

Complementary and integrative approaches to improve health for adults living with HIV

Eugene M. Dunne, PhD
Assistant Professor
Temple University

VA Complementary and Integrative
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OVERVIEW

- Health and HIV
 - Stress management
 - Pain management
- Qualitative methods in intervention development
- Current NIH-funded project



LIVING WITH HIV

➤ HIV in the United States

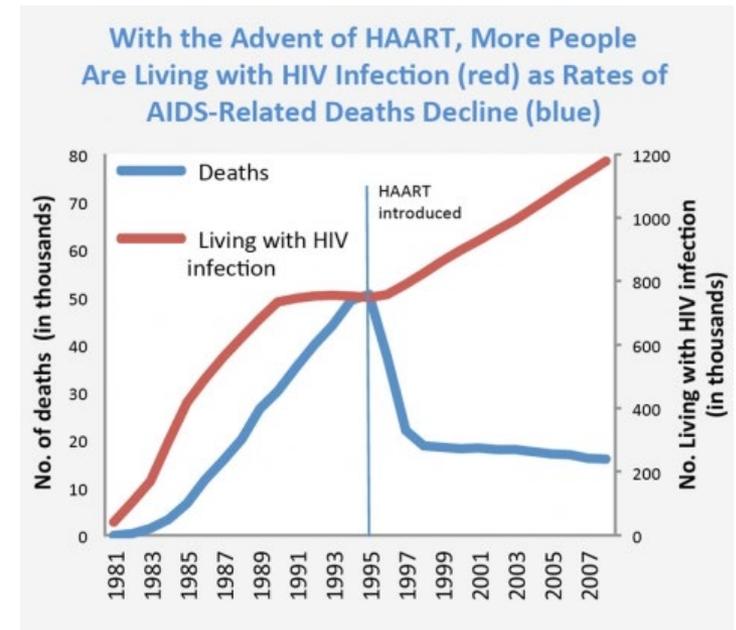
- 1.2 million persons living with HIV (PLWH)
- ~ 36,400 new cases annually
- ~ 30,000 Veterans

➤ Advances in Treatment

- Improved quality & length of life
- Medication Adherence

➤ Aging and Comorbidities

- Depression
- Cardiovascular disease
- Chronic pain conditions



STRESS AND HEALTH

➤ Health Inequity and Stress

- Cardiovascular disease
- Infectious Disease
- Cancers
- Pain

➤ Contributing Factors

- Structural barriers
- Social circumstances
- Health behaviors

➤ Targeted Intervention



Graphic by Stephanie King.

STRESS AND HEALTH



COGNITIVE:

Studying for exam, giving a presentation



EMOTIONAL:

Trauma, worry



ENVIRONMENTAL:

Noise, traffic



PHYSICAL:

Lack of sleep, injury

STRESS AND HEALTH



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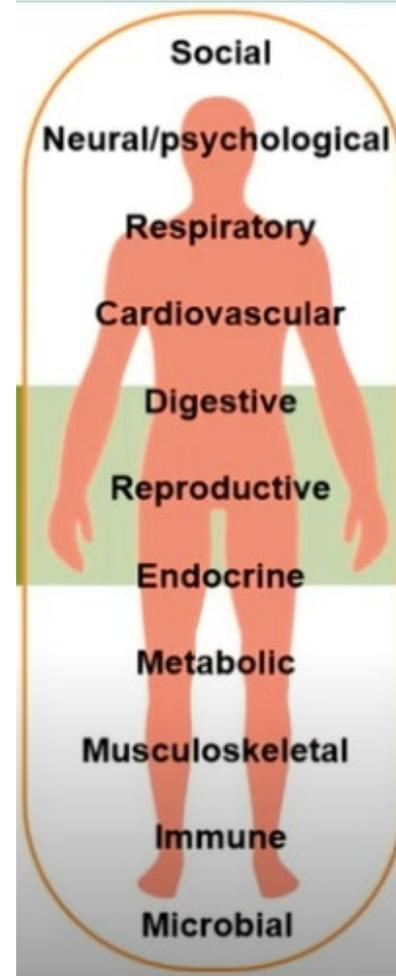
Noise, traffic



PHYSICAL:

