

Pharmacist Led Chair Yoga in Home Care Patients with Chronic Pain

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ABSTRACT

The National Institutes of Health estimate that 25.3 million American adults suffer from daily pain, a condition more common with aging, affecting quality of life as well as productivity. This pilot study investigated whether chair yoga (CY) improves chronic pain in home care patients and reduces the need for opioids. Methods: Participants were patients of Visiting Nurse Home and Hospice (VNHH), a home healthcare agency serving the state of Rhode Island, and identified as having chronic pain. Upon consent, a pre-intervention survey was conducted assessing previous yoga exposure, baseline demographics, perceived pain, and prescription pain medications. Seven homebound patients consented to CY participation. Participants engaged in 15-60 minutes of one-on-one chair yoga over six weeks tailored to individual ability levels. A post-survey was conducted after the final CY session assessing identical measures as the pre-survey. Paired t-test was used to assess statistical significance of data collected. Results: The average perceived pain utilizing analog scale was rated 7.71 out of 10 initially. After six weeks of CY intervention, the average pain score decreased by 4.5 (7.33 v. 2.83, $p = 0.01$). No patients reported adverse effects or increase in pain during the intervention period. Further, no patients required an increase in pain medication during or after the CY intervention. Conclusion: This pilot study demonstrates a role for complementary alternative medicine in home care patients with chronic pain. Low-risk routines such as CY offer an accessible option that may complement traditional therapies for patients that are unable to leave their homes.

Keywords: Chronic pain; Chair yoga; Home care, Complementary therapies; Mind-body therapies

INTRODUCTION

The National Institutes of Health estimate that 25.3 million American adults suffer from daily pain. [1] Pain is a personal and subjective experience that no test can measure with precision. Chronic pain is often defined as pain that persists longer than three months, or past the time for normal healing, and may arise from an injury or illness but many times the cause is not clear. [2] Chronic pain becomes more common with aging and can affect quality of life as well as productivity for many Americans. Annually, chronic pain accounts for an estimated \$635 billion in costs for treatment and lost productivity in the United States.

[3] Optimal treatment plans are tailored to an individual patient with the goal of reducing pain and improving function so daily activities may resume. [2] One of the current mainstays of treatment for pain includes opioid analgesics such as oxycodone, hydrocodone, and combination products. Patients with chronic pain often require long term treatment. Even when prescribed by a physician, regular use of opioid drugs may lead to dependence, addiction, overdose, and death. In 2018, Rhode Island alone reported 267 opioid overdose deaths. [4] Alternative options are available for patients experiencing chronic pain.

Mind and body practices, such as yoga and meditation, have increased in popularity in recent years as types of complementary health approaches for many Americans. [5] Symptoms of pain that are not consistently addressed by conventional treatments may be mitigated by complementary approaches and lessen the risk of complications associated with many of the prescription drugs used for pain. Yoga is a practice that has become increasingly popular in health and overall wellness. The practice has been studied in otherwise healthy individuals for its beneficial effects on depression, anxiety, stress, and pain. [6-8] Many individuals could benefit from the effects of yoga but may not perceive themselves to be in adequate condition to participate in the exercise as a result of safety concerns associated with certain comorbid medical conditions and general frailty of many older adults. Chair yoga (CY) offers a solution as a modified practice that invites individuals seeking an adaptive, low-risk routine for better wellness outcomes without fear for safety concerns associated with many other recommended exercises. A recent pilot study examined whether CY compared to a Health Education Program (HEP) led by health care providers could have an immediate and sustained effect on pain and physical function in older adults with osteoarthritis.

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Both interventions consisted of twice weekly, 45-minute sessions in a South Florida senior center. Participants randomly assigned to the CY group engaged in four main components: physical postures, breathing, deep relaxation, and meditation while utilizing the support of a chair. Demographic information and physical measures were collected at baseline, the midpoint, 8 weeks at completion of the intervention, and 1 and 3 weeks post intervention. After 8 weeks, CY participants were given a manual with instructions and pictures for continued yoga practice at home. All measures were completed on paper by participants using Likert scale responses, which were summed to obtain an overall score for each measure at each data point.

