



*Internet-based Pain Coping Skills
Training Intervention for People
with Osteoarthritis*

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GILLINGS SCHOOL OF
GLOBAL PUBLIC HEALTH

Osteoarthritis

- ❖ Most common type of arthritis, affecting ~27million in U.S. (~67million by 2030)^{1,2}



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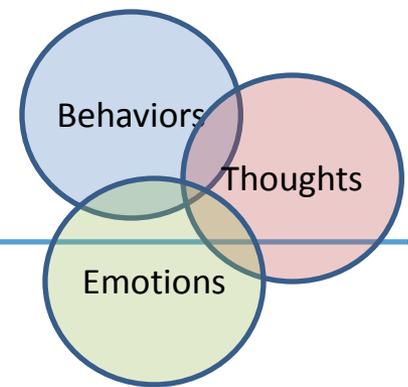
Osteoarthritis



- ❖ Most common type of arthritis, affecting ~27million in U.S. (~67million by 2030)^{1,2}
- ❖ Optimal management = pharmacological + non-pharmacological therapies ³
- ❖ Pain self-management (e.g., pain coping skills training)
 - ❖ Small but reliable effects on pain and function³
 - ❖ Potentially larger effects on psychological/behavioral outcomes⁴
 - ❖ Lack side effects of pharmacologic therapies
 - ❖ Core component of tx recommendations for hip/knee OA

¹ www.niams.nih.gov/Health_Info/Osteoarthritis/; ² Hootman JM, Helmick CG. Arthritis Rheum. 2006 Jan;54(1):226-29; ³ (OARSI) Zhang et al., Osteoarthritis and Cart. 2009; 18(4): 476-499; ⁴ Brady. Am J of Nursing. 2012; 112(3): S54-S60.

Pain Coping Skills Training



- ❖ Teach skills for changing thoughts, behaviors, and emotions contributing to pain and disability
- ❖ Delivered by highly trained PhD-level clinicians
- ❖ ~8-12 weekly in-person group sessions of ~60-90 min
- ❖ Three phases:
 - ❖ Education about biopsychosocial model of pain (therapeutic rationale)
 - ❖ Skills training
 - ❖ Application of skills in real-life situations

In-Person Pain Coping Skills Training



Pros

- Supportive interactions with therapist and peers
- Vicarious learning by observing others' experiences
- Easy to personalize training
- Strong potential to develop therapeutic relationship between therapist and person with OA



Cons

- Requires substantial time commitment of highly trained therapist
- Other costs/resources
- Not enough therapists to reach all who could benefit
- Not accessible in all geographies
- Not everyone able/willing to attend in-person therapy

Internet-based Pain Coping Skills Training



Pros

- Increase access to empirically-based program
- Cost-effective
- Standardized, 24/7 delivery of training
- Easier integration into medical care?
- Easily scalable, especially if automated (no therapist)
- Internet interventions can have effects similar to in-person therapies

