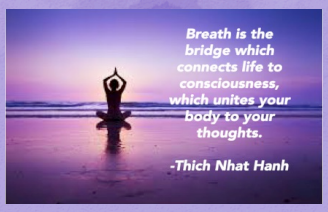
Yoga and Meditation as a Pain Management Techniques in Women with Chronic Pelvic Pain



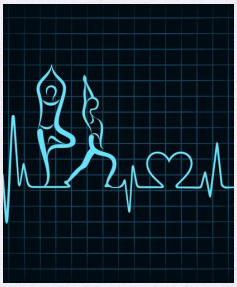
Abbie Marrale, SPT
Doctor of Physical Therapy Capstone Project
University of North Carolina – Chapel Hill

Objectives

- Understand chronic pain theories, and be able to apply those concepts specifically to pelvic pain
- Review supporting literature demonstrating the effects of meditation and yoga on chronic pain
- Be able to describe meditation and meditation techniques as they are used therapeutically
- Describe yoga and yoga techniques as they are used therapeutically
- Demonstrate an understanding of typical yoga poses and movement patterns that promote pelvic floor relaxation and general strengthening

Purpose

- To further explore how yoga and meditation can be used in the physical therapy setting to promote healing, health, and wellness.



Chronic Pelvic Pain

- Chronic (Persistent) pelvic pain is pelvic pain that lasts at least 6 months, and the problem that originally caused the pain has lessened or gone away.[1]

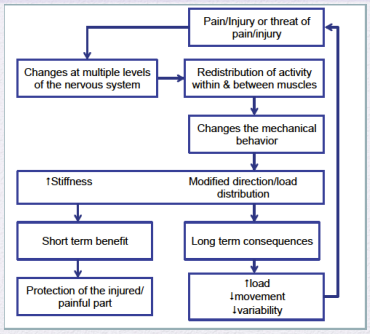
Chronic Pain Theories

- Vicious Cycle Theory[2]
  - Roland et al: increase in muscle activity in the muscles that are painful or move the painful region
- Pain Adaption Theory[3]
  - Lund et al: activity of a muscle that is painful or produces a painful movement is uniformly inhibited, whereas that of the antagonist is facilitated

Chronic Pain Theories

- Motor Adaptation to Pain[4]
  - Hodges & Tucker 2011
    1. Involves redistribution of activity within & between muscles
    2. Changes mechanical behavior
    3. Lead to 'protection' from further pain/injury
    4. Involves multiple levels of the motor system that may be complementary, additive, or competitive
    5. Short-term benefit, with potential for long-term consequences

Chronic Pain Pathways



Chronic Pain Theories

- Central Sensitization:[5-6]
  - Alterations in CNS processing
  - Widespread hypersensitivity (Hyperalgesia)
    - Inhibitory anti-nociceptive mechanisms
    - Over activation of descending and ascending pain facilitory pathways
  - Augmentation of nociceptive transmission
    - Allodynia: experience of pain to a non-painful stimuli (such as light touch)

Chronic Pain Theories

Neuromatrix Theory[7-8]

"Pain is not simply the end product of a linear sensory transmission system; it is a dynamic process that involves continuous interactions among complex ascending and descending systems." (pg1)

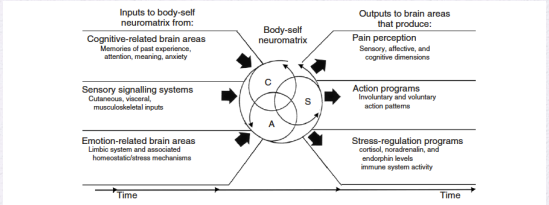


FIGURE 3 | Factors that contribute to the patterns of activity generated by the body-self neuromatrix, which is comprised of sensory, affective, and cognitive neuromodules. The output patterns from the neuromatrix produce the multiple dimensions of pain experience, as well as concurrent homeostatic and behavioral responses. (Reprinted with permission from Ref 21. Copyright 2001 Sage Publications)

Mindfulness & Meditation

- "Mindfulness is not targeted at minimizing pain but rather changing the relationship to pain."[9] (pg. 650)

Effects of mindfulness meditation on chronic pain: A randomized controlled trial[9]

- (n=109) patients with nonspecific chronic pain, verified by a physician and currently stable in their chronic pain treatment
- Randomized to mindfulness-based stress reduction [MBSR] or wait list control
- Outcomes:
  - Pain [VAS & SF36]
  - Physical function [SF36]
  - Mental function [Hospital Anxiety & Depression Scale, SF36, CSQ]
  - Pain acceptance [Chronic Pain Acceptance Questionnaire]
  - Health-related quality of life [SF36]

