

Pain Management after Brain Injury

North Dakota Brain Injury Network
'Webinar Wednesday'
January 12, 2022

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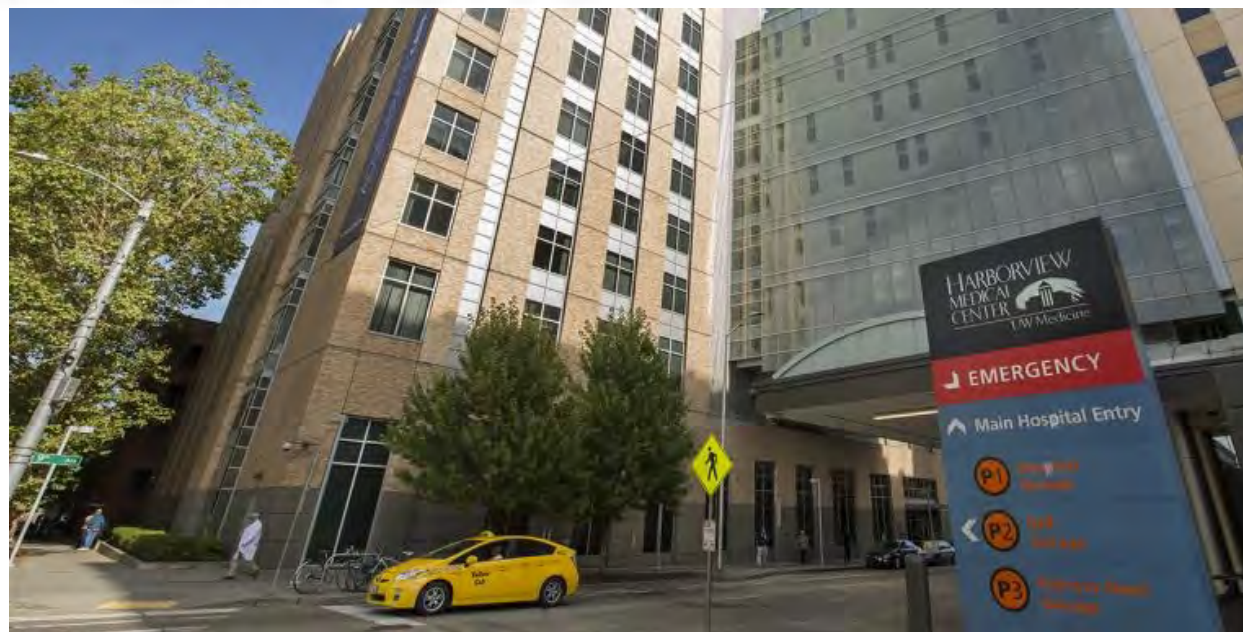
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Overview

- Rehabilitation psychology
- Changes after brain injury
- Self-management
- ETIPS Study
 - Aims
 - Cognitive behavioral approach
 - Study activities & skills
- Questions



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REHABILITATION MEDICINE



Shirley Ryan
Abilitylab

NATIONAL INSTITUTE ON DISABILITY,
INDEPENDENT LIVING,
AND REHABILITATION RESEARCH
NIDILRR

What is Rehabilitation Psychology?

A specialty area within psychology that focuses on the study and application of psychological knowledge and skills on behalf of individuals with disabilities and chronic health conditions in order to ***maximize health and welfare, independence and choice, functional abilities, and social role participation, across the lifespan.***



<https://www.apa.org/pubs/journals/rep>



**Rehabilitation
Psychology**

<http://www.div22.org/>

Rehabilitation Psychology in the Context of Brain Injury

- Psychoeducation
- Neuropsychological assessments
- Cognitive rehabilitation
- Psychotherapy
 - Mindfulness therapy
 - Acceptance and commitment therapy (ACT)
 - Cognitive behavioral therapy (CBT)
- Multidisciplinary team member

MANAGING BRAIN INJURY ACROSS LIFESPAN

Changes After Brain Injury



COGNITIVE

Memory and concentration difficulties
Communication difficulties



EMOTIONAL

Difficulties regulating emotions
Depression
Anxiety
Irritability



PHYSICAL

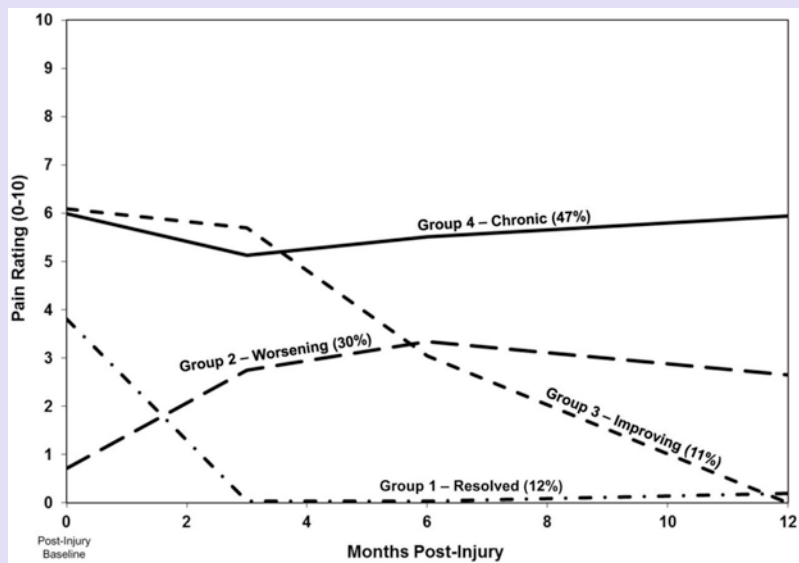
Fatigue
Sleep disturbances
Pain and sensory complaints

- Brain injuries can *directly* and/or *indirectly* result in many of these experiences
- Any one of these can significantly impact all areas of one's life