Lack of sleep, injury

STRESS AND HEALTH



MIND-BODY CONNECTION

➤ Sympathetic Nervous System

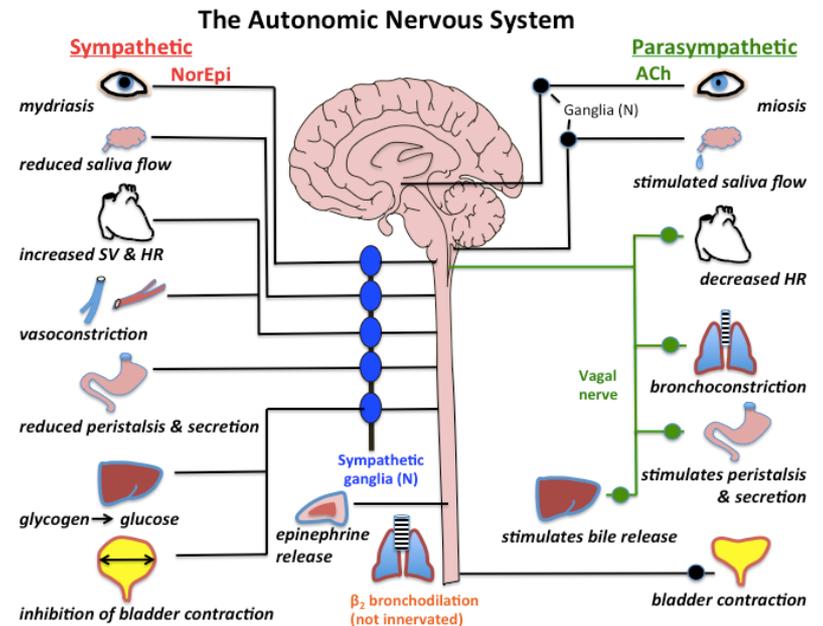
➤ “Fight or Flight”

