The Psychosocial Model of Pain and Non-Pharmacological Treatments

James Gerhart PhD
Associate Professor & Director of Clinical Training
Department of Psychology
Central Michigan University

CENTRAL MICHIGAN UNIVERSITY

The Coleman Palliative Medicine Training Program

Disclosures

Dr. Gerhart has no conflicts to report.

Acknowledgements

- **Michigan Health Endowment Fund**
- **Coleman Palliative Medicine Training Program**
- **University of Chicago, Center for Continuing Medical Education**
- Aliza Baron, AM
- Ashley Eaton England, MA
- Stacie Levine, MD
- Sean O'Mahony, MB, BCh, BAO, MS
- John W. Burns, PhD
- Michael Hoerger, PhD, MSCR, MBA
- Katherine Ramos, PhD
- Laura S. Porter, PhD
- Brenna Mossman, MA, MS
- Sarah Alonzi, BS
- Tristen Peyser, MS
- Seowoo Kim, BS

Rationale

- Pain is very common in cancer, and often increases as disease progresses
- Cancer risks may also pose risks for other painful conditions
- Medications are crucial but do not treat total pain or all its causes
- Today, we know more than ever, but pain in serious illness often remains:
  - common
  - undetected
  - misunderstood
  - undertreated
- This is an introduction or basic review of some non-pharmacological factors in pain during a serious illness

Objectives

1. Identify psychosocial factors that can exacerbate pain
2. Consider strategies for assessing psychosocial responses to pain
3. Analyze the impacts of non-pharmacological treatments on pain and pain-related function

Now Think About Cathy

Cathy is a 50-year-old Black woman recently treated for colon cancer. She felt unwell for several months last spring and began experiencing vague abdominal pains that were difficult to locate. She has trouble remembering exactly when it started, but she reluctantly saw her PCP as her appetite and bowel habits began to change.

After surgery, difficulty managing her colostomy led her to experience embarrassment in public places. She reports feeling tense, and "not herself."

Like most patients with cancer and many other adults, pain is part of her life. Cathy has a lengthy history of low back and side pain that started when she worked in an assisted living facility, and she fell while assisting a patient.

Lately, she worries that her pain is a sign her cancer has spread. Sometimes she blames herself for not seeing her doctor sooner. She is on short-term disability that covers most but not all her wages. She is both concerned about growing financial problems and fears the thought of returning to work with a colostomy bag.

Hardt, J., Jacobsen, C., Goldberg, J., Nickel, R., & Buchwald, D. (2008). Prevalence of chronic pain in a representative sample in the United States. *Pain Medicine*, *9*(7), 803-812.
Warth, M., Zöller, J., Köhler, F., Aguilar-Raab, C., Kessler, J., & Ditzen, B. (2020). Psychosocial interventions for pain management in advanced cancer patients: a systematic review and meta-analysis. *Current oncology reports*, *22*(1), 1-9.

Pain is real

- But hard to label, describe, and measure for patients and providers
- Pain is a process shaped by the nervous system
  - Peripheral and Central
  - External events
  - Past experiences
- Tissue Damage – Not Necessary or Sufficient for Pain
  - 25% to 50% of primary care visits involve medically unexplained symptoms
- Ever injured during an "adrenaline rush" and not notice?

Hilderink, P. H., Collard, R., Rosmalen, J. G. M., & Voshaar, R. O. (2013). Prevalence of somatoform disorders and medically unexplained symptoms in old age populations in comparison with younger age groups: a systematic review. *Ageing research reviews*, *12*(1), 151-156.

Pain is a private experience, but its real.

Even to B.F. Skinner, the founder of Radical Behaviorism:

Just as physical as a typewriter

Baum W. M. (2011). What is Radical Behaviorism? A Review of Jay Moore's Conceptual Foundations of Radical Behaviorism. Journal of the Experimental Analysis of Behavior, 95(1), 119–126. https://doi.org/10.1901/jeab.2011.95-119

Pain on multiple fronts

- Unpublished data from the EMPOWER Trial (N = 633 patients w/various cancer histories)
- >60% with physical comorbidity
- >25% with Arthritis
- >20% with Chronic Back Pain
- >10% with Diabetes
- >3% with Angina
- >30% with psychiatric diagnosis

