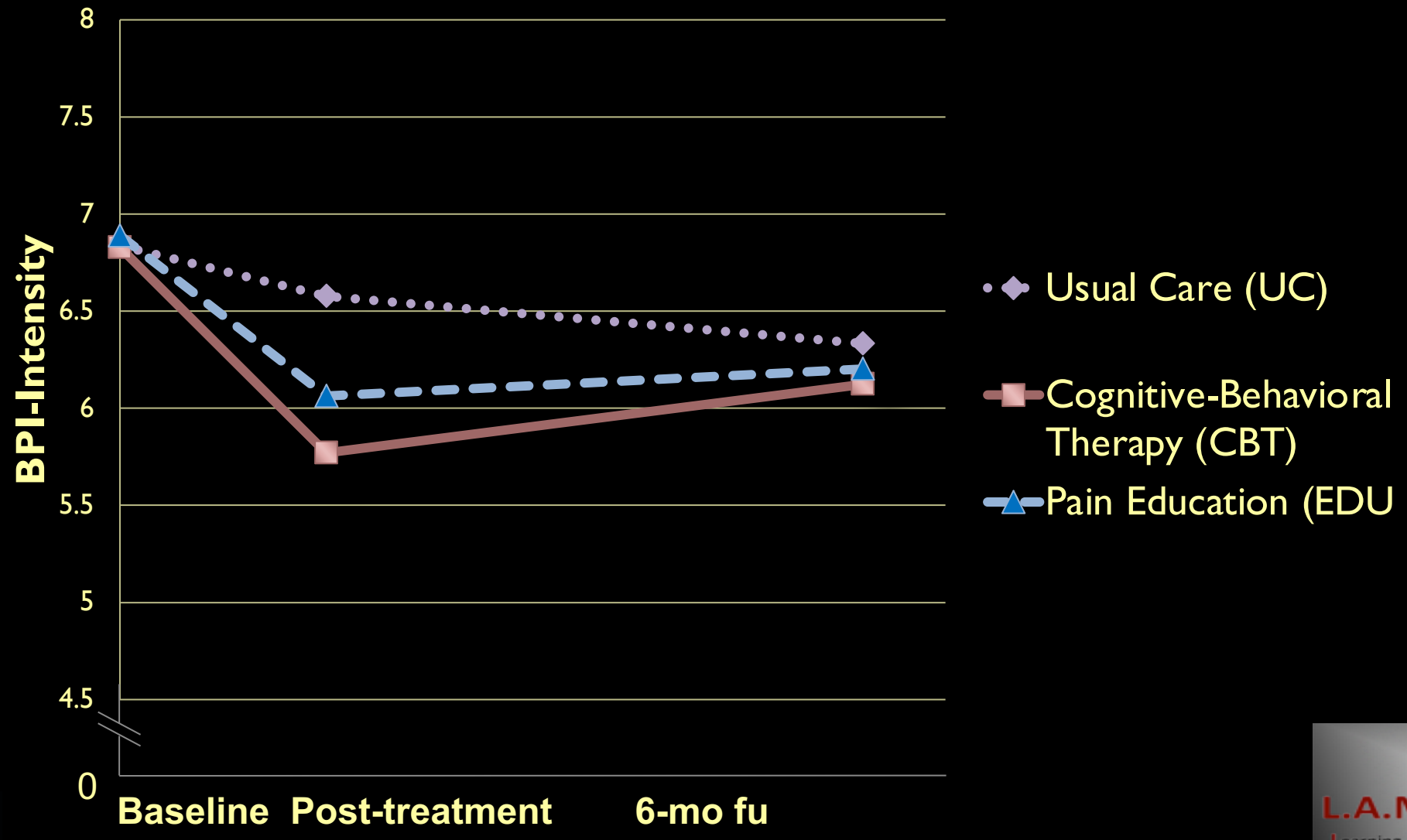
How Were the CBT & EDU Materials Simplified?