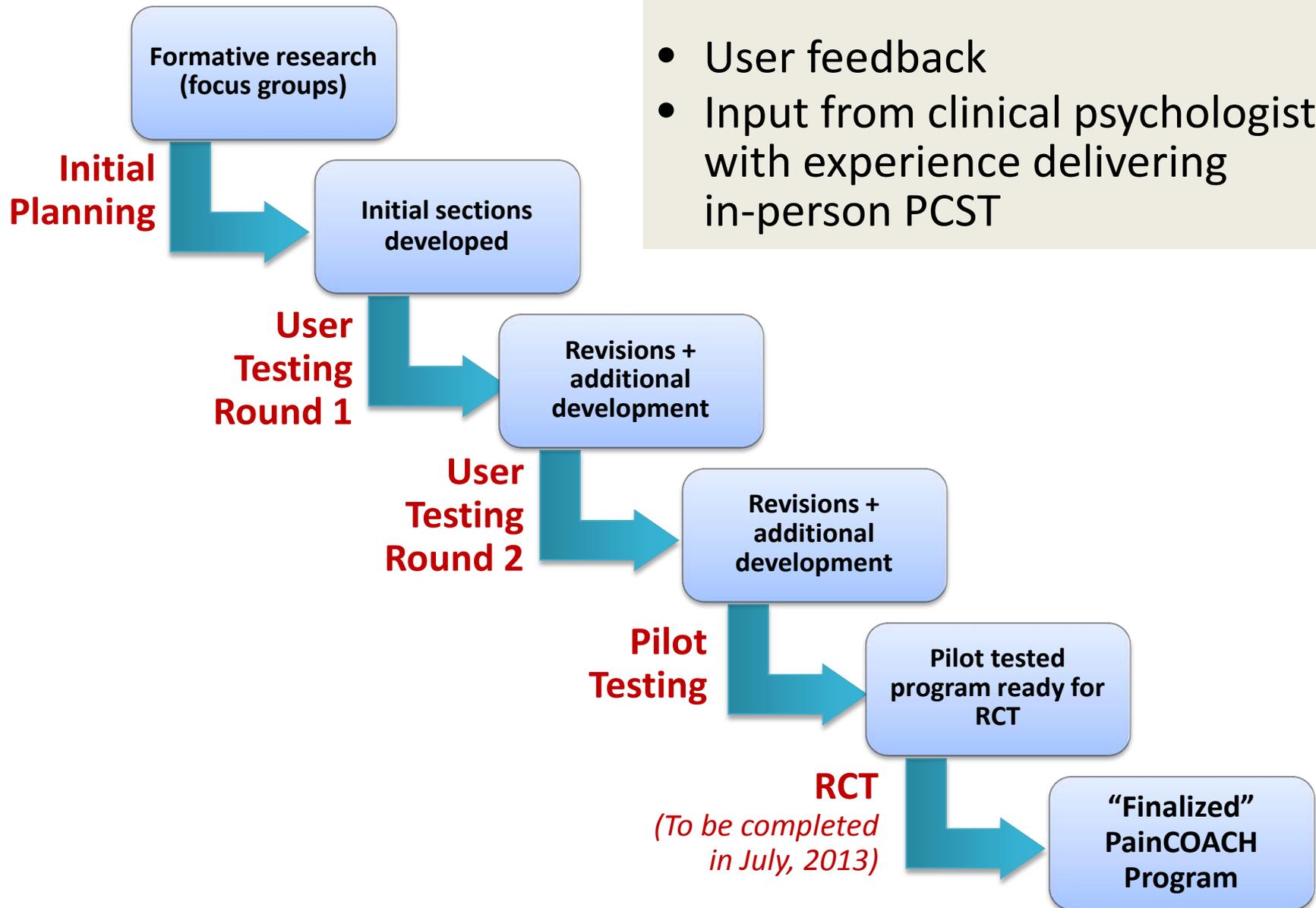


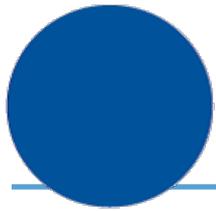
Cons

- Rapidly changing technologies can make programs obsolete without careful planning
- Lose benefits of face-to-face interactions
- Adherence often problematic
- May not appeal to everyone
- Access to Internet limited in some populations

Iterative development with extensive...

- User feedback
- Input from clinical psychologists with experience delivering in-person PCST





Features

❖ Pain Coping Skills Training

- ❖ 8 sessions completed 1 per week over 8 weeks
- ❖ 35-45 min each
- ❖ Earn badges for sessions, practice, COACHtrack, COACHchat

❖ COACHtrack

- ❖ Revise practice goals
- ❖ Rate “coping confidence”
- ❖ View graphs of practice and coping confidence
- ❖ Set up automated practice reminders

❖ COACHchat: Read about other people’s experiences using each skill and share own experiences

❖ Workbook: Session summaries, worksheets, practice log



User Experience

- ❖ Designed for touch-screen tablets
- ❖ Automated for cost-effective dissemination/scalability
- ❖ Development incorporated expertise of therapists who deliver in-person PCST
- ❖ Virtual coach provides personal connection, enhances sense of support and accountability
- ❖ Simple navigation
- ❖ Minimal reading
- ❖ Directive approach



PainCOACH

 Test Connection

 Logout



Sessions



1: Understanding Pain and Relaxation



2: Brief Relaxation with Mini-Practices



3: Activity/Rest Cycles



4: Pleasant Activity Scheduling



5: Coping Thoughts



6: Pleasant Imagery



7: Problem Solving

8: Looking Back and Moving Forward

Today's Messages

Logging your practices in COACHtrack can help you stay on track. And logging your practices helps your coach give you personalized feedback on how you're doing in each session.