➤ Heart rate increases, pupil dilation, inhibits digestion

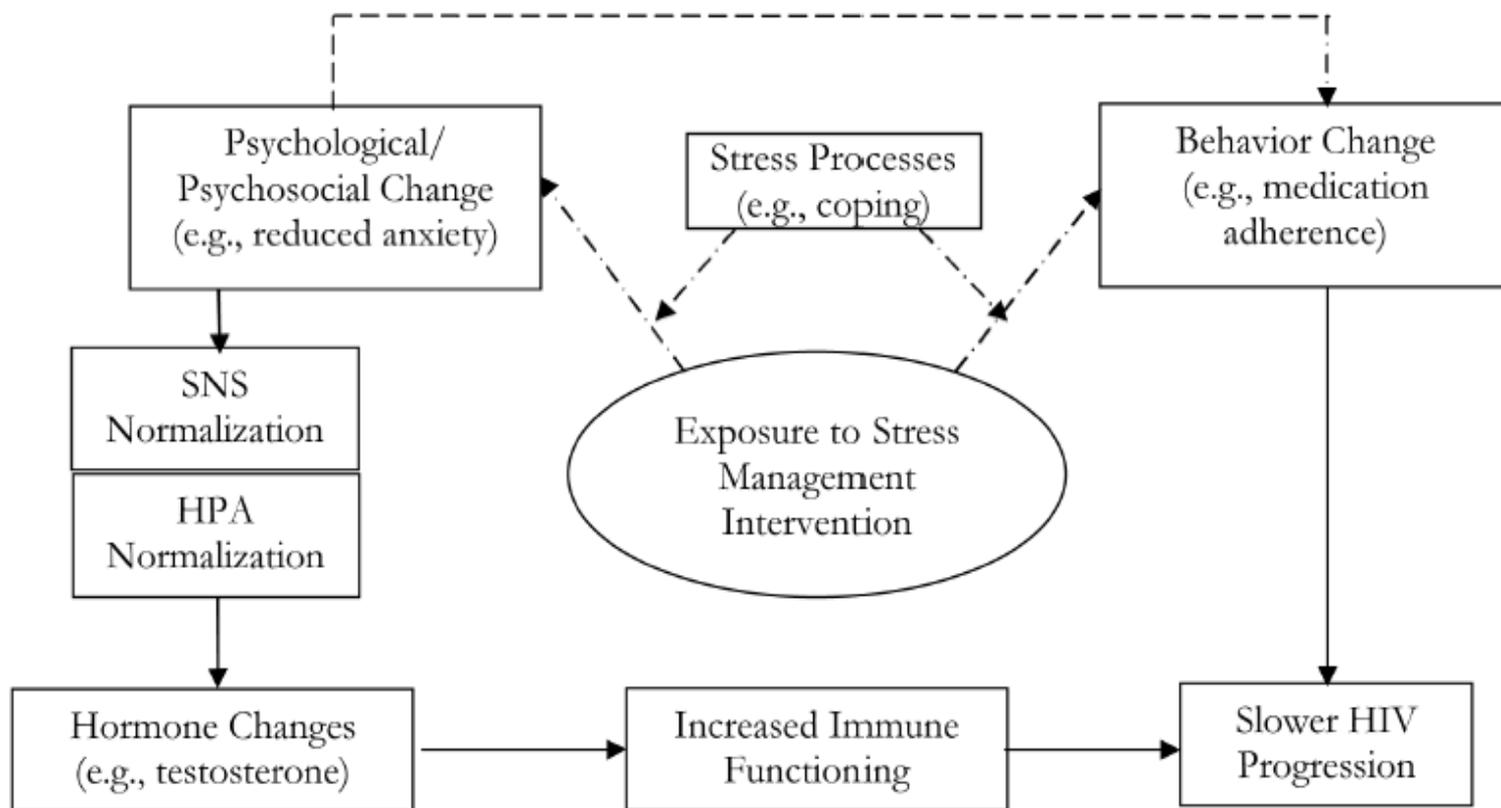
➤ Parasympathetic Nervous System

➤ “Rest and Digest”

➤ Decrease in heart rate, activation of digestion



STRESS & HIV



STRESS & HIV

Stress Management Interventions for HIV+ Adults: A Meta-Analysis of Randomized Controlled Trials, 1989 to 2006

Lori A. J. Scott-Sheldon
Syracuse University

Seth C. Kalichman
University of Connecticut

Michael P. Carey and Robyn L. Fielder
Syracuse University

Table 1
Efficacy of Stress Management Interventions for HIV-Seropositive Adults at First Measurement Occasion

Outcome ^a	<i>k</i> of Interventions	Weighed Mean <i>d</i> (and 95% Confidence Interval)		Homogeneity of Effect Sizes	
		Fixed Effects	Random Effects	<i>Q</i>	<i>P</i>
Coping	8	0.10 (−0.05, 0.26)	0.10 (−0.05, 0.26)	1.40	.99
Social support	11	0.01 (−0.15, 0.17)	0.01 (−0.15, 0.17)	6.45	.77
Anxiety	22	0.28 (0.17, 0.40)	0.31 (0.14, 0.48)	39.77	.01
Depression	34	0.28 (0.19, 0.37)	0.29 (0.18, 0.41)	45.51	.07
Distress	13	0.19 (0.06, 0.33)	0.19 (0.06, 0.33)	3.86	.99
Quality of Life	18	0.16 (0.05, 0.27)	0.16 (0.05, 0.27)	11.83	.81
CD4+ count	21	0.04 (−0.11, 0.18)	0.04 (−0.11, 0.18)	17.32	.63
Viral load	8	−0.09 (−0.31, 0.13)	−0.09 (−0.31, 0.13)	3.92	.79
Hormonal	5	−0.14 (−0.40, 0.11)	−0.17 (−0.62, 0.27)	11.80	.02
Fatigue	8	0.38 (0.16, 0.59)	0.38 (0.16, 0.59)	2.65	.91

STRESS & HIV



The benefits of yoga for people living with HIV/AIDS: A systematic review and meta-analysis