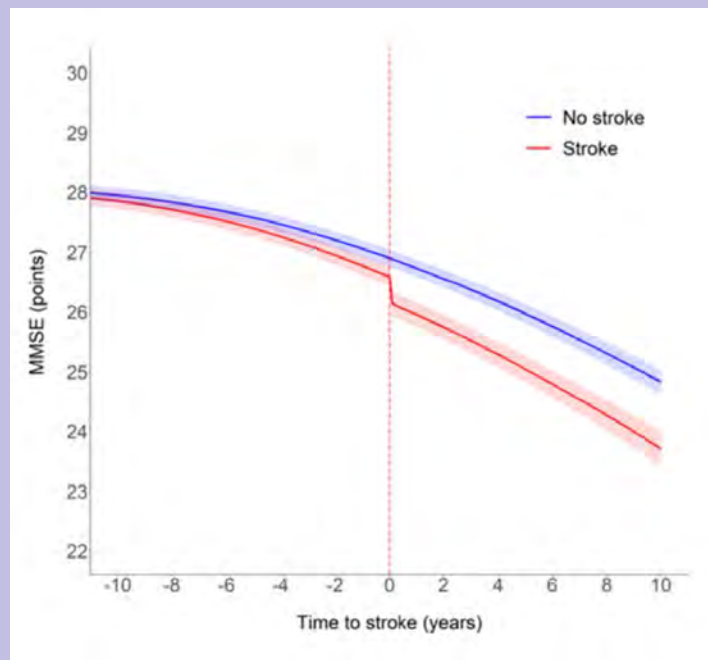
Every Brain Injury is Different



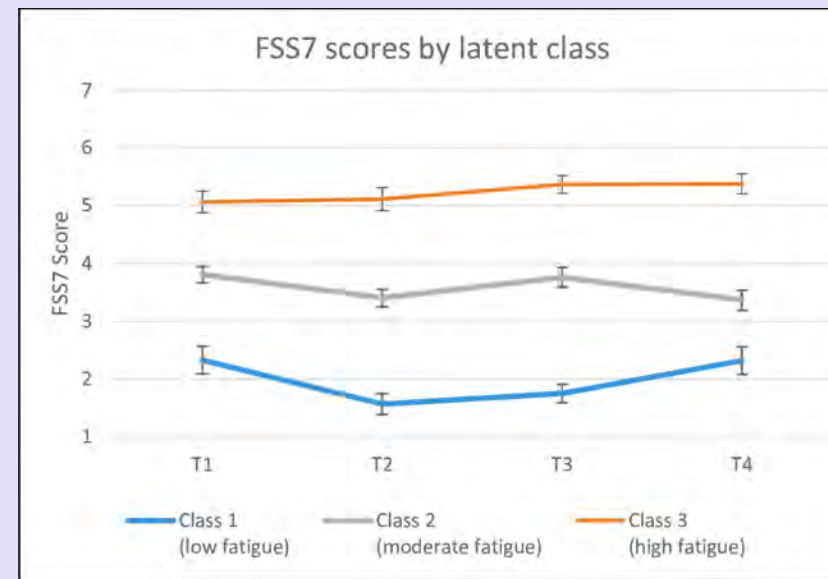
Change Over Time



TBI & Headache: 1 year post-injury



Stroke & Cognition: Pre & Post Injury



Stroke & Fatigue: 1.5 years post-injury

Health Management



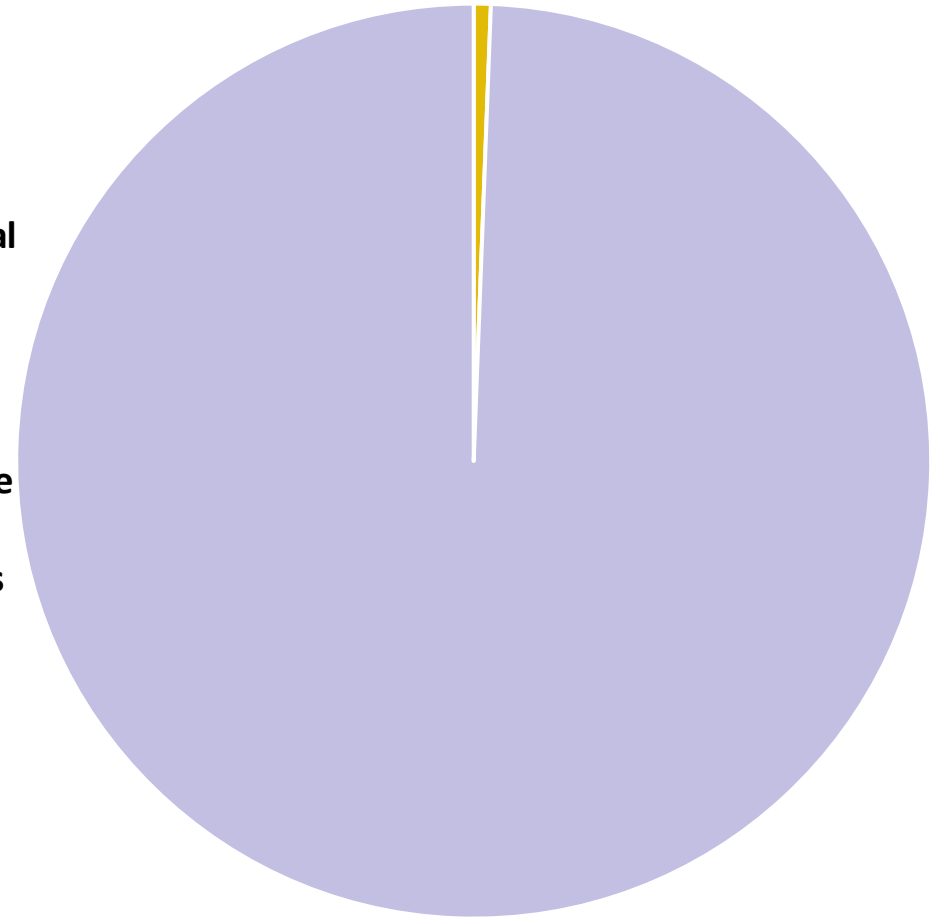
Medical/Professional Management

- Doctor's appointments, assessments, therapies, medical and professional advice

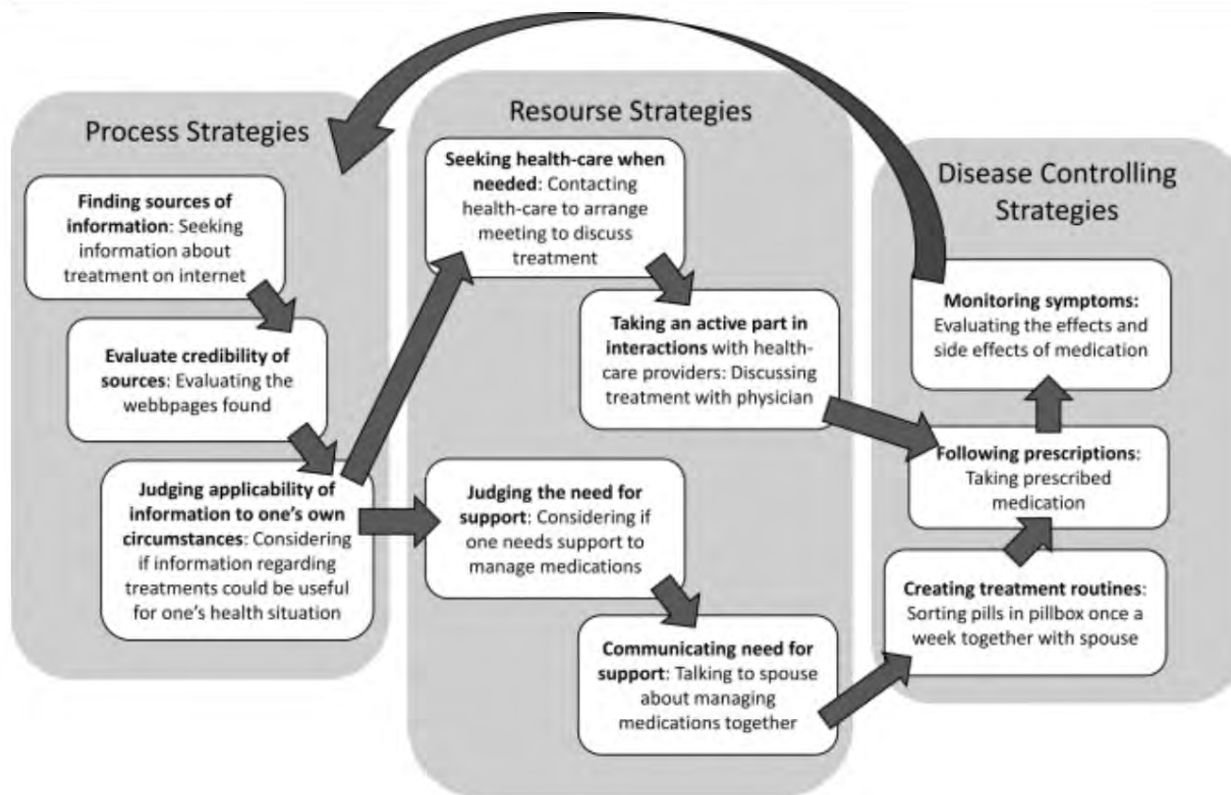


Self-Management

- YOUR daily maintenance of symptoms, including implementing strategies and advice you have found helpful



Self-Management



→ What do you do to self-manage?

What people do on a day-to-day basis to feel better and pursue the life they desire

(Teresa Brady, PhD, Self-Management Consensus Conference, 2010)

Why Self-Management?

One of the most important factors affecting health behaviors and outcomes

- ↑ Confidence in individuals' ability to manage symptoms
- ↑ Independence carrying out basic activities of daily living
- ↑ Reported mood and quality of life
- ↓ Reported fatigue and pain



**EFFICACY OF TELEHEALTH PAIN SELF-MANAGEMENT
INTERVENTION IN EMPLOYED ADULTS WITH PHYSICAL
DISABILITY: A RANDOMIZED CONTROLLED TRIAL**

E-TIPS Aims

- Evaluate the efficacy of an evidence-based telehealth pain **self-management** intervention (E-TIPS) compared to usual care in adults with physical disabilities who are employed
- Examine the effects of E-TIPS on secondary outcomes
- Evaluate treatment adherence, satisfaction, and barriers/facilitators of implementation

Methods

- Clinical trial with 200 employed adults with chronic pain and a range of physical disabilities (TBI, SCI, limb loss, MS)
- Randomization
 - Usual care/waitlist
 - E-TIPS: 8 session telephone-delivered pain self-management intervention
- Outcomes: Interested in how the treatment affects pain and other outcomes influenced by TBI and pain

Why Telehealth?

- Evidenced-based psychological interventions underutilized
- Acceptable form of service delivery
- Barriers to care
 - “Managing [condition] is confusing...so many things to be compliant with.”
 - “I know from my doctor there are treatments (for mood & pain), but it is hard to get connected to them in a way that works for me.”
 - “...my doctor recommended I see a therapist, but I never followed up—why? It seemed too difficult; I wasn’t sure where to start.”