[Next Message](#)

▶ [COACHtrack](#)

▶ [COACHchat](#)

▶ [MyCOACH](#)

Typical Session

**Review
practice for
prior skill;
explore
experiences;
positive
reinforcement**

**Training
in new
skill**

**Guided
practice
in new
skill**

**Explore
experience
with new
skill**

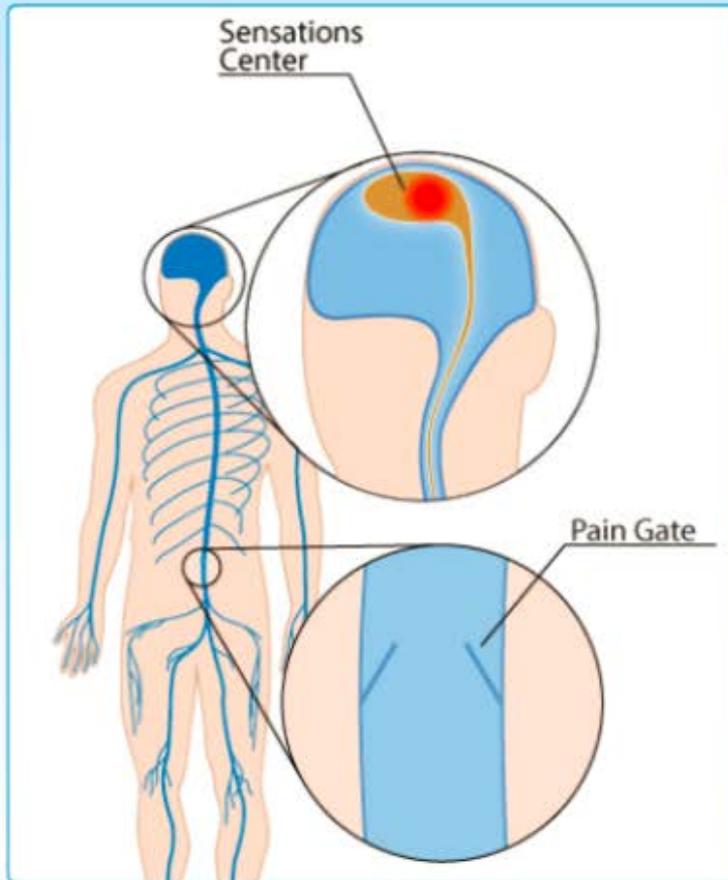
**Set
practice
goals for
week;
provide
practice
tips**

**“Appointment”
for next
session**



Home

Gate Control Theory



When the gate is open, pain signals can travel right through it to our brain's sensation center.

Restart

Pause ||

< Back

Next >



Home

Your Progressive Relaxation Practice

*Let's take a moment
to talk about how your
progressive relaxation
practice went.*



Restart

Play ▶

Loading audio...

◀ Back

Next ▶



Home

Progressive Relaxation: How Did You Feel?



Think about what position your body was in.

Restart

Pause ||



< Back

Next >



Home

Progressive Relaxation: How Did You Feel?

Tell me how you felt during your progressive relaxation by dragging the "More", "Less" or "No Change" options to each experience.

Relaxed

More

More

Sleepy

Happy

Pain

Less

Calm

More

Less

Stiffness

Clear-Headed

Muscle Tension

Less

Energetic

No Change

Nervous

No Change

Heaviness

More

Frustrated

Warmth

Reset

I'm Done

Fidgety

Restart

Pause

Back

Next



Home

Progressive Relaxation: How Did You Feel?