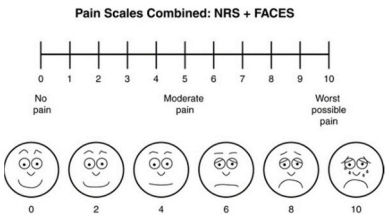
Pain on multiple fronts

- Comorbidity is understudied in cancer
- <1% to 90% of patients depending on the sample and methods
- Adds complexity to detection and diagnosis
  - More frequent visits could facilitate detection *or* serve as a distraction
- May deter curative treatments
  - RCTs tend to be designed around single diagnoses
- Poorer overall rates of survival

Sarfati, D., Koczwara, B., & Jackson, C. (2016). The impact of comorbidity on cancer and its treatment. CA: a cancer journal for clinicians, 66(4), 337-350.

Characterizing Pain

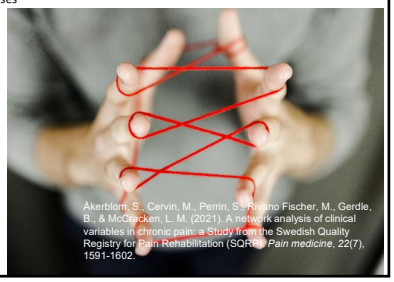
- Type (e.g., somatic, visceral, nerve)
- Intensity
- Duration
- Localized versus Diffuse
- Cognitive
- Functional Impact
- Emotional consequences



https://basicmedicalkey.com/assessment-tools/

Pain Networks

- Pain is a network of experiences and responses
- Behavior
- Cognition
  - Attention
  - Appraisal
  - Memory
- Emotion
  - Frustration, Fear, Anger
  - Awareness
  - Expression
- Relationships
- Spirituality



Åkerblom, S., Cervin, M., Perrin, S., Rivano Fischer, M., Gerdle, B., & McCracken, L. M. (2021). A network analysis of clinical variables in chronic pain: a Study from the Swedish Quality Registry for Pain Rehabilitation (SQRP). *Pain medicine*, 22(7), 1591-1602.

Assessing Psychosocial Processes

- Brief Pain Intensity and Localization
  - Edmonton Symptom Assessment Scale (ESAS; Chang, Hwang, & Feuerman, 2000)
- Pain related thinking
  - Pain Catastrophizing Scale (PCS; Sullivan, Bishop, & Pivik, 1995)
- Pain interference
  - PROMIS Pain Interference Short-Forms (Chen et al., 2019)

In the clinical conversation

- Think Functional Contextualism
  - What is the function of this expression of this pain, in this setting?
- *"Tell me more about your pain …" ,"How is your pain affecting you?"* Could reveal insights about
  - *Disease status*
  - *Activity*
  - *Sleep*
  - *Fatigue*
  - *Fear, Sadness, and Frustration*
  - *Isolation and role changes*
  - *Spiritual struggle*
- *"What other types of pain have you dealt with?"*

Nonverbals in the clinical conversation

"Its fine. I'm good, doc."

"Your pain scale needs to go up to 13!"

What pain behaviors and nonverbals provide you with clues about pain?

Some Non-pharmacological Treatment Strategies

Psychosocial Treatments for Pain

- Significant but modest impacts on conditions cancer-related pain, chronic low back pain
- Many tools available
  - Cognitive Behavioral Therapies
  - Education
  - Exercise
  - Hypnosis
- Consider our Top 10 Tips for Pain Management, and see the attached references.

James Gerhart, PhD; Katherine Ramos, PhD; Laura S. Porter, PhD; Scott Ravyts, PhD; Sonia Malhotra, MD, MS; Brenna Mossman, MA, MS; Ashley Eaton England, MA; Sarah Alonzi, BS;Tristen Peyser, MS; Seowoo Kim, BS; Sean O'Mahony, MB, BCh, BAO, MS; John W. Burns, PhD; Michael Hoerger, PhD, MSCR, MBA

Tip 1: Use a biopsychosocial framework

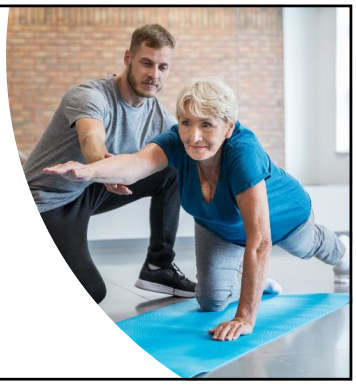
- Inquire with patients about how they are doing emotionally, cognitively, spiritually and in their relationships
- Assess their pain, and their *relationship* with it

