



59th Medical Wing



Warrior Medics – Mission Ready – Patient Focused



TAI CHI: AN EVIDENCE-BASED INTERVENTION FOR LOWER BACK PAIN

Dr. Rebecca E. Heyne, PhD, DNP, MBA, CPNP-PC
Evidence-Based Practice Facilitator
59th Medical Wing, Center for Clinical Inquiry

PEOPLE

MISSION

INNOVATION



Disclaimer



Warrior Medics – Mission Ready – Patient Focused

The views expressed are those of the presenter and do not reflect the official views or policy of the Department of Defense, or its components



PEOPLE

MISSION

INNOVATION



Description of the Project



Warrior Medics – Mission Ready – Patient Focused

- A literature review was conducted to explore the use of Tai Chi as an evidence-based intervention for lower back pain in active duty military personnel.
- Retrieved articles were critically appraised.
- Synthesis of the literature provided evidence to guide development of the proposed intervention.





PICO(T) Question



Warrior Medics – Mission Ready – Patient Focused

In active duty personnel being seen in an outpatient military clinic with lower back pain how does participation in a weekly Tai Chi session compared to current practice affect pain management?



PEOPLE

MISSION

INNOVATION



Background



Warrior Medics – Mission Ready – Patient Focused

- Lower back pain (LBP) is a common condition that can result in disability and economic burden related to lost productivity and healthcare costs (2,4,8,9,11).
- Between 2010 and 2014, 689,073 active duty military personnel had at least LBP related medical encounter (1).





Background



Warrior Medics – Mission Ready – Patient Focused

- Individuals suffering from back pain often seek out complementary and alternative medicine (CAM) for treatment (7).
- Tai Chi is a low-impact exercise consisting of a series of controlled movements combined with deep breathing (5).





Methods



Warrior Medics – Mission Ready – Patient Focused

- The Melnyk, Fineout-Overholt EBP model
- Literature review conducted using:
 - PubMed
 - Cochrane
 - CINAHL
 - Academic Search Complete
- Search limited to English language, peer reviewed journals





Methods



Warrior Medics – Mission Ready – Patient Focused

- Articles screened for relevance
- Reference lists of retrieved articles examined to ensure comprehensiveness of search
- Rapid critical appraisal conducted





Synthesis Table



Warrior Medics – Mission Ready – Patient Focused

Levels of Evidence Synthesis Table- Tai Chi and Lower Back Pain

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Level I: Systematic review or meta-analysis	X		X	X				X					X		X		X	X	X			X
Level II: Randomized controlled trial									X		X											
Level III: Controlled trial without randomization		X																				
Level IV: Case-control or cohort study																						
Level V: Systematic review of qualitative or descriptive studies																						
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project					X		X			X		X		X		X						
Level VII: Expert opinion						X														X	X	





Synthesis of the Evidence



Warrior Medics – Mission Ready – Patient Focused

- Tai Chi is a recognized form of CAM used to manage chronic pain (9,10).
- Randomized control trials demonstrated improved pain control and function associated with participation in Tai Chi for individuals with LBP(1,11).
- A 10-week Tai Chi intervention led by a certified instructor improved pain and disability (6).





Synthesis of the Evidence



Warrior Medics – Mission Ready – Patient Focused

- Tai Chi is a safe, cost effective intervention endorsed by the Arthritis Foundation (6).
- Agency for Healthcare Research and Quality (AHRQ) recommends Tai Chi as a noninvasive treatment for LBP (1).
- The Clinical Practice Guideline from the American College of Physicians recommends the use of Tai Chi for treatment of chronic LBP(11).





Implications for Nursing



Warrior Medics – Mission Ready – Patient Focused

- Lower back pain (LBP) can have a significant negative impact of readiness and military operations (2).
- The VA/DOD Clinical Practice Guideline for Diagnosis and Treatment of Low Back Pain recommends offering Tai Chi for chronic lower back pain (3).





Conclusions



Warrior Medics – Mission Ready – Patient Focused

- There is moderate evidence to support Tai Chi as part of a treatment regimen for the treatment of lower back pain.
- Piloting a 10- week Tai Chi intervention led by a certified instructor could be a safe, and cost-effective intervention for the treatment of lower back pain.





References



Warrior Medics – Mission Ready – Patient Focused

1. Chou, R., Deyo, R., Friedly, J., Skelly, A., Hashimoto, R., Weimer, M., ... & Grusing, S. (2017). Nonpharmacologic therapies for low back pain: a systematic review for an American College of Physicians clinical practice guideline. *Annals of internal medicine*, 166(7), 493-505.
2. Clark, L. L., & Hu, Z. (2015). Diagnoses of low back pain, active component, US Armed Forces, 2010-2014. *MSMR*, 22(12), 8-11.
3. Department of Veterans Affairs/Department of Defense (2017). *VA/DOD Clinical practice guideline for diagnosis and treatment of low back pain*. Retrieved from <https://www.healthquality.va.gov/guidelines/Pain/lbp/VADoDLBPCPG092917.pdf>
4. Ernat, J., Knox, J., Orchowski, J., & Owens, B. (2012). Incidence and risk factors for acute low back pain in active duty infantry. *Military medicine*, 177(11), 1348-1351.
5. Hall, A. M., Kamper, S. J., Emsley, R., & Maher, C. G. (2016). Does pain-catastrophising mediate the effect of tai chi on treatment outcomes for people with low back pain?. *Complementary therapies in medicine*, 25, 61-66.
6. Hall, A. M., Maher, C. G., Lam, P., Ferreira, M., & Latimer, J. (2011). Tai chi exercise for treatment of pain and disability in people with persistent low back pain: a randomized controlled trial. *Arthritis care & research*, 63(11), 1576-1583.
7. Kanodia, A. K., Legedza, A. T., Davis, R. B., Eisenberg, D. M., & Phillips, R. S. (2010). Perceived benefit of Complementary and Alternative Medicine (CAM) for back pain: a national survey. *The Journal of the American Board of Family Medicine*, 23(3), 354-362.
8. Knox, J., Orchowski, J., Scher, D. L., Owens, B. D., Burks, R., & Belmont, P. J. (2011). The incidence of low back pain in active duty United States military service members. *Spine*, 36(18), 1492-1500.
9. Kong, L. J., Lauche, R., Klose, P., Bu, J. H., Yang, X. C., Guo, C. Q., ... & Cheng, Y. W. (2016). Tai chi for chronic pain conditions: a systematic review and meta-analysis of randomized controlled trials. *Scientific Reports*, 6, 25325.
10. Peng, P. W. (2012). Tai chi and chronic pain. *Regional anesthesia and pain medicine*, 37(4), 372-382.
11. Qaseem, A., Wilt, T. J., McLean, R. M., & Forciea, M. A. (2017). Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American College of Physicians. *Annals of internal medicine*, 166(7), 514-530.





Questions?



Warrior Medics – Mission Ready – Patient Focused



PEOPLE

MISSION

INNOVATION