*It looks like you
noticed some
positive changes.*

Restart

Pause ||

< Back

Next >



Home

Solutions to Common Problems

Sometimes when people practice progressive relaxation, they have some concerns or problems



Restart

Play ▶

Loading audio...

◀ Back

Next ▶



Home

Solutions to Common Problems

Have you experienced any of these problems while doing your practices?

I have muscle cramps or pain

I fidget or can't sit still

I'm distracted by noise

I have muscle spasms and tics

I can't stop my thoughts

I fall asleep

I cough and sneeze

I feel uncomfortable

I feel like I'm not in control

Restart

Pause ||



< Back

Next >



Home

Progressive Relaxation Practice Review



*You'll get better at
progressive relaxation
and experience more
benefits the more you
practice it.*

Restart

Pause ||



◀ Back

Next ▶



Home

Progressive Relaxation Practice Review



You're starting to do something really positive for yourself.

Restart

Pause ||



◀ Back

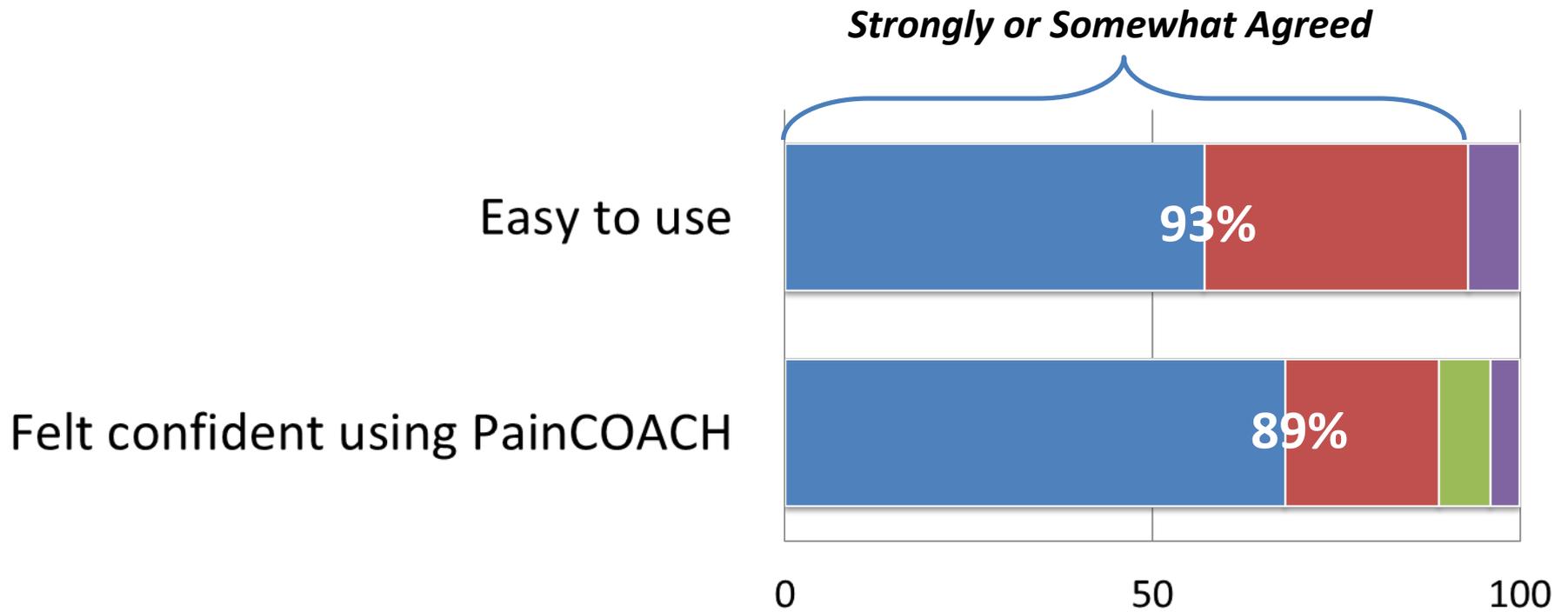
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Randomized Controlled Trial