Archives of Physical Medicine and Rehabilitation

journal homepage: www.archives-pmr.org

Archives of Physical Medicine and Rehabilitation 2015;96:1945-58



ORIGINAL RESEARCH

Efficacy of a Telephone-Delivered Self-Management Intervention for Persons With Multiple Sclerosis: A Randomized Controlled Trial With a One-Year Follow-Up



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Abstract

Objective: To evaluate the efficacy of a telephone-delivered self-management intervention for fatigue, pain, and depression in adults with multiple sclerosis (MS).

Design: Single-center, randomized (1:1), single-blind (outcome assessors), parallel-group trial with a primary endpoint of posttreatment (9–11 wk postrandomization) and long-term follow-up at 6 and 12 months.

Setting: Telephone-delivered across the United States.

Participants: Adults with MS (N=163) with fatigue, chronic pain, and/or moderate depressive symptoms (age range, 25–76y).

Interventions: Eight-week individual telephone-delivered self-management intervention (T-SM) (n=75) versus an 8-week individual telephone-delivered MS education intervention (T-ED) (n=88).

Main Outcome Measures: The primary outcome was the proportion who achieved a $\geq 50\%$ decrease in 1 or more symptoms—fatigue impact, pain interference, and/or depression severity. Secondary outcomes included continuous measures of pain, fatigue impact, depression, self-efficacy, activation, health-related quality of life, resilience, and affect.

Results: For our primary outcome, 58% of those in the T-SM group and 46% of those in the T-ED group had a $\geq 50\%$ reduction in 1 or more symptoms; this difference was not statistically significant (odds ratio, 1.50; 95% confidence interval, .77–2.93; $P=.238$). Participants in both groups significantly improved from baseline to posttreatment in primary and secondary outcome measures ($P<.05$). T-SM participants reported significantly higher treatment satisfaction and therapeutic alliance and greater improvements in activation, positive affect, and social role. Improvements were generally maintained at 6 and 12 months.

Conclusions: Both interventions resulted in short- and long-term, clinically meaningful benefits. The study demonstrated that the telephone is an effective method for engaging participants in care and extending the reach of rehabilitation for individuals with MS.