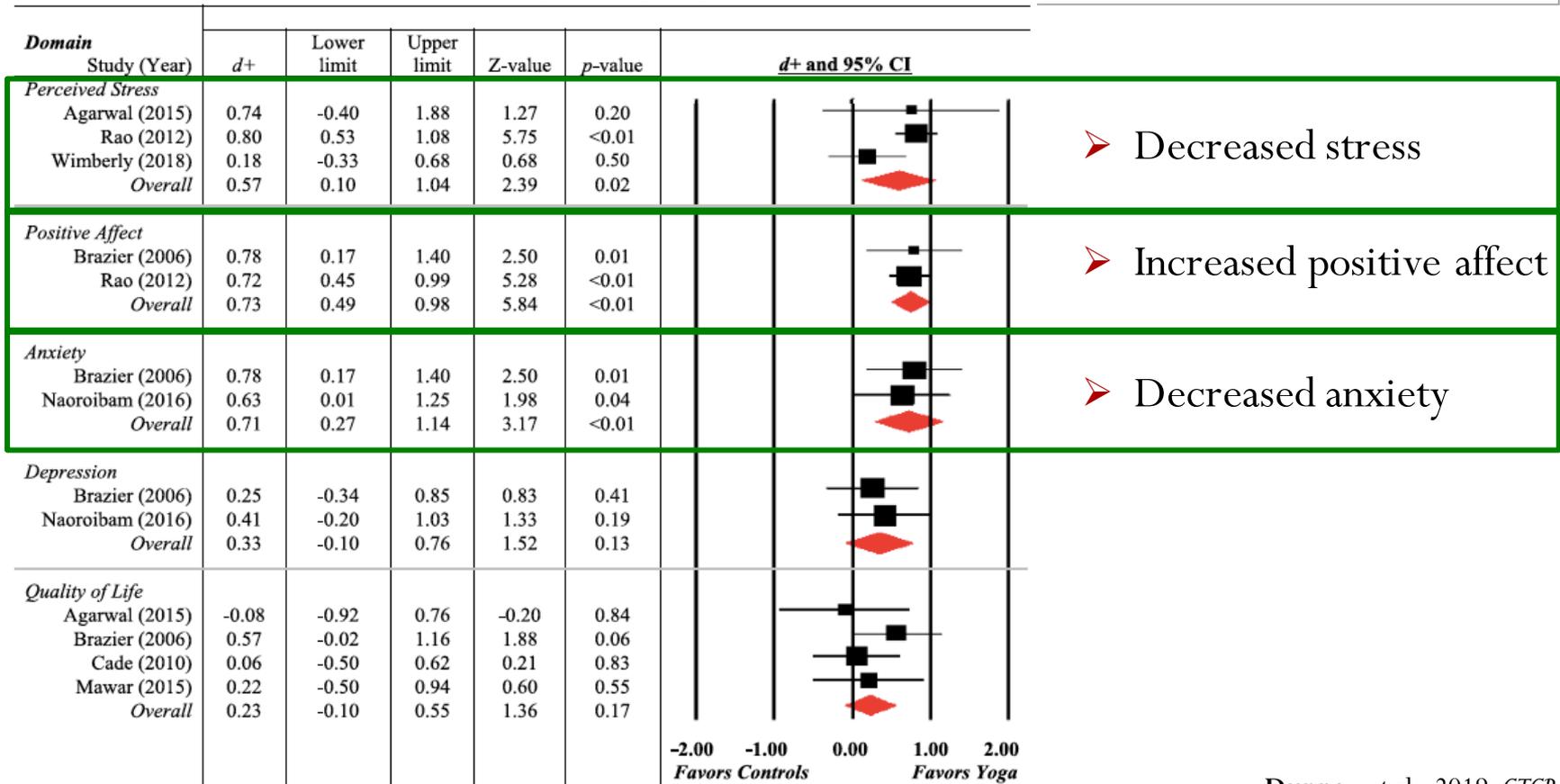
Eugene M. Dunne^{a,b,*}, Brittany L. Balletto^a, Marissa L. Donahue^a, Melissa M. Feulner^a, Julie DeCosta^a, Dean G. Cruess^c, Elena Salmoirago-Blotcher^{a,b}, Rena R. Wing^{a,b}, Michael P. Carey^{a,b,d}, Lori A.J. Scott-Sheldon^{a,b,d}

^a Centers for Behavioral and Preventive Medicine, The Miriam Hospital, Providence, RI, USA

^b Alpert Medical School, Brown University, Providence, RI, USA

^c University of Connecticut, Storrs, CT, USA

^d Brown University School of Public Health, Providence, RI, USA





Telephone-Delivered Mindfulness Training to Promote Medication Adherence and Reduce Sexual Risk Behavior Among Persons Living with HIV: An Exploratory Clinical Trial

Michael P. Carey^{1,2,3} · Eugene M. Dunne^{1,3} · Alyssa Norris^{1,3} · Shira Dunsiger^{1,2} · Carla Rich¹ · Rochelle K. Rosen^{1,2} · Philip Chan^{2,4} · Elena Salmoirago-Blotcher^{1,4}

- Mindfulness Training
 - Health Education Control
 - 8 weeks, telephone-delivered
 - Baseline, Post-Intervention, 3-month Follow-Up
 - Medication adherence
 - Stress, anxiety, depression
 - Qualitative Interviews

- Retention at Follow-Up
 - 100%

Table 1 Participant characteristics for entire sample and by group

	Entire sample N = 42
Sex (assigned at birth)	
Male	21 (50%)
Female	21 (50%)
Gender identity	
Male	22 (52%)
Female	20 (48%)
Age	47.5 (11.2)
Race	
White	18 (43%)
Black	11 (26%)
Native Hawaiian/Pacific Islander	1 (2%)
American Indian/Alaska Native	4 (10%)
Other	8 (19%)
Ethnicity	
Hispanic/Latino	11 (26%)
Education	
< High school	15 (36%)
High school graduate or GED	14 (33%)
Vocational school	1 (2%)
College (some)	12 (29%)
Employment	
Not working	24 (57%)
Retired	1 (2%)
Employed	14 (33%)
Self-employed	3 (7%)

