

## Leadership Connection 2018 (15-18 September)

### A Systematic Review of the Effects of Yoga Therapy for Chronic Low Back Pain

**Theresa Ann Poling, MSN, FNP-BC**

*School of Nursing, West Virginia Wesleyan College, Buckhannon, WV, USA*

Opioid overdose rates have risen sharply over the last several years. While the cause of this steep incline is multifactorial, some behaviors have been identified as contributing to the opioid crisis. In August of 2014, King, Fraser, Boikos, Richardson, and Harper, published an article that sought to identify the determinants of increased opioid mortality in the United States (US) and Canada. Determinants were ultimately placed into three categories: prescriber behavior, user behavior and characteristics and environmental and systemic determinants (King et al., 2014, para. 2). The purpose of this paper and poster is to present the current state of the opioid crisis and to explore alternative therapies for treatment of chronic low back pain in the general adult population. An advanced literature search was conducted between the dates of February 2, 2017 and April 1, 2017 using the following databases: CINAHL with full text, Medline, PsycInfo, Social work Abstracts, Health source: nursing/Academic and PsycArticles. Eight quantitative studies that had a control were included for review. The included eight studies identified decreased pain and depression with yoga therapy as well as increased function and flexibility. A decrease in pain medication use was also noted in two of the eight studies. Yoga therapy was found to be beneficial and safe for patients with sciatica and disc bulges. Patient self-efficacy scores showed more improvement in the yoga arm of randomized controlled trials. Findings indicate that yoga therapy is an effective, cost efficient alternative to usual medical care and opioid prescribing for low back pain. There is a need for larger randomized control studies to include minorities and special populations such as different ethnic groups, pregnant women and populations with comorbidities. Outcomes data will guide future standards of care and evidence based medicine will aid in one aspect of the opioid crisis, prescriber behavior.

---

#### **Title:**

A Systematic Review of the Effects of Yoga Therapy for Chronic Low Back Pain

#### **Keywords:**

Chronic low back pain, Opioid crisis and Yoga

#### **References:**

Centers for Disease Control and Prevention. (2010). Drug overdose. Retrieved from <http://www.cdc.gov/drugoverdose/data/statedeaths.html>

Centers for Disease Control and Prevention. (2010). Drug overdose. Retrieved from [https://www.cdc.gov/mmwr/volumes/66/wr/mm6610a1.htm?s\\_cid=mm6610a1\\_w](https://www.cdc.gov/mmwr/volumes/66/wr/mm6610a1.htm?s_cid=mm6610a1_w)

Centers for Disease Control and Prevention. (2011). *The CDC guide to strategies to increase physical activity in the community*. Retrieved from <https://www.cdc.gov/drugoverdose/pdf/policyimpact-prescriptionpainkillerod-a.pdf>

Cox, H., Tilbrook, H., Aplin, J., Semlyen, A., Torgerson, D., Trehwela, A., & Watt, I. (2010). A randomized controlled trial of yoga for the treatment of chronic low back pain: results of a pilot study. *Complementary Therapies In Clinical Practice*, 16(4), 187-193. doi:10.1016/j.ctcp.2010.05.007

Cherkin, D. C., Sherman, K. J., Balderson, B. H., Cook, A. J., Anderson, M. L., Hawkes, R. J., & ... Turner, J. (2016). Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: A randomized clinical trial. *JAMA: Journal Of The American Medical Association*, 315(12), 1240-1249. doi:10.1001/jama.2016.2323

Deyo, R. A., Smith, D. H. ., Johnson, E. S., Donovan, M., Tillotson, C. J., Yang, X., ... Dobscha, S. K. (2011). Opioids for Back Pain Patients: Primary Care Prescribing Patterns and Use of Services. *Journal of the American Board of Family Medicine : JABFM*, 24(6), 10.3122/jabfm.2011.06.100232. <http://doi.org/10.3122/jabfm.2011.06.100232>

King, N. B., Fraser, V., Boikos, C., Richardson, R., & Harper, S. (2014). Determinants of Increased Opioid Related Mortality in the United States and Canada, 1990–2013: A Systematic Review. *American Journal of Public Health*, 104(8), e32–e42. <http://doi.org/10.2105/AJPH.2014.301966>

Monro, R., Bhardwaj, A. K., Gupta, R. K., Telles, S., Allen, B., & Little, P. (2015). Disc extrusions and bulges in nonspecific low back pain and sciatica: Exploratory randomised controlled trial comparing yoga therapy and normal medical treatment. *Journal Of Back & Musculoskeletal Rehabilitation*, 28(2), 383-392. doi:10.3233/BMR-140531

Saper, R. B., Sherman, K. J., Cullum-Dugan, D., Davis, R. B., Phillips, R. S., & Culpepper, L. (2009). Yoga for chronic low back pain in a predominantly minority population: a pilot randomized controlled trial. *Alternative Therapies In Health And Medicine*, 15(6), 18-27.

Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. *MMWR Morb Mortal Wkly Rep* 2017;66:265–269. DOI: <http://dx.doi.org/10.15585/mmwr.mm6610a1>

Sherman, K. J., Cherkin, D. C., Erro, J., Miglioretti, D. L., & Deyo, R. A. (2005). Comparing Yoga, Exercise, and a Self-Care Book for Chronic Low Back Pain. *Annals Of Internal Medicine*, 143(12), 849-W169.

Tekur, P., Nagarathna, R., Chametcha, S., Hankey, A., & Nagendra, H. R. (2012). A comprehensive yoga programs improves pain, anxiety and depression in chronic low back pain patients more than exercise: an RCT. *Complementary Therapies In Medicine*, 20(3), 107-118. doi:10.1016/j.ctim.2011.12.009

Tekur, P., Singphow, C., Nagendra, H. R., & Raghuram, N. (2008). Effect of Short-Term Intensive Yoga Program on Pain, Functional Disability and Spinal Flexibility in Chronic Low Back Pain: A Randomized Control Study. *Journal Of Alternative & Complementary Medicine*, 14(6), 637-644. doi:10.1089/acm.2007.0815

Tilbrook, H. E., Cox, H., Hewitt, C. E., Kang'ombe, A. R., Ling-Hsiang, C., Jayakody, S., & ... Torgerson, D. J. (2011). Yoga for Chronic Low Back Pain. *Annals Of Internal Medicine*, 155(9), 569-W-167.

Williams, K., Abildso, C., Steinberg, L., Doyle, E., Epstein, B., Smith, D., & ... Cooper, L. (2009). Evaluation of the effectiveness and efficacy of Iyengar yoga therapy on chronic low back pain. *Spine*, 34(19), 2066-2076. doi:10.1097/BRS.0b013e3181b315cc

## **Abstract Summary:**

The purpose of this poster is to present the current state of the opioid crisis and to explore alternative therapies for chronic low back pain in the general adult population. Findings indicate that yoga therapy is an effective, cost efficient alternative to usual medical care for low back pain.

## **Content Outline:**

### **A systematic review of the effects of yoga therapy for chronic low back pain**

I. Factors that contribute to the opioid crisis and that may potentially alleviate the crisis are reviewed

A. Prescriber behavior, user behavior and characteristics and environmental and systemic determinants were identified as contributing factors

B. Yoga as an alternative therapies for treatment of chronic low back pain in the general adult population was evaluated as a possible alleviating factor

II. A total of 199 publications ranging from 1974 to 2017 were found. When limits of all adult, peer reviewed articles were added, the search yielded 44 articles. Of the remaining 44 articles, the following inclusion criteria was utilized to further narrow the field:

A. All trials (experimental and nonexperimental) with a control group

B. Adults with low back pain

C. Intervention of yoga therapy

D. Similar outcomes used to determine effectiveness

E. Review question clearly stated

F. Validity of studies assessed appropriately

G. Summary of findings included

H. Recommendations supported by the reported data.

III. Eight RCTs that were selected for review represented the following characteristics:

A. Adults ages 19-70

B. Special populations

C. Women

D. Minorities

E. Veterans

F. Disadvantages persons.

IV. The included eight studies identified decreased pain and depression with yoga therapy as well as increased function and flexibility.

A. A decrease in pain medication use was also noted in two of the eight studies.

B. One study demonstrated that yoga therapy was found to be beneficial and safe for patients with sciatica and disc bulges.

C. Two of the studies reported lasting benefits of yoga 6 months post-intervention.

V. Of the eight included studies, several limitations were noted

A. Balanced gender inclusion is needed

B. Diversity in the sample is needed

C. Larger sample sizes are needed

D. Long term follow up is needed

E. Studies using more objective measures such as MRI, x-rays are needed

F. Strategies to decrease loss to follow up are needed

VI. Prescriptive behaviors have been identified as having a causal effect on the opioid crisis.

A. Primary care providers should be responsible prescribers and consider complementary and alternative medicine such as yoga in the treatment of low back pain.

B. Findings indicate that yoga therapy is an effective, cost efficient alternative to usual medical care for low back pain

First Primary Presenting Author

***Primary Presenting Author***

Theresa Ann Poling, MSN, FNP-BC  
West Virginia Wesleyan College  
School of Nursing  
Assistant Professor  
Buckhannon WV  
USA

**Professional Experience:** Family Nurse Practitioner 2007-current, employed at Davis Health Systems Assistant Professor of Nursing in the MSN program 2015-current at West Virginia Wesleyan College Graduate of Fairmont State College with ADN 1994 Graduate of Alderson Broaddus College with BSN 2004 Graduate of West Virginia University with MSN, FNP 2007 DNP student at West Virginia University graduation date May 2019

**Author Summary:** Theresa Poling is a Family Nurse Practitioner and an Assistant Professor of Nursing

at West Virginia Wesleyan College. Theresa is a life long yoga enthusiast and will attend Soma Yoga Institute's 200 hour yoga certification course in Costa Rica, in August of 2018. She will Graduate with Her DNP from WVU in May of 2019. The focus of Theresa's capstone project is curtailing the opioid crisis in rural West Virginia.