Archives of Physical Medicine and Rehabilitation 2015;96:1945-58

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E-TIPS: Cognitive Behavioral Therapy Intervention



Therapist Manual

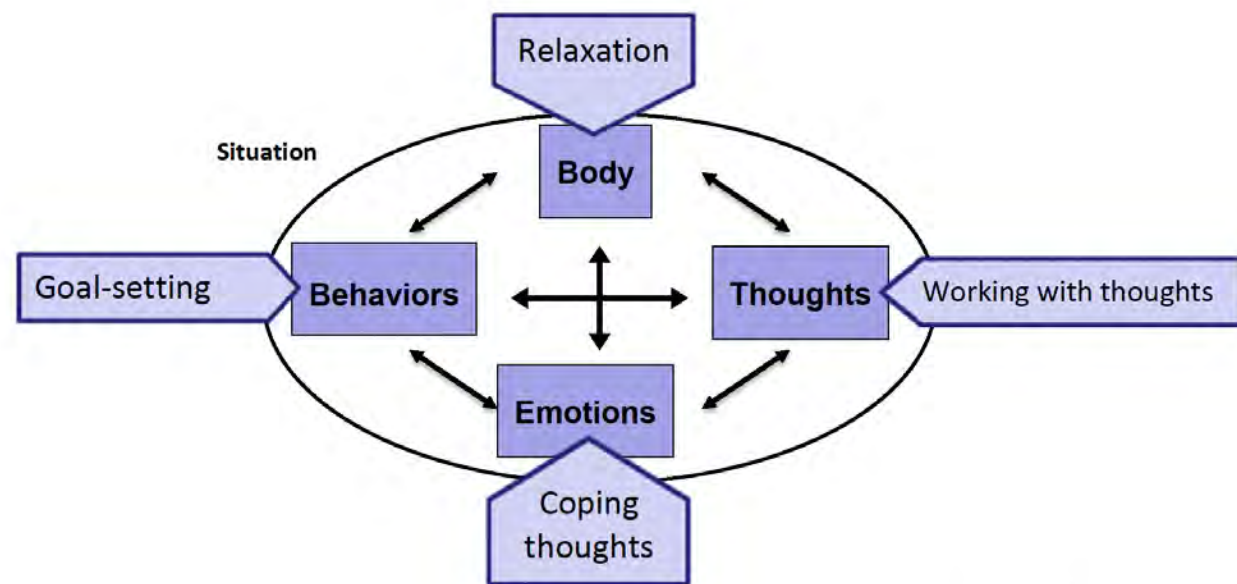
A COGNITIVE-BEHAVIORAL APPROACH TO PAIN

Manual developed for the E-TIPS intervention by Dawn M. Ehde, PhD, Kala Phillips, PhD, M. Elena Mendoza, PhD, and Carolyn C. Green, BFA

Principal Investigator and Lead Author: Dawn Ehde, PhD

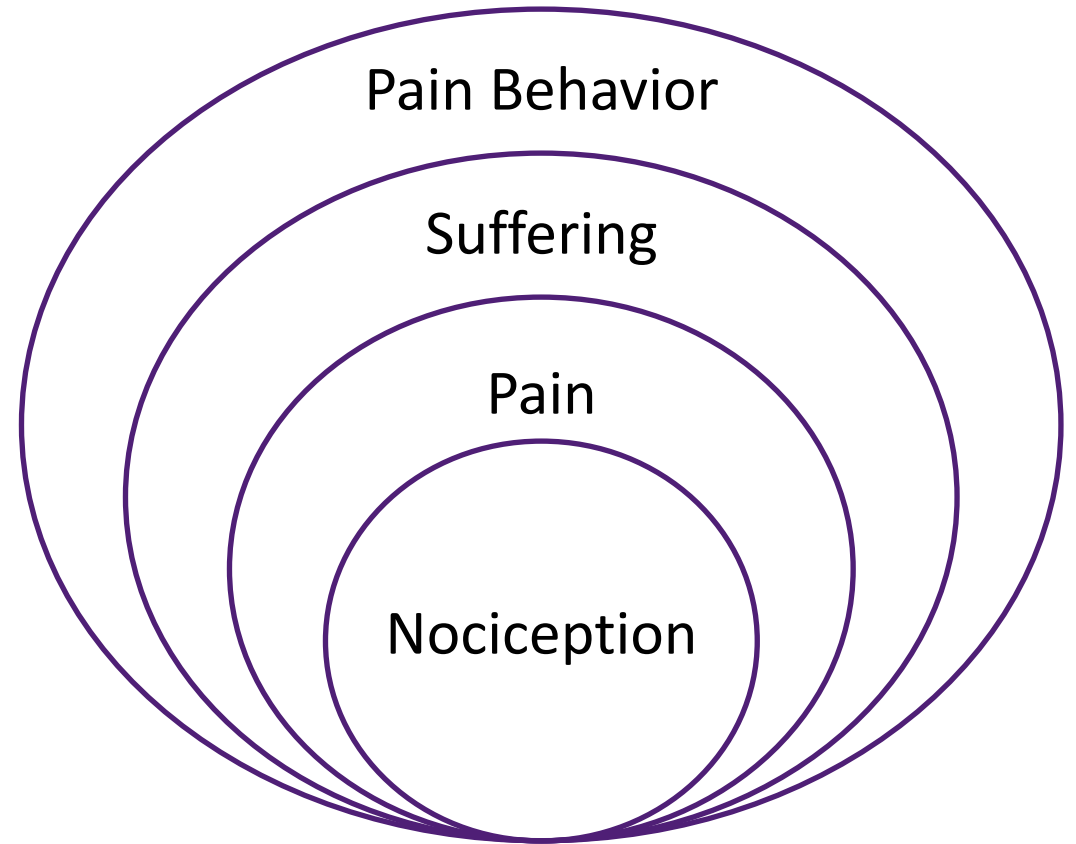
Treatment Goals

- Increase understanding of chronic pain and how it is influenced by thoughts, emotions, and behaviors
- Help develop new skills to manage pain