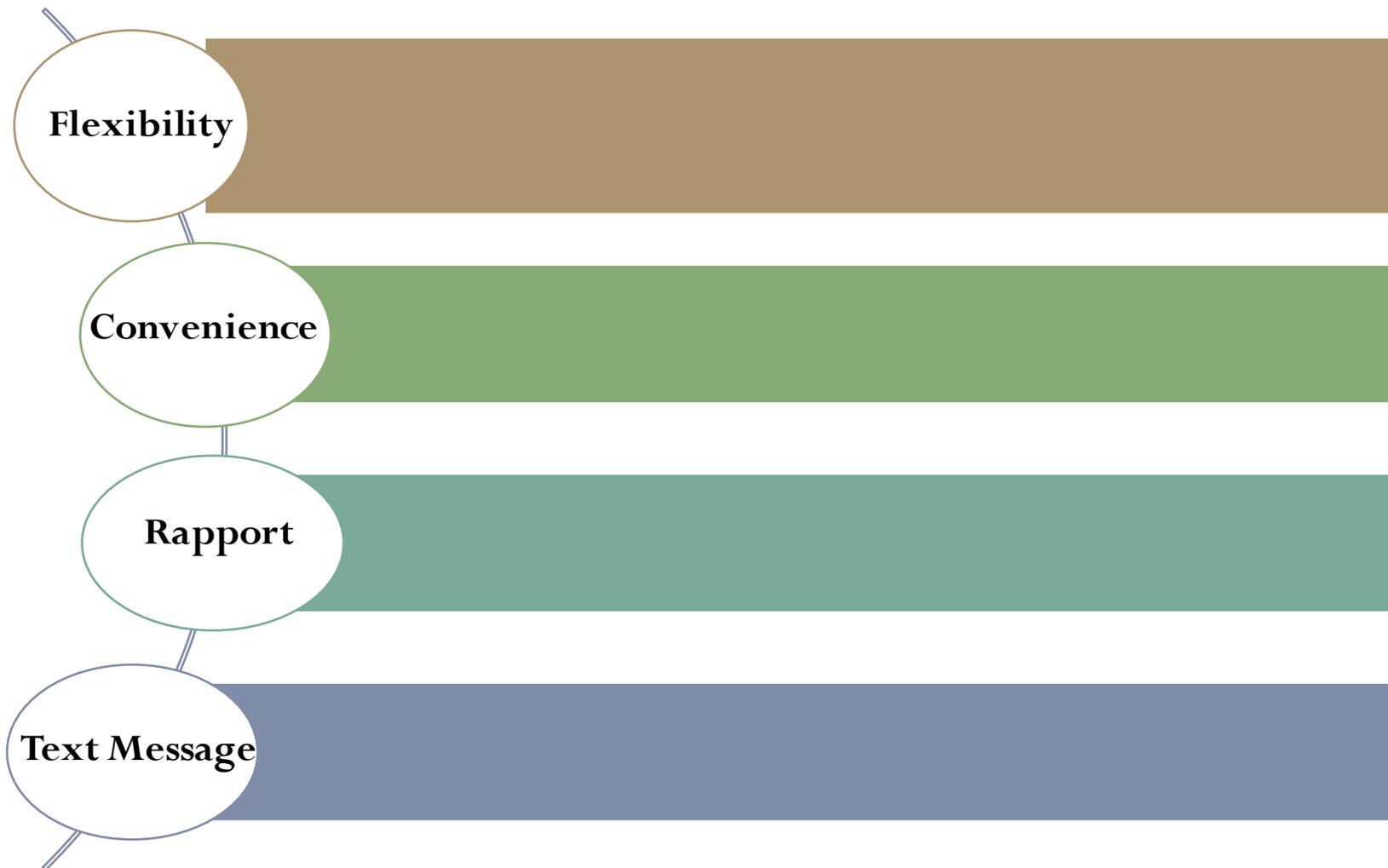


Telephone-Delivered Mindfulness Training to Promote Medication Adherence and Reduce Sexual Risk Behavior Among Persons Living with HIV: An Exploratory Clinical Trial

Table 4. Unadjusted Outcome Measures by Condition over Time

	Health Coaching <i>n</i> = 22	Mindfulness Training <i>n</i> = 20	Condition x Time Interaction	
			<i>F</i>	<i>p</i>
<i>Medication Adherence</i>				
Self-report (number of days missed dose of ART)			0.21	.809
Baseline	1.95 (3.15)	4.20 (7.02)		
Post-intervention	1.64 (3.30)	3.41 (6.57)		
Follow-up	1.45 (1.99)	2.70 (3.53)		
Virally suppressed (< 500 copies/mL)			2.87	.063
Baseline	20 (91%)	12 (67%)		
Post-intervention	17 (81%)	13 (77%)		
Follow-up	19 (95%)	14 (70%)		
<i>Mediators</i>				
Anxiety (GAD) (0 – 21)			0.29	.753
Baseline	7.50 (6.20)	9.25 (5.87)		
Post-intervention	5.00 (4.58)	7.88 (6.15)		
Follow-up	4.45 (4.22)	7.20 (5.33)		
Depression (PHQ9) (0 – 27)			0.27	.767
Baseline	8.55 (5.54)	9.80 (6.58)		
Post-intervention	5.68 (4.82)	8.82 (6.66)		
Follow-up	5.18 (3.72)	6.90 (5.23)		
Perceived Stress (PSS) (0 – 16)			0.42	.661
Baseline	5.86 (3.01)	6.90 (4.09)		
Post-intervention	5.64 (2.75)	6.06 (3.58)		
Follow-up	5.73 (3.28)	5.80 (3.71)		
Mindfulness (FFMQ) (15 – 75)			1.19	.312
Baseline	49.09 (8.09)	47.70 (7.09)		
Post-intervention	52.73 (8.98)	53.06 (10.32)		
Follow-up	52.18 (7.84)	53.05 (7.49)		