- Reduced reading level to 5th grade
- Reduced text
- Added illustrations
- Increased font size
- Increased white space

Comparative Effectiveness Trial

- 3 Conditions:
  - –Cognitive-Behavioral Therapy - CBT (n=95)
  - –Pain Education - EDU (n=97)
  - –Usual Medical Care - UC (n=98)
- 83% retained at primary endpoint (post-tx)
  - –CBT (87%)
  - –EDU (84%)
  - –UC (80%)
- 75% retained at 6 mo. follow-up

Estimated Mean Pain Severity Scores (BPI-Severity) by Condition and Time Point from Mixed Linear Models



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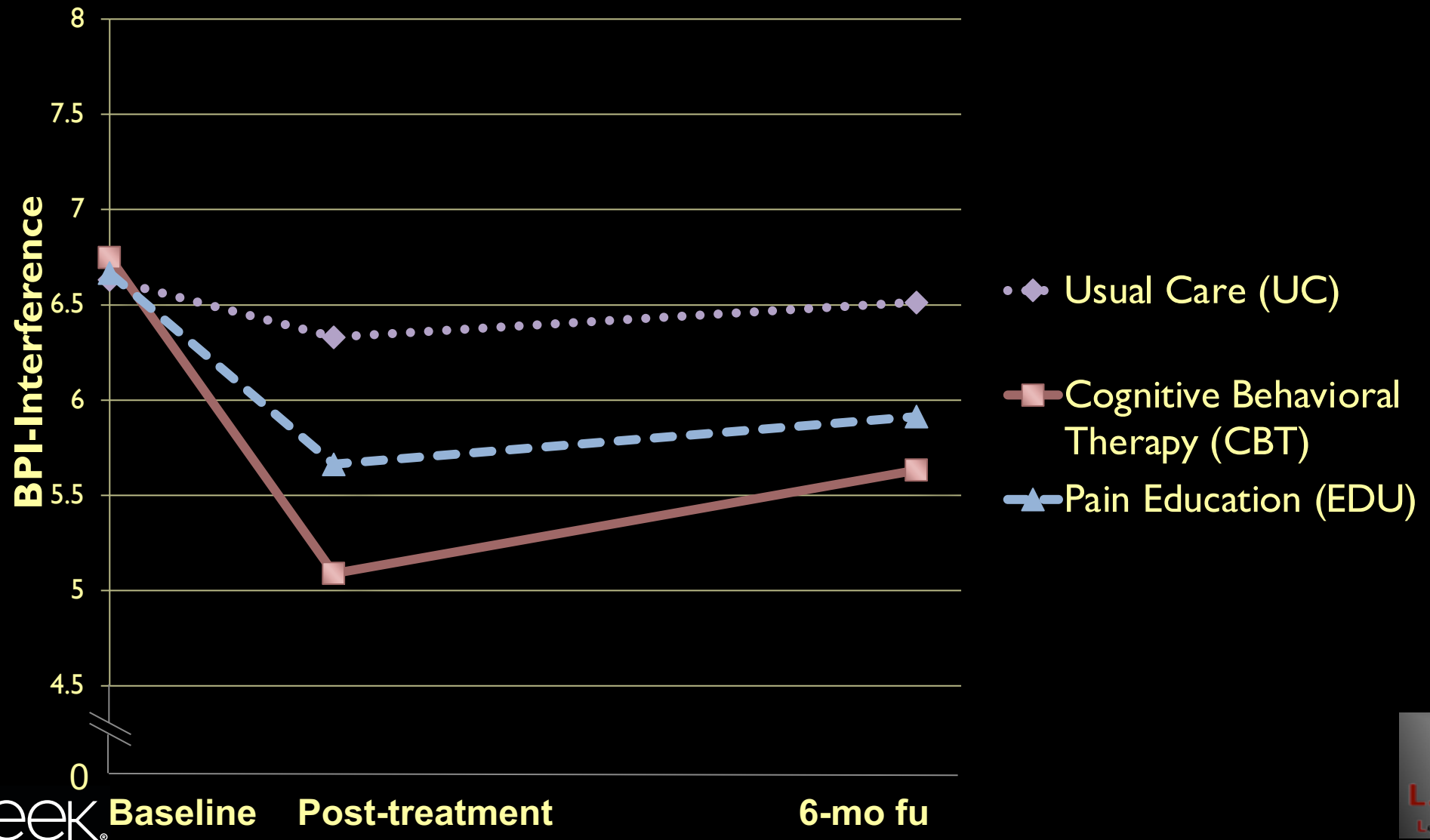