Tip 2: Promote Healthy Pacing

- Overcome avoidance
- Avoid Boom and Bust Cycles
- Balance rest and activity
  - (e.g., walk 10 minutes, rest 15 on park bench)
- Rest *before* pain is exacerbated

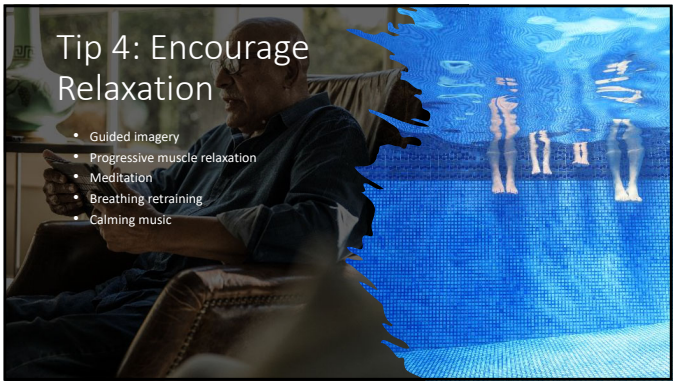
Tip 3: Consider stretching

- Stretching, Yoga
- Consult with Occupational, Physical Therapy, other rehabilitation specialists regarding an appropriate routine
- As with pacing – avoid overexertion
- Muscles may need to be strengthened, and balanced in addition to lengthened



Tip 4: Encourage Relaxation

- Guided imagery
- Progressive muscle relaxation
- Meditation
- Breathing retraining
- Calming music

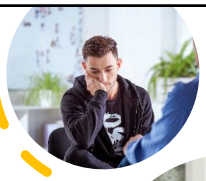


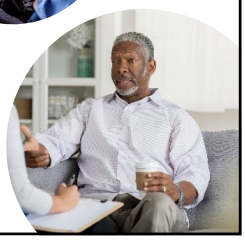
Tip 5: Address Sleep Concerns

- Sleep Hygiene
- Stimulus Control
  - Associating bed with sleep
- Sleep studies
- CBT-I Cognitive Behavioral Therapy for Insomnia
- Imagery Rehearsal for nightmares

Tip 6: Treat Distress and Mental Health Concerns

- Psychological Assessment
- Psychotherapy & Counseling
- Psychiatric interventions





Tip 7: Promote Mindful Attention

- Nonjudgmental focus on the here and now
- Learning to experience pain without judgement and shift focus flexibly
  - Jon Kabat-Zinn

Tip 8: Support caregiver communication

- Coyne's Interpersonal model of depression:
  - Efforts to help and support give way to criticism and hostility
- Patients with chronic pain tend to get more support **and** criticism from their spouses
  - (e.g., reinforcement and punishment)

Tip 9: Manage Conflict

- Unpublished EMPOWER data
  - After accounting for cancer, physical and psychiatric conditions
  - Fear of expressing emotions still relates to higher levels of pain
- Label anger
- Approach conflict with assertiveness
- Allow emotions to be expressed and information to flow
- Adopt problem solving strategies

Tip 10: Meet Non-Adherence with Non-Judgement

Case

Cathy scheduled a visit with her physician who reviewed imaging and assessed her back pain. Her worries were eased that her back pain was probably was an increase in her prior back pain. She adopted a strengthening and stretching routine, and her worry become more manageable as the pain eased.

As she relaxed, she had more attention on increasing her comfort with a colostomy bag. She began with readings and testimonials before getting a peer support who had a similar experience. She increased her comfort spending more time in public.

Her therapist encouraged her to gradually expose herself to situations to re-expand her comfort zone. She began by pacing her activities so she could spend more time in public parks. Gradually she began having more honest conversations with her daughters about her emotions.

Like many people with pain she has ups and down, but she is able to bounce back faster than before.

Hardt, J., Jacobsen, C., Goldberg, J., Nickel, R., & Buchwald, D. (2008). Prevalence of chronic pain in a representative sample in the United States. *Pain Medicine*, *9*(7), 803-812.
Warth, M., Zoller, J., Köhler, F., Aguilar-Raab, C., Kessler, J., & Ditzen, B. (2020). Psychosocial interventions for pain management in advanced cancer patients: a systematic review and meta-analysis. *Current oncology reports*, *22*(1), 1-9.

Thank you !