Pain is Complex

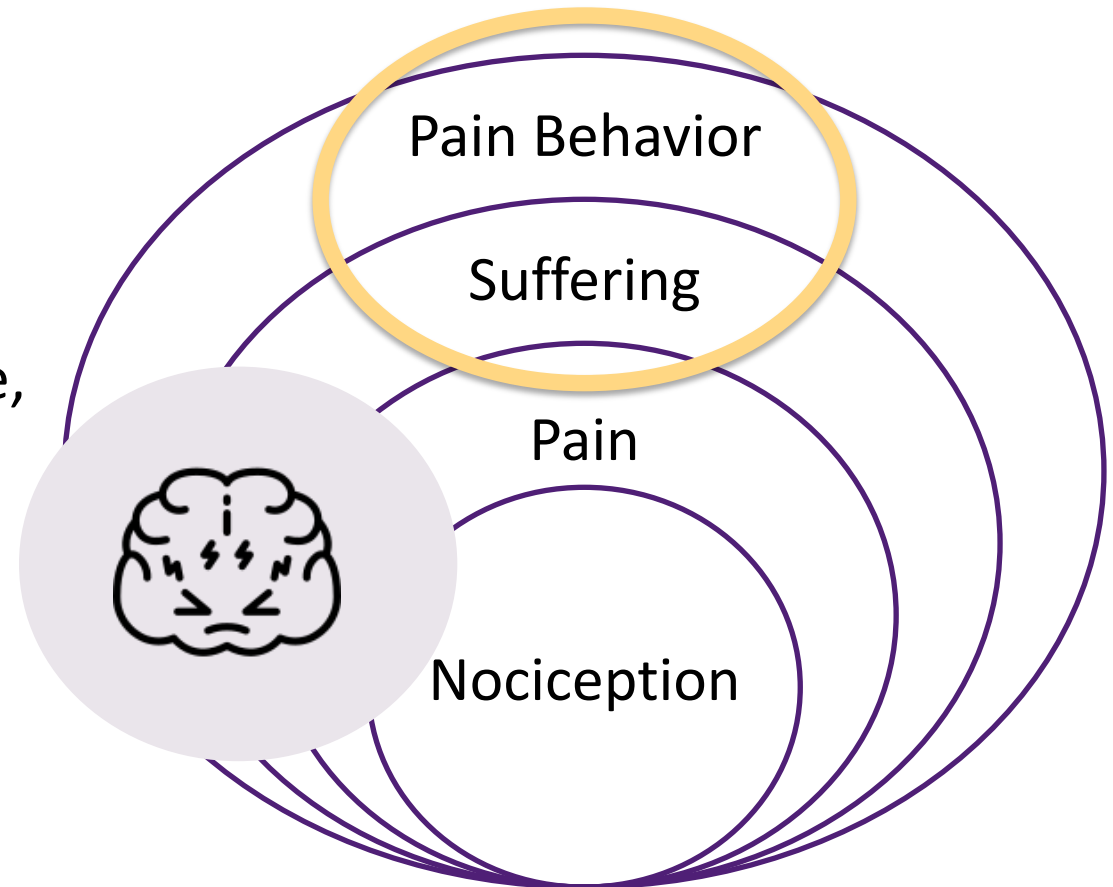
- Spasticity
- Headache
- Neurological or nerve pain
- Muscle or bone pain
- Pain sensations
 - hot, burning, chilling, tingling, dull, aching, stabbing, sore



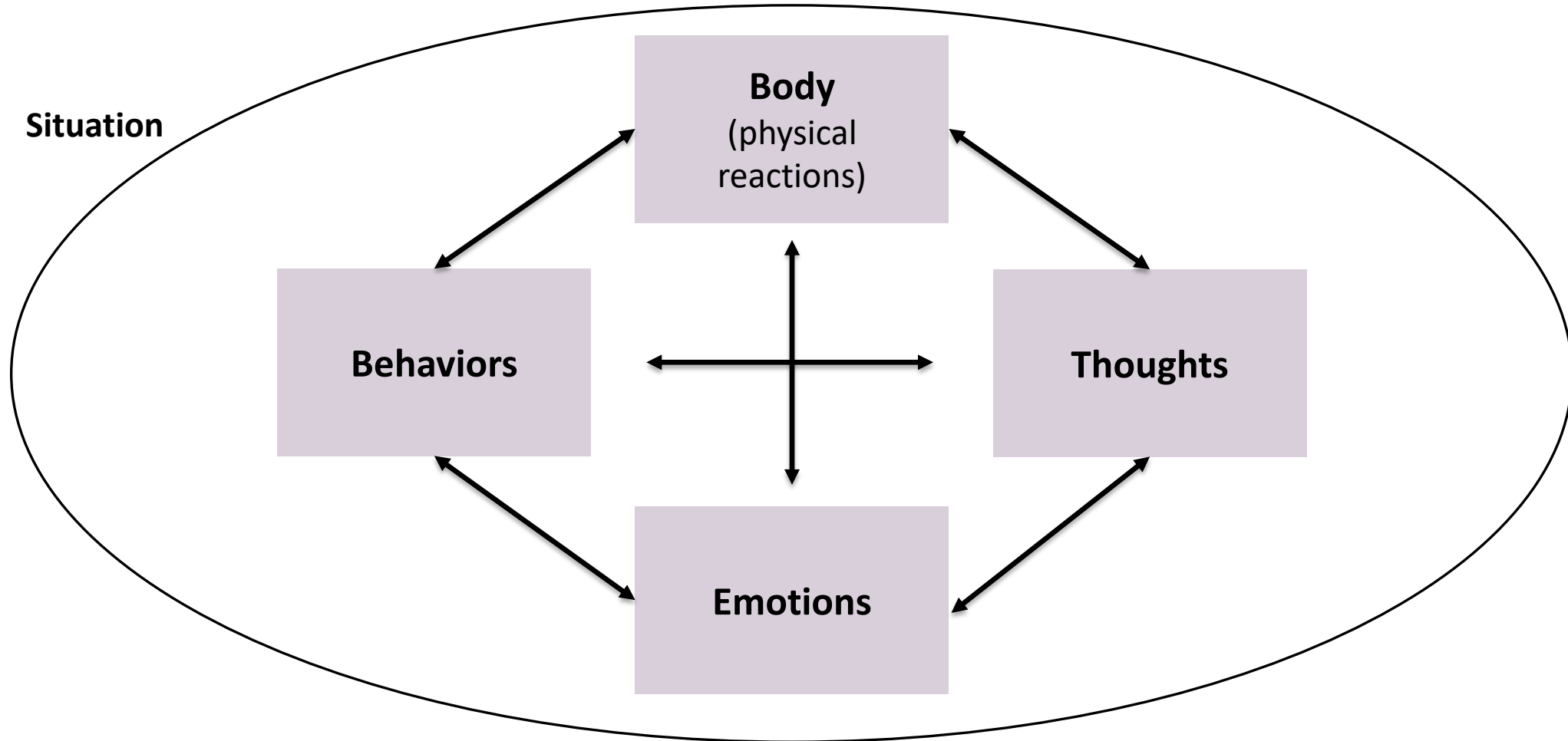
'An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.'