The CY group showed greater reduction in pain interference over 8 weeks ($p = 0.010$), sustained through 3 months ($p = 0.022$) compared to the HEP group. The study results support the use of a CY program to reduce pain interference in everyday living for patients with osteoarthritis. [9] Most recently, a pilot study was conducted evaluating the effects of chair yoga versus chair-based exercise in 18, community dwelling, older adults with osteoarthritis. The investigators found no significant difference in the two interventions, though both improved physical function and mobility after the 8-week study period. [10] To date, existing research examining the relationship of yoga or CY to wellness outcomes has been conducted in community-dwelling, older adults. This study was designed specifically to include home care patients that may not have the means or will to attend a community center. Home care services include a broad range of support to meet the needs to patients whose capacity for self-care is limited because of injury, chronic illness, disability, and other health conditions. In 2015, about 4.5 million Americans received services from home health agencies and 1.5 million receiving hospice services. Although people of all ages may require such services, the risk of needing assistance increases with age and the number of Americans over age 65 is projected to increase by 84% by 2050. [11] Our patients at Visiting Nurse Home and Hospice (VNHH) of Portsmouth, RI are home-bound for varying diagnoses including chronic pain and require a considerable amount of support to leave their homes with excursions limited almost exclusively to doctor visits. Pharmacists are an integral component of the interdisciplinary care team at VNHH by conducting medication evaluations of patients undergoing transitions in their care, and offering prescription, non prescription and complementary therapy recommendations. The aim of this study was to investigate whether bringing CY to the patient in the comfort of his or her own home could eliminate barriers, such as transportation, to improve pain and reduce medication usage.

Design

Data collection occurred prospectively. Secure software at VNHH containing active patients and their associated diagnoses was utilized to identify eligible patients. Due to the nature of the intervention, investigators and participants were unblinded.

Setting

All study patients were actively on service with VNHH. VNHH is an independent, non-profit home health agency that provides nursing, rehabilitation therapies and palliative care and Hospice services throughout the state of Rhode Island.

The primary investigator met with individuals one-on-one so that patients did not need to leave their homes. Patients of VNHH were able to practice CY utilizing personal chairs and recliners from their homes as equipment and did not need to purchase or provide anything additional.

Participants

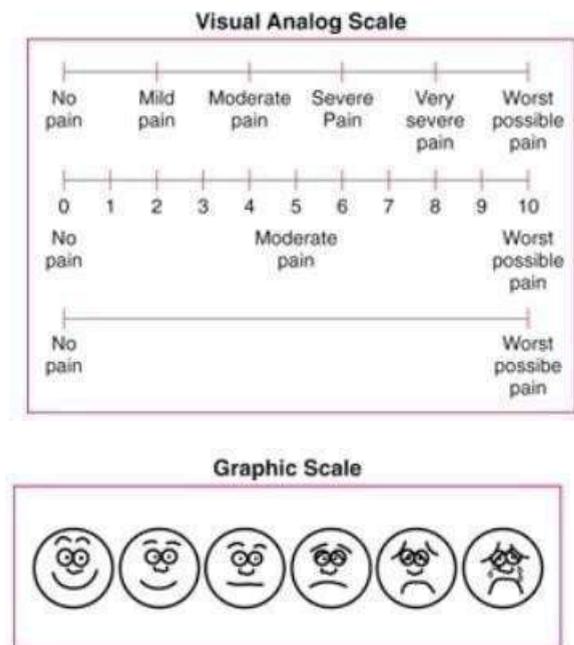
Home care patients of all ages with a diagnosis of chronic pain were eligible for inclusion. Case managers referred select patients expressing an interest in meeting with the primary investigator for pharmacist and CY consultation. Patients were excluded if they had recent surgery within the last 3 months. A total of seven eligible patients were enrolled and consented to CY participation. One patient was excluded for having undergone recent spinal surgery.

Intervention

Upon identification, the primary investigator scheduled one-on-one visits with all eligible participants to engage in discussion about the study and to ensure understanding before informed consent was obtained to continue. Upon consent, a pre-intervention survey was conducted by the lead investigator. The survey assessed baseline demographics: age, gender, previous yoga exposure, current prescription pain medication usage, pain assessment, and past medical history. Pain was assessed utilizing a paper pain analog scale (Appendix 1) ranging from zero to ten, with zero described as no pain at all and ten as the worst pain imaginable. This validated scale subjectively assesses chronic pain in both numbers as well as graphically, using facial expressions such as smiling (no pain) to crying (worst possible pain). Further, medication reconciliation was conducted by the pharmacist investigator to compare patient reported use and electronic medical records including medications used for pain. The survey also assessed participant's perceptions of yoga as a positive experience for overall wellness. After completing the initial survey, the lead investigator engaged participants in 15 to 60 minutes of one-on-one chair yoga tailored to individual ability levels and range of motion. The lead investigator underwent 200 hours of training to earn certification as a qualified yoga instructor two years prior to this investigation. Yoga sessions were repeated once weekly for a total of six weeks with each participant during the winter of 2019. Participants were provided a chair yoga handout with images and encouraged to practice on their own between sessions. A post-survey was conducted after the final chair yoga session assessing identical measures as the pre-survey. Paired t-test was used to assess differences in pain score and quality of life.