STRESS & HIV



STRESS & HIV

Flexibility

I had to reschedule, I'm embarrassed about that, but it was a lot easier. The phone is much easier, frankly.

Convenience

It's [hard] to take the ride up here, I'd have to take the bus, it's a pain in the neck. I definitely found that it fit into my day

Rapport

She wasn't only my coach, she was someone that I could vent to when I was going through drama. She helped me a lot. I cried, we talked, we laughed.

Text Message

The texts were very helpful 'heads up, today we are schedule to talk at this time, are you going to be available?' That was very convenient to everyday life."

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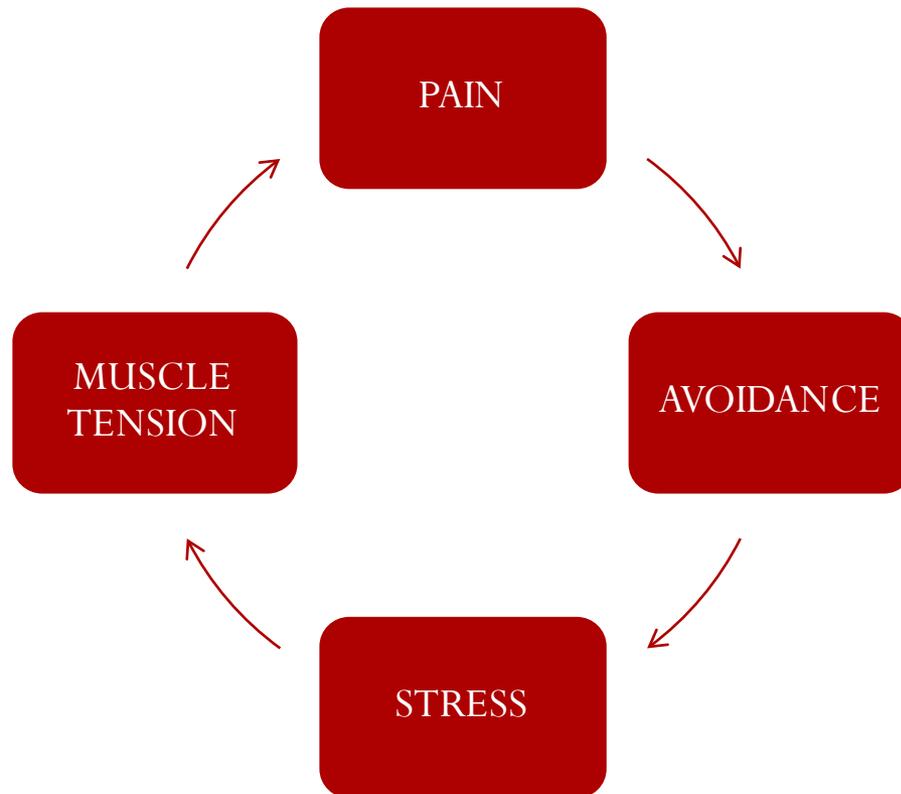
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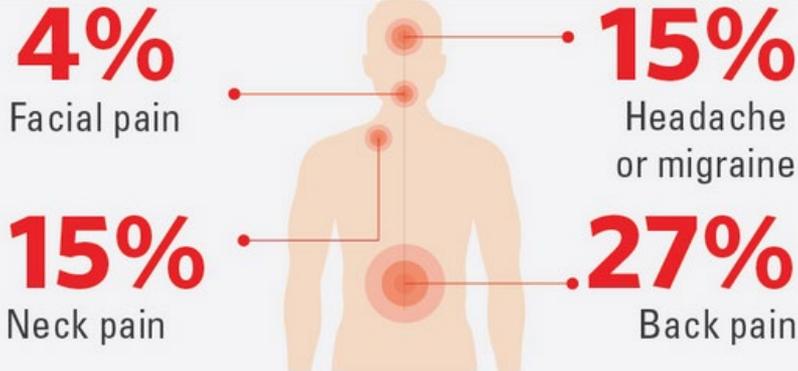
Stress and Pain Management in the Context of HIV