Pain is Complex *and* Common

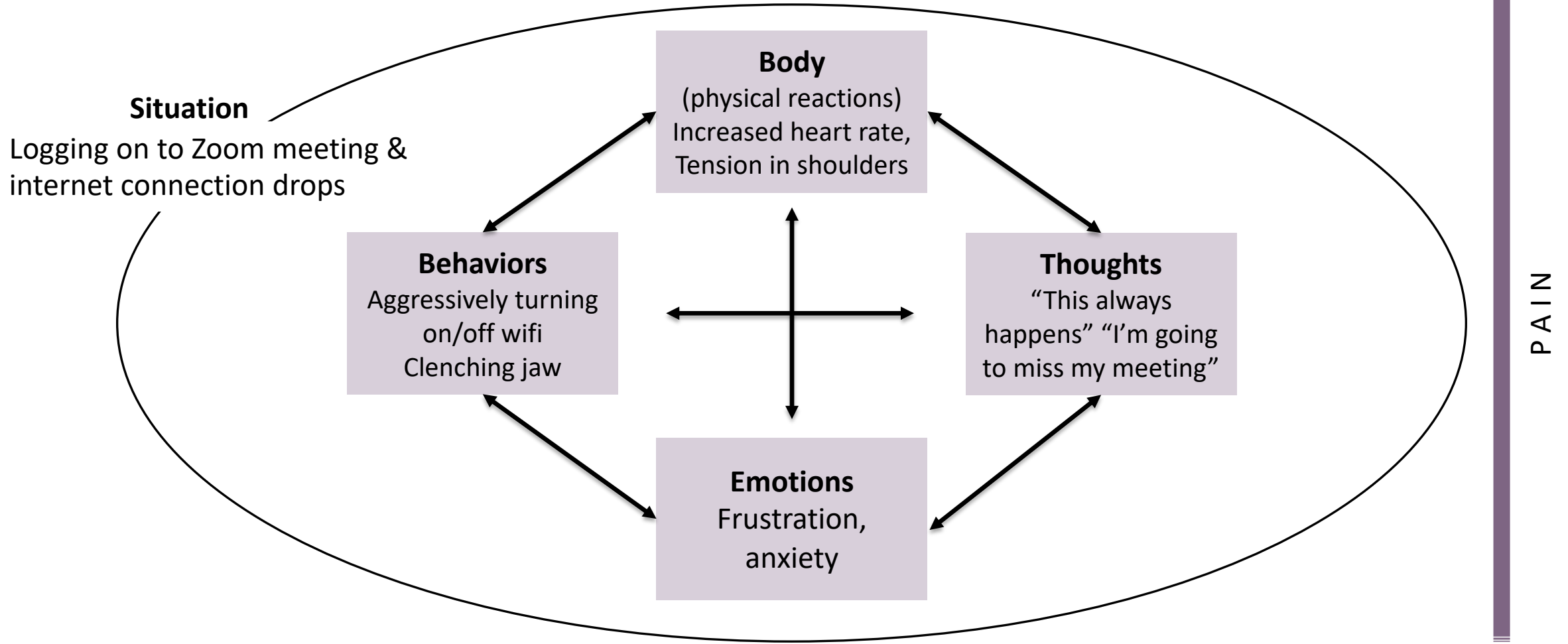
- People who have experienced a TBI are more likely to have chronic pain
- About 75% of people with TBI and 32% of people with stroke experience persistent pain
- The most common pain sites: headache, back, neck, arm, leg, and joints