Appendix 1

1. On a scale of 0 to 10, with 0 meaning no pain and 10 meaning the worse pain you can imagine, how much pain are you having now?
2. Related to your prescribed pain medication, how often are you taking?



Main Outcome Measures

The primary study outcome measures were pain scores and pain medication usage.

RESULTS

Seven patients were enrolled in this pilot study. Participants were primarily female, with 71.4% over 65 years of age. The number of participants having CY exposure prior to the start of the study was low at 28.6%. Average perceived pain was rated as 7.71 out of 10 initially with only 28.6% reporting no use of prescribed pain medications prior to and during the CY intervention. Of the remaining 71.4% of patients taking pain medications, the majority were taking opioids. Additional baseline characteristics were collected with percentages of each characteristic (Table 1). Concluding the six weeks of CY intervention, one patient was lost to follow up and data was not included in analysis for this participant. Of the remaining six participants, the average pain score decreased by 4.5 (7.33 v. 2.83, $p = 0.01$). No patients reported any adverse effects or increase in pain during the intervention period. Of note, no patients required an increase in their pain medication regimen during or after the CY intervention.

DISCUSSION

This study supports previous research utilizing complementary health approaches and broadens the patient population that may benefit by including homebound patients, a group not included in CY studies to date. Previous studies analyzing the impact of CY on patients with pain fail to address patients that are unable to attend community centers. [9, 10] Group CY sessions were initially considered for this research; however, the primary reason for choosing one-on-one engagement with patients was to reduce aforementioned barriers and potentially increase sustainability post-intervention. If patients initially start CY in the comfort of their own homes, our research team theorized that patients would be more apt to continuing exercises independently after the study's conclusion. Further, our study utilized pharmacist CY allowing for the unique assessment of pain therapy prior to and

after the intervention.

A limitation to this study was the small sample size of patients. Due to time constraints of the lead investigator, additional patients expressing interest in participating after the pre-specified study period were unable to be included in the initial pilot. Additional certified yoga instructors leading CY sessions would lend for more patients receiving this valuable service. Further, given the nature of home care, patients are spread out geographically leading to greater time demands for travel for one investigator. However, as a result of the positive outcomes of this pilot study, the expansion of CY services is ongoing at VNHH. A focus on improved pain management and quality of life post-intervention could offer more insight into sustainability as the service continues to expand, as this outcome measure was not assessed in the initial pilot. Last, this study evaluated outcomes pre and post intervention; however, lacked long term follow up data. Though small, the statistically and clinically significant measured improvement in pain scores and anecdotal reports from patient are impactful to pharmacy practice (Appendix2).

Appendix 2 – Participant Testimonials

“Thank you so much for teaching me yoga! I really appreciate the time you took with your busy schedule. I learned so much, especially breathing and to practice ways to control my anxiety, stress, and chronic pain! I will always be grateful to you for teaching me ways to help control the pain I live with every day. Though my pain will never go away I’m happy to have learned ways to deal with it. Thank you so much for being patient with a beginner and for being so kind. Wishing you all the best!”

“I think if I continue with the exercise regime and some of my old marine corp exercises it could be good.”

“Definitely helps with panic, distracts the mind from pain, slept better, significant reduction from pain. Sometimes after yoga I want to take a nap not because I'm tired but because I'm relaxed. I know it's not a cure but it definitely works. I'm a believer now, I even told my surgeon. I believe it will benefit others if they're open to try. Some people are stuck with the idea that opiates are the only cure, the answer to everything. I know that they do help to reduce pain and help with quality of life but it angers me that they won't consider alternatives.”

“Really enjoyed working with you and not just sitting around watching TV but moving while doing something. Wonderful! Fantastic!”

“This has been wonderful to me and it's nice to sit and talk with you. My quality of life has declined because I've had a tough year but I was able to get up and vacuum yesterday without much pain and that made me happy.”

“I've enjoyed these visits very much. It is helpful that you are a pharmacist and can answer questions as well.”

“I feel relaxed and want to take a nap now. Your voice is very calming. The words you use and way you speak is thoughtful.”