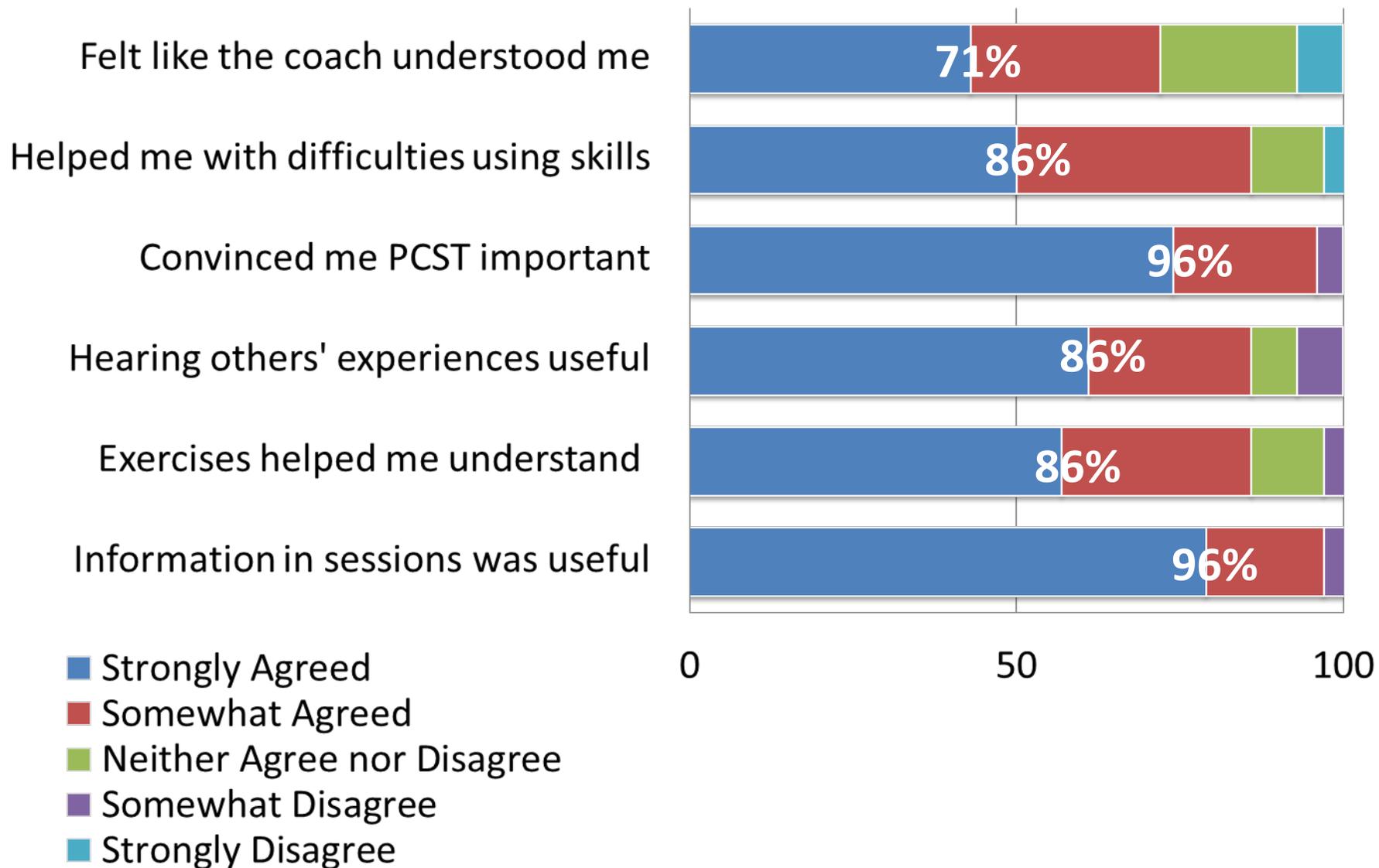
- ❖ Recruitment at UNC-Chapel Hill and Duke University ended (data collection until 7/2013)
 - ❖ 113 randomized (55 control, 58 PainCOACH arm)
 - ❖ Average age 67 (Range 38-90+)
 - ❖ 75% non-Hispanic White; rest mostly African American
 - ❖ 22% high school or less, 39% college/graduate degree
 - ❖ Median income < \$45k/yr (Range < \$15k to > \$135k)
- ❖ 20% never used computer; 50% used one daily
- ❖ Average ability to use Internet “Good” (Range: poor to excellent)