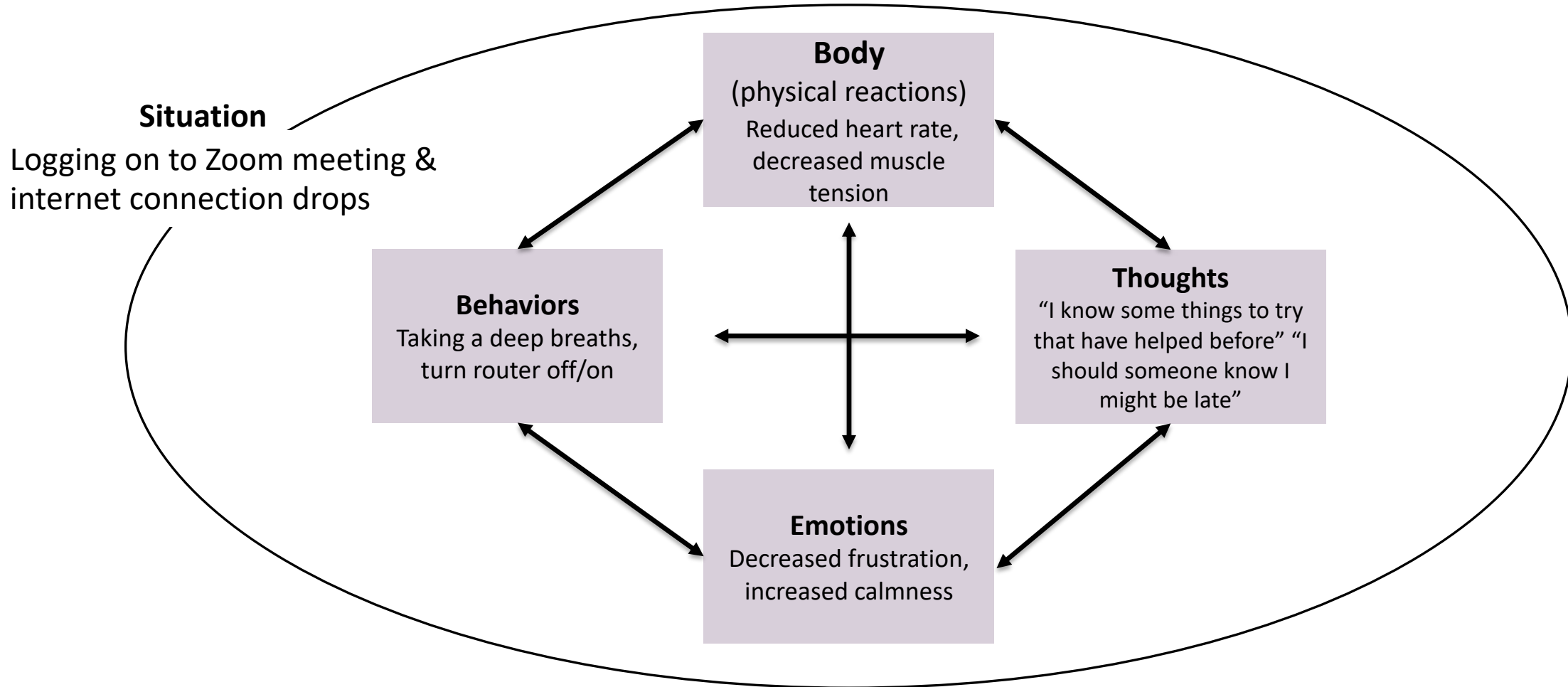
Cognitive Behavioral Model



Cognitive Behavioral Model

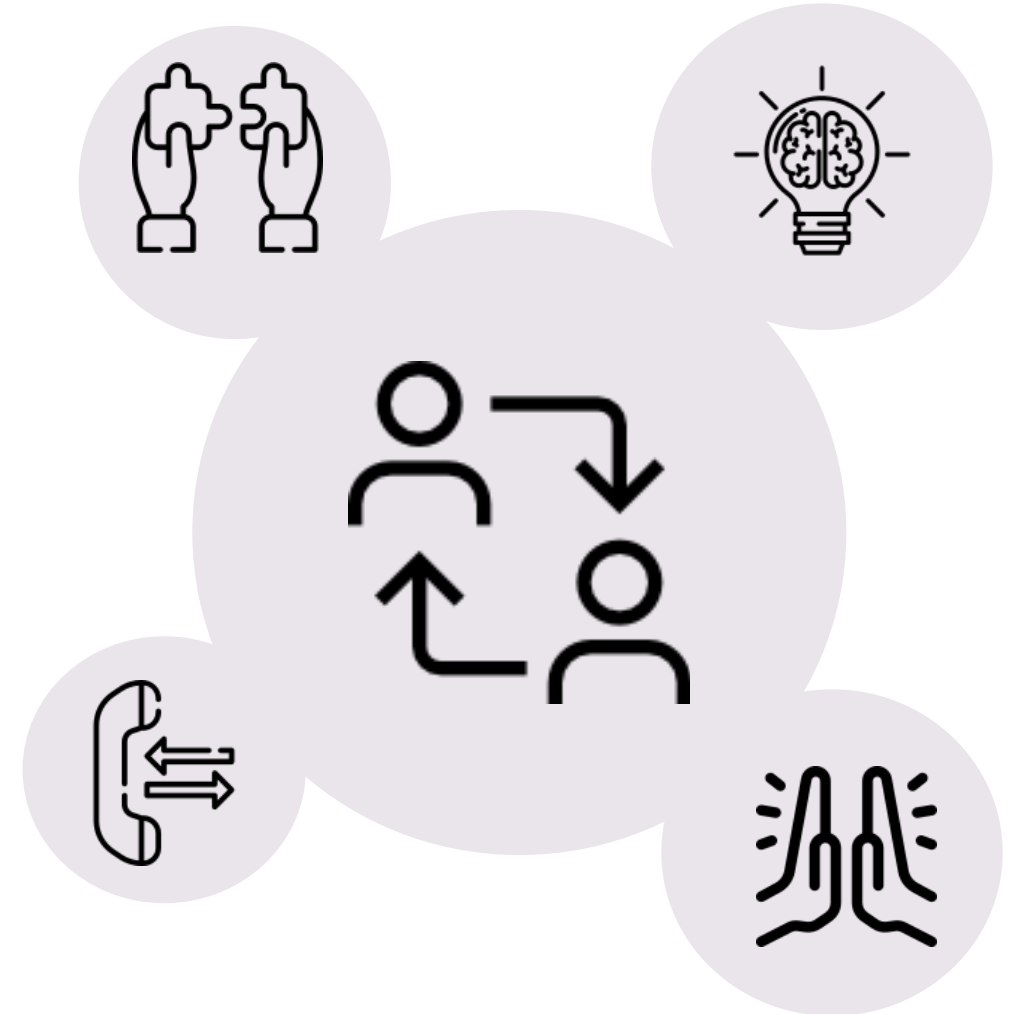


Cognitive Behavioral Model

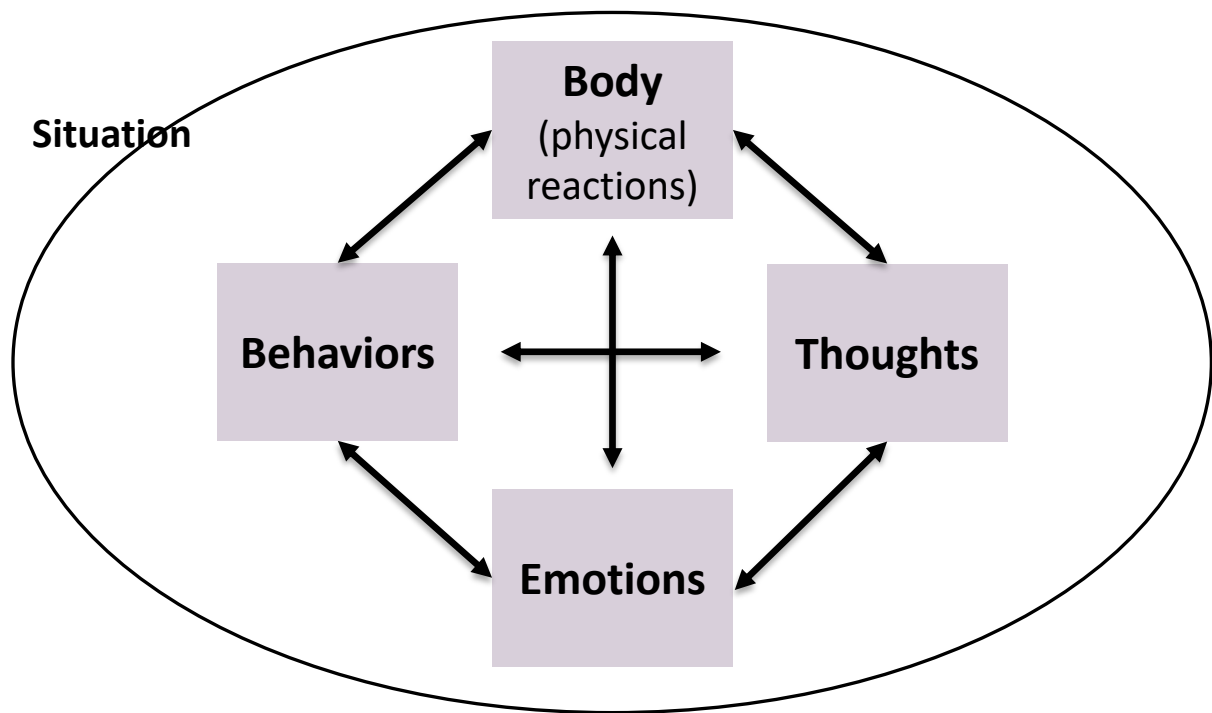


Collaborative Nature

- Interactive
- In session activities
- Home activities
- Content adapted to specified goals
- Activities tailored to disability