*Primary Outcome: SF36 Vitality Scale

Outcome Measure	Group†	Baseline Mean ± SD	After Intervention Mean ± SD	Effect Size (Cohen's d)‡	*P* Value	6-Month Follow-Up (Meditation Group Only) Mean ± SD§
Primary outcome						
SF36, vitality dimension	Meditation	28.3 ± 22.0	36.8 ± 24.4	0.39	0.04	34.8 ± 26.6*
	Control	26.9 ± 20.5	27.8 ± 20.2			
Pain						
BPI, average score	Meditation	19.0 ± 6.6	18.8 ± 5.9	0.25	0.17	18.0 ± 6.6
	Control	19.2 ± 5.2	17.9 ± 5.6			
SF36 pain scale	Meditation	24.3 ± 16.2	28.5 ± 18.1	0.21	0.26	30.1 ± 20.7*
	Control	23.7 ± 12.9	25.1 ± 15.5			
Physical functioning						
SF36 physical function scale	Meditation	45.4 ± 23.8	48.3 ± 25.8	−0.05	0.78	48.1 ± 24.9*
	Control	45.2 ± 20.6	48.6 ± 21.3			
Mental functioning						
HADS, anxiety	Meditation	9.3 ± 4.5	8.1 ± 4.4	0.50	0.01	8.3 ± 4.8
	Control	9.1 ± 4.4	9.4 ± 4.5			
HADS, depression	Meditation	7.1 ± 4.5	5.9 ± 4.3	0.37	0.05	5.5 ± 4.1*
	Control	7.6 ± 4.7	7.6 ± 4.8			
Catastrophic thinking	Meditation	16.6 ± 7.3	14.7 ± 7.9	0.20	0.28	14.9 ± 7.6
	Control	18.6 ± 7.9	18.1 ± 8.6			
Control over pain	Meditation	2.3 ± 1.3	2.9 ± 1.3	0.55	<0.01	2.8 ± 1.4*
	Control	2.5 ± 1.2	2.4 ± 1.1			
Minimizing pain	Meditation	2.3 ± 1.2	2.6 ± 1.3	0.19	0.30	2.4 ± 1.3
	Control	2.3 ± 1.2	2.4 ± 1.0			
SF36 psychological well-being scale	Meditation	57.0 ± 20.7	63.3 ± 20.5	0.43	0.02	62.6 ± 21.3
	Control	52.1 ± 17.3	52.5 ± 19.0			
Pain acceptance						
Engagement activity	Meditation	28.3 ± 12.0	32.3 ± 11.5	0.71	<0.01	33.0 ± 13.1*
	Control	29.4 ± 10.8	28.8 ± 10.9			
Pain willingness	Meditation	19.8 ± 8.2	22.0 ± 9.1	0.34	0.07	28.4 ± 9.6*
	Control	18.7 ± 8.0	18.6 ± 7.1			
Pain acceptance, total score	Meditation	48.21 ± 16.6	54.2 ± 18.1	0.60	<0.01	56.0 ± 20.9*
	Control	48.0 ± 16.2	47.2 ± 15.3			
Health-related quality of life						
SF36 physical health composite	Meditation	28.3 ± 7.1	30.1 ± 8.8	0.10	0.61	30.3 ± 8.7*
	Control	28.9 ± 6.5	30.1 ± 7.8			
SF36 mental health composite	Meditation	41.3 ± 13.2	45.5 ± 12.9	0.48	0.01	44.7 ± 13.5
	Control	39.5 ± 12.3	38.7 ± 12.7			

Mind-body therapies for the self-management of chronic pain symptoms[10]

- 146 randomized controlled trials were included in the review, 54 of which investigated mind-body therapies
- Potential benefits include:
  - Promotion of self-efficacy
  - Relatively low cost
  - Ability to be self-directed
- Limitations of current research
  - Overall low quality in existing studies
  - Inconclusive/mixed results
  - Lack of safety reporting

Mindfulness & Meditation

- Key Points:
  - Meditation may be an effective means to manage pain and improve quality of life[9-10]
  - There is a general moderate effect-size of mind-body therapy on chronic pain symptoms[9]
  - Goal of meditation should be to cultivate a better relationship with pain, not reduce it[9]
  - Meditation is a strategy that does not work for everyone[9-10]
  - Research is often low-quality and overall mixed on effectiveness[9]

Mindfulness & Meditation

- Types of Meditation:
  - Body Scan
  - Sitting/Walking Meditation
  - Guided Imagery Relaxation
  - Transcendental Meditation
  - Zen Meditation
  - Jyoti Meditation

Yoga

- "Yoga was developed up to 5,000 years ago in India as a comprehensive system for wellbeing on all levels: physical, mental, emotional and spiritual."
- "While Yoga is often equated with Hatha Yoga, the well-known system of postures and breathing techniques, Hatha Yoga is only a part of the overall discipline of Yoga."
- "Today, many millions of people use various aspects of Yoga to help raise their quality of life in such diverse areas as fitness, stress relief, wellness, vitality, mental clarity, healing, peace of mind and spiritual growth."

yogaalliance.com

The efficacy of a treatment program focusing on specific stabilizing exercises for pelvic girdle pain after pregnancy: a two-year follow-up of a randomized clinical trial[11]

- Prospective, randomized clinical trial
- 81 women randomized to 20-week PT program:
  - PT with specific stabilization exercises (n=40)
  - PT without specific stabilization exercises (n=41)
- 1-year follow-up: intervention made significant improvements vs active control in ODI scores ($p<0.001$) & pain ($p<0.001$)
- 2-year follow-up: improvements found at 1-year follow-up were maintained

Yoga for functional ability, pain, and psychological outcomes in musculoskeletal conditions: A systematic review and meta-analysis[12]

- Yoga is an effective method to improve functional outcomes and pain outcomes in participants with chronic MSK conditions
- Moderate effect size in favor of yoga interventions vs passive & active controls (-0.61)
- "A conservative analysis of high-quality studies suggests that yoga interventions produce clinically meaningful improvements in pain and functional outcomes across a range of [musculoskeletal conditions]". (pg. 214)

Yoga Key Points

- Yoga may be an effective method for improved pain and function in those with chronic musculoskeletal conditions[12]
- Yoga is not a replacement for standard physical therapy, however may be a beneficial addition[11-12]
- Limited research specifically on yoga for chronic pelvic pain[13]
- Further high-quality research is needed

Conclusion

- Yoga & Meditation are effective methods for chronic pain management
- Greater evidence for meditation than yoga
- These practices typically change relationship with pain, as opposed to the pain itself
- May increase quality of life and overall function
- Yoga & Meditation may not work for everyone

Thank You!!

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