PainCOACH Usability

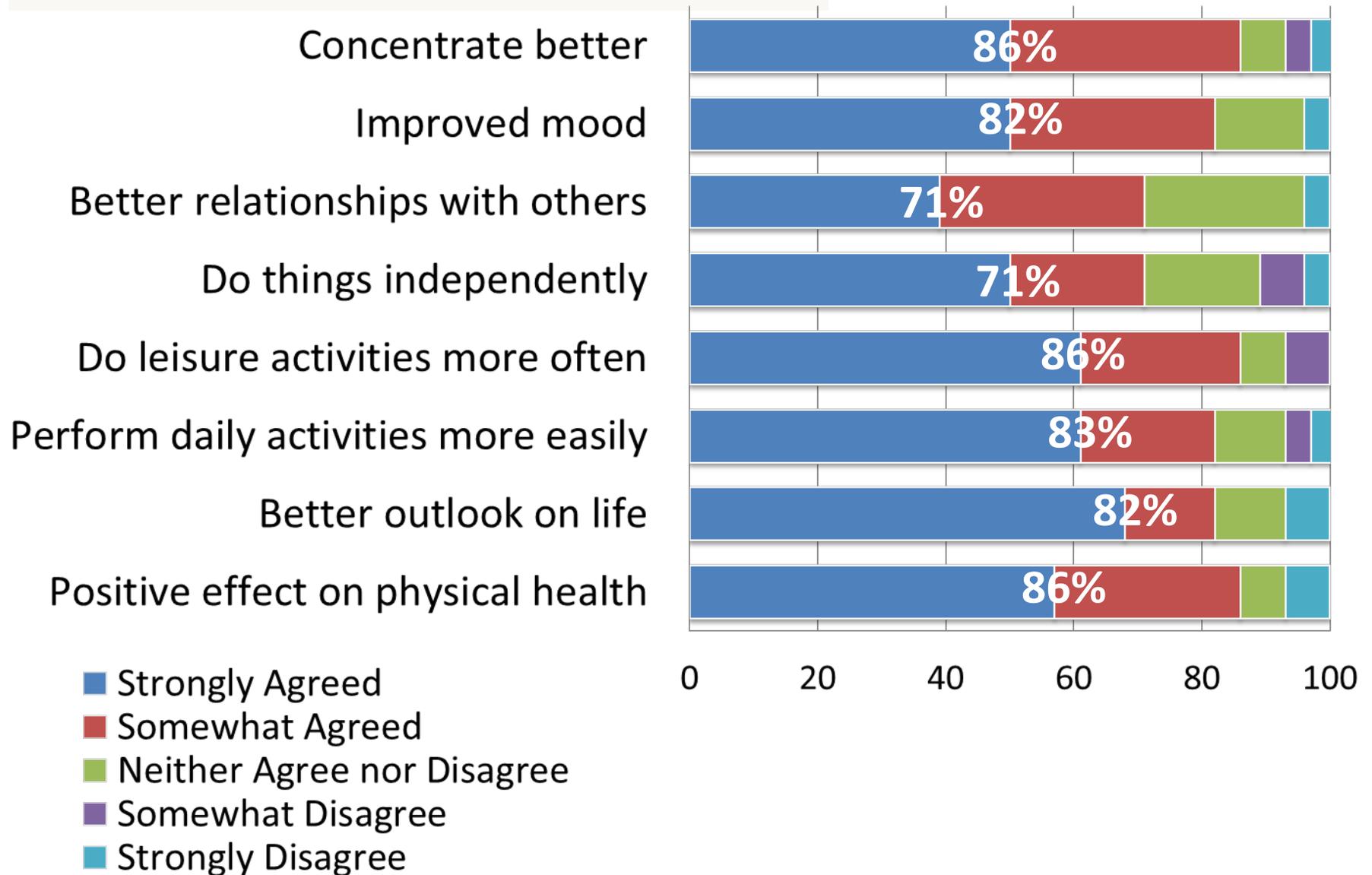


- Strongly Agreed
- Somewhat Agreed
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