Activity Example: Thought Record



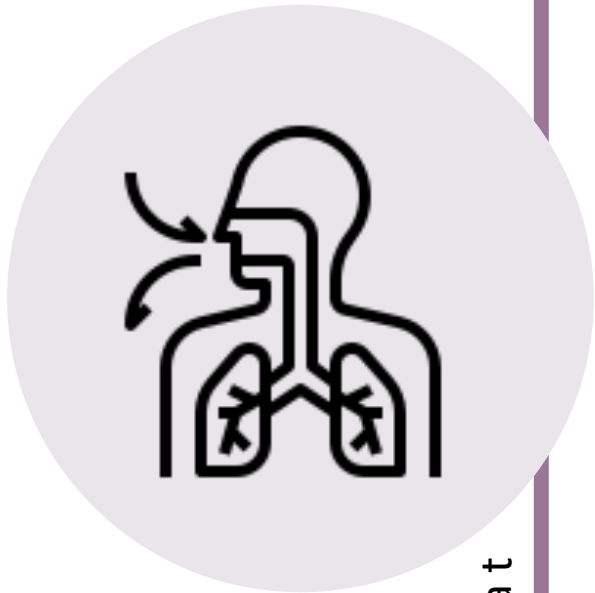
Example: Identifying Thoughts

Pick a situation and identify your thoughts and corresponding reactions

Situation **Date:** Monday 3/15 **Time:** 9:15 am
I woke up late and realized that I was going to be late for my physical therapy appt.

Thoughts	Body (Physical Reactions)	Emotions	Behaviors
<i>I'm not going to make it on time.</i> <i>My physical therapist is going to be upset with me for being late.</i> <i>I should call my therapist to let her know I'm going to be late.</i> <i>My arm always hurts more during my physical therapy sessions.</i> <i>I hate living with pain.</i> <i>I'm never going to get my life back.</i>	Tense neck & shoulders Increased arm pain Headache starting Feeling tired Low energy	Frustrated Anxious Sad	Rushing around house Not paying attention to gathering the papers I need for my appt
Pain Increased <input checked="" type="checkbox"/> Pain Decreased <input type="checkbox"/> Pain Did Not Change <input type="checkbox"/>			

In Session Activity | Diaphragmatic Breathing



repeat

1. Get as comfortable as you can.
2. Breathe through your nose.
3. As you breathe in, try and fill the lower part of your lungs first. Continue to fill your lungs all the way into your upper lungs.
4. Once your lungs are full, hold your breath for a few seconds.
5. Next, exhale slowly and deliberately; notice your chest, ribs, and abdominal area slowly deflating and relaxing. You're now ready to take your next breath.

Outcomes...TBD!

Overall, those starting the treatment tend to finish because they like it and/or find they are getting something from it

“My pain levels from when I started this study to now, I can’t even believe how much better I feel. I use to use tramadol all the time as my back-up to Tylenol, and took it often. Now I can’t even remember the last time I took tramadol.”

Self-Management Skills

- Self-monitoring
 - Pain, thoughts, behaviors, emotions
- Goal setting
 - SMART goal
- Pacing
- Distraction
- Coping thoughts
- Relaxation

EXAMPLE
Master Self-Management Plan

<p>Signs I am not acting in line with my goals:</p> <ul style="list-style-type: none"> • Increased pain and stiffness • Feeling fatigued • Trouble sleeping • Cancelling plans and feeling as if I'm letting down my friends and family 	<p>I can tell my body is stressed when:</p> <ul style="list-style-type: none"> • My neck feels tight • I get headaches • My heart is beating faster • My eyes feel tired 	<p>Priorities I have for managing my pain:</p> <ul style="list-style-type: none"> • Resuming my daily walks around the neighborhood • Staying employed so that I can provide for my family
<p>I'll better manage my activity by:</p> <ul style="list-style-type: none"> • Setting realistic goals and finding ways to work on them each week • Participating in activities that are in line with my values/priorities • Taking time to rest/bank energy each day using pacing skills • Saying "no" to activities I am not interested in/ will cause me to "overdo it" 	<p>I will relax my body by:</p> <ul style="list-style-type: none"> • Taking deep breaths • Using progressive muscle relaxation, especially for body areas with the most tension • Visualizing a relaxing situation • Resting on the armchair in the den 	
<p>E-TIPS Master Self-Management Plan</p>		<p>Unhelpful thought patterns I know are traps for me:</p> <ul style="list-style-type: none"> • "If I can't keep up with my friends they won't want to spend time with me" • "This pain is so unbearable—I have no control of my body"
<p>I know these are triggers for my stress/negative emotions:</p> <ul style="list-style-type: none"> • Family conflict • Rushed timelines • Biting off more than I can chew in my schedule • High pain days 		<p>I'll increase helpful thoughts by:</p> <ul style="list-style-type: none"> • Monitoring my thoughts when I'm in pain or stressful situations • Gathering evidence for and against unhelpful thoughts • Substituting more helpful alternative thoughts for unhelpful thoughts, such as "even though I may be slower, my friends care about me and will be understanding"
<p>I'll better manage my emotional responses by:</p> <ul style="list-style-type: none"> • Keeping a coping card in my wallet to easily remind me of my coping thoughts • Practicing relaxation before or during stressful situations • Distracting myself with enjoyable activities 		

Strengths I have that will help me manage my pain:

- Passion for learning
- Outgoing personality
- Resilience in coping with everything I have so far

Acknowledgements

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- Kara Link, BA
- Anna Evans, MA
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Do you have chronic pain?

WHAT WOULD I DO?

- Participants are randomly assigned to attend eight weekly treatment sessions via telephone over the course of 8-10 weeks or continue with usual care—**no in-person visits are required**
- Those assigned to usual care (no treatment) will have the opportunity to receive the intervention following completion of all surveys
- Complete four online surveys before, during, and after treatment
- **Compensation provided (up to \$125 total)**

DO I QUALIFY?

- Currently employed
- Age 18+
- Self-reported physical disability
- Experience chronic pain
- Daily access to a phone and the Internet

Questions? Interested? Chat with research staff:

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We cannot guarantee confidentiality of email communication.

Questions



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