CHRONIC PAIN

- Pain
 - Acute Pain: adaptive biological response
 - Chronic Pain: 3-6 months, present with or without detectable tissue damage or injury
- Physical and psychological suffering, disability, helplessness, and maladaptive coping efforts
- Most common reason people seek health care in the US
 - Often present to the emergency department
 - Significant economic costs (\$600+ billion annually)

CHRONIC PAIN



100 million

American adults experience chronic pain — more than the number affected by heart disease, diabetes and cancer combined



76.5 million

Have chronic pain lasting 24 hours or longer

36 million

Miss work each year because of chronic pain

3 in 4

Chronic pain patients report feeling depressed

\$635 billion

Annual cost of treatment and lost productivity

5 million to 8 million

Rely on opioids for long-term pain management

Most common **side effects**: trouble with concentration, energy levels and sleep

Helpful exercises for chronic pain: aquatic therapy, tai chi, yoga and walking

HIV & CHRONIC PAIN

❖ Why is chronic pain management critical for PLWH?

- Pain is historically undertreated among PLWH
- Significant stress of managing dual chronic health conditions
 - Reduced quality of life
 - Decreased physical health
- Chronic pain and retention in HIV care
 - Higher no-shows for clinic appointments
 - Poor antiretroviral (ART) adherence

HIV & CHRONIC PAIN

- Chronic pain co-occurs in over 50% of PLWH
 - Musculoskeletal pain
 - Neuropathic pain
- Physical and psychological suffering, disability, helplessness, and maladaptive coping efforts
- HIV-specific etiology
 - Suppressed immune function
 - Impact of antiretroviral medication
 - Aging
 - Psychological stress

HIV & CHRONIC PAIN

- Interdisciplinary team approach
 - HIV primary care
 - Pain specialist
 - Psychology

- Front Line Treatment: non-pharmacological interventions
 - Physical and manual therapies
 - Cognitive-behavioral pain management

- Complementary and integrative approaches
 - Mindfulness
 - Yoga
 - Acupuncture
 - Hypnosis

K23 Research Aims



TAI CHI FOR PAIN MANAGEMENT

- Tai Chi is considered a “moving meditation”
 - Gentle, fluid movements
 - Combines breath and balanced moving postures
 - Facilitates a mindful, balanced perspective

- Tai Chi is an effective pain management intervention
 - Decreases pain and stiffness
 - Enhances activities of daily living
 - Increased muscle strength and balance

RESEARCH AIMS

AIM 1: Formative Research (Completed)

- Understand the individual- and clinic-level experiences related to chronic pain management for PLWH, as well as feedback on Tai Chi as a mind-body chronic pain intervention

AIM 2: Randomized Pilot Trial

- Examine the feasibility and acceptability of Tai Chi for chronic pain management for PLWH



The Lived Experience of Managing HIV and Chronic Pain: Qualitative Interviews with Patients and Healthcare Providers

Eugene M. Dunne^{1,2,3}  · Rochelle K. Rosen^{1,4} · Georgiana L. McTigue¹ · Robert N. Jamison⁵ · Gloria Y. Yeh⁶ · Josiah D. Rich⁷ · Michael P. Carey^{1,2,4}

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Abstract

People living with HIV (PLWH) experience higher rates of comorbid chronic pain conditions compared to the general population. Managing HIV and chronic pain, two stigmatized health conditions, can exacerbate physical and psychological suffering. The current qualitative study was designed to increase our understanding of the experience of living with HIV and chronic pain. Twenty participants were recruited from a hospital-based immunology center to participate in individual

RESULTS: PARTICIPANTS

Recruited 20 participants

- Patients: $n = 13$
 - Mean age = 56.2
 - 42% female
 - 38% racial/ethnic minority
 - Mean pain rating = 7.1
 - Primarily musculoskeletal back pain
- Providers: $n = 7$
 - 3 Infectious Disease Physicians
 - 2 Clinical Psychologists
 - 1 Physician Assistant
 - 1 LCSW

QUALITATIVE RESULTS

HIV is
well-managed

Chronic pain is
poorly
managed

Need for
More Options

Lack of
Awareness

Relaxation and
Meditation

Interest in
Tai Chi

HIV is well-managed

- HIV becomes manageable and viral load undetectable
 - *I don't think about my HIV like that anymore. I'm undetectable.*
 - *My HIV is manageable. I'm undetectable, which is good. I take care of my health, that's one of the main things that's a priority in my life—my health.*
 - *Because they have the HIV medicine that can keep you undetectable... With HIV, you could live a normal life.*