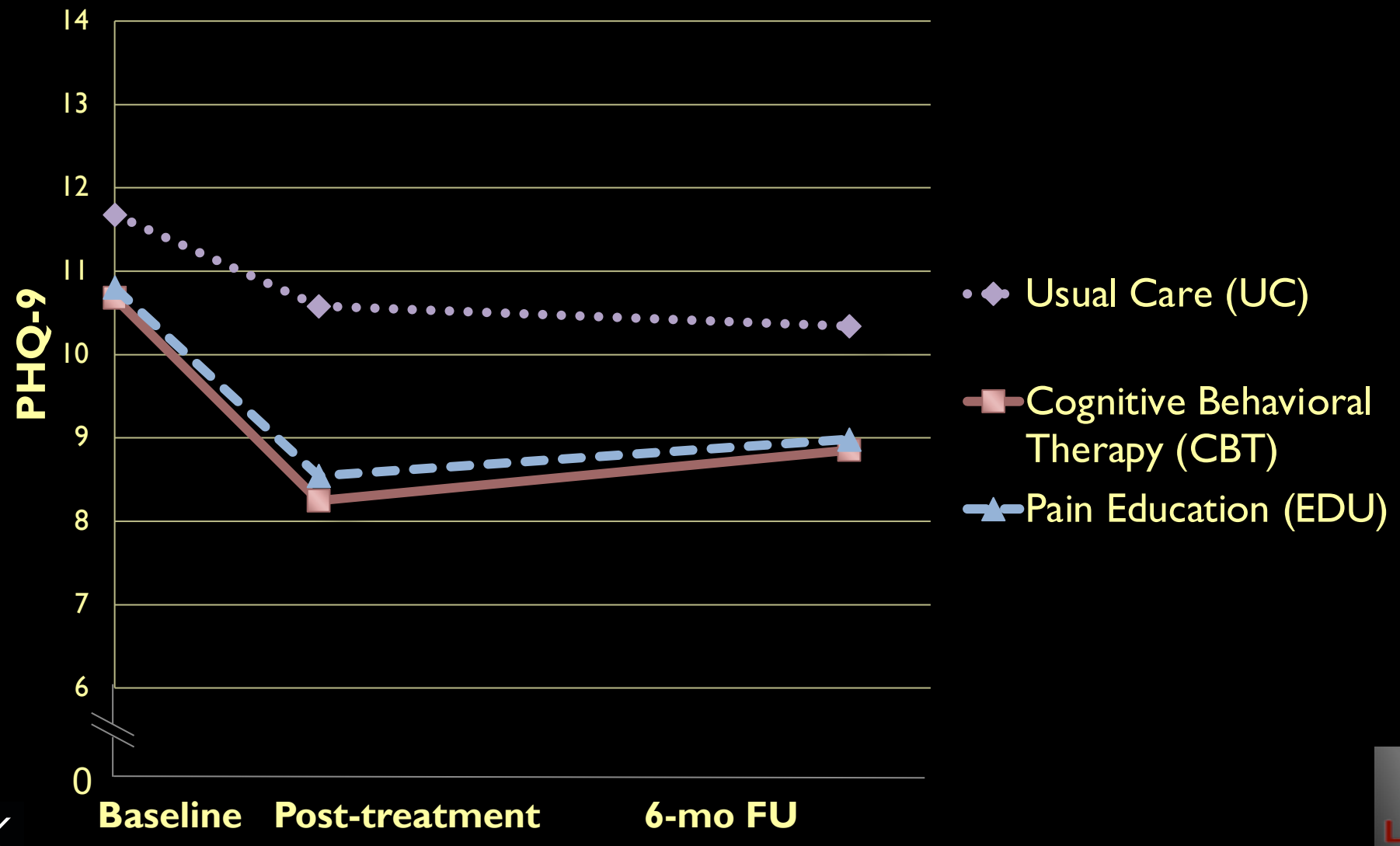
L.A.M.P. Learning About My Pain

Estimated Mean Physical Function Scores (BPI-Interference) by Condition and Time Point from Mixed Linear Models



L.A.M.P. Learning About My Pain

Estimated Mean Depression Scores (PHQ-9) by Condition by Time Point from Mixed Linear Models



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L.A.M.P. Learning About My Pain

Beyond CBT

- Acceptance and Commitment Therapy (ACT)
- Biofeedback Training
- Mindfulness-Based Interventions
- Emotional Awareness and Expression Therapy

Questions?

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