Pre-intervention, patients reported a 7.33 on the pain scale which translates to “very severe pain.” Post intervention, patients reported a 2.83 translating to “mild pain.” For patients living with chronic pain, the elimination of pain may not be a realistic goal, yet a reduction in pain intensity and improved quality of life may be attainable with adjunctive therapies such as CY. With more providers

Table 1. Baseline Demographics

Age range		30 - 49	2 (28.6%)
		50 - 65	0 (0%)
		65 - 79	2 (28.6%)
		80+	3 (42.8%)
Gender		Female	6 (85.7%)
		Male	1 (14.3%)
Previous Yoga Exposure		Yes	2 (28.6%)
		No	5 (71.4%)
Prescription Pain Medications	Yes	Oxycodone or combination	4 (57.1%)
		Gabapentin	4 (57.1%)
		Morphine	1 (14.3%)
	No		2/7 (28.6%)
Past Medical History		Anxiety	6 (85.7%)
		Arthritis	5 (71.4%)
		Depression	4 (57.1%)
		Insomnia	4 (57.1%)
		Cancer	1 (14.3%)
Average Pain			7.71 (n = 7)

considering complementary health approaches such as CY services for their patients, barriers limiting more patients from receiving this intervention can be addressed for larger, more generalizable studies in the future. As the role of pharmacists continues to expand across various practices, pharmacists are an integral part of the evaluation of pain management regimens, ensuring the safety and wellbeing of patients. Pharmacists are the most accessible healthcare professionals and can have a direct impact on reducing opioid usage in the midst of our nation's epidemic. Though our research did not detect a reduction in opioid usage over 6 weeks, there was also no increase in pain medication across all patients. As research in the area of complementary and alternative medicine evolves, safer treatments for patients with ailments such as chronic pain should be encouraged where the benefit of mind and body practices has been demonstrated.

CONCLUSION

This pilot study demonstrates the potential for positive outcomes with complementary health approaches in homebound patients with chronic pain. CY is an accessible, adaptive practice for patients seeking low risk routines. When tailored to individual patients, CY may improve pain scores and supplement traditional pain therapies.

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REFERENCES

1. National Institutes of Health. NIH analysis shows Americans are in pain. Published August 10, 2015. URL: <https://www.nih.gov/news-events/news-releases/nih-analysis-shows-americans-are-pain>. [Accessed September 3rd, 2020].
2. Centers for Disease Control and Prevention (CDC). (2016) CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016. *MMWR Recomm Rep*. 65.
3. National Center for Complimentary and Integrative Health (NCCIH). Chronic Pain: In Depth. Modified December 17, 2018. URL: <https://nccih.nih.gov/health/pain/chronic.htm>. [Accessed September 3rd, 2020].
4. National Institute on Drug Abuse. Rhode Island: Opioid-Involved Deaths and Related Harms. Published May 1, 2020. URL: <https://www.drugabuse.gov/drug-topics/opioids/opioidsummarie-by-state/rhode-island-opioid-involved-deaths-related-harms>. [Accessed September 3rd, 2020].
5. Clarke TC, Barnes PM, Black LI, Stussman BJ, Nahin RL. Use of yoga, meditation, and chiropractors among U.S. adults aged 18 and over. *NCHS Data Brief*, no 325. Hyattsville, MD: National Center for Health Statistics. 201
6. Buchanan DT, Vitiello MV, Bennett K. Feasibility and Efficacy of a Shared Yoga Intervention for Sleep Disturbance in Older Adults With Osteoarthritis. *J Gerontol Nurs*. 1802017;43:45-52.
7. Cheung C, Wyman JF, Bronas U, McCarthy T, Rudser K, Mathiason MA. (2017) Managing knee osteoarthritis with yoga or aerobic/strengthening exercise programs in older adults: a pilot randomized controlled trial. *Rheumatol Int*. 37:389-398.
8. Park J, McCaffrey R, Newman D, Cheung C, Hagen D. (2014) The Effect of Sit 'N' Fit Chair Yoga Among Community-Dwelling Older Adults With Osteoarthritis. *Holist Nurs Pract*. 28:247186257.
9. Park J, McCaffrey R, Newman D, Liehr P, Ouslander JG. (2017) A Pilot Randomized Controlled Trial of the Effects of Chair Yoga on Pain and Physical Function Among Community-Dwelling Older Adults With Lower Extremity Osteoarthritis. *J Am Geriatr Soc*. 65:592-597.
10. McCaffrey R, Taylor D, Marker C, Park J. (2019) A Pilot Study of the Effects of Chair Yoga and Chair-Based Exercise on Biopsychosocial Outcomes in Older Adults With Lower Extremity Osteoarthritis. *Holist Nurs Pract*. 33(6):321-326.
11. Harris Kojetin L, Sengupta M, Lendon JP, Rome V, Valverde R, Caffrey C. (2015–2016) Long-term care providers and services users in the United States. National Center for Health Statistics. *Vital Health Stat* 2019.