Chronic pain is poorly managed

- Pain remains poorly managed
 - *Because mine is all over pain... and there's so many reasons that cause it. I've been diagnosed with neuropathy, fibromyalgia, two types of arthritis, muscle issues—spasms and stuff like that. That's why there's nothing out there for me.*
 - *I'm in pain 24/7. There is nothing on the market that can take my pain away.*

Need for More Options

“For people that live like us, with HIV and chronic pain, they need more programs. Because, people are so unaware of what's going on and how to manage their pain. They think popping a pill is the best way to do it. That's not true. There's other ways.”
– Participant 6

“I wish there was more help for the chronic pain situation, somethin' that people won't get hooked on to help with the pain. That would be awesome, 'cause it does prevent me from doin' a lot of stuff, the pain. Especially when it's like this, I stay home. I won't leave the house and deal with the pain
– Participant 24

“Yeah, I like to do stretching exercises, but if I do it alone, I tend to overwork my body, and I'm in worse pain for a whole week, so I can't do anything. I need somebody to guide me on how to do it right
– Participant 2

Lack of Awareness

“I thought it would be something like Kung Fu.” — *Participant 801*

“Never heard of it. I hear about it on the TV commercials, I do know the karate commercials and all that. I don't know anything about that. I was never introduced to stuff like that.” — *Participant 806*

“I thought I was like kickboxing. I don't know because I never seen anybody do tai chi. I thought it was part of karate.” — *Participant 814*

Relaxation and Meditation

“Relaxation is important just to relieve their pain or anxiety.”

– *Participant 1*

“Just relax your mind so that you’re not dwelling on the pain because, a lot of times, when you’re in pain, you dwell on it, and that seems to make the pain worse. If you’re not thinking about that, and you’re thinking of calm things, then I would think that you wouldn’t be in as much pain.”

– *Participant 21*

“It seems like it's something that releases stress... I can see that movin' around like that would ease my mind about things. It's like a deep meditation thing.”

– *Participant 6*

Relaxation and Meditation

“The mind is a powerful thing and definitely can block out pain... close your eyes and just go with the flow.... I mean it’s not gonna kill the pain [*laughter*], but it’ll definitely help... It’s something that helps you deal with the pain... I think it’s awesome. If you can control your body like that and relax your mind at the same time and just let everything flow, I think it’s good for the circulation, good for the mind, good for the soul.”

– *Participant 22*

Interest in Tai Chi

“I think it’s a good idea. I definitely would try it.”

– *Participant 22*

“I’d definitely incorporate it. I would definitely give it a try. Yeah, I think it’s something that I would be interested in doing or trying.”

– *Participant 2*

“I’m sure those kinds of approaches would help [PLWH] for all kinds of things, not just pain.”

– *Provider 1*

SUMMARY OF AIM 1

- HIV is well managed, chronic pain is not
- Relaxation and stress reduction
 - Reduce pain
- Expressed interest in the Tai Chi program

PILOT RCT

➤ N = 40, two cohorts

N = 40	Intervention	Control
Cohort 1 (2021)	10	10
Cohort 2 (2022)	10	10

➤ Inclusion:

- Clinical diagnosis of HIV and chronic pain
- Age ≥ 45 years
- English speaking
- Physically able to participate in a Tai Chi Easy program
- Willing/able to attend 10-week intervention

➤ Exclusion:

- Acute suicidality, psychosis, active substance use disorder

PILOT RCT

Intervention Groups (in-person or **virtual**)

- Tai Chi Intervention Group
 - 10 weekly group sessions of Tai Chi Easy
 - Facilitated by expert Tai Chi instructor
 - RA will be present to code intervention fidelity

- Health Education Control Group
 - Matched for time and attention
 - 10 weekly group sessions
 - Facilitated by trained health coach
 - RA will be present to code intervention fidelity

PILOT RCT

Incentives

- Baseline assessment: \$30
- Post-intervention assessment: \$30
- 3 month follow up assessment: \$40

Group attendance: reimbursement for time/travel (\$5)

Group dynamics: include time for social interaction

PILOT RCT

Tailor for Population

- Focus on stress management
- Highlight specific health benefits
 - Increase circulation
 - Improve immune function

PILOT RCT

To Be Continued...

- Enrolling participants now
- Hope to be completed by end of 2022!

Future Directions...

- Integrate movement into psychological intervention for chronic pain
- Implementation strategies to sustain practice at clinics

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Research Assistants:

Georgiana McTigue, MPH

Brittany Balletto, BA

Stephanie Madden, BS

Christina Mitchell, BS

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THANK YOU

Eugene M. Dunne, PhD

Assistant Professor

Department of Oral Health Sciences

Kornberg School of Dentistry

eugene.dunne@temple.edu