PainCOACH Content



Perceived benefits reported by PainCOACH users



Some refinements needed

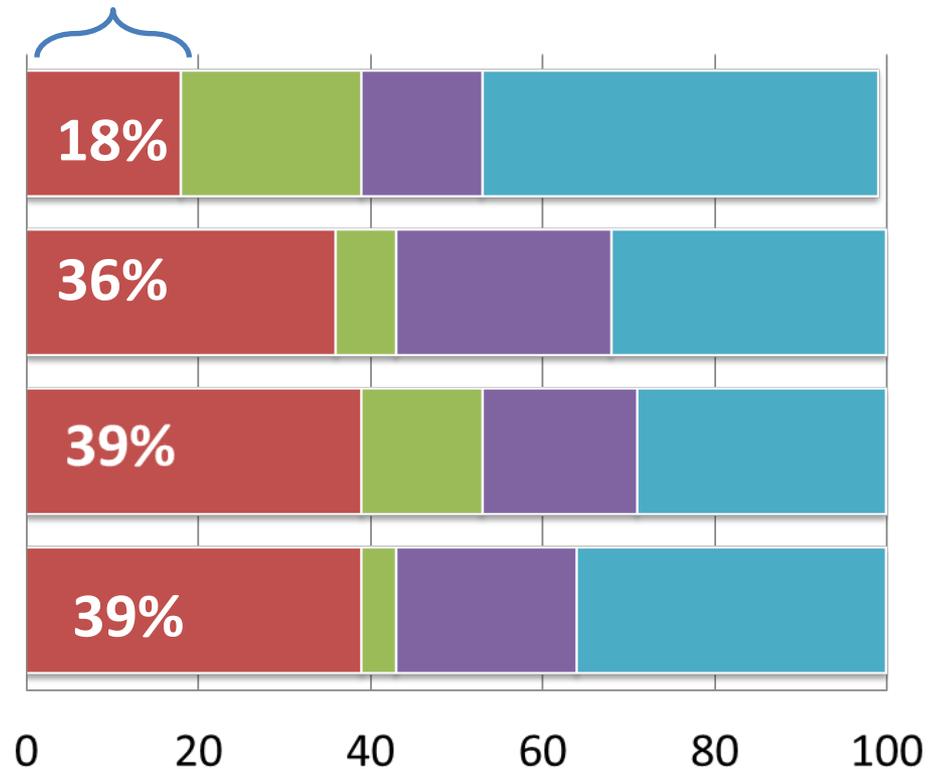
Somewhat Agreed

Hard to figure out best way to practice skills

Hard to find time to practice skills

Hard to remember to practice skills

Hard to figure out how to fix problems in program



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- Strongly Disagree

Future Directions

- ❖ Refine PainCOACH based on RCT findings and conduct larger trial to move PainCOACH toward dissemination



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 - ❖ Longer-term follow-up
 - ❖ Medication use
 - ❖ Cost-effectiveness

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- ❖ Add features to promote long-lasting benefits:
 - ❖ Booster sessions?
 - ❖ Ongoing access to website?

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 - ❖ Cost-effectiveness
- ❖ Add features to promote long-lasting benefits:
 - ❖ Booster sessions?
 - ❖ Ongoing access to website?
- ❖ Best way to make PainCOACH available
 - ❖ Integration into primary care?
 - ❖ Free access through website?



Study team

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U.S. Department of Health and Human Services

Supported by the



National Institute of
Arthritis and Musculoskeletal
and Skin Diseases

Thank you!

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